pharmasia

QIMP-15

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QUICK INDEX OF MEDICAL PRODUCTS & PROBLEMS

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THERAPEUTIC PART

Section - I

Chapter-1
GASTRO-INTESTINAL DRUGS

DRUGS ACTING ON THE ALIMENTARY SYSTEM[21,22,23]

The drugs and preparations acting on the alimentary system are classified into the following broad groups:

1. **Antacids & other anti-dyspeptic drugs.**
2. **Antispasmodics (anticholinergics).**
3. **Anticholinergic & anti-psychotic combination products.**
4. **Motility stimulants/Dopamine antagonists.**
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1. ANTACIDS & OTHER ANTI-DYSPEPTIC DRUGS

1.1 Antacids
1.2 Antacids with laxative action
1.3 Anti-dyspeptic & Carminatives

ANTACIDS[21,22,23,33]

Definition: Antacids are the most useful drugs for relief of hyperacidity & associated pain. Antacid preparations are weakly basic and consist of metal salts, most commonly aluminium hydroxide, magnesium hydroxide, calcium carbonate, or sodium bicarbonate.

Classification: Antacids are classified as:

i. ***Systemic antacids:*** Which are usually absorbed from the gut so, these are preferable as blood alkaliser to combat acidosis rather than antacids, such as, sodim bicarbonate, sodium citrate, sodium acetate, potassium citrate.

ii. ***Non-systemic antacids:*** These are not significantly absorbed from the gut and mainly used as antacids such as, aluminum hydroxide, magnesium hydroxide, magnesium trisilicate.

ALUMINIUM & MAGNESIUM ANTACIDS[21,33]

ALUMINIUM + MAGNESIUM ANTACID: Tablet/Suspension

Aluminum & magnesium antacid preparations are non-systemic antacids. These are not significantly absorbed from the gut and mainly used as antacids such as, aluminum hydroxide, magnesium hydroxide, magnesium trisilicate.

Mode of action: When antacids are ingested, these salts dissociat e to neutralize gastric acid and form neutral salts wi
the goal of antacid use is to increase the pH of gastric contents to a range of 3.5 to 4.5, at which pepsin activity is greatly diminished. Pain usually occurs when pH is below 3.5. There is good evidence from the clinical trials that antacids do not accelerate the rate of healing in gastric ulcer, but in duodenal ulcer, where very high doses of antacids such as 200-300ml of aluminium hydroxide daily in divided doses at frequent intervals well promote ulcer healing, but such treatment is inconvenient to the patient.

Ind: Hyperacidity, gastric & duodenal ulcer, gastritis, heartburn, dyspepsia, gastro-oesophageal reflux disease, flatulence.

C/I: Hypophosphataemia; if simethicone is added, contra-indicated in renal failure, severely debilitated patients, 1st trimester of pregnancy.

S/E: Diarrhoea, constipation, nausea, vomiting.

Cautions: Renal dysfunction, low phosphate diet, prolonged use.

Dosage: See below under individual preparations.

❖ **ACEDONE-Z Tab. Zenith**
Dried aluminium hydroxide gel & magnesium hydroxide BP: tablet.
Dose: 1-2 tabs. chewed half to 1 hour after or inbetween meals and at bed time or as required.
Child: Not recommended.
250's pack: 132.50 MRP

❖ **ACEDONE-Z Susp. Zenith**
Aluminium hydroxide gel BP & magnesium hydroxide BP: suspension
Dose: 2-4 tsf half to 1 hour after meals or when required and at bedtime.
200ml bot: 32.50 MRP

❖ **ACIDAX Susp. Apollo**
Aluminium oxide gel 180mg & magnesium hydroxide 200mg/5ml: suspension
Dose: 2-4 tsf 3 or 4 times daily half to 1 hour after or inbetween meals and at bedtime.
200ml bot: 31.40 MRP

❖ **ACIDROX Susp. Syntbo**
Aluminium hydroxide gel BP & magnesium hydroxide BP: suspension
Dose: 2-4 tsf half to 1 hour after meals or when required and at bedtime.
200ml bot: 32.00 MRP

❖ **ACIDROX-M Tab. Syntho**
Dried aluminium magnesium polyhydroxy complex USP: magaldrate tablet
Dose: 1-2 tablets 3 or 4 times daily half to 1 hour after or between meals & at bedtime.
150's pack: 150.00 MRP

❖ **ACIDROX-M Susp. Syntho**
Hydroxy magnesium aluminate or magaldrate USP: magaldrate suspension.
Dose: 2-4 tsf 3 or 4 times daily half to 1 hour after or between meals and at bedtime.
200ml bot: 50.00 MRP

❖ **ALGEX Tab. Doctors**
Dried aluminium hydroxide gel & magnesium hydroxide as tablet.
Dose: 1-2 tablets chewed half to 1 hour after or inbetween meals and at bed time or as required.
Child: Not recommended.
200's pack: 100.00 MRP

❖ **ALGEX Susp. Doctors**
Aluminium hydroxide gel 380mg & magnesium hydroxide 125mg/5ml: suspension
Dose: 2-4 tsf 3 or 4 times daily half to 1 hour after or inbetween meals and at bedtime.
200ml bot: 32.30 MRP

❖ **ALIDEX Tab. Rasa Pharma**
Dried aluminium hydroxide gel & magnesium hydroxide as tablet.
Adults: 1-2 tabs. chewed half to 1 hour after or inbetween meals and at bed time or as required.
Child: not recommended.
200's pack: 105.00 MRP

❖ **ALIDEX Susp. Rasa Pharma**
Aluminium hydroxide compressed gel BP & magnesium hydroxide BP: suspension.
Dose: 2-4 tsf half to 1 hour after meals or when required & at bed time.
200ml bot: 29.00 MRP

❖ **ALIMAG Tab. Asiatic**
Dried aluminium hydroxide gel & magnesium hydroxide BP: tablet.
Dosage: Adults: 1-2 tabs. chewed half to 1 hour after or inbetween meals and at bed time or as required.
Child: not recommended.
200's pack: 100.00 MRP

❖ **ALUCIL-S Tab. Opsonin**
Dried aluminium hydroxide gel BP & magnesium hydroxide BP & simethicone (activated dimethicone) 30mg/tablet.
Dose: 1-2 tabs. chewed half to 1 hour after meals or as required & at bedtime
100's pack: 90.00 MRP

❖ **ALUGEL Tab. Cosmic**
Dried aluminium hydroxide gel BP 250mg & magnesium hydroxide BP 400mg /tablet.
Dose: Adults: 1-2 tabs. chewed half to 1 hour after or inbetween meals and at bed time or as required.
200's pack: 100.00 MRP

❖ **ANCIDPLUS (DS) Susp. Renata**
Aluminium hydroxide gel BP & magnesium hydroxide BP: suspension
Dose: 2-4 tsf half to 1 hour after meals and at bedtime or as required
200ml bot: 46.00 MRP

❖ **ANTAMEAL Tab. Alco Pharma**
Dried aluminium hydroxide gel & magnesium hydroxide BP: tablet
Dose: 2-4 tabs. chewed or sucked with water half to 1 hour after meals or as reqd. Child, over 6 yrs. half adult dose.
200's pack: 100.00 MRP

❖ **ANTANIL Tab. Ibn Sina**
Dried aluminium hydroxide gel BP 250mg & magnesium hydroxide BP 400mg/tablet.
Dose: 2-4 tabs chewed or sucked with water half to 1 hour after meals or as reqd. Child, over 6 yrs. half adult dose.
200's pack: 104.00 MRP

❖ **ANTANIL Susp. Ibn Sina**
Alum.hydroxide gel 200mg & magnesium hydroxide 400mg/5ml: suspension.
Dose: 1-2 tsf 3 or 4 times daily half to 1 hour after or inbetween meals & at bedtime.
200ml bot: 30.80 MRP

❖ **ANTANIL Plus Tab. Ibn Sina**
Dried aluminium hydroxide 400mg, magnesium hydroxide 400mg & simethicone (activated dimethicone) 30mg/tablet.
Dose: 1-2 tabs. chewed half to 1 hour after meals or as required & at bedtime
100's pack: 90.00 MRP

❖ **ANTANIL Plus Susp. Ibn Sina**
Aluminium hydroxide gel 400mg, magnesium hydroxide 400mg & simethicone 30mg/5ml: suspension.
Dose: 2-4 tsf. half to 1 hour after meals or when required & at bedtime.
200ml bot: 55.00 MRP

❖ **APCOCID Tab. Supreme**
Dried aluminium hydroxide gel BP 250mg & magnesium hydroxide BP 400mg/tablet.
Dose: 2-4 tabs chewed or sucked with water half to 1 hour after meals or as reqd. Child, over 6 yrs. half adult dose.
100's pack: 50.00 MRP

❖ **APEDROX Susp. A.P.C Pharma**
Aluminium hydroxide gel BP & magnesium hydroxide BP: suspension
Dose: 2-4 tsf half to 1 hour after meals and at bedtime or as required
200ml bot: 30.00 MRP

❖ **AVLOCID Tab. ACI**
Dried aluminium hydroxide 400mg, magnesium hydroxide 400mg & simethicone (activated dimethicone) 30mg/tablet.
Dose: 1-2 tabs. chewed half to 1 hour after meals or as required & at bedtime
250's pack: 300.00 IP

❖ **AVLOCID Susp. ACI**
Aluminium hydroxide gel 400mg, magnesium hydroxide 400mg & simethicone 30mg/5ml: suspension.
Dose: 2-4 tsf. half to 1 hour after meals or when required & at bedtime.
200ml bot: 55.00 IP

❖ **BIOCID Tab. Bio-Pharma**
Dried aluminium hydroxide gel BP & magnesium hydroxide BP: tablet
Dose: 1-2 tabs. chewed half to 1 hour after meals or as required & at bedtime.
200's pack: 90.00 MRP

❖ **BIOCID Susp. Bio-Pharma**
Aluminium hydroxide gel BP & magnesium hydroxide BP: suspension
Dose: 2-4 tsf half to 1 hour after meals and at bedtime or as required
200ml bot: 32.30 MRP

❖ **BIOCID Plus Tab. Bio-Pharma**
Dried aluminium hydroxide gel BP & magnesium hydroxide BP & simethicone (activated dimethicone) 30mg/tablet.
Dose: 1-2 tabs. chewed half to 1 hour after meals or as required & at bedtime
200's pack: 180.00 MRP

❖ **BIOCID Plus Susp. Bio-Pharma**
Aluminium hydroxide gel BP & magnesium hydroxide BP & simethicone 30mg/5ml: suspension.
Dose: 2-4 tsf. half to 1 hour after meals or when required & at bedtime.
200ml bot: 46.00 MRP

❖ **CYTOCID Tab. CPL**
Aluminium hydroxide dried gel. 300mg, magnesium hydroxide 100mg per tablet.
Dose: 1-2 tabs half to 1 hour after meals and at bedtime or as required.
200's pack: 100.00 MRP

❖ **CYTOCID Susp. CPL**
Aluminium hydroxide gel 300mg, magnesium hydroxide 100mg in 5ml: Suspension
Dose: 2-4 tsf half to 1 hour after meals and at bedtime or as required.
200ml bot: 32.00 MRP

❖ **DIGEL Susp. Aristopharma**
Aluminium hydroxide gel BP & magnesium hydroxide BP: suspension
Dose: 2-4 tsf 3 or 4 times daily half to 1 hour after meals and at bedtime or as required.
200ml bot: 32.00 MRP

❖ **DOLOCID Tab. Aexim Pharma**
Alum. trisilicate dried gel BP, mag. trisilicate BP: tablet.
Dose: 2-4 tabs chewed or sucked with water half to 1 hour after meals or as reqd. Child, over 6 yrs. half adult dose.
200's pack: 86.00 MRP

❖ **DOLOCID Susp. Aexim Pharma**
Aluminium hydroxide gel BP & magnesium hydroxide BP: syrup
Dose: 1-2 tsf 3 or 4 times daily half to 1 hour after or inbetween meals & at bedtime.
200ml bot: 32.00 MRP

❖ **DROXIGEL-Plus Tab. Modern**
Dried aluminium hydroxide BP 400mg, magnesium hydroxide BP 400mg & simethicone 30mg/tablet.
Dose: 1-2 tablets chewed half to 1 hour after meals & at bed time.
200's pack: 180.00 MRP

❖ **DROXIGEL-S Susp. Modern**
Aluminium hydroxide gel BP 2.00gm & magnesium hydroxide paste BP 334mg/5ml: suspension.
Dose: 2-4 tsf half to 1 hour after meals or when required & at bed time.
200ml bot: 32.88 MRP

❖ **DROXIGEL-Plus Susp. Modern**
Aluminium hydroxide gel BP 2.00gm, magnesium hydroxide BP paste 1330mg & simethicone 30mg/5ml: suspension.
Dose: 2-4 tsf half to 1 hour after meals or when required & at bed time.
200ml bot: 55.00 MRP

❖ **DUOMEAL Tab. Ad-din**
Dried aluminium hydroxide gel BP 250mg & magnesium hydroxide BP 200mg/tablet.
Dose: 1-2 tabs. half to 1 hour after or between meals and at bedtime
100's pack: 50.00 MRP

❖ **DUOMEAL Susp. Ad-din**
Aluminium hydroxide gel BP. 250mg & magnesium hydroxide BP 125mg in 5ml: suspension
Dose: 2-4 tsf half to 1 hour or between meals and at bedtime.
200ml bot: 32.00 MRP

❖ **ENTACYD Tab. Square**
Dried aluminium hydroxide gel BP 250mg, magnesium hydroxide BP 200mg & magnesium trisilicate 370mg/tablet.
Dose: 1-2 tabs. half to 1 hour after or between meals and at bedtime
200's pack: 106.00 MRP

❖ **ENTACYD Susp. Square**

Aluminium hydroxide gel BP. 250 mg, magnesium hydroxide BP 125mg in 5ml: suspension
Dose: 2-4 tsf half to 1 hour or between meals and at bedtime.
200ml bot: 32.37 MRP

❖ **ENTACYD Plus Tab. Square**
Dried alumin. hydroxide gel BP & magnesium hydroxide BP + Simethicone 30mg/tablet.
Dose: 1-2 tabs. chewed half to 1 hour after meals & at bed time.
200's pack: 180.00 MRP

❖ **ENTACYD Plus Susp. Square**
Aluminium hydroxide gel BP & magnesium hydroxide BP + simethicone 30mg/5ml: suspension.
Dose: 2-4 tsf half to 1 hour after meals or when required & at bed time.
200ml bot: 55.00 MRP

❖ **EPAZAL Susp. Edruc**
Aluminium hydroxide gel BP & magnesium hydroxide BP: suspension (sugar free).
Dose: 2-4 tsf half to 1 hour after meals or when required & at bed time.
200ml bot: 32.00 MRP

❖ **FLATAMEAL DS Tab. Beximco**
Dried aluminium hydroxide gel BP & magnesium hydroxide BP + simethicone 30mg/tablet.
Ind: Dyspepsia, hyperacidity, peptic ulcer, flatulence.
Dose: 1-2 tabs. chewed half to 1 hour after meal or as required & at bedtime
200's pack: 240.00 MRP

❖ **FLATAMEAL-DS Susp. Beximco**
Alumin. hydroxide gel & magnesium hydroxide BP + Simethicone 30mg/5ml: suspension.
Dose: 2-4 tsf half to 1 hour after meals or when required & at bed time.
200ml bot: 50.00 MRP

❖ **G-ANTACID Tab. Gonoshasthaya**
Dried aluminium hydroxide gel 250mg & magnesium trisilicate 500mg + mannitol 120mg/tablet.
Dose: 1-2 tabs chewed or sucked with water half to 1 hour after meals or when required.
250's strip pack: 125.00 MRP
1000's pot: 300.00 MRP

❖ **G-ANTACID Susp. Gonoshasthaya.**
Aluminium hydroxide gel 125mg & magnesium trisilicate 500mg in 5ml: suspension
Dose: 2-4 tsf half to 1 hour after or between meals and at bedtime.
200ml bot: 25.00 MRP

❖ **G-ANTACID MH Tab. Gonoshasthaya**
Dried aluminium hydroxide gel & magnesium hydroxide BP: tablet.
Dose: 1-2 tabs chewed or sucked with water half to 1 hour after meals or when required.
200's pack: 100.00 MRP

❖ **GASTOLIN Susp. Belsen**
Aluminium hydroxide gel & magnesium trisilicate BP: suspension
Dose: 2-4 tsf half to 1 hour after or between meals and at bedtime.
200ml bot: 30.00 MRP

❖ **GELUDROX HS Susp. Drug Inter**
Aluminium hydroxide compressed gel. BP equivalent to alum. oxide 200mg, magnesium hydroxide BP 400mg & simethicone 30mg/5ml: suspension
Dose: 2-4 tsf half to 1 hour after meal and at bedtime.
200ml bot: 60.00 MRP

❖ **HI-GEL Susp. Hudson**
Dried aluminium/magnesium hydroxide BP prepa. antacid tablet.
Dose: 1-2 tabs. half to 1 hour after meals or when required.
200's pack: 104.00 MRP

❖ **HI-GEL Susp. Hudson**
Aluminium hydroxide gel BP + magnesium hydroxide BP: suspension
Dose: 2-4 tsf alf to 1 hour after meals 3 or 4 times daily and at bedtime.
200ml bot: 32.00 MRP

❖ **HYDROCID Susp. Millat**
Aluminium hydroxide gel BP + magnesium hydroxide BP: suspension
Dose: 2-4 tsf half to 1 hour after meals and at bedtime.
200ml bot: 32.20 MRP

❖ **JPDROX Tab. Jayson**
Dried aluminium hydroxide gel + magnesium hydroxide BP prepn: antacid tablet
Dose: 1-2 tabs half to 1 hour after meals or when required.
200's pack: 106.00 MRP

❖ **JPDROX Susp. Jayson**
Aluminium hydroxide gel BP 425mg, magnesium hydroxide BPC 425mg per 5ml : suspension.
Dose: 2-4 tsf half to 1 hour after meals 3 or 4 times daily and at bedtime.
200ml bot: 32.36 MRP

❖ **JPDROX-S Tab. Jayson**
Dried aluminium hydroxide gel + magnesium hydroxide BP + Simethicone: antacid tablet
Dose: 1-2 tabs half to 1 hour after meals or when required.
100's pack: 76.00 MRP

❖ **JPDROX-S Susp. Jayson**
Aluminium hydroxide gel BP 425mg + magnesium hydroxide BPC 425mg + simethicone 30mg per 5ml : suspension.
Dose: 2-4 tsf half to 1 hour after meals 3 or 4 times daily and at bedtime.
200ml bot: 46.14 MRP

❖ **KAMODROX Tab. Chemico**
Dried aluminium hydroxide gel BP 250mg & magnesium hydrox BP 400mg /tablet.
Dose: 1-2 tabs 3 or 4 times daily half to 1 hour after meals and at bedtime.
200's pack: 100.00 MRP

❖ **KAMODROX Susp. Chemico**
Aluminium hydroxide compressed gel 185mg & magnesium hydroxide 100mg in 5ml: suspension
Dose: 2-4 tsf 3 or 4 times daily half to 1 hour after meals and at bedtime.
200ml bot: 32.00 MRP

❖ **LACTAMEAL Tab. Beximco**
Dried aluminium hydroxide gel BP 200mg, magnesium hydrox BP 200mg per tablet.
Dose: 1-2 tabs 3 or 4 times daily half to 1 hour after meals and at bedtime.
200's pack: 106.00 MRP

❖ **LACTAMEAL Susp. Beximco**
Aluminium hydroxide gel. BP125mg, magnesium hydroxide BP 225mg in 5ml
Dose: 2-4 tsf 3 or 4 times daily half to 1 hour after meals and at bedtime.
200ml bot: 32.37 MRP

❖ **MAGADRATE-Plus Tab. Aexim**
Dried aluminium magnesium polyhydroxy complex USP & magnesium carbonate: magaldrate preparation
Dose: 1-2 tabs 3 or 4 times daily half to 1 hour after or between meals & at bedtime.
100's pack: 80.00 MRP

❖ **MAGADRATE-Plus Susp. Aexim**
Hydroxy magnesium aluminate or magaldrate 444mg/5ml USP: magaldrate suspension.
Dose: 2-4 tsf 3 or 4 times daily half to 1 hour after or between meals and at bedtime.
200ml bot: 50.00 MRP

❖ **MAGADROX Plus Tab. Gaco**
Aluminium hydroxide dried gel 250mg, mag. trisilicate 400mg + Simethicone 30mg/tablet.
Dose: 1-2 tabs half to 1 hour after meals or when required.
100's pack: 79.50 MRP

❖ **MAGADROX Plus Susp. Gaco**
Aluminium hydroxide gel. BP, magnesium hydroxide BP & simethicone 30mg/5ml.: Suspension
Dose: 2-4 tsf half to 1 hour after meal and at bedtime.
200ml bot: 46.02 MRP

❖ **MAGAPLUS Susp. Chemico**
Aluminium magnesium polyhydroxy complex or magaldrate usp 444mg/5ml: suspension
Dose: 2-4 tsf 3 or 4 times daily half to 1 hour after or between meals and at bedtime.
200ml bot: 50.00 MRP

❖ **MAGNOGEL Tab. Amico**
Dried aluminium/magnesium hydroxide BP prepn: antacid tablet
Dose: 1-2 tabs 3 or 4 times daily half to 1 hour after meals and at bedtime.
200's pack: 100.00 MRP

❖ **MAGNOGEL Susp. Amico**
Aluminium hydroxide & magnesium hydroxide gel prepn: antacid suspension
Dose: 2-4 tsf 3 or 4 times daily half to 1 hour after meals and at bedtime.
200ml bot: 32.00 MRP

❖ **MARLOX Tab. Incepta**
Dried aluminium magnesium polyhydroxy complex USP & magnesium carbonate: magaldrate preparation
Dose: 1-2 tablets by chewing half to 1 hour after meals or when required.
200's pack: 200.00 MRP

❖ **MUCOGEL Tab. Medicon**
Dried aluminium hydroxide & magnesium hydroxide BP prepn: antacid tablet
Dose: 1-2 tabs 3 or 4 times daily half to 1 hour after meals and at bedtime.
200's pack: 100.00 MRP

❖ **MUCOGEL Susp. Medicon**
Aluminium hydroxide & magnesium hydroxide gel prepn: antacid suspension
Dose: 2-4 tsf 3 or 4 times daily half to 1 hour after meals and at bedtime.
200ml bot: 32.00 MRP

❖ **NEUTRAL-S Tab. Hallmark**
Dried aluminium/magnesium hydroxide gel prepn with simethicone: antacid tablet
Dose: 1-2 tabs 3 or 4 times daily half to 1 hour after meals and at bedtime.

200's pack: 156.35 MRP

❖ **NEUTRAL-S Susp. Hallmark**
Aluminium hydroxide compressed gel + magnesium hydroxide paste + simethicone: antacid suspension
Dose: 2-4 tsf 3 or 4 times daily half to 1 hour after meals and at bedtime.
200ml bot: 45.50 MRP

❖ **NOCID Tab. Medimet**
Antacid preparation: tablet
Dose: 1-2 tabs 3 or 4 times daily half to 1 hour after or between meals & at bedtime.
200's pack: 106.00 MRP

❖ **NOCID Plus Tab. Medimet**
Antacid preparation with simethicone: tablet
Dose: 1-2 tabs 3 or 4 times daily half to 1 hour after or between meals & at bedtime.
200's pack: 180.00 MRP

❖ **NOCID-N Susp. Medimet**
Antacid liquid prepn: suspension.
Dose: 2-4 tsf 3 or 4 times daily half to 1 hour after meals and at bedtime or as required.
200ml bot: 32.50 MRP

❖ **NOCID Plus Susp. Medimet**
Aluminium hydroxide compressed gel + magnesium hydroxide paste + simethicone: antacid suspension
Dose: 2-4 tsf 3 or 4 times daily half to 1 hour after meals and at bedtime.
200ml bot: 50.00 MRP

❖ **OXECONE Tab. Acme**
Dried alumn. hydroxide gel 250mg & magnesium hydroxide 400mg/tablet
Dose: 1-2 tabs 3 or 4 times daily half to 1 hour after or between meals & at bedtime.
100s pack: 53.00 MRP

❖ **OXECONE-M Tab. Acme**
Dried aluminium magnesium polyhydroxy complex USP & magnesium carbonate: magaldrate preparation
Dose: 1-2 tabs 3 or 4 times daily half to 1 hour after or between meals & at bedtime.
100's pack: 100.00 MRP

❖ **OXECONE-S Tab. Acme**
Dried alumn. hydroxide gel 400mg & magnesium hydroxide 400mg + simethicone 30mg/tablet
Ind: Dyspepsia, hyperacidity, peptic ulcer, flatulence.
Dose: 1-2 tabs chewed half to 1 hour after meal or as required & at bedtime.
100s pack: 90.00 MRP

❖ **OXECONE Susp. Acme**
Aluminium hydroxide compressed gel 200mg & magnesium hydroxide 125mg/5ml: Suspension
Dose: 2-4 tsf 3 or 4 times daily half to 1 hour after meals & at bedtime.
200ml bot: 32.89 MRP

❖ **OXECONE-M Susp. Acme**
Aluminium magnesium polyhydroxy complex USP & magnesiumcarbonate: magaldrate preparation
Dose: 2-4 tsf 3 or 4 times daily half to 1 hour after or between meals and at bedtimes.
200ml bot: 54.00 MRP

❖ **OXECONE-S Susp. Acme**
Alumin. hydroxide gel 400mg & magnesium hydroxide 400mg USP + simethicone 30mg/5 ml: suspension.
Dose: 2-4 tsf 3 or 4 times daily half to 1 hour after meals and at bedtime.
200 ml bot: 55.00 MRP

❖ **PEPTACID Tab. Amico**
Dried aluminium/magnesium hydroxide gel preparation with simethicone: antacid tablet
Ind: Dyspepsia, hyperacidity, peptic ulcer, flatulence.
Dose: 1-2 tablets 3 or 4 times daily half to 1 hour after meals & at bedtime.
100's pack: 75.00 MRP

❖ **PEPTACID Susp. Amico**
Aluminium hydroxide & magnesium hydroxide gel + simethicone 30mg/5ml: antacid suspension
Dose: 2-4 tsf 3 or 4 times daily half to 1 hour after meals and at bedtime.
200ml bot: 50.00 MRP

❖ **PEPTOSOL-DS Susp. Globe Pharma**
Aluminium hydroxide compressed gel 200mg + magnesium hydroxide 400mg+ simethicone 30mg/5ml: antacid suspension
Dose: 2-4 tsf 3 or 4 times daily half to 1 hour after meals and at bedtime.
200ml bot: 45.00 MRP

❖ **PHARMACID Susp. Pharmadesh**
Aluminium hydroxide gel BP 200mg + magnesium hydroxide BP 125mg/ 5ml: suspension
Dose: 2 tsf 3 or 4 times daily half to 1 hour after meals and at bedtime.
200ml bot: 29.53 MRP

❖ **PHARMACID Plus Tab. Pharmadesh**
Dried aluminium hydroxide gel. BP 400mg & magnesium hydroxide BP 400mg + simethicone 30mg/tablet.
Dose: 1-2 tabs 3 or 4 times daily half to 1 hour after meals and as required.
200's pack: 196.00 MRP

❖ **PHARMACID Plus Susp. Pharmadesh**
Aluminium hydroxide compressed gel 200mg + magnesium hydroxide 400mg+ simethicone 30mg/5ml: antacid suspension
Dose: 2-4 tsf 3 or 4 times daily half to 1 hour after meals and at bedtime.
200ml bot: 43.00 MRP

❖ **PLACID Tab. Salton**
Dried aluminium hydroxide BP + magnesium hydroxide BP: tablet.
Dose: 1-2 tabs chewed or sucked with water half to 1 hour after or between meals and at bedtime.
200's pack: 200.00 MRP

❖ **RECOCID Tab. Rephco**
Dried aluminium hydroxide gel & magnesium hydroxide BP: tablet.
Dose: 1-2 tabs chewed or sucked with water half to 1 hour after or between meals and at bedtime.
200's pack: 100.00 MRP

❖ **RECOCID Forte Susp. Rephco**
Aluminium hydroxide gel & magnesium trisilicate BP: antacid suspension
Dose: 2-4 tsf 3 or 4 times daily half to 1 hour after meals and at bedtime.
200 ml bot: 32.90 MRP

❖ **REMACID Plus Tab. Reman**
Antacid prepn. + Simethicone: tablet
Dose: 1-2 tabs chewed 3-4 times daily half to 1 hour after meals and as required.
200's pack: 156.00 MRP

❖ **REMACID Susp. Reman**
Antacid liquid prepn. BP: suspension
Dose: 2-4 tsf 3 or 4 times daily half to 1 hour after meals and at bedtime.
200ml bot: 32.00 MRP

❖ **REMACID Plus Susp. Reman**
Antacid liquid prepn. BP + simethicone: suspension
Dose: 2-4 tsf 3 or 4 times daily half to 1 hour after meals and at bedtime.
200ml bot: 45.50 MRP

❖ **SEEMACID Tab. Seema**
Dried aluminium hydroxide gel BP + magnesium hydroxide BP: tablet.
Dose: 1-2 tabs chewed or sucked with water half to 1 hour after or between meals and at bedtime.
200's pack: 100.00 MRP

❖ **SEEMACID-MH Susp. Seema**
Aluminium hydroxide gel BP: suspension
Dose: 2-4 tsf 3 times daily half to 1 hour after meals and as required.
200ml bot: 32.00 MRP

❖ **SEEMACID Plus Susp. Seema**
Antacid liquid prepn. BP + simethicone: suspension
Dose: 2-4 tsf 3 or 4 times daily half to 1 hour after meals and at bedtime.
200ml bot: 45.50 MRP

❖ **SEEMALDRAT Susp. Seema**
Hydroxy magnesium aluminate or magaldrate USP: magaldrate suspension.
Dose: 2-4 tsf 3 or 4 times daily half to 1 hour after or between meals and at bedtime.
200ml bot: 32.00 MRP

❖ **SIMGEL Susp. Orion**
Aluminium oxide 200mg (equivalent amount of aluminium hydroxide gel USP), magnesium hydroxide 400mg (equivalent amount of magnesium hydroxide paste USP) & simethicone USP 30mg/5ml: Suspension
Dose: 1-2 tsf 1 hour after meal and at bedtime or as directed by the physician.
200ml bot: 50.00 MRP

❖ **SKYCID-T Tab. Skylab**
Dried aluminium hydroxide BP + magnesium hydroxide BP: tablet.
Dose: 1-2 tabs chewed or sucked with water half to 1 hour after or between meals and at bedtime.
200's pack: 104.00 MRP

❖ **SKYCID-T Susp. Skylab**
Aluminium hydroxide gel 400 mg + magnesium hydroxide 400mg/5ml: suspension
Dose: 2-4 tsf half to 1 hour after or between meals and at bedtime.
200ml bot: 32.50 MRP

❖ **STOMA Tab. SK+F**
Dried aluminium hydroxide 250mg + magnesium hydroxide 400mg/tablet.
200's pack: 107.22 MRP

❖ **STOMACID Tab. Ambee**
Dried aluminium hydroxide BP + magnesium hydroxide BP: tablet.
Dose: 1-2 tabs chewed or sucked with water half to 1 hour after or between meals and at bedtime.
100's pack: 53.00 MRP

❖ **STOMACID Susp. Ambee**
Aluminium hydroxide gel B. P + Magnesium hydroxide BP: suspension

Dose: 2-4 tsf 3 to 4 times daily half to 1 hour after meals and as required.
200ml bot: 32.87 MRP

❖ **SUGEL Tab. Pacific**
Dried aluminium hydroxide BP + magnesium hydroxide BP: tablet.
Dose: 1-2 tabs chewed or sucked with water half to 1 hour after or between meals and at bedtime.
200's pack: 100.00 MRP

❖ **SUGEL Susp. Pacific**
Aluminium hydroxide gel B. P + Magnesium hydroxide BP: suspension
Dose: 2-4 tsf 3 to 4 times daily half to 1 hour after meals and as required.
200ml bot: 32.00 MRP

❖ **TRICID Tab. Kumudini**
Dried aluminium/magnesium hydroxide BP prepn: antacid tablet
Dose: 1-2 tabs half to 1 hour after meals or when required.
200's pack: 100.00 MRP

❖ **TRICID Susp. Kumudini**
Aluminium hydroxide gel BP + magnesium hydroxide BP: suspension
Dose: 2-4 tsf half to 1 hour after meals 3 or 4 times daily and at bedtime.
200ml bot: 32.00 MRP

❖ **ULCID Tab. Ultra Pharma**
Dried aluminium hydroxide gel BP + magnesium hydroxide BP: tablet
Dose: 1-2 tabs. chewed 3 times daily half to 1 hour after meals and as required.
200's pack: 100.00 MRP

❖ **Z-ANTACID Tab. Ziska**
Dried aluminium hydroxide gel BP + magnesium hydroxide BP: tablet
Dose: 1-2 tabs. chewed 3 times daily half to 1 hour after meals and as required.
200's pack: 100.00 MRP

CALCIUM ANTACID[42]

CALCIUM CARBONATE ANTACID: Tablet (chewable)
Calcium carbonate antacid preparation is available as calcium carbonate BP 1000mg chewable tablet.
Mode of action: Calcium carbonate antacid works by simple acid-base neutralization reaction. Thus, it consumes the excess stomach acid & relieves the hyperacidity related symptoms.
Ind: It is indicated for the management of conditions associated with hyperacidity and for fast relief of acid indigestion, heartburn, sour stomach and upset stomach.
Use in pregnancy & lactation: Calcium carbonate antacids are thought to be the safest antacids during pregnancy & lactation since both the baby & mother need calcium to develop properly & maintain their health.
C/I: Known hypersensitivity to calcium carbonate or any of its ingredients and in hyper-calcemia, renal calculi, hypo-phosphatemia.
S/E: Generally well tolerated. Occasionally it may produce nausea and constipation in few patients, but it can be relieved by reducing the dose & frequency.
Dosage & admin: 2-3 tablet(s) when symptoms occur; may be repeated hourly, or as required.
Drug inter: Iron supplements should not be taken at the same time of the day with calcium carbonate, which may decrease the absorption of iron. And tetracycline antibiotics should not be taken at the same time of the day with calcium carbonate, because calcium decreases their absorption.

❖ **XCID Tab. (Chewable) Square**
Calcium carbonate BP 1000mg/tablet (chewable).
Dosage & admin: 2-3 tablet(s) when symptoms occur; may be repeated hourly, or as required.
30's pack: 60.00 MRP

Antacids with Laxative action

MAGNESIUM HYDROXIDE[21,22,23,33]

MAGNESIUM HYDROXIDE OR MILK OF MAGNESIA: Suspension
Composition & action: An aqueous suspension of magnesium hydroxide containing about 8% hydrated magnesium oxide, also known as milk of magnesia is an effective osmotic laxative. This magnesium salt is useful where rapid bowel evacuation is required & acts as an osmotic laxative by retaining water within the gut. This is also an effective antacid and bowel disturbances are minimized when combined with potentially constipating aluminium salt.
Ind: Constipation, heart-burn, gas & nausea. Acute & chronic constipation due to hyperacidity & peptic ulcer.
C/I: Do not use where use fo laxative is contra-indicated; acute gastro-intestinal conditions; renal failure (risk of magnesium accumulation).
S/E: Diarrhoea; abdominal colic.
Caution: Hepatic impairment elderly and debilitated; heart block, myocardial disease; pregnancy.
Doses: Adults & older children- 5 to 10 tsf in a single dose or in divided doses with a glass of water.
Children- 6-11 years, 3 to 5 tsf in a single dose or in divided doses with water; 2-5 years, 1 to 3 tsf in a single dose or in divided doses with water.

❖ **ACME'S MILK OF MAGNESIA Susp. Acme**
Magnesium hydroxide BP. 400mg/5ml: suspension
114ml bot: 13.14 MRP

❖ **MAGMIL Susp. Pacific**
Magnesium hydroxide BP. 400mg/5ml: suspension
100ml bot: 28.00 MRP
200ml bot: 50.00 MRP

❖ **MAGNASON Susp. Jayson**
Magnesium hydroxide BP. 400mg/5ml: suspension
100ml bot: 12.50 MRP

❖ **MILK OF MAGNESIA-AL Susp. Aexim**
Magnesium hydroxide BP. 400mg/5ml: suspension
114ml bot: 13.00 MRP

❖ **MILK OF MAGNESIA Susp. Doctors**
Magnesium hydroxide BP 412mg/5ml: suspension
114ml bot: 13.00 MRP

❖ **MILK OF MAGNESIA Susp. Gaco**
Magnesium hydroxide BP: suspension.
100ml bot: 12.61 MRP

❖ **MILK OF MAGNESIA Susp. Millat**
Magnesium hydroxide BP: suspension.
100ml bot: 19.50 MRP

❖ **MILK OF MAGNESIA Susp. Modern**
Magnesium hydroxide BP 8% w/w: suspension.
100ml bot: 15.00 MRP

❖ **MILK OF MAGNESIA Susp. Orion**
Magnesium hydroxide BP: suspension.
100ml bot: 11.55 MRP

❖ **MILK OF MAGNESIA Susp. Pharmadesh**
Magnesium hydroxide suspension
100ml bot: 14.00 MRP

❖ **MILK OF MAGNESIA Susp. Seema**
Magnesium hydroxide suspension
114ml bot: 15.00 MRP

Anti- dyspeptic & Carminatives

SIMETHICONE[26,42]

SIMETHICONE : Drop
Simethicone is an effective antiflatulent. It is used for relief of the painful symptoms of excess gas in the digestive
tract. Such gas is frequently caused by excessive swallowing of air or by eating foods that disagree, or leading to indigestion.
Mode of action: Simethicone acts in the stomach and intestines to change the surface tension of gas bubbles, enabling them to coalesce, thus gas is freed and eliminated more easily by belching or passing flatus. Its defoaming action relieves flatulence by dispersing and preventing the formation of mucous surrounded gas pockets in the G.I tract.
Ind: 1. Flatulence, abdominal distention, fullness, gas and windy colic. Simethicone drop is specially used in infants.
2. Postoperative gas pains- simethicone aids in the elimination of gas from the G.I tract and can be used to reduce postoperative gas pains.
2. Large bowel preparation- addition of simethicone to a polyethylene glycol bowel preparation produces symptomatic improvement prior to investigation in patients undergoing colonoscopy.
3. Treatment of poisoning- simethicone has an anecdotal use as an antifoaming
agent in the management of accidental ingestion of foaming detergents.
C/I: Contra-indicated in renal failure, severely debilitated patients, 1st trimester of pregnancy.
S/E: Simethicone is physiologically inert and no adverse effect has been noted after oral ingestion.

Precaution: Do not exceed 12 doses per day except under the advice and supervision of a physician. Keep the medicine out of the reach of children.
Pregnancy & lactation: No data are available to suggest any harmful effect in pregnancy, still it is not advised to give in the 1st trimester. Excretion of simethicone in breast milk has not been established, and is also unlikely.
Dosage & Admin: Children less than 2 years of age- 20mg (0.3ml or 5 drops) 4 times daily up to 240mg (3.6ml or 55 drops)/day.
Children 2-12 years of age- 40mg (0.6ml or 10 drops) 4 times daily.
Adults- 40-80mg (0.6ml-1.2ml or 10-20 drops) 4 times daily, up to 500mg (7.5ml)/day.
Take all the dosages after meals and at bedtime. Incase of infants, can be given with feeds. Shake the bottle well before each use.
Durg inte: There is no evidence that simethicone modifies the effect of other drugs. The defoaming effect of simethicone is reduced by antacids such as aluminium hydroxide and magnesium carbonate, which absorb the silicone.

❖ **AEROPAC Drop Amico**
Simethicone USP 67mg/ml: drop
15ml drop: 25.00 MRP
❖ **FLACOL Drop Square**
Simethicone USP 67mg/ml: drop
15ml drop: 30.00 MRP
❖ **LEFOAM Drop Incepta**
Simethicone USP 67mg/ml: drop
15ml drop: 30.00 MRP
❖ **NEODROP Drop Beximco**
Simethicone USP 67mg/ml: drop
15ml drop: 30.00 IP
❖ **PEDICON Drop Orion**
Simethicone USP 67mg/ml: drop
10ml drop: 25.00 MRP
20ml drop: 30.00 MRP
❖ **SEMECON Drop Drug Inter.**
Simethicone USP 67mg/ml: drop
15ml drop: 30.00 MRP
❖ **SIMECOL Drop Alco Pharma**
Simethicone USP 67mg/ml: drop
15ml drop: 28.00 MRP
❖ **SIMICON Drop Navana**
Simethicone USP 67mg/ml: drop
15ml drop: 30.00 MRP

CARMINATIVE PREPNS.[21,38]

❖ **CARMINATIVE MIXTURE: Liquid**
Sodium bicarbonate, chloroform, Tr. gingb. fort, Menthapip, Peppermint,
Camphor, Tr. card Co.
Ind: Dyspepsia, hyperacidity, indigestion, gas formation in the stomach & intestine.
Dose: 1 tablespoonful diluted with water 3 times daily or when required.
Preparation: May be available in the pharmacies as mixture.

❖ **SODA MINT Tablet.**
Sodium bicarbonate 300mg, contains about 4mmol Na+/tablet.
Ind: Rapid relief of dyspepsia. Cautions: Renal impairment; patient on a sodium-restricted diet; avoid prolonged use.
S/E: Belching, alkalosis etc.
Dose: 2-6 tablets sucked when required.

2. ANTISPASMODICS (Anticholinergics)

2.1 Antimuscarinics
a) **Tertiary amines viz:** ***Atropine sulphate, Dicycloverine (Dicyclomine) hydrochloride***
b) **Quaternary ammonium compounds viz:** ***Hyoscine butylbromide, Propantheline***
2.2 Other antispasmodics viz: ***Alverine citrate, Drotaverine, Mebeverine, Oxyphencyclimine, Oxyphenonum bromide, Timonium etc.***

Antimuscarinics

ATROPINE SULPHATE[21,33]

ATROPINE SULPHATE: Tablet/ Injection.
Ind: Aid in peptic ulcer treatment, g.i spasm, renal & biliary colic.
C/I: Glaucoma, paralytic ileus, pyloric stenosis, prostatic enlargement, intestinal obstruction.
S/E: Dry mouth with difficulty in swallowing & thirst, dilatation of pupils with loss of accommodation and sensitivity to light, increased intraocular pressure, flushing, dry skin, bradycardia, followed by tachycardia, palpitations and arrhythmias, difficulty with micturition and constipation.
Cautions: Elderly patient; urinary retention, tachycardia, cardiac insufficiency; and during breast feeding.
Dose: By mouth, 0.25-2 mg daily in single or divided doses, dosage should be gradually increased to the max. tolerated. By inj. 0.25-2 mg sC or i.m. injection.

❖ **ATROPINE Inj. Chemist**
Atropine sulphate 0.6mg/1ml ampoule: injection
50 amps pack: 126.00 MRP
❖ **ATROPINE-Jayson Inj. Jayson**
Atropine sulphate 0.6mg/1ml ampoule: injection
10 amps pack: 31.90 IP
❖ **ATROPINE Sulph. Inj. Edruc**
Atropine sulphate 0.6mg/1ml ampoule: injection
10 amps pack: 30.00 IP
❖ **G-ATROPINE Sulph. Inj. Gonoshas.**
Atropine sulphate 0.6mg/1ml ampoule: injection
10 amps pack: 30.00 MRP
❖ **MYDRIPINE Inj. Gaco**
Atropine sulphate 0.6mg/1ml ampoule: injection
1 ampoule: 2.62 MRP

DICYCLOVERINE[26,42]

DICYCLOVERINE HCl: Tablet/Syrup
Dicycloverine hydrochloride is an antimuscarinic (anticholinergic) antispasmodic agent, used to relieve smooth muscle spasm of the gastrointestinal tract. It is available as dicycloverine hydrochloride BP 10mg/tablet and 10mg/5ml syrup.
Mode of action: It works at specific receptors, called cholinergic (or muscarinic) receptors, located on the involuntary muscles in the walls of the gut. By binding to these receptors dicycloverine prevents certain chemicals produced by the body from interacting with these receptors. This causes the gut muscle to relax, relieving the pain of colic produced by gut muscle contraction and spasm.
Ind: i. Functional or irritable bowel syndrome, ii. urinary incontinence secondary to unstable detrusor muscle, iii. infantile colic, iv. gastrointestinal spasm, v. colicky abdominal pain, vi. diverticulitis, and vii. abdominal colic.
C/I: i. Obstructive uropathy, ii. obstructive disease of the gastrointestinal tract, iii. severe ulcerative colitis, iv. reflux esophagitis, v. unstable cardiovascular status in acute hemorrhage, vi. glaucoma, vii. myasthenia gravis, viii. evidence of prior hypersensitivity to dicycloverine hydrochloride or other ingredients of this formulation, and ix. infants less than 6 months of age.
S/E: Insomnia, mydriasis, cycloplegia, increased ocular tension, urinary hesitancy, palpitations, dyspnea.
Precaution: Use with caution in patients with autonomic neuropathy, hepatic or renal disease, ulcerative colitis, coronary heart disease, congestive heart failure, cardiac tachyarrhythmia, hiatal hernia, known or suspected prostatic hypertrophy.
Pregnancy & lactation: Dicycloverine was neither teratogenic nor embryocidal in animal trial. However, in human pregnancy it should be used only if clearly needed.
There are evidences on the secretion of dicycloverine into breast milk. So, it should not be used in case of lactating mother.42
Dosage & admin: By mouth: Adults- 10 to 20mg 3 times a day. Maximum recommended, oral dose is 160mg daily in divided doses.
Children over 6 months of age- 5 to 10mg 3 times a day.
By i.m injection: Usual recommended dose is 80mg daily by i.m route in 4 divided doses.
Drug inter: The following agents may increase certain actions or side-effects of dicycloverine-amantadine antiarrhythmic agents of class (e.g quinidine), antihistamine antipsychotic agents (e.g phenothiazines), benzodiazepines, MAO inhibitors, narcotic analgesics (e.g meperidine), nitrates and nitrites, sympathomimetic agents, tricyclic antidepressants, and other drugs having anticholinergic activity.

❖ **ABDORIN Tab. Opsonin**
Dicycloverine hydrochloride BP 10mg/tablet
50's pack: 100.00 MRP
❖ **ABDORIN Syp. Opsonin**
Dicycloverine hydrochloride BP 10mg/5ml: syrup
50ml bot: 30.00 MRP
❖ **COLICON Tab. Square**
Dicycloverine hydrochloride BP 10mg/tablet
100's pack: 200.00 MRP
❖ **COLICON Syp. Square**
Dicycloverine hydrochloride BP 10mg/5ml: syrup
50ml bot: 30.00 MRP
❖ **COLICON Inj. Square**
Dicycloverine hydrochloride BP 20mg/2ml ampoule: i.m injection.
10 amps pack: 60.00 MRP

❖ **CYCLOPAN Tab. Incepta**
Dicycloverine hydrochloride BP 10mg/tablet
100's pack: 200.00 MRP
❖ **CYCLOPAN Syp. Incepta**
Dicycloverine hydrochloride BP 10mg/5ml: syrup
50ml bot: 30.00 MRP
❖ **CYCLOPAN Inj. Incepta**
Dicycloverine hydrochloride BP 20mg/2ml
ampoule: i.m injection.
5 amps pack: 40.00 MRP
❖ **CYCLOVIN Tab. Somatec**
Dicycloverine hydrochloride BP 10mg/tablet
100's pack: 200.00 MRP
❖ **CYCLOVIN Syp. Somatec**
Dicycloverine hydrochloride BP 10mg/5ml: syrup
50ml bot: 30.00 MRP
❖ **DIRIN Tab. Alco Pharma**
Dicycloverine hydrochloride BP 10mg/tablet
100's pack: 175.00 MRP
❖ **DIRIN Syp. Alco Pharma**
Dicycloverine hydrochloride BP 10mg/5ml: syrup
50ml bot: 30.00 MRP
❖ **DIVERIN Tab. ACI**
Dicycloverine hydrochloride BP 10mg &
20mg/tablet
10mg x 50's pack: 100.00 IP
20mg x 50's pack: 175.00 IP
❖ **DIVERIN Syp. ACI**
Dicycloverine hydrochloride BP 10mg/5ml: syrup
50ml bot: 30.00 IP
❖ **LOVERIN Tab. Beximco**
Dicycloverine hydrochloride BP 10mg/tablet
50's pack: 100.00 IP
❖ **LOVERIN Syp. Beximco**
Dicycloverine hydrochloride BP 10mg/5ml: syrup
50ml bot: 30.00 IP
❖ **SPALAX Tab. Navana**
Dicycloverine hydrochloride BP 10mg/tablet
60's pack: 120.00 MRP
❖ **SPALAX Syp. Navana**
Dicycloverine hydrochloride BP 10mg/5ml: syrup
50ml bot: 30.00 MRP
❖ **WINSPA Tab. Apex**
Dicycloverine hydrochloride BP 10mg/tablet
50's pack: 100.00 MRP
❖ **WINSPA Syp. Apex**
Dicycloverine hydrochloride BP 10mg/5ml: syrup
50ml bot: 30.00 MRP

HYOSCINE BUTYLBROMIDE[21,33]

HYOSCINE BUTYLBROMIDE: Tablet/ Tincture/ Injction.
Ind: Aid in peptic ulcer treatment, spasmodic pain, gastro-intestinal spasm, biliary and spasmodic dysmenorrhoea.
C/I; S/E; Cautions: Same as atropine sulphate (above).
Dose: By mouth, adult- 20mg 4 times daily. Child- under 6 years not recommended, 6-12 yrs. 10mg 3 times daily. By injection, 20mg i.m. or i.v inj.(in acute pain or spasm), repeated after 30 minutes if necessary.

❖ **ANCOPAN Tab. Bristol**
Hyoscine butylbromide BP 10mg & 20mg/tablet
10mg x 100's pack: 180.00 MRP
20mg x 50's pack: 175.00 MRP
❖ **ANTIPEN Tab. Nipa**
Hyoscine butylbromide BP 10mg/tablet
100's pack: 162.00 MRP
❖ **ASIPAN 20 Tab. Asiatic**
Hyoscine butylbromide BP 20mg/tablet
100's pack: 300.00 MRP
❖ **BROMID Tab. SK+F**
Hyoscine butylbromide BP 10mg & 20mg/tablet
10mg x 100's pack: 180.00 MRP
20mg x 50's pack: 175.00 MRP
❖ **BROSPAN Tab. Gaco**
Hyoscine-n- butylbromide BP 10mg/tablet.
100's pack: 181.53 MRP
❖ **BROSPAN Inj. Gaco**
Hyoscine butylbromide 20mg/1ml amp: injection
1 ampoule: 7.84 MRP
❖ **BUSCOGEN Tab. Skylab**
Hyoscine butylbromide 10mg/tablet.
100's pack: 145.00 MRP
❖ **BUSCON Tab. Ibn Sina**
Hyoscine butylbromide 10mg/tablet.
100's pack: 182.00 MRP
❖ **BUSCON Inj. Ibn Sina**
Hyoscine butylbromide 20mg/1ml amp: injection
10 amps pack: 70.00 MRP
❖ **BUTACIN Tab. Ziska/Unicare**
Hyoscine butylbromide 10mg/tablet.
100's pack: 175.00 MRP
❖ **BUTAPAN Tab. Sanofi-aventis**
Hyoscine butylbromide 10mg & 20mg/tablet.
10mg x 500's pack: 915.00 MRP
20mg x 100's pack: 350.00 MRP
❖ **BUTAPAN Inj. Sanofi-aventis**
Hyoscine butylbromide 20mg/1 ml amp: injection
10 amps pack: 78.60 MRP
❖ **BUTASON Tab. Hudson**
Hyoscine butylbromide 10mg/tablet.
100's pack: 175.00 MRP
❖ **BUTASTAT Tab. Alco Pharma**
Hyoscine butylbromide 10mg/tablet.
100's pack: 182.00 MRP
❖ **BUTYL-K Tab. Chemico**
Hyoscine butylbromide 10mg/tablet.
100's pack: 180.00 MRP
❖ **BUTYL-20 Tab. Chemico**
Hyoscine butylbromide 20mg/tablet.
50's pack: 175.00 MRP
❖ **COLIK Tab. ACI**
Hyoscine butylbromide 10mg & 20mg/tablet.
10mg x 100's pack: 150.00 IP
20mg x 100's pack: 350.00 MRP
❖ **COLIK Inj. ACI**
Hyoscine butylbromide 20mg/1ml amp: injection
5 amps pack: 39.30 MRP
❖ **COLIPAN Tab. Medimet**
Hyoscine butylbromide 10mg & 20mg/tablet.
10mg x 100's pack: 182.00 MRP
20mg x 50's pack: 175.00 MRP
❖ **COLIPAN Inj. Medimet**
Hyoscine butylbromide 20mg/1ml amp: injection
10 amps pack: 78.60 MRP
❖ **GASTOPAN Tab. Salton**
Hyoscine butylbromide 10mg/tablet.
100's pack: 150.00 MRP
❖ **G-HYOSCINE Tab. Gonoshas**
Hyoscine butylbromide 10mg/tablet.
100's pack: 160.00 MRP
❖ **G-HYOSCINE Inj. Gonoshas**
Hyoscine butylbromide 20mg/1ml amp: injection
10 amps pack: 60.00 MRP
❖ **HYBUCIN Tab. Supreme**
Hyoscine-butylbromide 10mg/tablet.
100's pack: 160.00 MRP
❖ **HYLAC Tab. Apollo**
Hyoscine-butylbromide 10mg/tablet.
100's pack: 181.00 MRP
❖ **HYOSIN Tab. Delta**
Hyoscine butylbromide 10mg/tablet.
100's pack: 179.94 MRP
❖ **HYSIN Tab. Edruc**
Hyoscine butylbromide 10mg/tablet.
100's pack: 180.00 MRP
❖ **HYSIN Inj. Edruc**
Hyoscine butylbromide 10mg/1ml amp: injection
10 amps pack: 77.50 MRP
❖ **HYSOCIN Tab. Pharmadesh**
Hyoscine butylbromide 10mg/tablet.
100's pack: 225.00 MRP
❖ **HYSOMA Tab. Modern**
Hyoscine butylbromide 10mg/tablet.
100's pack: 167.00 MRP
❖ **HYSOMIDE Tab. Opsonin**
Hyoscine butylbromide 10mg & 20mg/tablet.
10mg x 100's pack: 180.00 MRP
20mg x 100's pack: 350.00 MRP
❖ **HYSOMIDE Inj. Opsonin**
Hyoscine butylbromide 20mg/1ml amp: injection
25 amps pack: 187.50 MRP
❖ **HYSOPAN Tab. Rephco**
Hyoscine-butylbromide 10mg/tablet.
100's pack: 180.00 IP
❖ **HYSOPAN Inj. Rephco**
Hyoscine butylbromide 20mg/1ml amp: injection
10 amps. pack: 77.70 MRP
❖ **LOPAN Tab. Navana**
Hyoscine butylbromide 10mg/tablet.
100's pack: 180.00 MRP
❖ **RELAPAN Tab. Chemist**
Hyoscine butylbromide 10mg/tablet.
100's pack: 152.00 MRP
❖ **RELAPAN Inj. Chemist**
Hyoscine butylbromide 20mg/1ml ampoule:
injection.
10 amps. pack: 60.70 MRP
❖ **RESOPAN Tab. General**
Hyoscine butylbromide 10mg/tablet.
100's pack: 165.00 MRP
❖ **SAPEN Tab. SAPL**
Hyoscine butylbromide 10mg/tablet.
100's pack: 180.00 MRP
❖ **SPA-20 Tab. Cosmic**
Hyoscine butylbromide 20mg/tablet.
50's pack: 175.00 MRP
❖ **SPANIL Tab. Beximco**
Hyoscine butylbromide 10mg/tablet.
100's pack: 180.00 MRP
❖ **SPASMOPIN Tab. Seema**
Hyoscine butylbromide 10mg/tablet.
100's pack: 180.00 MRP
❖ **SPASMOSON Tab. Jayson**
Hyoscine butylbromide 10mg/tablet.
100's pack: 180.00 MRP
❖ **SPASMOSON Inj. Jayson**
Hyoscine butylbromide 20mg/1ml ampoule:
injection.
10's pack: 65.00 MRP
❖ **SPASMOZEN Tab. Zenith**
Hyoscine butylbromide 10mg/tablet.
100's pack: 180.00 MRP
❖ **TYPAN Tab. Proteety**
Hyoscine butylbromide 10mg/tablet.
100's pack: 170.00 MRP

PROPANTHELINE[21,33]

PROPANTHELINE: Tablet.
Ind: Peptic ulceration, spastic colon, acute pancreatitis, aid in radiological procedures.
C/I: Glaucoma, pyloric stenosis, obstructive conditions of the gastrointestinal or urinary tracts.
S/E: Mild peripheral anti-cholinergic side-effects.
Cautions: Prostatic bypertrophy, lactation.
Adult: 15mg. 3 times daily before meals and 2 at night.
Child: Up to 2mg/kg body-wt daily in divided doses.

❖ **PROKIND Tab. Beacon**
Propantheline bromide 15mg/tablet.
50's pack: 175.00 MRP
❖ **PROPANTHENE Tab. Gaco**
Propantheline bromide 15mg/tablet.
100's pack: 129.85 MRP

Other Antispasmodics

ALVERINE[87]

ALVERINE CITRATE: Tablet
Alverine citrate is a smooth muscle relaxant. It is available as 60mg film-coated tablet.
Mode of action: Alverine citrate acts directly on the smooth muscle in the gut, causing it to relax, thus it prevents muscle spasms which occur in the gut in conditions such as irriable bowel syndrome and diverticular disease. Alverine citrate also relaxes the smooth muscle of the uterus. It is therefore also used to treat painful menstruation, which is caused by muscle spasms in the uterus (dysmenorrhea).
Ind: 1. Irritable bowel syndrome; 2. Bowel movement disturbances caused by small sacs or pouches in the wall of the gut (diverticular disease); 3. Abdominal pain associated with menstrual periods (primary dysmenorrhea); 4. Relief of other conditions associated with spasm of involuntary muscle.
C/I: Paralytic ileus of known hypersensitivity to any of the ingredients.
S/E: Possible side effects may include- nausea, headache, dizziness, itching, rash and allergic reactions.
Precaution: No significant precaution to be exercised.
Pregnancy & lactation: Although no teratogenic effects have been reported, use during pregnancy or lactation is not recommended as evidence of safety in preclinical studies is limited.
Dosage & admin: Adult: 60-120mg 1-3 times daily.
Child under 12 years: Not recommended.
Drug inter: There are no interactions reported with this medicine.

❖ **ALVE Tab. Orion**
Alverine citrate 60mg/tablet (f.c)
50's pack: 200.00 MRP
❖ **ALVERIN Tab. Rangs Pharma**
Alverine citrate 60mg/tablet.
30's pack: 150.00 MRP
❖ **SPASVERIN Tab. Beacon**
Alverine citrate 60mg/tablet.
50's pack: 200.00 MRP

DROTAVERINE[21,33]

DROTAVERINE HCl: Tablet/Injection
Ind: Gastro-intestinal, biliary and ureteric colic, g.i spasm, urogenital spasm; peptic ulcer; peripheral vascular spasm, threatend abortion, spastic dysmenorrhoea and acute parametritis.
S/E: Flushing of face, perspiration, tachycardia, hyperapnoea, may be found rarely.
Dose: Oral, 1-2 tabs. once, can be repeated 2-3 times daily if necessary.
By injection, 1-2 amp. i.m or sC, which can be repeated 2-3 times daily if necessary.

❖ **DOT Tab. Acme**
Drotaverine hydrochloride 40mg/tablet.
100's pack: 175.00 MRP
❖ **DOT Inj. Acme**
Drotaverine hydrochloride 40mg in 2ml ampoule: injection
10 amps pack: 70.00 MRP
❖ **DOVER Tab. Nipa**
Drotaverine hydrochloride 40mg/tablet.
100's pack: 175.00 MRP
❖ **DROTA Tab. Hallmark**
Drotaverine hydrochloride 40mg/tablet.
100's pack: 175.00 MRP
❖ **DROTAPAN Tab. Incepta**
Drotaverine hydrochloride 40mg/tablet.
100's pack: 175.00 MRP
❖ **DROVIN Tab. ACI**
Drotaverine hydrochloride 40mg/tablet.
100's pack: 175.00 MRP
❖ **DROVIN Inj. ACI**
Drotaverine hydrochloride 40mg in 2ml ampoule: injection
5 amps pack: 35.00 MRP
❖ **DUVEN Tab. Rasa**
Drotaverine hydrochloride 40mg/tablet.
100's pack: 175.00 MRP
❖ **ESPA Tab. Square**
Drotaverine hydrochloride 40mg/tablet.
100's pack: 175.00 IP
❖ **ESPA Inj. Square**
Drotaverine hydrochloride 40mg in 2ml ampoule: injection
10 amps pack: 70.00 MRP
❖ **NO-SPA Tab. Ambee**
Drotaverine hydrochloride 40mg/tablet.
200's pack: 362.00 MRP
❖ **NO-SPA Inj. Ambee**
Drotaverine hydrochloride 40mg in 2ml ampoule: injection
10 amps pack: 79.50 MRP
❖ **RENAPA Tab. Renata**
Drotaverine hydrochloride 40mg/tablet.
100's pack: 180.00 MRP
❖ **ROVA Tab. Chemico**
Drotaverine hydrochloride 40mg/tablet.
100's pack: 175.00 MRP
❖ **SPAN Tab. Opsonin**
Drotaverine hydrochloride 40mg/tablet.
100's pack: 175.00 MRP
❖ **TAVERIN Tab. Beximco**
Drotaverine hydrochloride 40mg/tablet.
100's pack: 175.00 IP

MEBEVERINE[21,33]

MEBEVERINE HCl: Tablet/syrup.
Ind: Antispasmodic to relief pain in gastrointestinal spasm & diarrhoea of irritable bowel syndrome.
Caution: Paralytic ileus; pregnancy and breastfeeding; avoid in porphyria.
Dose: Adult and child over 10 years, 135mg (1 tablet or 15ml of liquid prepn.) 3 times daily preferably half an hour before meals.

❖ **EVARIN Tab. Delta**
Mebeverine hydrochloride 135mg/tablet.
50's pack: 299.98 MRP
❖ **IRIBAN Tab. Incepta**
Mebeverine hydrochloride 135mg/tablet.
50's pack: 300.00 MRP
❖ **MANIL Tab. Gaco**
Mebeverine hydrochloride 135mg/tablet.
50's pack: 303.43 MRP
❖ **MAVE Tab. Opsonin**
Mebeverine hydrochloride 135mg/tablet.
50's pack: 300.00 MRP
❖ **MESPA Tab. Ambee**
Mebeverine hydrochloride 135mg/tablet.
50's pack: 300.00 MRP
❖ **MEVERINE Tab. Drug Inter.**
Mebeverine hydrochloride 135mg/tablet.
50's pack: 300.00 MRP
❖ **ROSTIL Tab. Beximco**
Mebeverine hydrochloride 135mg/tablet.
50's pack: 300.00 IP
❖ **VERON Tab. SK+F**
Mebeverine hydrochloride 135mg/tablet.
50's pack: 304.00 MRP

OXYPHENONIUM BROMIDE[21,33]

OXYPHENONIUM BROMIDE: Tablet
Ind; C/I; S/E: See under Hyoscine butyl bromide.
Adult: 1-2 tabs. several times daily, if necessary. Child: over 6yrs, 1/2 to 1 tablet 1-3 times daily.

❖ **ANIL Tab. Gaco**
Oxyphenonium bromide 5mg/tablet.
100's pack: 143.10 MRP
❖ **ANTRENEX Tab. Opsonin**
Oxyphenonium bromide 5mg/tablet.
100's pack: 125.00 MRP
❖ **ANTRENYL Tab. Sandoz/Novartis**
Oxyphenonium bromide 5mg/tablet.
100's pack: 300.00 MRP
❖ **A-SPASM Tab. Acme**

Oxyphenonium bromide 5mg/tablet.
100's pack: 143.00 MRP

❖ **ISONIL Tab. Amico**
Oxyphenonium bromide 5mg/tablet.
100's pack: 141.00 MRP

TIEMONIUM[21,40]

TIEMONIUM METHYLSULFATE: Tablet/ Injection

This is an antispasmodic drug which reduces visceral smooth muscles spasm.

Ind: Acute spasmodic pain in gastrointestial and biliary diseases, and in urology and gynaecological origin.

C/I: Glaucoma; difficulty to urinate (disorders of prostate or bladder).

S/E: See under atropine; risk of hypotension & tachycardia; occasional retention of urine in excessive or overdoses.

Caution: See under atropine; avoid taking this drug without medical advice during pregnancy or breast feeding.

Dosage & Admin: Adult- by mouth, the usual dosages is 2 to 6 tablets (100-300mg) daily in divided doses as required; by injection usual dosages is 5mg by slow i.m or i.v injection 3 times daily.

❖ **ALGIN Tab. Renata**
Tiemonium methylsulfate 50mg/tablet (f.c)
50's pack: 200.00 MRP

❖ **ALGIN Inj. Renata**
Tiemonium methylsulfate 5mg/2ml ampoule: injection
5 amps pack: 75.00 MRP

❖ **DYSMA Tab. Rangs**
Tiemonium methylsulfate 50mg/tablet (f.c)
50's pack: 200.00 MRP

❖ **EMONIUM Tab. Beximco**
Tiemonium methylsulfate 50mg/tablet
50's pack: 200.00 IP

❖ **NORVIS Tab. Square**
Tiemonium methylsulfate INN 50mg/tablet
50's pack: 200.00 MRP

❖ **NORVIS Inj. Square**
Tiemonium methylsulfate 5mg/2ml ampoule: injection
10 amps pack: 150.00 MRP

❖ **ONIUM Tab. Orion**
Tiemonium methylsulfate INN 50mg/tablet
50's pack: 200.00 MRP

❖ **ONIUM Inj. Orion**
Tiemonium methylsulfate 5mg/2ml ampoule: injection
5 amps pack: 75.00 MRP

❖ **PARILLEX Tab. Drug inter.**
Tiemonium methylsulfate INN 50mg/tablet
50's pack: 200.00 MRP

❖ **PREVIP Tab. General**
Tiemonium methylsulfate INN 50mg/tablet
50's pack: 200.00 MRP

❖ **SPASALGIN Tab. Opsonin**
Tiemonium methylsulfate INN 50mg/tablet
30's pack: 120.00 MRP

❖ **SPASALGIN Inj. Opsonin**
Tiemonium methylsulfate 5mg/2ml ampoule: injection
5 amps pack: 75.00 MRP

❖ **TIMEM Tab. Silva**
Tiemonium methylsulfate INN 50mg/tablet
50's pack: 200.00 MRP

❖ **TIMOBEN 50 Tab. Benham**
Tiemonium methylsulfate INN 50mg/tablet
30's pack: 120.00 MRP

❖ **TIMOLAX Tab. SAPL**
Tiemonium methylsulfate INN 50mg/tablet
50's pack: 200.00 MRP

❖ **TIMONIL Tab. Popular**
Tiemonium methylsulfate INN 50mg/tablet
50's pack: 200.00 MRP

❖ **TIMONIL Inj. Popular**
Tiemonium methylsulfate 5mg/2ml ampoule: injection
5 amps pack: 75.00 MRP

❖ **TIMOTHY Tab. SK+F**
Tiemonium methylsulfate INN 50mg/tablet
50's pack: 200.00 MRP

❖ **TIMOTHY Inj. SK+F**
Tiemonium methylsulfate 5mg/2ml ampoule: injection
5 amps pack: 75.00 MRP

❖ **TIMOZIN Tab. Incepta**
Tiemonium methylsulfate INN 50mg/tablet
50's pack: 200.00 MRP

❖ **TIMOZIN Inj. Incepta**
Tiemonium methylsulfate 5mg/2ml amp: injection
5 amps pack: 50.00 MRP

❖ **TINIUM Tab. Acme**
Tiemonium methylsulfate INN 50mg/tablet
50's pack: 200.00 MRP

❖ **TINIUM Inj. Acme**
Tiemonium methylsulfate 5mg/2ml ampoule: injection
5 amps pack: 75.00 MRP

❖ **TINO Tab. Delta**
Tiemonium methylsulfate INN 50mg/tablet
30's pack: 120.01 MRP

❖ **TITOS Tab. Novo Healthcare**
Tiemonium methylsulfate INN 50mg/tablet
30's pack: 120.00 MRP

❖ **TYNIUM Tab. ACI**
Tiemonium methylsulfate INN 50mg/tablet
50's pack: 200.00 IP

❖ **TYNIUM Inj. ACI**
Tiemonium methylsulfate 5mg/2ml ampoule: injection
5 amps pack: 75.00 IP

❖ **VERALGIN Tab. Aristopharma**
Tiemonium methylsulfate 50mg/tablet
50's pack: 200.00 MRP

❖ **VERALGIN Inj. Aristopharma**
Tiemonium methylsulfate 5mg/2ml ampoule: injection
2ml amp x 10's pack: 150.00 MRP

❖ **VISCER Tab. Techno Drugs**
Tiemonium methylsulfate 50mg/tablet
50's pack: 175.00 MRP

❖ **VISCER Inj. Techno Drugs**
Tiemonium methylsulfate 5mg/2ml ampoule: injection
2ml amp x 10's pack: 120.00 MRP

❖ **VISCERALGINE Tab. Nuvista**
Tiemonium methylsulfate 50mg/tablet (f.c)
30's pack: 207.00 MRP
50's pack: 345.00 MRP

❖ **VISCERALGINE Inj. Nuvista**
Tiemonium methylsulfate 5mg/2ml ampoule: injection
5 amps pack: 100.00 MRP

❖ **VISET Tab. Healthcare**
Tiemonium methylsulfate 50mg/tablet
50's pack: 250.00 MRP

❖ **VISET Inj. Healthcare**
Tiemonium methylsulfate 5mg/2ml amp: injection
10 amps pack: 150.00 MRP

❖ **VISPAZIN Tab. Globe**
Tiemonium methylsulfate 50mg/tablet
50's pack: 200.00 MRP

❖ **ZEUM 50 Tab. Sandoz/Novartis**
Tiemonium methylsulfate 50mg/tablet
50's pack: 325.00 MRP

TRIMEBUTINE

TRIMEBUTINE MALEATE: Tablet

Trimebutine maleate is a noncompetitive spasmolytic agent. It is available as trimebutine maleate INN 100mg film coated tablet.

Mode of action: Trimebutine maleate possesses moderate opiate receptor affinity and has marked anti-serotonin activity especially on 'mu' receptors. It induces regulation of spontaneous activity and increases synchronization between electrophysiological spikes and contractions in isolated guinea pig strips of colon and ileum. However, it does not alter normal motility, but regulates abnormal intestinal activity.

Ind: 1. Treatment and relief of symptoms associated with irritable bowel syndrome (spastic colon). 2. Postoperative paralytic ileus in order to accelerate the resumption of the intestinal transit following abdominal surgery.

C/I: Patients with known hypersensitivity to trimebutine maleate or any excipient.

A/R: Trimebutine maleate is generally well tolerated. The infrequently reported adverse effects are as following- dry mouth, foul taste, diarrhea, dyspepsia, epigastric pain, nausea, constipation, drowsiness, fatigue, dizziness, hot/cold sensations, headache etc.

Precautions: *Pregnancy & lactation:* Although teratological studies have not shown any drug related adverse effects on the course and outcome

of pregnancy, the use of trimebutine maleate in pregnant women is not recommended. It is not known if trimebutine maleate passes into breast milk. This medication should be used while breast feeding only if the potential benefits outweigh risks to the nursing infants.
Dosage & admin: Adults: 100mg-200mg, 3 times daily before meals.
Drug inter: Trimebutine maleate increases the duration of d-tubocurarine-induced curarization. No other drug interactions have been observed during clinical trials or otherwise reported.

❖ **TIMOTOR Tab. Square**
Trimebutine maleate INN 100mg/tablet (f.c)
100mg x 50's pack: 250.00 MRP

3. ANTICHOLINERGIC & ANTI-PSYCHOTIC COMBINATION PRODUCTS

There is no definite product molecules in this group. This is an innovative group of combined preparations.

TRIFLUOPERAZINE + ISOPROPAMIDE[65]

TRIFLUOPERAZINE + ISOPROPAMIDE: Tablet
Combination preparations of trifluoperazine and isopropamide are available in three fixed-dose presentations, viz: i. Trifluoperazine 1mg & isopropamide 5mg, ii. Trifluoperazine 2mg & isopropamide 5mg, & iii. Trifluoperazine 2mg & isopropamide 7.5mg. In these preparations, trifluoperazine is a piperazine phenothiazine derivative with antipsychotic & antiemetic properties; isopropamide is a long-acting synthetic anticholinergic agent.
Mode of action: As isopropamide is a long-acting synthetic anticholinergic agent, it provides 12-hour antisecretory-antispasmodic activity. Trifluoperazine as a piperazine phenothiazine derivative, it's mode of action has not been definitely established, but like other most phenothiazines, trifluoperazine possesses weak anticholinergic & possibly alpha-adrenergic blocking activities.
Ind: This combined product is indicated particularly where anxiety, tension, worry or other emotional factors are thought to be wholly or partially responsible for the digestive dysfunction. This product may be employed to advantage in the treatment of a wide range of gastrointestinal disorders, including such conditions as peptic ulcer, gastritis, hyperchlorhydria, functional diarrhoea, irritable or spastic colon, pyloroduodenal irritability, pylorospasm, acute nonspecific gastroenteritis, biliary dyskinesia and chronic cholelithiasis, duodenitis, gastrointestinal spasm; it may also be used to treat genitourinary spasm. In addition to the convenience of twice-daily dosage, this product can provide the following significant therapeutic advantages: continuous reduction of gastric secretion, continuous inhibition of spasm and motility, continuous relief of anxiety and tension, continuous control of nausea & vomiting.
C/I: In comatose states and in the presence of glaucoma, cardiospasm, obstructive uropathy (e.g bladder neck obstruction due to prostatic hypertrophy) or obstructive lesions of the gastrointestinal tract (as in achalasia, obstructive or paralytic ileus, phyloroduodenal stenosis, etc), intestinal atony of the elderly or debilitated patient, severe ulcerative colitis, toxic megacolon complicating ulcerative colitis. Because of the antiemetic action of the trifluoperazine component, brand name should not be used where nausea and vomiting are believed to be evidence of intestinal obstruction or brain tumor.
S/E: The usual anticholinergic side effects are dry mouth, blurred vision, urinary hesitancy and retention, and constipation. Skin rash may occur rarely. A few patients sensitive to phenothiazine compounds may experience a transient unpleasant agitation, or jitteriness, characterized by restlessness and sometimes by insomnia. These symptoms often disappear spontaneously. Where the effect is particularly bothersome, the concomitant administration of a mild sedative may be helpful. Phenothiazines, in some patients on long term therapy, can cause tardive dyskinesia which may last for months or years; the risk appears greater in elderly patients.
Precautions: Use with caution in elderly patients, in patients with cardiac impairment, hyperthyroidism or hiatal hernia associated with reflux esophagitis.
Pregnancy & lactation: Use during pregnancy should be restricted to those cases where the potential benefit to the mother outweighs the potential risk to the fetus. Adequate human data on use during lactation and adequate animal reproduction studies are not available.
Dosage & admin: Adults: For the majority of patients, the usual dose recommendation is 1 tablet of trifluoperazine 2mg & isopropamide 5mg twice daily (every 12 hours). Low dose preparation (i.e 1 tablet of trifluoperazine 1mg & isopropamide 5mg) may be preferred where there is relatively little psychic distress. A higher dose (i.e 1 tablet of trifluoperazine 2mg & isopropamide 7.5mg) is specially useful for those patients in whom a greater degree of antispasmodic and antisecretory action is desired.

❖ **TELABID 1 Tab. SK+F**
Trifluoperazine hydrochloride USP equivalent to trifluoperazine 1mg & isopropamide iodide USP equivalent to isopropamide 5mg/tablet (f.c)
50's pack: 100.00 MRP
❖ **TELABID 2 Tab. SK+F**
Trifluoperazine hydrochloride USP equivalent to trifluoperazine 2mg & isopropamide iodide USP equivalent to isopropamide 5mg/tablet (f.c)
50's pack: 150.00 MRP
❖ **TELABID Forte Tab. SK+F**
Trifluoperazine hydrochloride USP equivalent to trifluoperazine 2mg & isopropamide iodide USP equivalent to isopropamide 7.5mg/tablet (f.c)
30's pack: 150.00 MRP

4. MOTILITY STIMULANTS/ DOPAMINE ANTAGONISTS

DOMPERIDONE[21,26,65]

DOMPERIDONE: Tablet/Suspension/Drop/ Suppositories
Introduction & mode of action: Domperidone is a dopamine antagonist. It acts peripherally rather than central action; since it can't readily enter the central nervous system due to blood-brain barrier, its effects are confined to the periphery and acts principally at the receptor site in the chemoreceptor trigger zone.
Ind: In adult- i. prevention and symptomatic relief of acute nausea and vomiting from any cause including cytotoxic therapy, radiotherapy and anti-parkinsonism therapy; ii. functional dyspepsia; not recommended for routine prophylaxis of post-operative vomiting or for chronic administration.
In children- the use of domperidone is restricted to nausea and vomiting following cytotoxic or radiotherapy only; not recommended for other causes.
C/I: Hypersensitivity to this drug; neonates.
S/E: Domperidone may cause increased prolactin production (1.3%), which may result in galactorrhoea, gynaecomastia; soreness and reduced libido. Other side-effects may include- dry mouth, nervousness, drowsiness, skin rash and itching. Extra-pyramidal reactions are also reported very rarely in some clinical studies.
Cautions: Domperidone should be used with absolute caution in case of young children, because there may be an increased risk of extra-pyramidal reactions, since drug may enter into the central nervous system due to an incompletely developed blood-brain barrier.
Pregnancy & lactation: The safety of domperidone has not been proven and hence it is not recommended during pregnancy. In lactating mother, domperidone may precipitate galactorrhoea & improve post natal lactation; it is also secreted in breast milk but in very small quantities insufficient to be considered harmful; but its use in lactating mother should be very cautiously observed.
Dosage & admin: ***By mouth:*** **Adults: Acute nausea and vomiting (including drug induced), 10-20mg every 3-4 times daily orally before meal; maximum period of treatment is 12 weeks. Functional dyspepsia, 10-20mg 3 times daily orally before meals & at night; maximum period of treatment is 12 weeks. Children: Nausea and vomiting following cytotoxic or radiotherapy only, 0.2-0.4mg/kg every 4-8 hours daily. Functional dyspepsia- not recommended.**
(Domperidone oral preparation should be taken 15-30 minutes before a meal.)
Suppositories: **Adult: 30 to 60mg every 4 to 8 hours.**
Children: Maximum daily dose 30mg for the babies of 10-15kg body weight. Suppositories are to be inserted per rectum. During insertion patient should lie on his/her left with flexed right hip and knee.
Drug inter: Domperidone may reduce the hypoprolactinaemic effect of bromocriptine. The action of domperidone on g.i function may be antagonized by anti-muscarinics and opioid analgesics.

❖ **ADEGUT Tab. Supreme**
Domperidone maleate 10mg/tablet
50's pack: 75.00 MRP
❖ **ADEGUT Susp. Supreme**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP
❖ **ADOREX Tab. Ambee**
Domperidone maleate 10mg/tablet
100's pack: 95.00 MRP
❖ **ADOREX Susp. Ambee**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP
100ml bot: 38.00 MRP
❖ **ADOREX Drop Ambee**
Domperidone 5mg/ml: drop
15ml drop: 20.00 MRP
❖ **ANET Tab. Chemico**
Domperidone maleate 10mg/tablet
100's pack: 100.00 MRP
❖ **ANET Susp. Chemico**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP
❖ **APEDOM Tab. Apollo**
Domperidone maleate 10mg/tablet
50's pack: 100.00 IP
100's pack: 200.00 IP
❖ **APEDOM Susp. Apollo**
Domperidone 5mg/5ml: suspension
60ml bot: 27.00 IP
❖ **APULDON Tab. Aristopharma**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP
❖ **APULDON Susp. Aristopharma**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP
❖ **APULDON Drop Aristopharma**
Domperidone 5mg/ml: drop
15ml drop: 20.00 MRP
❖ **ATIDON Tab. Asiatic**
Domperidone maleate 10mg/tablet
50's pack: 100.00 MRP
❖ **ATIDON Susp. Asiatic**
Domperidone 5mg/5ml: suspension
60ml bot: 25.00 MRP
❖ **AVOMIT Tab. Chemist**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP
❖ **AVOMIT Susp. Chemist**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP
❖ **BPDON Tab. Bristol**
Domperidone maleate 10mg/tablet
100's pack: 100.00 MRP
❖ **COSY Tab. Orion**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP
❖ **COSY Susp. Orion**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP
100ml bot: 38.00 MRP
❖ **CPDOM Tab. Cosmo Pharma**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP
❖ **DEDOM Tab. Decent**
Domperidone maleate 10mg/tablet
100's pack: 190.00 MRP
❖ **DEDOM Susp. Decent**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP
❖ **DEFLUX Tab. Beximco**
Domperidone maleate 10mg/tablet
150's pack: 300.00 MRP
❖ **DEFLUX DT Tab. Beximco**
Domperidone maleate 20mg/tablet (dispersible)
100's pack: 200.00 MRP
❖ **DEFLUX Susp. Beximco**
Domperidone 5mg/5ml: suspension
100ml bot: 38.00 MRP
❖ **DEFLUX Drop Beximco**
Domperidone 5mg/ml: drop
15ml drop: 20.00 MRP
❖ **DEGUT Tab. Delta**
Domperidone maleate 10mg/tablet
100's pack: 199.94 MRP
❖ **DEGUT Susp. Delta**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP
❖ **DOMAR Tab. Pacific**
Domperidone maleate 10mg/tablet
100's pack: 190.00 MRP
❖ **DOMAR Susp. Pacific**
Domperidone 5mg/5ml: suspension
60ml bot: 25.00 MRP
100ml bot: 40.00 MRP
❖ **DOMIDON Tab. Ziska**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP
❖ **DOMIDON Susp. Ziska**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP
❖ **DOMILIN Tab. General**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP
❖ **DOMILIN Susp. General**
Domperidone 5mg/5ml: suspension
100ml bot: 40.00 MRP
❖ **DOMILUX Tab. Popular**
Domperidone maleate 10mg/tablet
100's pack: 100.00 IP
❖ **DOMILUX Susp. Popular**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 IP
❖ **DOMIN Tab. Opsonin**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP
❖ **DOMIN Susp. Opsonin**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP
❖ **DOMIN Drop Opsonin**
Domperidone 5mg/ml: drop
15ml drop: 20.00 MRP
❖ **DOMIN Suppo. Opsonin**
Domperidone 15mg & 30mg/suppository.
15mg suppository x 10's pack: 50.00 MRP
30mg suppository x 10's pack: 80.00 MRP
❖ **DOMINAT Tab. Nipa**
Domperidone maleate 10mg/tablet
50's pack: 100.00 MRP
❖ **DOMINAT Susp. Nipa**
Domperidone 5mg/5ml: suspension
60ml bot: 27.00 MRP
❖ **DOMINOL Tab. White Horse**
Domperidone maleate 10mg/tablet
50's pack: 100.00 MRP
❖ **DOMIREN Tab. Renata**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP
❖ **DOMIREN Susp. Renata**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP
❖ **DOMIREN Drop Renata**
Domperidone 5mg/ml: drop
15ml drop: 20.00 MRP
❖ **DOMPA-S Tab. Seema**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP
❖ **DOMPA-S Susp. Seema**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP
❖ **DOMPEN Tab. Millat**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP
❖ **DOMPI Tab. Alco Pharma**
Domperidone maleate 10mg/tablet
100's pack: 150.00 MRP
❖ **DOMPI Susp. Alco Pharma**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP
❖ **DOMSIL Tab. Silva**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP
❖ **DOMSIL DT Tab. Silva**
Domperidone maleate 20mg/dispersible tablet
100's pack: 200.00 MRP
❖ **DOMSIL Susp. Silva**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP
100ml bot: 38.00 MRP
❖ **DOMSTAL Tab. A.P.C Pharma**
Domperidone maleate 10mg/tablet
50's pack: 100.00 IP
❖ **DOMSTAL Susp. A.P.C Pharma**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 IP
❖ **DON-A Tab. Acme**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP
❖ **DON-A Susp. Acme**
Domperidone 5mg/5ml: suspension
30ml bot: 25.00 MRP
❖ **DON-A Suppo. Acme**
Domperidone 15mg & 30mg/ suppository.
15mg suppository x 10's pack: 50.00 MRP
30mg suppository x 10's pack: 80.00 MRP
❖ **DOPADON Tab. Ibn Sina**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP
❖ **DOPADON Susp. Ibn Sina**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP
❖ **DOPON Tab. SAPL**
Domperidone maleate 10mg/tablet
50's pack: 50.00 MRP
❖ **DORIDON Tab. Medicon**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP
❖ **DORIDON Drop Medicon**
Domperidone 5mg/ml: drop
15ml drop: 20.00 MRP
❖ **DPDONE Tab. CPL**
Domperidone maleate 10mg/tablet

100's pack: 200.00 MRP

❖ **DPDONE Susp. CPL**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP

❖ **DUDON Tab. Kumudini**
Domperidone maleate 10mg/tablet
100's pack: 100.00 MRP

❖ **DUDON Susp. Kumudini**
Domperidone 5mg/5ml: suspension
100ml bot: 26.00 MRP

❖ **DYSNOV Tab. UniHealth**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP

❖ **DYSNOV Susp. UniHealth**
Domperidone 5mg/5ml: suspension
100ml bot: 38.00 MRP

❖ **EDONE Tab. Zenith**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP

❖ **EDONE Susp. Zenith**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP
100ml bot: 38.00 MRP

❖ **EMEDON Tab. Cosmic**
Domperidone maleate 10mg/tablet
100's pack: 150.00 MRP

❖ **EMIDOM Tab. Somatec**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP

❖ **EMIDOM Susp. Somatec**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP

❖ **EMIDOM Drop Somatec**
Domperidone 5mg/ml: drop
15ml drop: 20.00 MRP

❖ **ERIDON Tab. Doctor's**
Domperidone maleate 10mg/tablet
100's pack: 100.00 MRP

❖ **ERIDON Susp. Doctor's**
Domperidone 5mg/5ml: suspension
60ml bot: 25.00 MRP

❖ **ESOGUT Tab. Biopharma**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP

❖ **ESOGUT Susp. Biopharma**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP

❖ **ESOGUT Drop Biopharma**
Domperidone 5mg/ml: drop
15ml drop: 20.00 MRP

❖ **GIDORA Tab. Rephco**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP

❖ **GIDORA Susp. Rephco**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP

❖ **GUTSET Tab. Ad-din**
Domperidone maleate 10mg/tablet
100's pack: 171.00 MRP

❖ **GUTSET Drop Ad-din**
Domperidone 5mg/ml: drop
15ml drop: 18.28 MRP

❖ **LORIDON Tab. Modern**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP

❖ **LORIDON Susp. Modern**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP

❖ **LORIDON Drop. Modern**
Domperidone 5mg/ml: drop
15ml drop: 20.00 MRP

❖ **LOVAL Tab. Jayson**
Domperidone maleate 10mg/tablet
100's pack: 200.00 IP

❖ **LOVAL Susp. Jayson**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 IP
100ml bot: 38.00 IP

❖ **MERIN Tab. Edruc**
Domperidone maleate 10mg/tablet
100's pack: 150.00 IP

❖ **MERIN Susp. Edruc**
Domperidone 5mg/5ml: suspension
100ml bot: 38.00 IP

❖ **MOTIDOM Tab. Medimet**
Domperidone maleate 10mg/tablet
50's pack: 100.00 MRP

❖ **MOTIFAST Tab. Square**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP

❖ **MOTIGEN Tab. Novo Healthcare**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP

❖ **MOTIGUT Tab. Square**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP

❖ **MOTIGUT Susp. Square**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP

❖ **MOTIGUT Drop Square**
Domperidone 5mg/ml: drop
15ml drop: 20.00 MRP

❖ **MOTIL Tab. Hallmark**
Domperidone maleate 10mg/tablet
100's pack: 150.00 MRP

❖ **MOTIL Susp. Hallmark**
Domperidone 5mg/5ml: suspension
100ml bot: 28.00 MRP

❖ **MOTILANT Tab. Marksman**
Domperidone maleate 10mg/tablet
100's pack: 100.00 MRP

❖ **MOTILANT Susp. Marksman**
Domperidone 5mg/5ml: suspension
60ml bot: 27.00 MRP

❖ **MOTILEX Tab. Techno Drugs**
Domperidone maleate 10mg/tablet
50's pack: 75.00 MRP

❖ **MOTILEX Susp. Techno Drugs**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP

❖ **MOTIPER Tab. Mystic**
Domperidone maleate 10mg/tablet
50's pack: 100.00 MRP

❖ **MOTIPER Susp. Mystic**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP

❖ **MYODON Tab. Peoples**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP

❖ **MYODON Susp. Peoples**
Domperidone 5mg/5ml: suspension
60ml bot: 25.00 MRP

❖ **NOBURN Tab. Beacon**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP

❖ **NORMOGUT Tab. Rangs**
Domperidone maleate 10mg/tablet
50's pack: 100.00 MRP

❖ **NORMOGUT Susp. Rangs**
Domperidone 5mg/5ml: suspension
100ml bot: 38.00 MRP

❖ **OMID Tab. Desh**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP

❖ **OMID Susp. Desh**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP

❖ **OMIDON Tab. Incepta**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP

❖ **OMIDON D Tab. Incepta**
Domperidone maleate 20mg/dispersible tablet
100's pack: 200.00 MRP

❖ **OMIDON Susp. Incepta**
Domperidone 5mg/5ml: suspension
15ml bot: 20.00 MRP
30ml bot: 25.00 MRP
60ml bot: 28.00 MRP
100ml bot: 38.00 MRP

❖ **OMIDON Drop Incepta**
Domperidone 5mg/ml: drop
15ml drop: 20.00 MRP

❖ **PARIDON Tab. Drug inter.**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP

❖ **PARIDON Susp. Drug inter.**
Domperidone 5mg/5ml: suspension
100ml bot: 32.00 MRP

❖ **P-DON Tab. Pharmadesh**
Domperidone maleate 10mg/tablet
100's pack: 95.00 MRP

❖ **P-DON Susp. Pharmadesh**
Domperidone 5mg/5ml: suspension
60ml bot: 24.00 MRP

❖ **PERI Tab. Hudson**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP

❖ **PERI Susp. Hudson**
Domperidone 5mg/5ml: suspension
100ml bot: 35.00 MRP

❖ **PERION Tab. Globe**
Domperidone maleate 10mg/tablet
100's pack: 100.00 MRP

❖ **PERION Susp. Globe**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP
100ml bot: 38.00 MRP

❖ **PROTIX Tab. Apex**
Domperidone maleate 10mg/tablet
100's pack: 150.00 MRP

❖ **PROTIX Susp. Apex**
Domperidone 5mg/5ml: suspension
100ml bot: 25.00 MRP

❖ **REMADON Tab. Reman**
Domperidone maleate 10mg/tablet

100's pack: 195.00 MRP
❖ **RIDON Tab. SK+F**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP
❖ **RIDON Eff. Granules SK+F**
Domperidone maleate 10mg/sachet (effervescent granules)
20's pack: 100.00 MRP
❖ **RIDON Susp. SK+F**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP
100ml bot: 38.00 MRP
❖ **RIDON Drop SK+F**
Domperidone 5mg/ml: drop
15ml drop: 20.00 MRP
❖ **SANDOM Tab. Sanofi-aventis**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP
❖ **SANDOM Susp. Sanofi-aventis**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP
❖ **SANDOM Drop Sanofi-aventis**
Domperidone 5mg/ml: drop
15ml drop: 20.00 MRP
❖ **SKYDON Tab. Skylab**
Domperidone maleate 10mg/tablet
15ml drop: 20.00 MRP
❖ **VEGADON Tab. Pharmasia**
Domperidone maleate 10mg/tablet (f.c).
100's pack: 100.00 IP
❖ **VEGADON Susp. Pharmasia**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 IP
❖ **VOMINO Tab. MonicoPharma**
Domperidone maleate 10mg/tablet (f.c).
100's pack: 200.00 MRP
❖ **VOMITOP Tab. Navana**
Domperidone maleate 10mg/tablet (f.c).
100's pack: 120.00 MRP
❖ **VOMITOP Susp. Navana**
Domperidone 5mg/5ml: suspension
60ml bot: 24.00 MRP
❖ **XEPADON Tab. Amico**
Domperidone maleate 10mg/tablet (f.c).
50's pack: 100.00 MRP
❖ **XEPADON Susp. Amico**
Domperidone 5mg/5ml: suspension
60ml bot: 25.00 MRP
❖ **XEPADON Drop Amico**
Domperidone 5mg/ml: drop
15ml drop: 18.00 MRP
❖ **XERIDON Tab. RAK Pharma**

All orally, i.m or i.v. Usual max. doses, all ages 0.5mg/kg body-wt . daily .
Preparations: See under anti-vomiting drugs in the chapter of CNS products.

4. ULCER HEALING DRUGS

4.1 H_2 -receptor antagonists
4.2 Selective antimuscarinics
4.3 Chelates and complexes
4.4 Prostaglandin analogues
4.5 Proton pump inhibitors
4.6 Therapy for H. Pylori eradication
4.7 Other ulcer-healing drugs

H_2 -receptor antagonists

CIMETIDINE[21,33]

CIMETIDINE: Tablet/Syrup/Injection
Ind: Peptic ulceration, recurrent and stomal ulceration, Zollinger-Ellison syndrome; Reflux oesophagitis and other conditions where a reductation of gastric acid is beneficial, erosive gastritis with bleeding.

Cautions: Impaired renal functions (reduce dosage), exclude malignant disease, as cimetidine may mask symptoms and delay treatment; long term treatment should be avoided (if possible) otherwise the patient should be kept under observation or monitored;
avoid abrupt withdrawal of treatment, concurrent admin. of anticoagulants or phenytoin.
S/E: Occasional diarrhoea, dizziness, rashes, rarely mental confusion and gynaecomastia.

Dosage & admin: Adult- by mouth, duodenal & benign gastric ulcer, 400mg, 2 times daily with breakfast & at bed time or 800 mg at bedtime for minimun 4 weeks, then 400mg. once or twice daily as maintenance dose.
Reflux oesopbagitis- 400mg 4 times a day after meals.
By injection- 200mg i.m. or slow i.v.(100-150mg/hour) 4 to 6 hourly, max. dose 2 gm. daily.
Child- not recommended.

❖ **G-CIMETIDINE Inj. Gonoshas.**
Cimetidine 200mg/2ml ampoule: injection

100's pack: 200.00 MRP
❖ **SYDON Tab. Syntho**
Domperidone maleate 10mg/tablet
100's pack: 200.00 MRP
❖ **SYDON Susp. Syntho**
Domperidone 5mg/5ml: suspension
60ml bot: 27.00 MRP
❖ **TYDON Tab. Proteety**
Domperidone maleate 10mg/tablet
50's pack: 75.00 MRP
❖ **ULDOM Tab. Ultra Pharma**
Domperidone maleate 10mg/tablet
100's pack: 100.00 MRP
❖ **UNIDONE Tab. Gaco**
Domperidone maleate 10mg/tablet
100's pack: 200.08 MRP
❖ **VAVE Tab. ACI**
Domperidone maleate 10mg/tablet (f.c).
150's pack: 300.00 MRP
❖ **VAVE Susp. ACI**
Domperidone 5mg/5ml: suspension
60ml bot: 28.00 MRP
100ml bot: 38.00 MRP
❖ **VAVE Drop ACI**
Domperidone 5mg/ml: drop
Domperidone maleate 10mg/tablet (f.c).
100's pack: 200.00 MRP

METOCLOPRAMIDE[21,23]

METOCLOPRAMIDE HCl: Tablet/ syrup/ drop/injection
It is an effective anti-emetic drug. It has got a central anti-emetic effect & a peripheral action on the gut as dopamine antagonist, as a result it enhances motility of the upper gastrointestinal tract & thus hastens gastric emptying.
Ind: Non ulcer dyspepsia, for speeding the transit of barium during intestinal follow through examination, reflux oesophagitis and also in non specific or cytotoxic nausia and vomiting.
S/E: Extrapyramidal reactions, drowsiness, constipation, gynaecomastia, galactorrhoea.
Cautions: Renal impairment, immediately after abdominal surgery, Parkinsonism & children.
Adult: 15 to 20 years 5-10mg; others, 10mg. Both 3 times daily.
Child: Under 1 yr, 1 mg twice daily; 1-3 yrs. 1mg 2 or 3 times daily; 3-5 yrs. 2mg 2 or 3 times daily; 5-14 yrs. 2.5-5mg 3 times daily.

25 amps pack: 107.25 MRP
❖ **SEEMET Tab. Seema**
Cimetidine 200mg/tablet
100's pack: 135.00 MRP

FAMOTIDINE[21,33]

FAMOTIDINE: Tablet
Ind: Benign gastric & duodenal ulcer, reflux oesophagitis, Zollinger- Ellison syndrome.
S/E: See under cimetidine
Cautions: see under cimetidine; does not inhibit hepatic miceosomal drug metabolism.
Dose: Benign gastric and duodenal ulceration, treatment, 40mg at night for 4-8 weeks; maintenance, 20mg at night.
Reflux oesophagitis, 20-40mg twice daily for 6-12 weeks.
Zollinger-Ellison syndrome, 20mg every 6 hours (higher dose in those who have previously been receiving another H2-antagonist).

❖ **FAMO Tab. Gaco**
Famotidine 20mg & 40mg/tablet
20mg x 50's pack: 76.20 MRP
40mg x 50's pack: 151.71 MRP
❖ **FAMODIN Tab. Acme**
Famotidine 20mg & 40mg/tablet
20mg x 100's pack: 150.00 MRP
40mg x 100's pack: 300.00 MRP
❖ **FAMOTACK Tab. Square**
Famotidine 20mg & 40mg/tablet
20mg x 100's pack: 150.00 MRP
40mg x 50's pack: 150.00 MRP
❖ **FAMOTID Tab. Drug inter**
Famotidine 20mg & 40mg/tablet
20mg x 100's pack: 200.00 MRP
40mg x 100's pack: 400.00 MRP
❖ **FAMOTIN 20 Tab. Doctor's**
Famotidine 20mg/tablet
20mg x 100's pack: 142.00 MRP
❖ **NACID Tab. Sonear**
Famotidine 20mg & 40mg/tablet
20mg x 100's pack: 200.00 MRP
40mg x 50's pack: 190.00 MRP
❖ **NOVATAC Tab. ACI**
Famotidine 20mg & 40mg/tablet.
20mg x 100's pack: 225.00 MRP
40mg x 100's pack: 410.00 MRP
❖ **PEPTID Tab. Opsonin**
Famotidine 20mg & 40mg/tablet.
20mg x 100's pack: 190.00 MRP
40mg x 100's pack: 380.00 MRP
❖ **SERVIPEP Tab. Sandoz/Novartis**
Famotidine 20mg & 40mg/tablet
20mg x 50's pack: 133.50 MRP
40mg x 50's pack: 253.00 MRP
❖ **YAMADIN Tab. Beximco**
Famotidine 20mg & 40mg/tablet
20mg x 200's pack: 380.00 MRP
40mg x 100's pack:
❖ **ZACTROL Tab. Peoples**
Famotidine 20mg & 40mg/tablet
20mg x 100's pack: 155.00 MRP
40mg x 100's pack: 300.00 MRP

RANITIDINE[21,33]

RANITIDINE: Tablet/Syrup/Injection
Ind: Duodenal, benign gastric and postoperative ulceration, reflux oesophagitis, Zollinger- Ellison syndrome and other conditions where a reduction of gastric acid is beneficial.
Parenteral administration (injection/infusion) is specially indicated for the treatment of hospitalized patients with pathological hypersecretory conditions, intractable duodenal ulcers, and to prevent acid aspiration in obstetric patients at delivery.
S/E: No serious adverse effects have been reported to date. But rare and transient nausea, headache, dizziness and diarrhoea may occur. Anaphylactoid reactions & skin rashes have been reported rarely.
Caution: Caution should be taken in case of renal impairment, pregnancy, lactation; exclude malignant diseases before treatment. Carry out periodic axamina tions of patients on prolonged therapy.
Dosage & admin: ***By mouth:*** **Adult, Benign gastric and duodenal ulcer- 150mg (1 tab or 2 tsf) b.i.d in the morning and at bed time; or 300mg at bed time for 4 weeks; maintenance therapy, 150mg at bed time.**
Reflux oesophagitis- 150mg b.i.d for upto 8 weeks.
Zollinger-Ellison syndrome- the starting dose is 150mg t.d.s and may be increased as necessary to 900mg (six tablets).
Child- Under 8 yrs. not recommended; over 8 yrs. upto 150mg twice daily.
Parenteral administration: **By injection, adult- 50mg i.m or by slow i.v injection or infusion, repeated 6 to 8 hourly. Child- not recommended.**
By i.v infusion, 25mg (or 50ml)/hour for 2 hours; may be repeated every 6-8 hours.
Prophylaxis of stress ulceration, initially slow i.v infusion of 50mg (as above) then continuous infusion of 125-250mcg/kg per hour.
In patients with severely impaired renal function having a creatinine clearance less than 50ml/min, the recommended dosage is 50mg every 18-24 hours. If the patient's condition requires, the frequency of dosing may be increased to every 12 hours or even further with caution.
Child- not recommended.

❖ **ACEPTIN-R Tab. Asiatic**
Ranitidine 150mg/tablet
100's pack: 200.00 MRP
❖ **ACIN Tab. Bio-pharma**
Ranitidine 150mg & 300mg/tablet
150mg x 100's pack: 200.00 MRP
300mg x 50's pack: 175.00 MRP
❖ **ACIN Syp. Bio-pharma**
Ranitidine 75mg/5ml: syrup
100ml bot: 45.00 MRP
❖ **ALIN Tab. Rephco**
Ranitidine 150mg/tablet
100's pack: 200.00 MRP
❖ **ANTAC Tab. Ambee**
Ranitidine 150mg/tablet
100's pack: 180.00 MRP
❖ **ANTAC Syp. Ambee**
Ranitidine 75mg/5ml: syrup
100ml bot: 40.00 MRP
❖ **ANTAC Inj. Ambee**
Ranitidine 50mg/2ml ampoule: injection
10 amps pack: 53.00 MRP
❖ **ASINAR Tab. Sanofi-aventis**
Ranitidine 150mg/tablet
150mg x 100's pack: 200.00 MRP
❖ **BENTID-150 Tab. Benham**
Ranitidine 150mg/tablet
100's pack: 141.00 IP
❖ **DENITINE Tab. Doctors**
Ranitidine 150mg/tablet
100's pack: 200.00 MRP
❖ **DETAC-150 Tab. Desh Pharma**
Ranitidine 150mg/tablet
150's pack: 225.00 MRP
❖ **DETAC Syp. Desh Pharma**
Ranitidine 75mg/5ml: syrup
100ml bot: 40.00 MRP
❖ **DUGAL Tab. Reman**
Ranitidine 150mg & 300mg/tablet
150mg x 100's pack: 115.00 MRP
300mg x 50's pack: 200.00 MRP
❖ **DURAN Tab. Techno Drugs**
Ranitidine 150mg & 300mg/tablet
150mg x 100's pack: 200.00 MRP
300mg x 100's pack: 400.00 MRP
❖ **DURAN Syp. Techno Drugs**
Ranitidine 75mg/5ml: syrup
100ml bot: 40.00 MRP
❖ **DURAN I.V Inf. Techno Drugs**
Ranitidine hydrochloride 50mg in 100ml (0.5mg/ml) bottle: i.v infusion
100ml bot: 60.00 MRP
❖ **EDITIN-R Tab. Edruc**
Ranitidine 150mg/tablet
100's pack: 223.00 IP
❖ **EDITIN-R Inj. Edruc**
Ranitidine 50mg/2ml ampoule: injection
10 amps pack: 60.00 IP
❖ **EUCON Tab. Pacific**
Ranitidine 150mg/tablet
100's pack: 190.00 MRP
❖ **EXAC Tab. Hallmark**
Ranitidine 150mg/tablet
100's pack: 150.00 MRP
❖ **GASTROLOC Tab. Beacon**
Ranitidine 150mg/tablet
100's pack: 200.00 MRP
❖ **GEPIN Tab. General**
Ranitidine 150mg/tablet
100's pack: 200.00 MRP
❖ **GEPIN Syp. General**
Ranitidine 75mg/5ml: syrup
100ml bot: 40.00 MRP
200ml bot: 70.00 MRP
❖ **G-RANITIDINE Tab. Gonoshas**
Ranitidine 150mg/tablet.
100's pack: 142.00 MRP
❖ **H2-150 Tab. Apollo**
Ranitidine 150mg/tablet.
100's pack: 200.00 IP
❖ **HI-TAC Tab. Hudson**
Ranitidine 150mg/tablet.
100's pack: 150.00 MRP
❖ **INRAN 150 Tab. MonicoPharma**
Ranitidine 150mg/tablet.
100's pack: 200.00 MRP
❖ **INSEAC Tab. Ibn Sina**
Ranitidine 150mg & 300mg/tablet
150mg x 100's pack: 200.00 IP
300mg x 48's pack: 184.32 IP

❖ **JOVRAN Tab. Belsen**
Ranitidine 150mg/tablet.
100's pack: 200.00 MRP

❖ **LIBRET I.V Inf. Libra**
Ranitidine hydrochloride 50mg in 100ml (0.5mg/ml) bottle: i.v infusion
100ml bot: 55.00 MRP

❖ **LUMERAN Tab. Aristopharma**
Ranitidine 150mg/tablet
150mg x 100's pack: 200.00 IP

❖ **MUTAC-150 Tab. Salton**
Ranitidine 150mg/tablet
150mg x 100's pack: 200.00 MRP

❖ **MYSTIN-R Tab. Mystic**
Ranitidine 150mg/tablet.
100's pack: 200.00 MRP

❖ **NEOCEPTIN-R Tab. Beximco**
Ranitidine 150mg & 300mg/tablet
150mg x 150's pack: 330.00 MRP
300mg x 100's pack: 400.00 MRP

❖ **NEOCEPTIN-R Syp. Beximco**
Ranitidine 75mg/5ml: syrup
100ml bot: 45.00 MRP

❖ **NEOCEPTIN-R I.V Inf. Beximco**
Ranitidine hydrochloride 50mg in 100ml (0.5mg/ml) bottle: i.v infusion
100ml bot: 101.00 MRP

❖ **NEODIN-R Tab. Skylab**
Ranitidine 150mg/tablet
100's pack: 205.00 MRP

❖ **NEOPEP Tab. CPL**
Ranitidine 150mg/tablet
150mg x 100's pack: 200.00 MRP

❖ **NEOSETIN R-150 Tab. Bristol**
Ranitidine 150mg/tablet
150mg x 100's pack: 150.00 MRP

❖ **NEOTACK Tab. Square**
Ranitidine 150mg & 300mg/tablet
150mg x 150's pack: 300.00 MRP
300mg x 100's pack: 400.00 MRP

❖ **NEOTACK Syp. Square**
Ranitidine 75mg/5ml: syrup
100ml bot: 45.00 MRP

❖ **NEOTACK Inj. Square**
Ranitidine 50mg/2ml ampoule: injection
10 amps pack: 60.00 MRP

❖ **NEOTID Tab. Modern**
Ranitidine 150mg/tablet
100's pack: 200.00 MRP

❖ **NEOTIN Tab. Nipa**
Ranitidine 150mg/tablet
100's pack: 200.00 MRP

❖ **NORMACID Tab. Chemlco**
Ranitidine 150mg/tablet
100's pack: 200.00 MRP

❖ **NORMACID Syp. Chemico**
Ranitidine 75mg/5ml: syrup
100ml bot: 40.00 MRP

❖ **NORMA-H Tab. Renata**
Ranitidine 150mg/tablet
150mg x 100's pack: 218.00 MRP

❖ **ORTAC Tab. Orion**
Ranitidine 150mg/tablet
100's pack: 200.00 MRP

❖ **ORTAC I.V Inf. Orion**
Ranitidine hydrochloride 50mg in 100ml (0.5mg/ml) bottle: i.v infusion
100ml bot: 60.00 MRP

❖ **PEOTID Tab. Peoples**
Ranitidine 150mg/tablet
100's pack: 210.00 MRP

❖ **PEPTIDIN-150 Tab. Cosmic**
Ranitidine 150mg/tablet
100's pack: 150.00 MRP

❖ **PEPTIL-H Tab. SK+F**
Ranitidine 150mg/tablet
150mg x 100's pack: 200.00 MRP

❖ **PEPTIL-H Syp. SK+F**
Ranitidine 75mg/5ml: syrup
100ml bot: 45.00 MRP

❖ **PEPTONIL Tab. Decent**
Ranitidine 150mg/tablet
100's pack: 200.00 MRP

❖ **PEPTOSOL I.V Inf. Opsosaline**
Ranitidine hydrochloride 50mg in 100ml (0.5mg/ml) bottle, premixed in 0.45% sodium chloride solution, for i.v administration as a single dose. It contains no preservatives.
100ml bot: 35.00 MRP

❖ **PROTEC-R Tab. Globex**
Ranitidine 150mg/tablet
100's pack: 200.00 MRP

❖ **RANBEX Tab. Novo Healthcare**
Ranitidine 150mg/tablet
100's pack: 200.00 MRP

❖ **RANI Tab. Cosmo Pharma**
Ranitidine 150mg/tablet
100's pack: 202.00 MRP

❖ **RANI-150 Tab. Alco Pharma**
Ranitidine 150mg/tablet
100's pack: 200.00 MRP

❖ **RANID Tab. Ziska/Unicare**
Ranitidine 150mg/tablet
100's pack: 110.00 MRP

❖ **RANID Inj. Ziska**
Ranitidine 50mg/2ml ampoule: injection
10 amps pack: 60.00 MRP

❖ **RANIDIL Tab. Millat**
Ranitidine 150mg/tablet
100's pack: 200.00 MRP

❖ **RANIDIN Tab. Acme**
Ranitidine 150mg & 300mg/tablet
150mg x 100's pack: 200.00 MRP
300mg x 100's pack: 400.00 MRP

❖ **RANIDIN Inj. Acme**
Ranitidine 50mg/2ml ampoule: injection
10 amps pack: 60.00 MRP

❖ **RANILOC Tab. Kumudini**
Ranitidine 150mg/tablet
150's pack: 225.00 MRP

❖ **RANISON Tab. Jayson**
Ranitidine 150mg/tablet
100's pack: 171.00 IP

❖ **RANISON Inj. Jayson**
Ranitidine 50mg/2ml ampoule: injection
10 amps pack: 62.80 IP

❖ **RANISYN Tab. Syntho**
Ranitidine 150mg/tablet
100's pack: 210.00 MRP

❖ **RANIT Tab. Pharmadesh**
Ranitidine 150mg/tablet.
300mg x 50's pack: 100.00 MRP

❖ **RANITAB Tab. Sonear**
Ranitidine 150mg/tablet
100's pack: 200.00 MRP

❖ **RANITACK Tab. Ad-din**
Ranitidine 150mg/tablet
100's pack: 75.00 MRP

❖ **RANITEC-150 Tab. A.P.C Pharma**
Ranitidine 150mg/tablet
100's pack: 200.00 MRP

❖ **RANITID Tab. Opsonin**
Ranitidine 150mg/tablet
150mg x 150's pack: 300.00 MRP

❖ **RANITID Syp. Opsonin**
Ranitidine 75mg/5ml: syrup
100ml bot: 45.00 MRP

❖ **RANITID Inj. Opsonin**
Ranitidine 50mg/2ml ampoule: injection
50 amps pack: 300.00 MRP

❖ **RANITOR Tab. Popular**
Ranitidine 150mg/tablet.
100's pack: 100.00 IP

❖ **RANIX Tab. Chemist**
Ranitidine 150mg/tablet.
100's pack: 75.00 MRP

❖ **RANIX Inj. Chemist**
Ranitidine 50mg/1ml ampoule: injection
10 amps pack: 50.00 MRP

❖ **RANTEC Tab. Medimet.**
Ranitidine 150mg & 300mg/tablet
150mg x 100's pack: 200.00 MRP
300mg x 50's pack: 175.00 MRP

❖ **RANTIN Tab. Seema**
Ranitidine 150mg/tablet
100's pack: 210.00 MRP

❖ **RANUL Tab. Apex**
Ranitidine 150mg/tablet
100's pack: 100.00 MRP

❖ **RAVIA Tab. Pharmasia**
Ranitidine 150mg/tablet
100's pack: 100.00 IP

❖ **REETAC-R Tab. Navana**
Ranitidine 150mg & 300mg/tablet.
150mg x 100's pack: 200.00 MRP
300mg x 50's pack: 200.00 MRP

❖ **RENICON Tab. Medicon**
Ranitidine 150mg/tablet.
100's pack: 150.00 MRP

❖ **RHINE Tab. Healthcare**
Ranitidine 150mg/tablet.
60's pack: 150.00 IP

❖ **ROSTID Tab. Rasa**
Ranitidine 150mg/tablet.
100's pack: 155.00 MRP

❖ **RT 150 Tab. Silva**
Ranitidine 150mg/tablet.
100's pack: 200.00 MRP

❖ **SADIN Tab. SAPL**
Ranitidine 150mg/tablet.
100's pack: 150.00 MRP

❖ **SUTAC Tab. Supreme**
Ranitidine 150mg/tablet.
100's pack: 200.00 MRP

❖ **TINADIN Tab. Delta**
Ranitidine 150mg/tablet
100's pack: 85.00 MRP

❖ **TINADIN Syp. Delta**
Ranitidine 75mg/5ml: syrup
100ml bot: 40.00 MRP

❖ **TYTAC Tab. Proteety**
Ranitidine 150mg/tablet.
100's pack: 150.00 MRP

❖ **ULCAR Tab. Drug Inter.**
Ranitidine 150mg & 300mg/tablet.
150mg x 100's pack: 200.00 MRP
300mg x 50's pack: 200.00 MRP

❖ **ULCITID Tab. Marksman**
Ranitidine 150mg/tablet.
100's pack: 200.00 MRP

❖ **ULTAC Tab. Aexim Pharma**
Ranitidine 150mg/tablet
100's pack: 100.00 MRP
❖ **ULTID Tab. Ultra Pharma**
Ranitidine 150mg/tablet.
100's pack: 150.00 MRP
❖ **ULTRADIN-150 Tab. Globe**
Ranitidine 150mg/tablet.
100's pack: 200.00 MRP
❖ **UNITAC Tab. Gaco**
Ranitidine 150 mg/tablet.
100's pack: 130.00 MRP
❖ **UNITAC Inj. Gaco**
Ranitidine 50mg/2ml ampoule: injection
1 amp pack: 6.28 MRP
❖ **WINTACK Tab. White Horse**
Ranitidine 150 mg/tablet.
100's pack: 200.00 MRP
❖ **XANTID Tab. ACI**
Ranitidine 150mg/tablet.
150mg x 150's pack: 300.00 MRP
❖ **XANTID-HS Tab. ACI**
Ranitidine 300mg/tablet (higher strength).
300mg x 100's pack: 400.00 MRP
❖ **XANTID Inj. ACI**
Ranitidine 50mg/2ml ampoule: injection
2ml amp x 10's pack: 75.00 MRP
❖ **ZANTAC Tab. GlaxoSmithKline**
Ranitidine 150mg/tablet.
150mg x 100's pack: 404.00 MRP
❖ **ZENIDINE Tab. Zenith**
Ranitidine 150mg/tablet.
100's pack: 150.00 MRP
❖ **ZENIL Tab. Rangs**
Ranitidine 150mg/tablet.
100's pack: 200.00 MRP
❖ **ZODIN Tab. Somatec**
Ranitidine 150mg/tablet.
100's pack: 200.00 MRP
❖ **ZODIN Syp. Somatec**
Ranitidine 75mg/5ml: syrup
100ml bot: 40.00 MRP
❖ **ZOREP Tab. Amico**
Ranitidine 150mg & 300mg/tablet.
150mg x 100's pack: 150.00 MRP

Prostaglandin Analogues

MISOPROSTOL[26]

MISOPROSTOL: Tablet
Misoprostol INN 200mcg/tablet.
Mode of action: Misoprostol is a synthetic prostaglandin E1 analogue that has gastric antisecretory, mucosal protective and uterine contractibility properties. The antisecretory activity and uterine contractibility of misoprostol is mediated through a class of high affinity E-type prostaglandin receptors on the surface of gastric parietal cells and uterus respectively. Misoprostol achieves cytoprotection by stimulation of gastric mucus secretion, duodenal bicarbonate secretion and gastric mucosal blood flow.
Ind: Misoprostol is indicated for-
- prophylaxis of gastric and duodenal ulceration in NSAID users at high risk of complications from gastric ulcer e.g the elderly, patients with concomitant debilitating disease and patients with a history of ulcer.
- healing of established NSAID-induced gastric and duodenal damage.
- healing of gastric and duodenal ulcers in the absence of NSAID therapy.
- induction of labor.

C/I: Misoprostol is contraindicated to anyone with a history of allergy to prostaglandins.
S/E: Generally, misoprostol is well tolerated. The most frequent adverse effects associated with misoprostol therapy involve the G.I tract such as, diarrhea, abdominal pain, dyspepsia, flatulence, nausea, vomiting, rashes and dizziness. The incidence of diarrhea may be minimized by administering the drug after meal and at bedtime and by avoiding concomitant administration with a magnesium-containing or other laxative antacid.
Precautions: Incase of prevention and treatment of NSAID-induced gastric & duodenal ulcer: Misoprostol is contraindicated in women who are pregnant, and should not be used in women of child bearing potential unless the patient requires NSAID therapy. Women of child bearing potential should be told that they must not be pregnant when misoprostol therapy is initiated and they must use an effective contraceptive method while taking misoprostol.
Incase of induction of labor: The pregnancy should have completed 38 weeks of gestation by reliable dating, or completed 36 weeks gestation with a maternal or fetal medical indication for induction of labor. Induction of labor is contraindicated in acute fetal distress, abruptio placenta, placenta previa or unexplained vaginal bleeding. The fetus should be in vertex presentation.
Pregnancy & lactation: Misoprostol is contraindicated in pregnant women. It should not be used in women in child bearing potential unless the patient requires NSAID therapy or is at high risk of developing gastric ulceration. Misoprostol is prescribed if patient has had a negative serum pregnancy test within 2 weeks prior to beginning of therapy. Before starting therapy, an effective contraceptive method must be used, and then misoprostol to be started only on the second or third day of the next normal menstrual period.
It is not known whether misoprostol's active metabolite- misoprostol acid is excreted in human milk, therefore, misoprostol should not be administered to nursing mothers because the excretion of misoprostol acid might cause diarrhea in nursing infants.
Dosage & admin: Benign gastric and duodenal ulceration and NSAID associated ulceration: 800mcg daily, in 2-4 divided doses with breakfast or main meals and at bedtime; treatment should be continued for at least 4 weeks and may be continued for upto 8 weeks if required.
Prophylaxis of NSAID-induced gastric and duodenal ulcer: 200mcg 2-4 times daily taken with NSAID. If this dose cannot be tolerated, a dose of 100mcg can be used. Misoprostol should be taken for the duration of NSAID therapy as prescribed by the physician.
Induction of labor: 100mcg taken orally. If cervical ripening or active labor does not occur, repeated dose of 100-200mcg of oral misoprostol is given every 4 hourly unitl labor is established (as evidenced by a Bishop score of 7 or more). Maximum number of dose is 6. Maternal vital signs, fetal heart rate and contractions should be monitored. Oxytocin can be started 4 hours after the last dose of misoprostol. Physician should be notified for signs of fetal distress or tetanic uterine contractions. Oral misoprostol therapy should be monitored by physician, RN or LPN.
Children: Use of misoprostol in children below the age of 18 years have not been established.
Drug inter: There is no evidence of clinically significant interaction between misoprostol and cardiac, pulmonary, CNS drugs and NSAID's. Bioavailability of misoprostol is decreased with high doses of antacid.
Overdosage: The toxic dose of misoprostol in human has not been determined. Clinical signs that may indicate an overdose are sedation, tremor, convulsions, dyspnea, abdominal pain, diarrhea and fever. Symptoms should be treated with supportive therapy.

❖ **CYTOMIS Tab. Incepta**
Misoprostol INN 200mcg/tablet.
200mcg x 30's pack: 450.00 MRP
❖ **G-MISOPROSTOL Tab. Gonoshas**
Misoprostol INN 200mcg/tablet.
200mcg x 30's pack: 300.00 MRP
❖ **ISOVENT Tab. Square**
Misoprostol INN 100mcg & 200mcg/tablet.
100mcg x 30's pack: 240.00 MRP
200mcg x 30's pack: 450.00 MRP

Proton Pump Inhibitors[21,26,33]

The important 'proton pump inhibitors' include- *Omeprazole, Lansoprazole, Pantoprazole, Rabeprazole & Esomeprazole.*
Mode of action: 'Proton pump inhibitors' interfere in the final stage of gastric acid production by blocking i.e forming a covalent bond to two sites of the H+, K+ - ATPase enzyme system ('proton pump') at the secretory surfaces of the gastric parietal cells. This leads to inhibition of both basal and stimulated gastric acid secretion irrespective of the stimulus. The binding to the H+, K+ - ATPase enzyme system results in an antisecretory effect of long duration persisting more than 24 hours.

OMEPRAZOLE[21,26,33,139]

OMEPRAZOLE: Tablet/Capsule/Suspension/ Injection

Mode of action: See above under the text of 'proton pump inhibitors'.
Ind: Benign gastric & duodenal ulcer (including NSAID complicating), Zollinger- Ellison syndrome, reflux oesophagitis.
S/E: Diarrhoea, headache (both may be severe); also nausea, constipation, flatulence, dizziness, somnolence, malaise, insomnia and paraesthesia; rashes, urticaria, bullous eruption, erythema multiforme, angioedema, alopecia and photosensitivity reported; muscle and joint pain, blurred vision, peripheral oedema, gynaecomastia and rarely impotence, loss of taste, stomatitis, gastro-intestinal candidiasis, leucopenia, thrombocytopenia, fever, bronchospasm, interstitial nephritis, liver enzyme changes and liver dysfunction also reported, reversible mental confusion, agitation, depression and hallucinations have been noted in the severely ill.
Cautions: Exclude gastric malignancy; severe liver disease, avoid in pregnancy and breast-feeding.
Pregnancy & lactation: There are no adequate and well-controlled studies on the use of omeprazole in pregnant women. Therapeutic doses during pregnancy are unlikely to cause a substantial teratogenic risk. Omeprazole should be used during pregnancy only if the potential benefit to pregnant women justifies the potential risk to the fetus.
Omeprazole is excreted in human milk. Thus, a decision should be taken to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.

Dosage & admin: ***By mouth (tablet, capsule, suspension):***
Benign gastric and duodenal ulcers (including those complicating NSAID therapy) 20mg daily for 4 weeks in duodenal ulceration or 8 weeks in gastric ulceration; in severe cases increase to 40mg daily; long-term use not recommended.
Zollinger-Ellison syndrome, initially 60mg once daily; usual ranger 20-120mg daily (above 80mg in 2 divided doses).
Reflux oesophagitis, 20mg daily for 4 weeks, followed by a further 4-8 weeks if not fully healed; 40mg daily has been given for 8 weeks in reflux oesophagitis refractory to other treatment; may be continued at 20mg daily.
Preparation of suspension: **Whole contents of the packet should be taken into a small glass containing 2-3 tsf of water. Other liquids or foods should not be used. The mixer should be stirred well and drink immediately. The glass should be refilled with water and drink.**
If the suspension is to be administered through a nasogastric or orogastric tube, the suspension should be constituted with about 20ml of water, and an approximately sized syringe should be used to instill the suspension in the tube. The suspension should be washed through the tube with about 20ml of water.
By i.v injection:
In patients with duodenal ulcer, gastric ulcer or reflux oesophagitis where oral medication is inappropriate, omeprazole i.v 40mg once daily is recommended. In patients with Zollinger-Ellison syndrome the recommended initial dose of omeprazole given i.v is 60mg daily.
Higher daily doses may be required and the dose should be adjusted individually. When doses exceed 60mg daily, the dose should be divided and given twice daily.
Impaired renal function: **Dose adjustment is not needed in patients with impaired renal function.**
Impaired hepatic function: **As plasma half-life of omeprazole is increased in patients with impaired hepatic function a daily dose of 10 - 20mg may be sufficient.**
Elderly: **Dose adjustment is not needed in the elderly.**

❖ **ANASEC Cap. Novo Healthcare**
Omeprazole BP 20mg/capsule
20mg x 60's pack: 240.00 MRP
❖ **ANASEC Inj. Novo Healthcare**
Omeprazole BP 40mg/ampoule: i.v injection
1 amp's pack: 70.00 MRP
❖ **ASPRA-20 Cap. Apex**
Omeprazole 20mg/capsule
20mg x 40's pack: 140.00 MRP
❖ **AU-20 Cap. Decent**
Omeprazole 20mg/capsule
20mg x 100's pack: 350.00 MRP
❖ **AUMI Cap. Hudson**
Omeprazole 20mg & 40mg/capsule
20mg x 50's pack: 200.00 MRP
40mg x 50's pack: 375.00 MRP
❖ **COSEC Cap. Drug Inter.**
Omeprazole 20mg & 40mg/capsule
20mg x 60's pack: 240.00 MRP
40mg x 40's pack: 200.00 MRP
❖ **DEU 20 Cap. MonicoPharma**
Omeprazole 20mg/capsule
20mg x 48's pack: 192.00 MRP
❖ **ELIPRAZOLE Cap. Elixir**
Omeprazole 20mg & 40mg/capsule
20mg x 40's pack: 160.00 MRP
40mg x 40's pack:
❖ **EMEZ Cap. Edruc**
Omeprazole 20mg/capsule
20mg x 60's pack: 240.00 IP
❖ **EPZ-40 Cap. Reman**
Omeprazole 40mg/capsule
40mg x 20's pack: 150.00 MRP
❖ **GEM-20 Cap. Millat**
Omeprazole 20mg/capsule
20mg x 60's pack: 240.00 MRP
❖ **G-OMEPRAZOLE Cap. Gonoshasthaya**
Omeprazole 20mg/capsule
20mg x 20's pack: 60.00 MRP
❖ **HEALER Cap. Amico**
Omeprazole 20mg/capsule
20mg x 50's pack: 150.00 MRP
❖ **HK-20 Cap. Apollo**
Omeprazole 20mg/capsule
20mg x 60's pack: 240.00 IP
❖ **INHIBITA Cap. Delta**
Omeprazole 20mg & 40mg/capsule

20mg x 60's pack: 240.00 MRP
40mg x 20's pack: 140.00 MRP
❖ **INPRO Cap. Bio-pharma**
Omeprazole 20mg & 40mg/capsule
20mg x 60's pack: 240.00 MRP
40mg x 20's pack: 120.00 MRP
❖ **LOMESEC 20 Cap. Aexim**
Omeprazole 20mg/capsule
20mg x 60's pack: 280.00 MRP
❖ **LOSECTIL Cap. SK+F**
Omeprazole 10mg, 20mg & 40mg/capsule
10mg x 48's pack: 96.00 MRP
20mg x 100's pack: 400.00 MRP
40mg x 24's pack: 168.00 MRP
❖ **LOSECTIL 20 Susp. SK+F**
Omeprazole 20mg powder for suspension in each packet.
Dose & admin: See above under the text.
20mg packet x 20's pack: 100.00 MRP
❖ **LOSECTIL 40 Susp. SK+F**
Omeprazole 40mg powder for suspension in each packet.
40mg packet x 20's pack: 160.00 MRP
❖ **LOSECTIL DR Tab. SK+F**
Omeprazole magnesium 20mg/tablet (delayed release)
20mg x 60's pack: 240.00 MRP
❖ **LOSEK Cap. Bristol**
Omeprazole 20mg/capsule
20mg x 30's pack: 105.00 MRP
❖ **LUMISEC 20 Cap. Rasa**
Omeprazole 20mg/capsule
20mg x 30's pack: 90.00 MRP
❖ **MEPRA 20 Cap. Marksman**
Omeprazole 20mg/capsule
20mg x 60's pack: 240.00 MRP
❖ **NEOPRA 20 Cap. Supreme**
Omeprazole 20mg/capsule
20mg x 30's pack: 105.00 MRP
❖ **O-20 Cap. Asiatic**
Omeprazole 20mg/capsule
20mg x 60's pack: 240.00 MRP
❖ **O-40 Cap. Asiatic**
Omeprazole 40mg/capsule
40mg x 12's pack: 72.00 MRP
❖ **OC-20 Cap. CPL**
Omeprazole 20mg/capsule
20mg x 60's pack: 240.00 MRP
❖ **OMAG-DR Tab. Rangs Pharma**
Omeprazole magnesium 20mg/tablet (delayed release)
20mg x 100's pack: 200.00 MRP
❖ **OMAPRIN-20 Cap. Doctor's**
Omeprazole 20mg/capsule
20mg x 40's pack: 120.00 MRP
❖ **OM-CAPSULE Cap. Ambee**
Omeprazole 20mg & 40mg/capsule
20mg x 40's pack: 120.00 MRP
40mg x 20's pack: 100.00 MRP
❖ **OME Cap. Somatec**
Omeprazole 20mg & 40mg/capsule
20mg x 30's pack: 90.00 IP
40mg x 20's pack: 100.00 IP
❖ **OMECAP-20 Cap. Chemist**
Omeprazole 20mg/capsule

20mg x 50's pack: 150.00 MRP

❖ **OMEBEN Cap. Benham**
Omeprazole 20mg/capsule
20mg x 60's pack: 234.00 MRP

❖ **OMEGUT Cap. Popular**
Omeprazole 20mg & 40mg/capsule
20mg x 32's pack: 128.00 MRP
20mg x 60's pack: 240.00 MRP
40mg x 32's pack: 224.00 MRP

❖ **OMEGUT Inj. Popular**
Omeprazole 40mg/ampoule: i.v injection
1 amp's pack: 70.00 IP

❖ **OMEL-20 Cap. Medicon**
Omeprazole 20mg/capsule
20mg x 60's pack: 240.00 MRP

❖ **OMENIX 20 Tab. Incepta**
Omeprazole 20mg/tablet
20mg x 60's pack: 240.00 MRP

❖ **OMENIX Cap. Incepta**
Omeprazole 20mg & 40mg/capsule
20mg x 60's pack: 240.00 MRP
40mg x 20's pack: 140.00 MRP

❖ **OMENIX IR 20 Cap. Incepta**
Each capsule contains omeprazole BP 20mg & sodium bicarbonate BP 1100mg (immediate release).
20mg x 60's pack: 240.00 MRP

❖ **OMENIX IR 40 Cap. Incepta**
Each capsule contains omeprazole BP 40mg & sodium bicarbonate BP 1100mg (immediate release).
40mg x 20's pack: 140.00 MRP

❖ **OMENIX 20 Susp. Incepta**
Omeprazole 20mg powder for suspension in each packet.
Dose & admin: See above under the text.
20mg packet x 30's pack: 150.00 MRP

❖ **OMENIX 40 Susp. Incepta**
Omeprazole 40mg powder for suspension in each packet.
Dose & admin: See above under the text.
40mg packet x 30's pack: 240.00 MRP

❖ **OMENIX 40 I.V Inj. Incepta**
Omeprazole sodium BP 40mg/vial, (as lyophilized powder for solution): i.v injection.
Dose & admin: See above under the text.
40mg vial x 1's pack: 70.00 MRP

❖ **OMENTA 20 Cap. RAK Pharma**
Omeprazole 20mg/capsule
20mg x 60's pack: 240.00 MRP

❖ **OMEP Cap. Aristopharma**
Omeprazole 20mg & 40mg/capsule
20mg x 100's pack: 400.00 MRP
40mg x 30's pack: 210.00 MRP

❖ **OMEPRA Cap. Alco Pharma**
Omeprazole 20mg & 40mg/capsule
20mg x 50's pack: 200.00 MRP
40mg x 30's pack: 150.00 MRP

❖ **OMEPRAZOLE-20 Cap. A.P.C Pharma**
Omeprazole 20mg/capsule
20mg x 60's pack: 150.00 MRP

❖ **OMEPROL-20 Cap. Ziska/Unicare**
Omeprazole 20mg/capsule
20mg x 60's pack: 80.00 MRP

❖ **OMESIL Cap. Silva**
Omeprazole 20mg & 40mg/capsule
20mg x 60's pack: 240.00 MRP
40mg x 20's pack: 140.00 MRP

❖ **OMESIL Tab. Silva**
Omeprazole 20mg & 40mg/tablet
20mg x 60's pack: 240.00 MRP
40mg x 30's pack: 210.00 MRP

❖ **OMESIL Fast 20 Susp. Silva**
Omeprazole 20mg powder for suspension in each packet.
Dose & admin: See above under the text.
20mg packet x 30's pack: 150.00 MRP

❖ **OMESIL Fast 40 Susp. Silva**
Omeprazole 40mg powder for suspension in each packet.
Dose & admin: See above under the text.
40mg packet x 30's pack: 240.00 MRP

❖ **OMESIL IR 20 Cap. Silva**
Each capsule contains omeprazole BP 20mg & sodium bicarbonate BP 1100mg (immediate release).
20mg x 60's pack: 240.00 MRP

❖ **OMESIL IR 40 Cap. Silva**
Each capsule contains omeprazole BP 40mg & sodium bicarbonate BP 1100mg (immediate release).
40mg x 28's pack: 196.00 MRP

❖ **OMET-20 Cap. Pharmadesh**
Omeprazole 20mg/capsule
20mg x 60's pack: 55.00 MRP

❖ **OMETAC Cap. Navana**
Omeprazole 20mg & 40mg/capsule
20mg x 100's pack: 300.00 MRP
40mg x 24's pack: 144.00 MRP

❖ **OMETID Cap. Opsonin**
Omeprazole 20mg & 40mg/capsule
20mg x 60's pack: 240.00 MRP
40mg x 30's pack: 210.00 MRP

❖ **OMETID 40 I.V Inj. Opsonin**
Omeprazole sodium BP 40mg/vial, (as lyophilized powder for solution): i.v injection.
Dose & admin: See above under the text.
40mg (10ml) vial x 1's pack: 70.00 MRP

❖ **OMEX Cap. Chemico**
Omeprazole 20mg & 40mg/capsule
20mg x 60's pack: 240.00 MRP
40mg x 20's pack: 140.00 MRP

❖ **OMEZOLE Cap. Medimet**
Omeprazole 20mg/capsule
20mg x 50's pack: 250.00 MRP

❖ **OMIDEX Cap. Modern**
Omeprazole 20mg/capsule
20mg x 40's pack: 120.00 MRP

❖ **OMILOC 20 Cap. Kumudini**
Omeprazole 20mg/capsule
20mg x 100's pack: 300.00 MRP

❖ **OMIREX Cap. Jayson**
Omeprazole 20mg & 40mg/capsule
20mg x 40's pack: 118.00 IP
40mg x 20's pack: 100.00 IP

❖ **OMITAC-20 Cap. Gaco**
Omeprazole 20mg/capsule
20mg x 48's pack: 139.20 MRP

❖ **OMITIN Cap. Nipa**
Omeprazole 20mg & 40mg/capsule
20mg x 30's pack: 120.00 MRP
40mg x 30's pack: 210.00 MRP

❖ **OMIZIT-20 Cap. White Horse**
Omeprazole 20mg/capsule
20mg x 30's pack: 120.00 MRP

❖ **OMPA-20 Cap. Seema**
Omeprazole 20mg/capsule
20mg x 60's pack: 240.00 MRP

❖ **OMRAZOL Cap. Ad-din**
Omeprazole 20mg/capsule
20mg x 50's pack: 199.00 MRP

❖ **OMSEC Cap. Techno Drugs**
Omeprazole 20mg/capsule
20mg x 60's pack: 240.00 MRP

❖ **OMSEC 40 I.V Inj. Techno Drugs**
Omeprazole sodium BP 40mg/vial, (as lyophilized powder for solution): i.v injection.
Dose & admin: See above under the text.
40mg (10ml) vial x 1's pack: 70.00 MRP

❖ **OMTRIC Cap. Belsen**
Omeprazole 20mg/capsule
20mg x 30's pack: 75.00 MRP

❖ **OP-20 Cap. Globe**
Omeprazole 20mg/capsule
20mg x 60's pack: 240.00 MRP

❖ **OP-40 Cap. Globe**
Omeprazole 40mg/capsule
40mg x 40's pack: 280.00 MRP

❖ **OPAL Cap. Healthcare**
Omeprazole 20mg & 40mg/capsule
20mg x 60's pack: 240.00 MRP
40mg x 30's pack: 225.00 MRP

❖ **OPAZOL Cap. Skylab**
Omeprazole 20mg/capsule
20mg x 60's pack: 300.00 MRP

❖ **OPEZEN Tab. Zenith**
Omeprazole 20mg & 40mg/tablet
20mg x 60's pack: 240.00 MRP
40mg x 20's pack: 140.00 MRP
40mg x 30's pack: 210.00 MRP

❖ **OPRA Cap. Cosmo Pharma**
Omeprazole 20mg/capsule
20mg x 60's pack: 242.40 MRP

❖ **OSECTON Cap. Salton**
Omeprazole 20mg & 40mg/capsule
20mg x 60's pack: 210.00 MRP
40mg x 30's pack: 135.00 MRP

❖ **OSYN-20 Cap. Syntho**
Omeprazole 20mg/capsule
20mg x 30's pack: 120.00 MRP

❖ **OZ-20 Cap. Ultra Pharma**
Omeprazole 20mg/capsule
20mg x 30's pack: 90.00 MRP

❖ **OZOLE Cap. Peoples**
Omeprazole 20mg/capsule
20mg x 60's pack: 180.00 MRP

❖ **PIAZOL-20 Cap. Globex**
Omeprazole 20mg/capsule
20mg x 60's pack: 240.00 MRP

❖ **PPI Cap. Acme**
Omeprazole 20mg & 40mg/capsule
20mg x 60's pack: 240.00 MRP
40mg x 20's pack: 140.00 MRP

❖ **PRAM Cap. Mystic**
Omeprazole 20mg/capsule

20mg x 28's pack: 105.00 MRP

❖ **PRAZO 20 Cap. Pacific**
Omeprazole 20mg/capsule
20mg x 50's pack: 200.00 MRP

❖ **PRAZO Plus Cap. Pacific**
Each capsule contains omeprazole BP 20mg & sodium bicarbonate BP 1100mg.
20mg x 32's pack: 160.00 MRP

❖ **PRAZOLE Cap. Renata**
Omeprazole 20mg/capsule
20mg x 50's pack: 200.00 MRP

❖ **PRESEC Cap. UniHealth**
Omeprazole 20mg & 40mg/capsule
20mg x 28's pack: 112.00 MRP
40mg x 28's pack: 196.00 MRP

❖ **PREVAS Cap. General**
Omeprazole 20mg & 40mg/capsule
20mg x 50's pack: 200.00 MRP
40mg x 30's pack: 210.00 MRP

❖ **PREVENCID Cap. Rangs Pharma**
Omeprazole 20mg & 40mg/capsule
20mg x 60's pack: 240.00 MRP
40mg x 20's pack: 140.00 MRP

❖ **PROBITOR Cap. Sandoz/Novartis**
Omeprazole 20mg & 40mg/capsule
20mg x 40's pack: 234.80 MRP

❖ **ROCEPTIN-20 Cap. Desh Pharma**
Omeprazole 20mg/capsule
20mg x 30's pack: 120.00 MRP
20mg x 60's pack: 240.00 MRP

❖ **ROME-20 Cap. Rephco**
Omeprazole 20mg/capsule
50's pack: 200.00 IP

❖ **SECLO Cap. Square**
Omeprazole 20mg & 40mg/capsule
20mg x 96's pack: 384.00 MRP
40mg x 30's pack: 210.00 MRP

❖ **SECLO DR Tab. Square**
Omeprazole magnesium 20mg/tablet (delayed release)
20mg x 60's pack: 240.00 MRP

❖ **SECTIL 20 Cap. Cosmic**
Omeprazole 20mg/capsule
20mg x 60's pack: 240.00 MRP

❖ **SOM-20 Cap. SAPL**
Omeprazole 20mg/capsule
20mg x 60's pack: 240.00 MRP

❖ **TYLO 20 Cap. Proteety**
Omeprazole 20mg/capsule
20mg x 20's pack: 80.00 MRP
20mg x 60's pack: 240.00 MRP

❖ **TYLO 40 Cap. Proteety**
10mg x 30's pack: 75.00 MRP
20mg x 100's pack: 400.00 MRP
40mg x 30's pack: 210.00 MRP

❖ **ZILON Cap. Radiant**
Omeprazole 20mg & 40mg/capsule
20mg x 60's pack: 300.00 MRP
40mg x 24's pack: 180.00 MRP

ESOMEPRAZOLE[26,42]

ESOMEPRAZOLE: Tablet/Injection

Esomeprazole is the newest proton pump inhibitor. It is available as esomeprazole magnesium oral tablet & esomeprazole sodium parenteral i.v injection.

Mode of action: See above under the text of 'proton pump inhibitors'.

Ind: Esomeprazole is indicated for the relief of heartburn and other symptoms associated with gastroesophageal reflux disease (GERD) and for the healing of erosive esophagitis, a potentially serious condition associated with GERD; acid related dyspepsia; duodenal and gastric ulcer; Zolinger-Ellison syndrome.

Esomeprazole is also approved for using in combination of 'triple therapy' with amoxycillin and clarithromycin for the eradication of

40mg x 28's pack: 252.00 MRP

❖ **PROCAP Cap. Orion**
Omeprazole 20mg & 40mg/capsule
20mg x 100's pack: 400.00 MRP
40mg x 20's pack: 140.00 MRP

❖ **PROCEPTIN-20 Cap. Beximco**
Omeprazole 20mg & 40mg/capsule
20mg x 100's pack: 400.00 IP
40mg x 30's pack: 210.00 IP

❖ **PROLOK Cap. Ibn Sina**
Omeprazole 20mg/capsule
20mg x 60's pack: 240.00 IP

❖ **PROPIN Cap. Hallmark**
Omeprazole 20mg & 40mg/capsule
20mg x 28's pack: 98.00 MRP
40mg x 20's pack: 150.00 MRP

❖ **PROVOXIA-20 Cap. Pharmasia**
Omeprazole 20mg/capsule
20mg x 30's pack: 120.00 IP

❖ **RE-20 Cap. Reman**
Omeprazole 20mg/capsule
20mg x 40's pack: 124.00 IP

❖ **RE-40 Cap. Reman**
Omeprazole 40mg/capsule
40mg x 20's pack: 110.00 IP

Omeprazole 40mg/capsule
40mg x 20's pack: 160.00 MRP

❖ **XELDRIN Cap. ACI**
Omeprazole 10mg, 20mg & 40mg/capsule
10mg x 48's pack: 96.00 IP
20mg x 80's pack: 320.00 IP
40mg x 28's pack: 196.00 IP

❖ **XELDRIN 20 Tab. ACI**
Omeprazole 20mg/tablet
20mg x 70's pack: 280.00 IP

❖ **XELDRIN 40 I.V Inj. ACI**
Omeprazole sodium BP 40mg/vial, (as lyophilized powder for solution): i.v injection.
Dose & admin: See above under the text.
40mg vial x 1's pack: 70.00 IP

❖ **XELOPES Cap. Beacon**
Omeprazole 20mg/capsule
20mg x 80's pack: 320.00 MRP

❖ **XELOPES Inj. Beacon**
Omeprazole sodium BP 40mg/vial, (as lyophilized powder for solution): i.v injection.
Dose & admin: See above under the text.
40mg vial x 1's pack: 70.00 MRP

❖ **XEROSEC Cap. Sanofi-aventis**
Omeprazole 10mg, 20mg & 40mg/capsule

Helicobacter pylori infection in patients with duodenal ulcer disease.

C/I: Known hypersensitivity to any component of the formulation.

S/E: Side-effects may include- headache, diarrhoea, abdominal pain etc.

Precaution: Exclude the possibility of malignancy when gastric ulcer is suspected and before treatment for dyspepsia. When using in 'triple therapy' refer to the prescribing information of the respective antibiotics.

Precautions & warnings: No dosage adjustment is necessary for geriatric patients; no dosage adjustment is necessary in renal insufficiency & in patients with mild to moderate liver impairment; patients with severe liver impairment, a dose of 20mg of esomeprazole should not be exceeded. In paediatric patient, safety and effectiveness have not yet been established.

Dosage & admin: ***By mouth:***
Gastroesophageal reflux disease (GERD): i. Symptomatic gastroesophageal reflux- 20mg once daily for 4 weeks; if symptoms do not resolve completely after 4 weeks, an additional

4 weeks of treatment may be considered. ii. Healing of erosive esophagitis- 20mg or 40mg once daily for 4 to 8 weeks; patients who do not heal after 8 weeks, an additional 4-8 weeks treatment may be considered. iii. Maintenance of healing of erosive esophagitis- 20mg once daily for up to not beyond six months.
Triple therapy for H. pylori eradication: Esomeprazole 40mg once daily for 10 days with Amoxycillin 1gm twice daily for 10 days & Clarithromycin 500mg twice daily for 10 days.
By injection:
Duodenal ulcer, gastric ulcer, gastrointestinal lesions refractory to H_2 blockers, Zollinger-Ellison syndrome: 40mg/day intravenously. Reflux esophagitis: 20-40mg/day intravenously.
(Reconstitution of solution: Injection solution is prepared by adding 5ml of 0.9% Sodium chloride for intravenous injection into the vial. IV injection must be administered intravenously over a period of at least 3 minutes).
Drug inter: Esomeprazole appears to be a selective inhibitor of the cytochrome P-450 mono-oxygenase system; there may be an effect on hepatic clearance, but there have been no reports to date of clinically relevant interactions. There is some uncertainty over the effect of esomeprazole on the oral combined contraceptive pill. Physiological changes similar to those found with omeprazole are likely to take place because of the reduction in gastric acid, which is likely to influence the bacterial colonization of tbe stomach and duodenum and also vitamin B_{12} absorption.

❖ **ALENIA Cap. Delta**
Esomeprazole 20mg/capsule (e.c)
20mg x 36's pack: 180.00 MRP
❖ **ALTON Tab. General**
Esomeprazole 20mg & 40mg/tablet (e.c)
20mg x 30's pack: 120.00 MRP
40mg x 30's pack: 210.00 MRP
❖ **ASECTOR Cap. Novo Healthcare**
Esomeprazole 20mg/capsule (e.c)
20mg x 30's pack: 120.00 MRP
❖ **CURACID Tab. Rangs Pharma**
Esomeprazole INN 20mg & 40mg/tablet (e.c)
20mg x 28's pack: 140.00 MRP
40mg x 20's pack: 140.00 MRP
❖ **EMA-20 Tab. Globe**
Esomeprazole INN 20mg/tablet (e.c)
20mg x 50's pack: 200.00 MRP
❖ **EMEP Tab. Aristopharma**
Esomeprazole INN 20mg/tablet (e.c)
20mg x 60's pack: 240.00 MRP
❖ **EMO-20 Tab. Pharmadesh**
Esomeprazole INN 20mg/tablet (e.c)
20mg x 30's pack: 105.00 MRP
❖ **EPA Tab. Zenith**
Esomeprazole INN 20mg/tablet (e.c)
20mg x 50's pack: 200.00 MRP
❖ **ERAZOLE-20 Tab. Chemico**
Esomeprazole INN 20mg/tablet (e.c)
20mg x 30's pack: 120.00 MRP
❖ **ESMOTAC Tab. Gaco**
Esomeprazole INN 20mg & 40mg/tablet (e.c)
20mg x 30's pack: 120.01 MRP
40mg x 20's pack: 140.01 MRP
❖ **ESO-20 Tab. Asiatic**
Esomeprazole 20mg/tablet (e.c)
20mg x 30's pack: 120.00 MRP
❖ **ESONIX Tab. Incepta**
Esomeprazole INN 20mg & 40mg/tablet (e.c)
20mg x 50's pack: 200.00 MRP
40mg x 30's pack: 210.00 MRP
❖ **ESONIX I.V Inj. Incepta**
Esomeprazole sodium INN 40mg/vial: i.v injection
40mg vial (powder for 5ml soln.): 70.00 MRP
❖ **ESOPIN-20 Tab. Hallmark**
Esomeprazole 20mg/tablet (e.c)
20mg x 30's pack: 120.00 MRP
❖ **ESORAL Tab. SK+F**
Esomeprazole INN 20mg & 40mg/tablet (e.c)
20mg x 20's pack: 80.00 MRP
40mg x 20's pack: 140.00 MRP
❖ **ESOPRA-20 Tab. Alco Pharma**
Esomeprazole INN 20mg/tablet (e.c)
20mg x 30's pack: 120.00 MRP
❖ **ESOTAC Tab. Navana**
Esomeprazole INN 20mg & 40mg/tablet (e.c)
20mg x 60's pack: 240.00 MRP
40mg x 30's pack: 210.00 MRP
❖ **ESOTID Tab. Opsonin**
Esomeprazole INN 20mg & 40mg/tablet (e.c)
20mg x 50's pack: 200.00 MRP
40mg x 50's pack: 350.00 MRP
❖ **ESPRAM Tab. Mystic**
Esomeprazole INN 20mg/tablet (e.c)
20mg x 30's pack: 120.00 MRP
❖ **ESPRAZO Cap. Pacific**
Esomeprazole INN 20mg/capsule
20mg x 30's pack: 150.00 MRP
❖ **EXIUM Cap. Radiant**
Esomeprazole INN 20mg & 40mg/capsule.
20mg x 60's pack: 390.00 MRP
40mg x 24's pack: 192.00 MRP
❖ **EXMART-20 Tab. Syntho**
Esomeprazole INN 20mg/tablet (e.c)
20mg x 30's pack: 90.00 MRP
❖ **MAXIMA Cap. Acme**
Esomeprazole INN 20mg & 40mg/capsule
20mg x 40's pack: 200.00 MRP
40mg x 20's pack: 160.00 MRP
❖ **MAXPRO Tab. Renata**
Esomeprazole INN 20mg & 40mg/tablet (e.c)
20mg x 70's pack: 280.00 MRP
40mg x 50's pack: 210.00 MRP
❖ **MAXPRO Cap. Renata**
Esomeprazole INN 20mg & 40mg/capsule (e.c)
20mg x 42's pack: 210.00 MRP
40mg x 30's pack: 240.00 MRP
❖ **NEPTOR Cap. Sandoz/Novartis**
Esomeprazole INN 20mg/capsule (e.c)
20mg x 40's pack: 280.00 MRP
❖ **NEXCAP DR Cap. UniHealth/UniMed**
Esomeprazole INN 20mg & 40mg/capsule (delayed release).
Dosage & admin: Dosages are same as normal tablet or capsule preparations - see above under the text.
20mg x 28's pack: 112.00 MRP
40mg x 28's pack: 224.00 MRP
❖ **NEXE Tab. Apex**
Esomeprazole INN 20mg/tablet
20mg x 30's pack: 120.00 MRP
❖ **NEXPRO Tab. UniHealth/UniMed**
Esomeprazole INN 20mg & 40mg/tablet
20mg x 30's pack: 120.00 MRP
40mg x 30's pack: 240.00 MRP
❖ **NEXUM Cap. Square**
Esomeprazole INN 20mg & 40mg/capsule (e.c)
20mg x 30's pack: 150.00 MRP
40mg x 30's pack: 240.00 MRP
❖ **NEXUM Tab. Square**
Esomeprazole INN 20mg & 40mg/tablet (e.c)
20mg x 50's pack: 200.00 MRP
40mg x 30's pack: 210.00 MRP
❖ **OPTON Tab. Beximco**
Esomeprazole INN 20mg & 40mg/tablet (e.c)
20mg x 30's pack: 120.00 IP
40mg x 30's pack: 210.00 IP
❖ **PROGUT Tab. Popular**
Esomeprazole INN 20mg/tablet (e.c)
20mg x 32's pack: 128.00 MRP
❖ **PROGUT I.V Inj. Popular**
Esomeprazole sodium INN 40mg/vial: i.v injection
40mg vial (1 combipack): 70.00 MRP
❖ **PRONEX Tab. Drug Inter.**
Esomeprazole INN 20mg & 40mg/tablet (e.c)
20mg x 50's pack: 200.00 MRP
40mg x 100's pack: 600.00 MRP
❖ **SERGEL Cap. Healthcare**
Esomeprazole INN 20mg/capsule
20mg x 60's pack: 390.00 MRP
❖ **SOMPRAZ Tab. Sun Pharma**
Esomeprazole INN 20mg & 40mg/tablet (e.c)
20mg x 50's pack: 200.00 MRP
40mg x 50's pack: 350.00 MRP
❖ **USO-20 Cap. Ultra Pharma**
Esomeprazole INN 20mg/capsule
20mg x 30's pack: 120.00 MRP

LANSOPRAZOLE[21,34]

LANSOPRAZOLE: Capsule
Mode of action: See above under the text of 'proton pump inhibitors'.
Ind: Lansoprazole is indicated in the treatment of conditions where a reduction of gastric acid secretion is required, such as- duodenal ulcer, gastric ulcer, peptic ulcer associated with Helicobacter pylori, NSAID associated peptic ulcer, gastro-oesophageal reflux disease, acid-related dyspepsia & Zollinger-Ellison syndrome.
C/I: Hypersensitivity to the ingredients of this drug.
S/E: These include- headache, diarrhoea, rashes, pruritus, dizziness, urticaria, nausea & vomiting, constipation, flatulence & abdominal pain.
Precaution & warnings: Lansoprazole should be administered with care in the following patients- i. patients with a history of drug hypersensitivity, ii. patients with hepatic dysfunction, iii. in pregnant women or women having possibilities of being pregnant only if the expected therapeutic benefit is thought to outweigh any possible risk, iv. it is advisable to avoid in nursing mothers, v. the safety of lansoprazole in children has not been established.
Dosage & admin: Benign gastric ulcer- 30mg daily in the morning for 8 weeks.
Duodenal ulcer- 30mg daily in the morning for 4 weeks; maintenance 15mg daily. NSAID associated duodenal or gastric ulcer- 15mg to 30mg once daily for 4 weeks, followed by a further 4 weeks if not healed completely.

Zollinger-Ellison syndrome (and other hypersecretory conditions)- initially 60mg once daily adjusted according to response; daily doses of 120mg or more is given in two divided doses. Gastro-oesophageal reflux disease- 30mg daily in the morning for 4 weeks, followed by a further 4 weeks if not fully healed; maintenance therapy may be required, 15-30mg daily. Acid-related dyspepsia- 15mg to 30mg daily in the morning for 2-4 weeks.

Drug Inter: In clinical studies lansoprazole does not show any significant interactions with warfarin, indomethacin, aspirin, ibuprofen, phenytoin, prednisolone, antacids, or diazepam in healthy subjects; but when administered concomitantly with theophylline, a minor increase (10%) in the clearance of theophylline was seen, which is unlikely to be of clinical importance.

❖ **ENSO Cap. Chemico**
Lansoprazole 15mg & 30mg/capsule
15mg x 20's pack: 60.00 MRP
30mg x 20's pack: 100.00 MRP

❖ **LANOZOLE Cap. Medimet**
Lansoprazole 30mg/capsule
15mg x 40's pack: 120.00 MRP
30mg x 20's pack: 100.00 MRP

❖ **LANSEC Cap. Drug Inter.**
Lansoprazole 30mg/capsule
30mg x 60's pack: 300.00 MRP

❖ **LANSINA Cap. Ibn Sina**
Lansoprazole 30mg/capsule
30mg x 25's pack: 150.00 IP

❖ **LANSO Cap. Square**
Lansoprazole 15mg & 30mg/capsule
15mg x 50's pack: 175.00 MRP
30mg x 30's pack: 180.00 MRP

❖ **LANSODIN Cap. Acme**
Lansoprazole 15mg & 30mg/capsule
15mg x 28's pack: 98.00 MRP
30mg x 28's pack: 168.00 MRP

❖ **LANSOPROL Cap. Ziska**
Lansoprazole INN 30mg/capsule
30mg x 20's pack: 80.00 MRP

❖ **LANTID Cap. Opsonin**
Lansoprazole 15mg & 30mg/capsule
15mg x 20's pack: 60.00 MRP
30mg x 18's pack: 90.00 MRP

❖ **LANZOL-30 Cap. Doctor's**
Lansoprazole 30mg/capsule
30mg x 40's pack: 200.00 MRP

❖ **LAP Cap. Ambee**
Lansoprazole 30mg/capsule
30mg x 28's pack: 140.00 MRP

❖ **LAZO-30 Cap. Desh Pharma**
Lansoprazole 30mg/capsule
30mg x 30's pack: 150.00 MRP

❖ **PROTOLAN Cap. Beximco**
Lansoprazole 15mg & 30mg/capsule
15mg x 30's pack: 120.00 IP
30mg x 30's pack: 180.00 IP

❖ **ZOTON Cap. General**
Lansoprazole 15mg & 30mg/capsule
15mg x 30's pack: 90.00 MRP
30mg x 20's pack: 100.00 MRP

PANTOPRAZOLE[21,26,133]

PANTOPRAZOLE: Tablet/Capsule/Injection
Pantoprazole is a 'proton pump inhibitor', and chemically a benzimidazole derivative.. It is available as pantoprazole sodium sesquihydrate 20mg & 40mg tablet & capsule for oral administration and also as 40mg injection vial for i.v. administration.

Mode of action: See above under the text of 'proton pump inhibitors'.

Ind: Pantoprazole is indicated where suppression of acid secretion is of therapeutic benefit, such as- peptic ulcer diseases (PUD); gastro-oesophageal reflux diseases (GERD); treatment of ulcer resistant to H2 receptor antagonists (H2RAs); treatment of ulcers induced by non-steroidal anti-inflammatory drugs (NSAIDs); gastrointestinal bleeding from stress or acid peptic diseases; eradication of helicobacter pylori (in combination with antibiotics); Zollinger-Ellison syndrome; prophylaxis for acid aspiration syndrome during induction of anaesthsia.

C/I: Known hypersensitivity to any of the product.

S/E: No serious adverse reactions have been reported yet. There are two commonest symptomatic adverse effects are reported, headache (1.3%) and diarrhoea (1.5%). Other side-effects may include abdominal pain, dizziness, nausea, epigastric discomfort, flatulence, skin rash, pruritus etc. Peripheral oedema has occasionally been reported in female patients.

Precautions & warnings: Cautions: Exclude gastric malignancy & severe liver disease before treatment is started. No dosage adjustment of pantoprazole is required in patients with mild, moderate or severe renal insufficiency or in elderly patients. No dosage adjustment is needed in patients with mild or moderate hepatic impairment, but in hepatic cirrhosis, the dosing is reduced to every other day.

Pregnancy & lactation: There are no data are available on administration of pantoprazole to pregnant women & lactating mother, therefore, it is better to avoid in pregnancy and breast feeding. This drug could only be used during pregnancy & lactation if it is clearly needed to safe the mother, in the case of lactating mother nursing may be discontinued.

Dosage & Admin: By mouth: The usual recommended adult oral dose is 40mg once daily, preferably in the morning with or without food. The duration of therapy is ranging from 2-8 weeks.

In duodenal ulcers, pantoprazole 40mg once daily given for 2-4 weeks; it generally heals within 2 weeks.

In gastric ulcers, pantoprazole 40mg once daily given for 4-8 weeks; it usually heals within 4 weeks.

In reflux oesophagitis, pantoprazole 40mg once daily given for 4-8 weeks; it also heals within 4 weeks of treatment.

In resistant ulcers, 40mg once daily given for 8 weeks.

In ulcers induced by NSAIDs, 40mg once daily, in patients receiving continuous treatment with NSAIDs.

In gastrointestinal bleeding from stress or acid peptic diseases, usual adult dosage; if required the dosage may be increased.

Eradication of Helicobacter pylori- pantoprazole 40mg twice daily in 'triple therapy' in combination with appropriate antibiotic for one week achieved eradication rates of 90-100%.

Zollinger-Ellison syndrome- pantoprazole 160mg (40mg x 4 tablets) per day; once control of acid secretion has been achieved, the dose should be gradually reduced to the lowest effective dose that maintains acid control.

Prophylaxis for acid aspiration syndrome during induction of anaesthesia- pantoprazole 40-80mg should be given the evening before surgery and repeated again the morning of surgery.

Maintenance therapy: Maintenance treatment should be the lowest effective dose of the drug. Pantoprazole 20mg or 40mg, both are safe and effective in maintaining patients with healed reflux oesophagitis and peptic ulcer disease (PUD) in remission.

By i.v injection: Usual recommended adult dose: Duodenal ulcer- 40mg once daily for 2-4 weeks; Gastric ulcer- 40mg once daily for 4-8 weeks; Gastro-esophageal reflux disease- 40mg once daily for 4 weeks.

I.V injection should be given slowly by diluting in 10 ml of sterile water for injection to make 10 ml solution containing 4mg/ml of pantoprazole approximately. Subsequently add 10 ml of reconstituted solution to 90 ml of normal saline or 5% dextrose solution to make 100 ml solution of 0.4 mg/ml of pantoprazole approximately. The resultant infusion should be given i.v over a period of 2-15 minutes.

Drug inter: No significant interactions with concomitantly administered other drugs have been noted.

❖ **COSPRA 20 Tab. Cosmo Pharma**
Pantoprazole sodium sesquihydrate 20mg/tablet
20mg x 50's pack: 125.00 MRP

❖ **NEOPANTA Tab. Supreme**
Pantoprazole sodium sesquihydrate 20mg/tablet
20mg x 30's pack: 90.00 MRP

❖ **OTONIX Tab. Peoples**
Pantoprazole sodium sesquihydrate 20mg & 40mg/tablet
20mg x 50's pack: 150.00 MRP
40mg x 50's pack: 250.00 MRP

❖ **P-20 Tab. Asiatic**
Pantoprazole sodium sesquihydrate 20mg/tablet
20mg x 50's pack: 150.00 MRP

❖ **P-40 Tab. Asiatic**
Pantoprazole sodium sesquihydrate 40mg/tablet
40mg x 50's pack: 250.00 MRP
❖ **PAMEL-20 Tab. Medicon**
Pantoprazole sodium sesquihydrate 20mg/tablet
20mg x 50's pack: 150.00 MRP
❖ **PANORAL Tab. SK+F**
Pantoprazole sodium sesquihydrate 20mg & 40mg/tablet
20mg x 40's pack: 120.00 MRP
40mg x 40's pack: 200.00 MRP
❖ **PANPRAZO 20 Tab. Pacific**
Pantoprazole sodium sesquihydrate 20mg/tablet
20mg x 50's pack: 150.00 MRP
❖ **PANPRO Tab. Bio-pharma**
Pantoprazole sodium sesquihydrate 20mg & 40mg/tablet
20mg x 50's pack: 150.00 MRP
40mg x 50's pack: 250.00 MRP
❖ **PANSEC Tab. Drug Inter.**
Pantoprazole sodium sesquihydrate 20mg & 40mg/tablet
20mg x 50's pack: 150.00 MRP
40mg x 100's pack: 350.00 MRP
❖ **PANTAC Tab. Navana**
Pantoprazole sodium sesquihydrate 40mg/tablet
40mg x 30's pack: 150.00 IP
❖ **PANTALOC 40 Tab. Aexim**
Pantoprazole sodium sesquihydrate 40mg/tablet
40mg x 30's pack: 120.00 MRP
❖ **PANTALOK Tab. Ibn Sina**
Pantoprazole sodium sesquihydrate 20mg & 40mg/tablet.
20mg x 50's pack: 150.00 MRP
40mg x 30's pack: 150.00 MRP
❖ **PANTEX Cap. ACI**
Pantoprazole sodium sesquihydrate 20mg & 40mg/capsule.
20mg x 40's pack: 120.00 IP
40mg x 40's pack: 200.00 IP
❖ **PANTID Tab. Opsonin**
Pantoprazole sodium sesquihydrate 20mg & 40mg/tablet.
20mg x 50's pack: 150.00 MRP
40mg x 50's pack: 250.00 MRP
❖ **PANTID I.V Inj. Opsonin**
Pantoprazole sodium sesquihydrate 40mg/ampoule: i.v injection
40mg amp x 1's pack: 70.00 MRP
❖ **PANTO Tab. Somatec**
Pantoprazole sodium sesquihydrate 20mg & 40mg/tablet
20mg x 30's pack: 90.00 IP
40mg x 30's pack: 150.00 IP
❖ **PANTOBEX Tab. Beximco**
Pantoprazole sodium sesquihydrate 20mg & 40mg/tablet
20mg x 100's pack: 300.00 IP
40mg x 50's pack: 250.00 IP
❖ **PANTODAC Tab. Ziska/Unicare**
Pantoprazole sodium sesquihydrate INN 20mg & 40mg/tablet
20mg x 30's pack: 90.00 MRP
40mg x 30's pack: 150.00 MRP
❖ **PANTOGEN Tab. General**
Pantoprazole sodium sesquihydrate 20mg & 40mg/tablet
20mg x 50's pack: 150.00 MRP
40mg x 50's pack: 250.00 MRP
❖ **PANTOGUT Tab. Popular**
Pantoprazole sodium sesquihydrate 20mg & 40mg/tablet
20mg x 50's pack: 150.00 MRP
40mg x 50's pack: 250.00 MRP
❖ **PANTOGUT I.V Inj. Popular**
Pantoprazole sodium sesquihydrate 40mg/ampoule: i.v injection.
40mg amp x 1's pack: 70.00 MRP
❖ **PANTONIX Tab. Incepta**
Pantoprazole sodium sesquihydrate 20mg & 40mg/tablet
20mg x 50's pack: 150.00 MRP
40mg x 50's pack: 250.00 MRP
❖ **PANTONIX I.V Inj. Incepta**
Pantoprazole sodium sesquihydrate 40mg/ampoule: i.v injection
40mg amp x 1's pack: 70.00 IP
❖ **PANTOPRA Tab. Alco Pharma**
Pantoprazole sodium sesquihydrate 20mg & 40mg/tablet
20mg x 30's pack: 90.00 MRP
40mg x 30's pack: 150.00 MRP
❖ **PANTOSEC I.V Inj. Techno Drugs**
Pantoprazole sodium sesquihydrate 40mg/vial: i.v Injection
40mg vial x 1's pack: 70.00 MRP
❖ **PANTO SP Tab. Seema**
Pantoprazole sodium sesquihydrate 20mg & 40mg/tablet
20mg x 50's pack: 130.00 MRP
40mg x 50's pack: 250.00 MRP
❖ **PANTOSIL Tab. Silva**
Pantoprazole sodium sesquihydrate 20mg & 40mg/tablet
20mg x 50's pack: 150.00 MRP
40mg x 50's pack: 250.00 MRP
❖ **PANTOZOL Tab. Gaco**
Pantoprazole sodium sesquihydrate 20mg & 40mg/tablet
20mg x 20's pack: 60.00 MRP
40mg x 20's pack: 100.00 MRP
❖ **PANTROL 20 Tab. Apex**
Pantoprazole sodium sesquihydrate 20mg/tablet
20mg x 50's pack: 150.00 MRP
❖ **PANZOI. Tab. Amico**
Pantoprazole sodium sesquihydrate 20mg & 40mg/tablet
20mg x 30's pack: 90.00 MRP
40mg x 30's pack: 150.00 MRP
❖ **PROPENTA 20 Tab. SAPL**
Pantoprazole sodium sesquihydrate 20mg/tablet
20mg x 50's pack: 150.00 MRP
❖ **PROTIUM Tab. UniHealth**
Pantoprazole sodium sesquihydrate 20mg & 40mg/tablet
20mg x 50's pack: 150.00 MRP
40mg x 50's pack: 250.00 MRP
❖ **PROTOLOC Tab. Beacon**
Pantoprazole sodium sesquihydrate 20mg & 40mg/tablet
20mg x 50's pack: 150.00 MRP
40mg x 50's pack: 250.00 MRP
❖ **PROTONIL Tab. Renata**
Pantoprazole sodium sesquihydrate 20mg & 40mg/tablet
20mg x 50's pack: 150.00 MRP
40mg x 30's pack: 150.00 MRP
❖ **PROTON-P Tab. Aristopharma**
Pantoprazole sodium sesquihydrate 20mg & 40mg/tablet
20mg x 50's pack: 150.00 MRP
40mg x 50's pack: 250.00 MRP
❖ **PROTOPA-20 Tab. Apollo**
Pantoprazole sodium sesquihydrate 20mg/tablet
20mg x 30's pack: 90.00 IP
❖ **TOPRA Tab. Jayson**
Pantoprazole sodium sesquihydrate 20mg & 40mg/tablet
20mg x 30's pack: 90.00 IP
40mg x 30's pack: 150.00 IP
❖ **TRUPAN Tab. Square**
Pantoprazole sodium sesquihydrate 20mg & 40mg/tablet
20mg x 60's pack: 180.00 MRP
40mg x 60's pack: 300.00 MRP
❖ **ULPANTO Tab. Ultra Pharma**
Pantoprazole sodium sesquihydrate 40mg/tablet
40mg x 50's pack: 250.00 MRP
❖ **ZOPAN Tab. Chemico**
Pantoprazole sodium sesquihydrate 20mg & 40mg/tablet
20mg x 50's pack: 150.00 MRP
40mg x 50's pack: 250.00 MRP

RABEPRAZOLE[52]

RABEPRAZOLE: Tablet
Rabeprazole sodium INN 20mg/tablet
Ind: 1. Short-term treatment (4 to 8 weeks) in the healing & symptomatic relief of 'erosive or ulcerative gastro-esophageal reflux diseases (GERD)'.
2. Treatment for maintaining healing and reduction in relapse rates of heart burn symptoms in patients with 'erosive or ulcerative gastro-esophageal reflux diseases (GERD)'.
3. Healing of duodenal ulcers: Short-term (up to 4 weeks) treatment in the healing and symptomatic relief of duodenal ulcers. Most patients heal within 4 weeks.
4. Long-term treatment of pathological hypersecretory conditions including Zollinger-Ellison syndrome.
C/I: Known hypersensitivity to the drug or substituted benzimidazoles. Symptomatic response to therapy does not preclude the presence of gastric malignancy.
S/E: Generally rabeprazole is well tolerated in both short-term and long-term trials. The following adverse events were reported with rabeprazole in both short-term and long-term treatments.
Body as a whole: asthenia, fever, allergic reaction, chills, malaise, chest pain (substernal), neck rigidity, photosensitivity reaction. Rarely, abdomen enlarged, face edema, hangover effect.
Cardiovascular system: hypertension, myocardial infarct, electrocardiogram abnormal, migraine, syncope, angina pectoris, bundle branch block, palpitation, sinus bradycardia, tachycardia. Rare-bradycardia, pulmonary embolus, supraventricular tachycardia, thrombophlebitis, vasodilation, QTC prolongation and ventricular tachycardia.
Digestive system: diarrhea, nausea, abdominal pain, vomiting, dyspepsia, flatulence, constipation, dry mouth, eructation, gastroenteritis, rectal hemorrhage, melena, anorexia, cholelithiasis, mouth ulceration, stomatitis, dysphagia, gingivitis, cholecystitis,

increased appetite, abnormal stools, colitis, esophagitis, glossitis, pancreatitis, proctitis. Rare- bloody diarrhea, cholangitis, duodenitis, gastrointestinal hemorrhage, hepatic encephalopathy, hepatitis, hepatoma, liver fatty deposit, salivary gland enlargement, thirst.
Endocrine system: hyperthyroidism, hypothyroidism.
Hematinic & lymphatic system: anemia, ecchymosis, lymphadenopathy, hypochromic anemia.
Metabolic & nutritional diorders: peripheral edema, edema, weight gain, gout, dehydration, weight loss.
Musculo-skeletal system: myalgia, arthritis, leg cramps, bone pain, arthrosis, bursitis. Rare- twitching.
Nervous system: insomnia, anxiety, dizziness, depression, nervousness, somnolence, hypertonia, neuralgia, vertigo, convulsion, abnormal dreams, libido decreased, neuropathy, paresthesia, tremor. Rare- agitation, amnesia, confusion, extrapyramidal syndrome, hyperkinesia.
Respiratory system: dyspnea, asthma, epistaxis, laryngitis, hiccup, hyperven-tilation. Rare- apnea, hypoventilation.
Skin & appendages: rash, pruritus, sweating, urticaria, alopecia. Rare- dry skin, herpes zoster, psoriasis, skin discoloration.
Special senses: cataract, amblyopia, glaucoma, dry eyes, abnormal vision, tinnitus, otitis media. Rare- corneal opacity, blurry vision, diplopia, deafness, eye pain, retinal degeneration, strabismus.
Urogenital system: cystitis, urinary frequency, dysmenorrhea, dysuria, kidney calculus, metrorrhagia, polyuria. Rare- breast enlargement, hematuria, impotence, leukorrhea, menorrhagia, orchitis, urinary incontinence.

Caution & warnings: No dosage adjustment is necessary in elderly patients, in patients with renal disease or in patients with mild to moderate hepatic impairment. Due to the lack of clinical data on rabeprazole in patients with severe hepatic impairment, caution should be exercised.
Pregnancy & lactation: No adequate and wellcontrolled studies in pregnant women. In animal studies have revealed no evidence of impaired fertility or harm to the fetus due to rabeprazole. Since many drugs are excreted in the milk, and there are potential for adverse reactions to nursing infants from rabeprazole, a decision should be made to discontinue nursing or discontinue the drug, taking into account the importance of the drug to the mother.

Dosage & admin: Healing of 'erosive or ulcerative gastro-esophageal reflux diseases (GERD)': The recommended dose is 20mg daily for 4 to 8 weeks. Patients who have not healed after 8 weeks of treatment, an additional 8-weeks course may be considered. Maintaining healing & reduction in relapse rates of heart burn symptoms in patients with 'erosive or ulcerative gastro-esophageal reflux diseases (GERD)': The recommended dose is 20mg daily.
Healing of duodenal ulcers: The recommended dose is 20mg daily in the morning for 4 weeks. Treatment of pathological hypersecretory conditions including Zollinger-Ellison syndrome: The dosage of rabeprazole in patients with pathologic hypersecretory conditions varies with the individual patient. The recommended starting dose is 60mg once day. Doses should be adjusted to individual patient's need and continued for as long as clinically indicated. Some patients may require divided doses. Doses up to 100mg divided in to 4 times and 60mg in to 2 times daily may be administered. Some patients with Zollinger-Ellison syndrome have been treated continuously with rabeprazole for up to one year.
Rabeprazole tablets should be swallowed whole, and not be chewed crushed, or split.
Drug inter: Rabeprazole is metabolized by the cytochrome P450 drug metabolizing enzyme system, but it does not have clinically significant interactions with other drugs metabolized by the CYP450 enzyme system, such as warfarin, theophylline, diazepam, phenytoin etc.

❖ **FINIX Tab. Opsonin**
Rabeprazole sodium INN 20mg/tablet
20mg x 50's pack: 250.00 MRP
❖ **PARICEL Tab. ACI**
Rabeprazole sodium INN 20mg/tablet
20mg x 60's pack: 300.00 IP
❖ **RASONIX Tab. Incepta**
Rabeprazole sodium INN 20mg/tablet
20mg x 50's pack: 250.00 MRP

Chelating complexes

SUCRALFATE[21,33]

SUCRALFATE: Tablet
Ind: Duodenal and gastric ulcer, chronic gastritis.
S/E: Constipation, diarrhoea, nausia, indigestion, dry mouth, rash, pruritus, back pain, dizziness, insomnia, vertigo, gastric discomfort.
Cautions: Renal impairment; concurrent admin. of tetracyclines. If any adverse effect, special reporting to committee on safety of medicine is requested. Antacid should not be taken half an hour before or after a dose.
Adult: Usually 1-2 tabs (500-1000mg) 4 times daily before meals for minimum 4 weeks.
Child: not recommended.

❖ **ANTEPSIN Tab. Chemico**
Sucralfate 500mg & 1000mg/tablet.
500mg x 100's pack:
1000mg x 100's pack: 400.00 MRP
❖ **GASTALFET Tab. Beximco**
Sucralfate 500mg/tablet.
100's pack: 170.00 IP
❖ **ULSEC Tab. Asiatic**
Sucralfate 1000mg/tablet.
1000mg x 24's pack: 96.00 MRP

Therapy for H. Pylori eradication

TRIPLE THERAPY[2,21,34]

The recommended therapeutic regimens for eradication of H. pylori in peptic ulcer patients who are positive, include a combination of triple drugs, which are- a proton pump inhibitor (viz. omeprazole or lansoprazole) & two antibiotics (from amoxycillin clarithromycin, tetracycline & metronidazole), known as 'triple therapy', for 7-14 days.
Ind: For eradication of H. pylori in active chronic gastritis, duodenal and gastric ulcers. Triple therapy is not indicated for non-ulcer dyspepsia because of concerns about cancer risk.

C/I: Known hypersensitivity to any of its component.
A/R: Adverse reactions which were reported as possibly or probably related to treatment (<3%) in clinical trials when all three components of this therapy were given concomitantly are listed below under different systems:
Digestive system- nausea, vomiting, diarrhoea, dark stools, dry mouth, glossitis, oral moniliasis, stomatitis, tongue discoloration; Musculoskeletal system- myalgia; Nervous system- confusion, headache, dizziness; Skin- skin reactions; Urogenital system- vaginitis, vaginal moniliasis.
Cautions: Serious and occasionally fatal hypersensitivity (anaphylactoid) reactions have been reported in patients on amoxycillin therapy. These reactions are more apt to occur in individuals with a history of penicillin hypersensitivity.
Elderly patients may suffer from asymptomatic renal and hepatic dysfunction. Care should be taken when administering 'triple therapy' kit to this group of patients.
Pregnancy & lactation: There were no adequate and well controlled studies of 'triple therapy' kit in pregnant women. But metronidazole is contraindicated in pregnancy specially in the 1st trimester. Therefore, 'triple therapy' kit containing metronidazole should not be given during 1st trimester of pregnancy; thereafter only it can be used in the rest period of pregnancy if the potential benefit justifies the potential risk to the mother & foetus.
Clarithromycin should not be used in pregnant women except in clinical circumstances where no alternative therapy is appropriate.
Amoxycillin is excreted in human milk in very small amounts. Because of the potential for serious adverse reactions in nursing infants from 'triple therapy' kit, a decision should be made whether to discontinue nursing or to discontinue the drug therapy, taking into account the importance of the therapy to the mother.

Dosage: Each 'triple therapy' kit twice daily for 7-14 days or as per the physician's advice.
Drug inter: Lansoprazole is metabolized through the cytochrome P450 system, specifically through the CYP3A and CYP2C19 isozymes. Studies have shown that lansoprazole does not have clinically significant interactions with other drugs metabolized by the cytochrome P450 system, such as warfarin, antipyrine, indomethacin, ibuprofen, phenytoin, propranolol, prednisolone, diazepam, clarithromycin, or terfenadine in healthy subjects.
Clarithromycin use in patients who are receiving theophylline may be associated with an increase of serum theophyline concentrations. There have been reports of interactions of erythromycin and

or clarithromycin with carbamazepine, cyclosporine, tactrolimus. hexobarbital, phenytoin, alfentanil, disopyramide, lovastatin, bromocriptine, valproate, terfenadine, cisapride, pimozide & astemizole.

❖ **HELICON Kit General**
Each Helicon kit contains- 1 lansoprazole INN 30mg capsule, 2 amoxycillin BP 500mg capsules & 1 clarithromycin USP 500mg tablet.
Dosage & admin: Each Helicon kit twice daily for 7-14 days or as per the physician's advice.
Helicon Kit x 14's pack: 770.00 MRP

❖ **NEOKIT Beximco**
Each Neo kit contains- 1 omeprazole 20mg capsule, 1 metronidazole 400mg tablet & 1 clarithromycin 500mg tablet.
Dosage: Each Neo kit twice daily for 7-14 days or as per the physician's advice.
Neokit x 14's pack: 770.00 IP

❖ **PYLOTRIP Square**
Each Pylotrip blister strip contains- lansoprazole 30mg, amoxycillin BP 500mg & clarithromycin USP 1gm.
Dosage: Each Pylotrip strip twice daily for 7-14 days or as per the physician's advice.
Pylotrip strip x 7's pack: 385.00 MRP

5. ANTI-DIARRHOEAL DRUGS

5.1 Adsorbents & bulk forming drugs
5.2 Antimotility drugs
5.3 Anti-diarrhoeal antimicrobial drugs
5.4 Anti-diarrhoeal Antiprotozoal drugs
5.5 Water purifying agents

Adsorbents & bulk forming drugs

Adsorbents & bulk forming drugs, when taken with a minimum amount of water are useful in controlling faecal consistency in diarrhoea, ileostomy and colostomy.

ISPAGHULA HUSK[21,33]

ISPAGHULA HUSK: Non-proprietory bran of topical seeds granules.
Ind: Diarrhoea, constipation, IBS, anal fissure, haemorrhoides.
C/I: Intestinal obstruction, colonic atony.
S/E: Flatulence, abdominal distension.
Caution: Adequate water intake should be maintained incase of constipation. In diarrhoea it should be taken with minimum amount of water & should not be taken immediately before going to bed.
Adult: 1-2 tsf in water twice or thrice daily with meals or just after meals. In diarrhoea water should be minimum.
Preparations: See under laxatives.

METHYL CELLULOSE

METHYL CELLULOSE: Tablet
Ind: Diarrhoea, ileostomy, colostomy control, constipation, obesity.
C/I; S/E; Cautions: See below under laxatives.
Dose: See below under laxatives.
Preparations: See below under laxatives.

Antimotility drugs

In acute diarrhoea antimotility drugs have a very limited role as adjuncts to fluid and electrolyte replacement. They are not recommended for acute diarrhoea in young children. In chronic diarrhoea, sometimes it may be necessary but prolonged use may aggravate the condition.

LOPERAMIDE[21,33]

LOPERAMIDE: Capsule
Ind: Adjunct to rehydration in acute diarrhoea in adult and children over 4 years; chronic diarrhoea in adult only.
S/E: Occasional dry mouth, dizziness, headache, gastro-intestinal disturbances and rashes
Adult: Acute diarrhoea, initially 2 caps. then 1 at each loose stool, (usually 3-4 daily). Max. 8 daily. Chronic diarrhoea, initially 2-4 caps. daily in divided doses.
Child: Acute diarrhoea, under 4 years, not rcommended; 4-8 yrs. 1/2 of 1 capsule; 9-12 yrs 1 capsule. Both four times daily.

❖ **IMOTIL Cap. Square**
Loperamide hydrochloride 2mg/capsule.
200's pack: 114.00 MRP

❖ **LOPAMID Cap. Acme**
Loperamide hydrochlor 2 mg/capsule.
100's pack: 58.00 MRP

❖ **LOPERIN Cap. Opsonin**
Loperamide hydrochlor. 2mg/capsule.
100's pack: 53.00 MRP

❖ **LOPERDIUM Cap. Gaco**
Loperamide hydrochlor 2mg/capsule.
100's pack: 56.94 MRP

❖ **LORAMIDE Cap. Bristol**
Loperamide hydrochlor. 2mg/capsule.
200's pack: 100.00 MRP

❖ **NOMOTIL Cap. Ziska/Unicare**
Loperamide hydrochlor. 2mg/capsule.
200's pack: 120.00 MRP

Anti-diarrhoeal Antimicrobial drugs[21]

In simple gastroenteritis, antimicrobial agents are generally unnecessary.When the bacterial cause is suspected and isolated, appropriate antimicrobial drugs are needed. Such as-
a. ***Erythromycin-*** is the drug of choice for treating enteritis caused by camphylobacter spp.
b. ***Cotrimoxazole-*** is used to treat both salmonella and shigella gastroenteritis.
c. Nalidixic acid- is used to treat shigellosis with a severe involvement.
d. Ciprofloxacin- for severe form of salmonella, shigella, camphylobacter gastroenteritis.
e. ***Pivmecillinam-*** also drug of choice for salmonellosis & shigellosis
f. ***Furazolidone-*** a miscellaneous antimicrobial, used in bacterial and protozoal gastroenteritis and diarrhoea.
Preparations: See systemic antimicrobial drugs.

Anti-diarrhoeal Antiprotozoal drugs[21,42]

Some protozoa are olso responsible for human diarrhoea by causing intestinal infections. The most common pathogens responsible for protozoal diarrhoea are- Cryptosporidium parvum, Giardia intestinalis, Giardia lamblia and Entamoeba histolytica..
The drugs available and effective against these protozoa are:
a. ***Metronidazole-*** is the drug of choice for treating diarrhoea caused by Giardia and Entamoeba histolytica..
b. ***Nitazoxanide-*** recent study shows that nitazoxanide is highly effective against all these above pathogenic protozoa.

NITAZOXANIDE[42,87]

NITAZOXANIDE INN: Tablet/Syrup
Nitazoxanide is an antiprotozoal antidiarrhoeal drug. It is available as tablet and syrup.
Mode of action: The antiprotozoal activity of nitazoxanide is believed to be due to the interference with the pyruvate: ferredoxin oxidoreductase enzyme-dependent electron transfer reaction which is essential to anaerobic energy metabolism.
Ind: Nitazoxanide is indicated for the treatment of diarrhoea caused by cryptosporidium parvum and giardia lamblia in paediatric & adult patients.
S/E: Nitazoxanide is well tolerated and minimum side effects, such as- abdominal discomfort, diarrhoea, nausea and headache. The side effects are typically mild and transient in nature.
C/I: Known case of hypersensitivity to nitazoxanide.
Pregnancy & lactation: The safety of nitazoxanide in pregnancy and lactation is yet unproven. So, this drug should be used in pregnancy and lactation with great caution if it is clearly needed.
Dosage & admin: Age 12-47 months: 100mg (5ml) every 12 hours for 3 days.
Age 4-11 years- 200mg (10ml) every 12 hours for 3 days.
Adults & adolescents: 500mg (1 tablet or 25ml) every 12 hours for 3 days.
The drug should be taken with food.

Drug inter: No interactions with other medicinal products have been reported by patients using nitazoxanide.

❖ **ADNIX Tab. Alco Pharma**
Nitazoxanide INN 500mg/tablet.
12's pack: 96.00 MRP

❖ **ADNIX Susp. Alco Pharma**
Nitazoxanide INN 100mg/5ml: suspension
30ml bot: 30.00 MRP

❖ **DIANIDE Susp. General**
Nitazoxanide INN 100mg/5ml: suspension
30ml bot: 35.00 MRP
60ml bot: 50.00 MRP

❖ **DIAR Tab. ACI**
Nitazoxanide INN 500mg/tablet.
10's pack: 100.00 IP

❖ **DIAR Susp. ACI**
Nitazoxanide INN 100mg/5ml: suspension
30ml bot: 35.00 IP
60ml bot: 50.00 IP

❖ **NIAZID Tab. Apex**
Nitazoxanide INN 500mg/tablet.
28's pack: 280.00 MRP

❖ **NIAZID Susp. Apex**
Nitazoxanide INN 100mg/5ml: suspension
30ml bot: 35.00 MRP

❖ **NITANID Tab. Drug Inter.**
Nitazoxanide INN 500mg/tablet.
20's pack: 200.00 MRP

❖ **NITANID Susp. Drug Inter.**
Nitazoxanide INN 100mg/5ml: suspension
60ml bot: 50.00 MRP

❖ **NITAX Tab. Delta**
Nitazoxanide INN 500mg/tablet.
10's pack: 80.00 MRP

❖ **NITAX Susp. Delta**
Nitazoxanide INN 100mg/5ml: suspension
30ml bot: 30.00 MRP
60ml bot: 50.01 MRP

❖ **NITAXIDE Susp. Beximco**
Nitazoxanide INN 100mg/5ml: suspension
30ml bot: 35.00 IP
60ml bot: 50.00 IP

❖ **NITAZOX Tab. Incepta**
Nitazoxanide INN 500mg/tablet.
30's pack: 300.00 MRP

❖ **NITAZOX Susp. Incepta**
Nitazoxanide INN 100mg/5ml: suspension
30ml bot: 35.00 MRP
60ml bot: 50.00 MRP

❖ **NITOXIN Tab. Aristopharma**
Nitazoxanide INN 500mg/tablet (f.c).
18's pack: 180.00 MRP

❖ **NITOXIN Susp. Aristopharma**
Nitazoxanide INN 100mg/5ml: suspension
30ml bot: 30.00 MRP
60ml bot: 50.00 MRP

❖ **TAZONID Tab. Popular**
Nitazoxanide INN 500mg/tablet (f.c).
30's pack: 300.00 MRP

❖ **TAZONID Susp. Popular**
Nitazoxanide INN 100mg/5ml: suspension
30ml bot: 32.00 MRP

❖ **TAZOX Tab. Novo Healthcare**
Nitazoxanide INN 500mg/tablet (f.c).
12's pack: 120.00 MRP

❖ **TAZOX Susp. Novo Healthcare**
Nitazoxanide INN 100mg/5ml: suspension
30ml bot: 35.00 MRP

❖ **TOZA Tab. SK+F**
Nitazoxanide INN 500mg/tablet (f.c).
12's pack: 120.00 MRP

❖ **TOZA Susp. SK+F**
Nitazoxanide INN 100mg/5ml: suspension
30ml bot: 35.00 MRP
60ml bot: 50.00 MRP

❖ **XANIDE Tab. Globe**
Nitazoxanide INN 500mg/tablet (f.c).
12's pack: 120.00 MRP

❖ **XANIDE Susp. Globe**
Nitazoxanide INN 100mg/5ml: suspension
30ml bot: 35.00 MRP
60ml bot: 50.00 MRP

❖ **XANITA Tab. Renata**
Nitazoxanide INN 500mg/tablet (f.c).
18's pack: 180.00 MRP

❖ **XANITA Susp. Renata**
Nitazoxanide INN 100mg/5ml: suspension
30ml bot: 35.00 MRP
60ml bot: 50.00 MRP

❖ **ZOANA Tab. Orion**
Nitazoxanide INN 500mg/tablet.
12's pack: 120.00 MRP

❖ **ZOANA Susp. Orion**
Nitazoxanide INN 100mg/5ml: suspension
32ml bot: 35.00 MRP
62ml bot: 50.00 MRP

❖ **ZOX Tab. Square**
Nitazoxanide INN 500mg/tablet.
30's pack: 300.00 MRP

❖ **ZOX Susp. Square**
Nitazoxanide INN 100mg/5ml: suspension
30ml bot: 35.00 MRP
60ml bot: 50.00 MRP

❖ **ZOXAN Tab. Opsonin**
Nitazoxanide INN 500mg/tablet.
18's pack: 180.00 MRP

❖ **ZOXAN Susp. Opsonin**
Nitazoxanide INN 100mg/5ml: suspension
30ml bot: 35.00 MRP
60ml bot: 50.00 MRP

❖ **ZOXANIDE Tab. Silva**
Nitazoxanide INN 500mg/tablet.
12's pack: 120.00 MRP

❖ **ZOXANIDE Susp. Silva**
Nitazoxanide INN 100mg/5ml: suspension
30ml bot: 35.00 MRP
60ml bot: 50.00 MRP

Water Purifying agent

HALAZONE[21,43]

❖ **HALODROP Drop Sonear**
Sodium hypochlorite BP 0.5 solution: drop.
Sodium hypochlorite is a chlorine based disinfectant which ensures drinking water safe and about 99.9% bacteria free.
Ind: Water purification.
Use: In case of tap water- add 2 drops in one glass (250ml) of water or 8 drops in one litre of water, and wait 30 minutes then drink. In case of river/pond water- add 4 drops in one glass (250ml) of water or 16 drops in one litre of water, and wait 30 minutes then drink.
10ml drop: 15.00 MRP

❖ **HALOTAB Tab. Sonear**
Halazone USP 7.5mg, 15mg & 50mg/tablet.
Ind: Water purification.
Use: Dissolve 7.5mg tablet in 1.5 litres, 15mg tablet in 3 litres & 50mg tablet in 10 litres of (suspected contaminated) drinking water & use half to 1 hour after preparation.
7.5mg x 100's pack: 50.00 MRP
15mg x 100's pack: 75.00 MRP
50mg x 100's pack: 150.00 MRP

❖ **THIODROP Drop Sonear**
Sodium thiosulphate BP: drop
Ind: To remove smell of chlorine from drinking water liberated from sodium hypochlorite (halazone) drop.
Use: Add 8 drops of sodium thiosulphate solution along with 8 drops of sodium hypochlorite solution in one litre of tap water, or add 16 drops of sodium thiosulphate solution along with 16 drops of sodium hypochlorite solution in one liter of river/pond water and use half to 1 hour after preparation.
10ml drop: 12.50 MRP

❖ **THIOTAB Tab. Sonear**
Sodium thiosulph. BP 7.5mg & 15mg/tablet.
Ind: To remove smell of Chlorine from drinking water liberated from Halazone tablet.
Use: Dissolve 7.5mg tab. alongwith 7.5mg Halazone tab. in 1.5 litres & 15mg tab. alongwith 15mg Halazone tab. in 3 litres of drinking water respectively & use half to 1 hour after prepn.
7.5mg x 100's pack: 45.00 MRP
15mg x 100's pack: 70.00 MRP

SODIUM DICHLOROISOCYANURATE[42]

SODIUM DICHLOROISOCYANURATE: Tablet (effervescent)
Sodium dichloroisocyanurate is a disinfectant with the general properties of chlorine and sodium hypochlorite. It contains about 65% of available chlorine. It rapidly dissolves into water to kill micro-organisms. This product is available as sodium dichloroisocyanurate INN 17mg &

51mg/tablet (effervescent).
Ind & Use: Effervescent water purifying tablets make water safer by destroying harmful micro-organisms. It can also be used for washing fruits and vegetables, and for cleaning teeth.
C/I: Do not use with other products. It may release dangerous gases (chlorine). It may react violently with many substances, causing fire and explosion hazard.
A/E: *Skin contact:* There may be irritation and redness at the site of contact. Repeated or prolonged contact may cause dermatitis. *Eye contact:* There may be severe pain, redness and irritation. *Ingestion:* There may be nausea and vomiting, occasionally with abdominal pain. *Inhalation:* Mild poisoning causes cough, irritation of the throat and shortness of breath. Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.
Precautions & warnings: Harmful if swallowed. If tablet is swallowed seek medical advice immediately. Keep away from other materials, especially from flammable materials. Slit off the tablets only before use. Store in a cool & dry place, protected from light and moisture. Keep out of the reach of children.
Dosage & admin: For drinking water: 17mg 1 tablet to 1 liter of water or 51mg 1 tablet to 3 liters of water.
For fruits, vegetables washing water: 17mg 3 tablets or 51mg 1 tablet to 1 liter of water.
Double the amount of tablets if the water is heavily contaminated.
Leave for 15 (fifteen) minutes before use.
Drug inter: Store away from calcium or sodium hypochlorite. Store away from acids and compounds containing ammonia.

❖ **PEURITAR 1 Effer. Tab. Square**
Sodium dichloroisocyanurate INN 17mg/tablet (effervescent).
Ind & Use: Water purification. Washing fruits and vegetables, and for cleaning teeth.
Dosage & admin: For drinking water: 17mg (1 tablet) to 1 liter of water.
For fruits, vegetables washing water: 17mg 3 tablets to 1 liter of water.
Double the amount of tablets if the water is heavily contaminated.
Leave for 15 (fifteen) minutes before use.
17mg x 100's pack: 50.00 MRP

❖ **PEURITAR 3 Effer. Tab. Square**
Sodium dichloroisocyanurate INN 51mg/tablet (effervescent).
Ind & Use: Water purification. Washing fruits and vegetables, and for cleaning teeth.
Dosage & admin: For drinking water: 51mg (1 tablet) to 3 liters of water.
For fruits, vegetables washing water: 51mg (1 tablet) to 1 liter of water.
Double the amount of tablets if the water is heavily contaminated.
Leave for 15 (fifteen) minutes before use.
51mg x 30's pack: 28.50 MRP

6. DRUGS for CHRONIC INFLAMMATORY BOWEL DISEASE

6.1 Ulcerative colitis
6.2 Crohn's disease
6.3 Irritable bowel syndrome
6.4 Malabsorption syndromes
6.5 Antibiotic-associated colitis
6.6 Diverticular disease

Ulcerative Colitis

MESALAZINE[21,44]

❖ **MESACOL 400 Tab. Sun Pharma**
Mesalazine (or 5-aminosalicylic acid) 400mg/tablet.
Ind: Induction and maintenance of remission in ulcerative colitis.
C/I: Salicylate hypersensitivity; renal impairment (nephrotoxic).
S/E: Nausea, diarrhoea, and abdominal pain; headache; exacerbation of symptoms of colitis; rarely reversible pancreatitis, hepatitis, and interstitial nephritis; leucopenia, neutropenia, thrombocytopenia and aplastic anaemia reported; myocarditis, lupus phenomenon, fibrosing alveolitis also reported.
Caution: pregnancy and breast-feeding; blood disorders.
Preparations that lower stool pH(e.g lactulose) may prevent release of mesalizine.
Dose: Acute attack, 6 tablets daily in divided doses; maintenance 3-6 tablets daily in divided doses.
Child, not recommended.
50's pack: 361.50 MRP

SULPHASALAZINE[21,45]

SULPHASALAZINE: Tablet
Ind: Ulcerative colitis, crohn's disease, rheumatoid arthritis.
Precautions: Impaired renal or hepatic function. Regular blood check and livar function test should be done.
S/E: Nausia, headache, rash, fever, loss of appetite.
Dosage & admin: ***Inflammatory bowel diseases:*** **Adults: 2-4 tablets 4 times daily; maintenance, 4 tablets daily in divided doses.**
Rheumatoid arthritis: **Initially 1 tablet daily for one week increasing by one each week to maximum 6 daily in divided doses.**
Children: Under 2 years not recommended. Over 2 years 40-60mg/kg daily; maintenance, 20-30 mg/kg daily.

❖ **REUMAZIN Tab. Aristopharma**
Sulphasalazine 500mg/tablet
50's pack: 260.00 MRP
❖ **SALAZINE Tab. Opsonin**
Sulphasalazine 500mg/tablet
50's pack: 260.00 MRP
❖ **SALAZOPYRIN EN Tab. Pharmacia-Pfizer**
Sulphasalazine 500mg/tablet
100's pack: 943.00 MRP
❖ **SULFAZIN Tab. Popular**
Sulphasalazine 500mg/tablet
30's pack: 156.00 MRP

Irritable Bowel Syndrome

TEGASEROD[26,54]

TEGASEROD: Tablet.
Tegaserod is an amino guanidine-indole with selective and partial 5-HT4 receptor agonistic activity. It is available as tegaserod maleate INN equivalent to tegaserod 6mg/tablet.
Mode of action: It binds to 5-HT4 receptors in gastrointestinal tract and stimulates gastrointestinal motility and intestinal peristaltic reflex, and inhibits intestinal sensitivity.
Ind: Treatment of constipation predominantly in patients of irritable bowel syndrome, whose main symptoms are constipation, abdominal pain and discomfort.
C/I: Hypersensitivity to the active substance or to any of the excipients.
A/E: The adverse events are similar to that observed with placebo, with the exception of diarrhoea. The frequency of most other adverse events are also similar as placebo-trial. They include abdominal pain, nausea, flatulence, headache, dizziness, back pain and influenza-like symptoms.
Precautions & warnings: Usually no dosage adjustment is required in patients with mild to moderate hepatic impairment & mild, moderate or severe renal impairment.
Special care is necessary in patients with severe hepatic impairment & patients with lactose intolerance.
Pregnancy & lactation: Since limited experience in pregnant women, use of tegaserod during pregnancy is not recommended. It is also not recommended to prescribe in breast-feeding women.
Pediatric patients: Safety and efficacy have not been established in pediatric patients.
Dosage: The recommended dose is 6mg orally twice daily prior to meal. No dosage adjustment is required in elderly patients.
Drug inter: Based on the currently available data, dosage adjustment is not required for either drug when tegaserod is coadministered with other drugs.

❖ **DORESA Tab. Incepta**
Tegaserod maleate INN 6mg/tablet
50's pack: 300.00 MRP
❖ **TEGARID Tab. Renata**
Tegaserod maleate INN 6mg/tablet
30's pack: 180.00 MRP
❖ **TESOD Tab. Square**
Tegaserod maleate INN 6mg/tablet
30's pack: 150.00 MRP
❖ **TIBS Tab. SK+F**
Tegaserod maleate INN 6mg/tablet
50's pack: 300.00 MRP

7. LAXATIVES, PURGATIVES & LUBRICANTS

7.1 Bulk-forming laxatives
7.2 Stimulant laxatives
7.3 Faecal softeners
7.4 Osmotic laxatives
7.5 Enema & Bowel cleansing solutions

Bulk-forming laxatives

ISPAGHULA HUSK[21]

ISPAGHULA HUSK: Sachet.
Non-proprietory bran of tropical seeds (Oesufgue bhushi): granules.
Ind: Constipation caused by inadequate fibre intake, diverticuler disease,
chronic diarrhoea; irritable colon syndrome, colostomy control, heamorrhoids.
C/I: Intestinal obstruction and colonic atony
S/E: Flatulence, abdominal distension, intestinal obstruction.
Caution: Adequate water intake should be maintained; caution in ulcerative colitis.
Adult: 2 tsf (10ml) in water once or twice daily with meals.
Child: half adult dose.

❖ **LAXATE Sachet Medimet**
Ispaghula husk granules 3.5gm/sachet
12's pack: 62.88 MRP
❖ **LITE Sachet Rephco**
Ispaghula husk granules 3.5gm/sachet
12's pack: 70.00 IP

METHYL CELLULOSE[21,46]

METHYL CELLULOSE Tablet
Preparation: May not be available.

Stimulant laxatives

BISACODYL[21,33]

BISACODYL: Tablet
Ind: Constipation, bowel evacuation before radio-logical procedures, endoscopy, surgery and labour.
C/I: Intestinal obstruction
S/E: May cause gastro-intestinal disturbance and abdominal cramp.
Caution: Prolonged use should be avoided as they can eventually precipitate the onset of an atonic nonfunctioning colon and hypokalaemia.
Adult: 1-2 tabs. after meal usullly at night.
Child: Under 10 yrs. 1 tab. at night; over 10 yrs. same as adult. Avoid taking with milk and antacids.

❖ **DULCOLAX Tab. Boehringer**
Bisacodyl 5mg/tablet.
100's pack:
❖ **DURALAX Tab. Opsonin**
Bisacodyl 5mg/tablet.
100's pack: 70.00 MRP

GLYCERINE[21]

❖ **GLYCERINE Suppository**
Glycerine suppositories adult and children size stick.
Use & application: 1 suppository to be inserted per rectum when requird. Moistened with water before use. During insertion patient should lie on his/her left with flexed right hip and knee.
- **Preparations:** Available in the market.

SENNOSIDE[21,47]

SENNOSIDE: Tablet.
Ind: Constipation; bowel evacuation before abdominal radiological procedures, endoscopy, surgery and labour.
C/I; S/E; Cautions: Same as Bisacodyl (above); the urine may be coloured red.
Adult: 2-4 tabs. at bedtime
Child: under 2 years, not recommended; 2-6 yrs. 1/4th and over 6 yrs. 1/2 adult dose. Both ages take in the morning.

❖ **LAXENNA Tab. GlaxoSmithKline**
Sennoside B 12mg/tablet.
100's pack: 125.00 MRP

Osmotic laxatives

LACTITOL[127]

LACTITOL: Powder for Solution
Lactitol is an osmotic laxative.
Mode of action: Lactitol as an osmotic laxative, it is not digested or absorbed to a significant extent in the small intestine.
When lactitol reaches the colon it is fermented by colonic bacteria. The products of this fermentation are short chain fatty acids, carbon dioxide and hydrogen. These products increase the osmotic power of the original non-absorbed hydrocarbonate, and because they are not absorbed at same rate, make the contents of the colon more viscous by water retention. Because lactitol is an excellent energy source for the saccharolytic bacteria in the colon, also the bacterial mass increases which results in an increase of dry substance of the faeces, which has also a positive influence on defeacation.
Ind: Lactitol is used for the treatment of two different syndromes namely- constipation and hepatic encephalopathy or portal systemic encephalopathy. These diseases are a result of malfunction of the liver what is often caused by alcohol abuse but also by hepatitis and other causes.
C/I: Galactosaemia (unable to metabolize galactose), intestinal obstruction.
S/E: Reported side effects are abdominal distension, flatulence and abdominal cramps leading to diarrhoea in case of overdose. A dose reduction promptly corrects the latter. The untoward effects tend to diminish with continued use, probably as a reflection of shift in the composition of the colonic flora. It is preferable to administer lactitol in a single daily dose; this diminished the incidence and intensity of untoward abdominal effects.
Precaution: Should be taken carefully in case of lactose intolerance.
Dosage & admin: Adults: The initial daily dosage should be 20gm, to be taken in a single dose with morning or evening meal. This dose can be reduced to 10gm/day when desired effect has been obtained.
Children: 1-6 years old, 2.5-5gm per day; 6-12 years old, 5-10gm per day; 12-16 years old, 10-20gm per day.

❖ **LAXITOL Sachet SK+F**
Each sachet contains lactitol BP 10gm as lactitol monohydrate: powder for solution.
10's pack: 120.00 MRP
❖ **SINALAX Sachet Ibn Sina**
Each sachet contains lactitol BP 10gm as lactitol monohydrate: powder for solution.
10's pack: 120.00 MRP
❖ **TITOLAX Sachet Renata**
Each sachet contains lactitol BP 10gm as lactitol monohydrate: powder for solution.
10's pack: 120.00 MRP

LACTULOSE[21,33]

LACTULOSE: Liquid
Lactulose is a semisynthetic disaccharide which is not absorbed from the gastrointestinal tract. It produces an osmotic diarrhoea of low faecal pH and discourages the proliferation of ammonia producing organisms. It is therefore useful in the treatment of hepatic ncephalopathy.
Ind: Constipation, hepatic encephalopathy
C/I: Galactosaemia, intestinal obstruction.
S/E: Flatulence, cramp, abdominal discomfort.
Dose: Constipation- adult, initially 15ml twice daily then gradually reduced according to patient's needs; child, under 1 year 2.5ml, 1-5 years 5ml, 6-12 years 10ml, all twice daily, gradually reduced.
Hepatic encephalopathy- 30-50ml 3 times daily, subsequently adjusted to produce 2-3 soft stools daily.

❖ **ACTULOSE Syp. Silva**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.4gm of lactulose USP: syrup.
100ml bot: 60.00 MRP
200ml bot: 120.00 MRP
❖ **ASILAC Syp. Asiatic**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.35gm of lactulose: syrup.
100ml bot: 75.00 MRP
❖ **AVOLAC Soln. Aristopharma**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.35gm of lactulose: syrup.
100ml bot: 100.00 MRP
200ml bot: 200.00 MRP
❖ **DEVOLAC Soln. Desh Pharma**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.35gm of lactulose: syrup.
100ml bot: 100.00 MRP
200ml bot: 195.00 MRP
❖ **D-LAC Soln. Drug Inter.**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.4gm of lactulose USP: syrup.
100ml bot: 80.00 MRP
200ml bot: 150.00 MRP
❖ **DULAC Soln. Chemist**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.35gm of lactulose: syrup.
100ml bot: 100.00 MRP
❖ **E-LAX Syp. Edruc**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.4gm of lactulose USP: syrup.
100ml bot: 90.00 IP
❖ **INOLAC Soln. Incepta**
Lactulose concentrate oral solution; 1tsf (5ml)

contains 3.4gm of lactulose USP: syrup.
100ml bot: 70.00 MRP

❖ **LACLOSE Soln. Opsonin**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.4gm of lactulose USP: syrup.
100ml bot: 70.00 MRP
200ml bot: 140.00 MRP

❖ **LACTOLAX Soln. Pharmasia**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.35gm of lactulose USP: syrup.
100ml bot: 80.00 IP

❖ **LACTU Soln. Bio-pharma**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.4gm of lactulose USP: syrup.
100ml bot: 90.00 MRP
200ml bot: 160.00 MRP

❖ **LACTULOSE-H Soln. Hudson**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.4gm of lactulose USP: syrup.
100ml bot: 60.00 MRP

❖ **LAX Soln. Medicon**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.4gm of lactulose USP: syrup.
100ml bot: 100.00 MRP

❖ **LAXATIV Soln. Rangs**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.4gm of lactulose USP: syrup.
100ml bot: 75.00 MRP
200ml bot: 140.00 MRP

❖ **LAXOL Soln. Navana**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.4gm of lactulose USP: syrup.
100ml bot: 70.00 IP

❖ **LAXOLAC Soln. Globe**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.35gm of lactulose USP: syrup.
100ml bot: 100.00 MRP

❖ **LIVAX Soln. Pacific**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.4gm of lactulose USP: syrup.
100ml bot: 100.00 MRP
200ml bot: 200.00 MRP

❖ **LIVERTON Soln. Salton**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.4gm of lactulose USP: syrup.
100ml bot: 75.00 MRP

❖ **LIVOTON Syp. Chemico**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.4gm of lactulose USP: syrup.
50ml bot: 50.00 MRP
100ml bot: 100.00 MRP
200ml bot: 200.00 MRP

❖ **LOCTOZ Syp. Amico**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.4gm of lactulose USP: syrup.
100ml bot: 100.00 MRP

❖ **MYLAC Syp. Mystic**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.4gm of lactulose USP: syrup.
100ml bot: 75.00 MRP
200ml bot: 140.00 MRP

❖ **ORALAX Syp. Somatec**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.4gm of lactulose USP: syrup.
100ml bot: 100.00 MRP

❖ **OSMOLAX Syp. Square.**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.4gm of lactulose USP: syrup.
100ml bot: 100.00 MRP
200ml bot: 200.00 MRP

❖ **P-LAC Soln. Pharmadesh**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.35gm of lactulose BP: syrup.
100ml bot: 93.00 MRP

❖ **REGULOSE Syp. General**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.4gm of lactulose USP: syrup
100ml bot: 75.00 MRP
200ml bot: 140.00 MRP

❖ **RELACS Soln. ACI**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.35gm of lactulose BP: syrup.
100ml bot: 65.00 MRP

❖ **SERELOSE Soln. Beximco**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.35gm of lactulose BP: syrup.
100ml bot: 100.00 MRP

❖ **TULAC Soln. SK+F**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.5gm of lactulose USP: syrup.
100ml bot: 100.00 MRP

❖ **TULOS Soln. Acme**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.5gm of lactulose USP: syrup.
100ml bot: 100.00 MRP
200ml bot: 200.00 MRP

❖ **XYLOSE Soln. Delta**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.35gm of lactulose BP: syrup.
100ml bot: 100.00 MRP

❖ **ZENILAC Soln. Zenith**
Lactulose concentrate oral solution; 1tsf (5ml) contains 3.35gm of lactulose BP: syrup.
100ml bot: 70.00 MRP
200ml bot: 130.00 MRP

POLYETHYLENE GLYCOL[26]

POLYETHYLENE GLYCOL: Powder for solution
Polyethylene glycol is a synthetic polyglycol having an average molecular weight of 3350. It is an osmotic agent and acts as an osmotic laxative. It is presented as a white powder for solution.
Mode of action: As an osmotic agent, polyethylene glycol causes water to be retained with the stool. It appears to have no effect on the active absorption or secretion of glucose or electrolytes.
Ind: For the treatment of constipation.
Polyethylence glycol is a prescription only laxative that has been prescribed by the physician to treat constipation. This product should only be used by the person for whom it is prescribed. Polyethylene glycol solution should be used for 2 weeks or less or as direted by the physician.
C/I: Patients with known or suspected bowel obstruction and patients known to be allergic to polyethylene glycol.
S/E: Nausea, abdominal bloating, cramping and flatulence may occur. High doses may produce diarrhea and excessive stool frequency, particularly in elderly patients. Patients taking other medications containing polyethylene glycol have occasionally developed urticaria suggestive of an allergic reaction.
Precautions: Patients with symptoms suggestive of bowel obstruction (nausea, vomiting, abdominal pain or distention) should be evaluated to rule out this condition before initiating laxative therapy. Polyethylene glycol should be administered after being dissolved in water, juice, coke, coffee or tea.
Pregnancy & lactation: It is not known whether polyethylene glycol can cause fetal harm when administered to a pregnant woman or can affect reproductive capacity. Polyethylene glycol should only be administered to a pregnant woman if clearly needed.
There is no information on the use of polyethylene glycol while nursing. Consultation with a physician is necessary in case of breast-feeding.
Dosage & admin: The usual dose of polyethylene glycol is 17gm of powder per day (or as directed by the physician) in a glass of water, juice, coke, coffee or tea (approx. 240ml). Each bottle of polyethylene glycol is supplied with a cup that is used to measure 17gm or 8.5gm of laxative powder when filled upto the marked line.
Polyethylene glycol achieves its best results when used between 1 and 2 weeks. It may be discontinued after several satisfactory bowel movements.
Drug inter: No specific drug interactions have been demonstrated.

❖ **AQUALAX Soln. Incepta**
Each bottle contains 85gm of polyethylene glycol: powder for solution.
85gm bot: 80.00 MRP

MILK OF MAGNESIA

MILK OF MAGNESIA: Suspension
Magnesium hydroxide, an antacid laxative.
Preparations: Discussed under antacid group of drugs.

Faecal softeners

LIQUID PARAFFIN[21]

D LIQUID PARAFFIN: Mineral oil prepn.
Liquid paraffin, an unabsorbable lubricant mineral oil which act as faecal softeners by af fecting intestinal electrolyte transport.
Ind: Constipation, management of haemorrhoids (piles) and anal fissure.
Cautions: avoid prolonged use.
S/E: Anal seepage of paraffin and consequent anal irritation after prolonged use,

granulomatous reactions caused by absorption of small quantities of liquid paraffin, lipoid pneumonia and interference with absorption of fat soluble vitamins.
Dose: 2 tsf (10ml) at night and morning or after meals; Child, half adult dose.

Abdominal gas adsorbent prepns.

ULTRACARBON[21,33]

ULTRACARBON: Tablet
Activated charcoal tablets; available as 250mg/tablet.
Ind: Infections gastro-intestinal disturbances, gastritis, gastro-enteritis, dysentery, intestinal gas generation, food & other inorganic poisonings.
Dose: 1-2 tablets to be taken several times daily, disintegrated in water stirred before drinking. In severe cases, a large number of tablets should be taken (4-6-8 or more at once).

❖ **ULTRACARBON Tab. E. Merck**
Activated charcoal tablets
50's pack:
❖ **ULTRACARBON Tab. Popular**
Activated charcoal 250mg/tablet.
50's pack: 258.00 MRP

8. PREPARATIONS FOR APHTHOUS ULCER

AMLEXANOX[42]

AMLEXANOX: Oral paste
Amlexanox oral paste is available as amlexanox INN 50mg/gm (i.e 5% w/w); 5gm paste in tube.
Mode of action: The mechanism of action by which amlexanox accelerates healing of aphthous ulcers is unknown. In vitro studies have demonstrated amlexanox to be a potent inhibitor of the formation and release of inflammatory mediators (histamine and leukotrienes) from mast cells, neutrophils and mononuclear cells. Given orally to animals, amlexanox has demonstrated anti-allergic and anti-inflammatory activities and has been shown to suppress both immediate and delayed type hypersensitivity reactions. The relevance of these activities of amlexanox to its effects on aphthous ulcers has not been established. After a single oral application of 100mg of paste (5mg amlexanox), maximal serum levels are observed at 2.4 hours.
Ind: For the treatment of aphthous ulcers.
C/I: Amlexanox oral paste is contraindicated in patients with known hypersensitivity to amlexanox or other ingredients in the formulation.
A/E: Adverse reactions reported by 1-2% of patients were transient pain, stinging and/or burning at the site of application. Infrequent (<1%) adverse reactions in the clinical studies were contact mucositis, nausea, and diarrhea.
Precautions: In the event that a rash or contact mucositis occurs, discontinue use.
Pregnancy & lactation: Teratology studies were performed with animals at doses up to two hundred and six hundred times, respectively, the projected human daily dose. No adverse fetal effects were observed. There are no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.
Amlexanox was found in the milk of lactating rats; therefore, caution should be exercised when administering amlexanox oral paste to a nursing woman.
Dosage & admin:
1. **Apply the paste as soon as possible after noticing the symptoms of an aphthous ulcer. Continue to use the paste four times daily, preferably following oral hygiene after breakfast, lunch, dinner, and at bedtime.**
2. **Dry the ulcer(s) by gently patting it with a soft, clean cloth.**
3. **Wash hands before applying.**
4. **Moisten the tip of the index finger.**
5. **Squeeze a dab of paste approximately 1/4 inch (0.5cm) on to a finger tip.**
6. **Gently dab the paste on to the ulcer. Repeat the process if more than one ulcer are present.**
7. **Wash hands after application.**
8. **Wash eyes promptly if they would come in contact with the paste.**
9. **Use the paste until the ulcer heals. If significant healing or pain relief has not occurred in 10 days, try to find the other causes.**

Pediatric use: **Safety and effectiveness of amlexanox oral paste in pediatric patients have not been established.**

❖ **APSOL Oral Paste Square**
Amlexanox INN 50mg/gm (i.e 5% w/w); 5gm paste in tube.
5gm tube: 75.00 MRP

9. LOCAL PREPARATIONS FOR ANAL & RECTAL DISORDERS

9.1 Phlebotonic & vascular protecting prepns.
9.2 Soothing haemorrhoidal prepns.
9.3 Compound haemorrhoidal preparations with corticosteroids
9.4 Rectal sclerosants.

Phlebotonic & Vascular protecting prepns.

DIOSMIN + HESPERIDIN[42]

DIOSMIN + HESPERIDIN: Tablet
This combined preparation contains diosmin in micronised form and hesperidin. This has been prepared for hemorrhoidal bleeding and chronic venous insufficiency.
Mode of action: Diosmin and hesperidin combination acts as a phlebotonic drug and vascular protecting agent. It reinforces venous tone by prolonging the activity of parietal noradrenaline. It thus decreases venous capacitance, venous distensibility, and venous emptying time. It protects the microcirculation by fighting the microcirculation damaging process. It combats venous inflammation by decreasing leukocyte activation, and as a consequence by inhibiting the release of inflammatory mediators, principally free redicals and prostaglandin. Thus, this combined preparation normalizes capillary permeability and strengthens capillary resistance. This also acts on the lymphatic system, and improves lymphatic drainage by increasing lymph flow and lymph oncotic pressure.
Ind: Acute hemorrhoidal attacks, chronic hemorrhoidal disease; organic and functional chronic venous insufficiency of the lower limbs with the following symptoms: heavy legs, pain, nocturnal cramps.
C/I: Proper data on contraindication is not available.
S/E: Some cases of routine gastric disorders and neurovegetative disorders (feeling of discomfort) have been reported. In these cases discontinuation of treatment is not required.
Precautions: If the hemorrhoidal symptoms do not disappear within 15 days of teratment, patient should ask doctor for advice.
Pregnancy & lactation: Experimental studies in animal have not demonstrated any teratogenic effect and no harmful effects have been reported in women to date. Breast feeding is not recommended during treatment.
Dosage & admin: Each film coated tablet contains micronised diosmin INN 450mg and hesperidin INN 50mg.
Acute hemorrhoidal attacks: 3 tablets twice daily for the first 4 days, then 2 tablets twice daily for 3 days and if required 1 tablet twice daily as maintenance dosage.
Chronic hemorrhoids: 1 tablet twice daily.
Chronic venous insufficiency: 1 tablet twice daily initially for 7 days; duration may be increased depending on severity. Tablet should be taken at meal times.
Drug inter: Proper data is not available.

❖ **DAFLON Tab. Servier**
Micronised diosmin INN 450mg & hesperidin INN 50mg/tablet (f.c)
30's pack: 363.00 MRP
❖ **DIOHES Tab. Opsonin**
Micronised diosmin INN 450mg & hesperidin INN 50mg/tablet (f.c)
30's pack: 240.00 MRP
❖ **DIORIN Tab. Incepta**
Micronised diosmin INN 450mg & hesperidin INN 50mg/tablet (f.c)
30's pack: 240.00 MRP
❖ **HEMORIF Tab. Square**
Micronised diosmin INN 450mg & hesperidin INN 50mg/tablet (f.c)
30's pack: 240.00 MRP
❖ **NORMANAL Tab. Renata**
Micronised diosmin INN 450mg & hesperidin INN 50mg/tablet (f.c)
30's pack: 240.00 MRP
❖ **PILESTOP Tab. Acme**

Micronised diosmin INN 450mg & hesperidin INN 50mg/tablet (f.c)
20's pack: 160.00 MRP

❖ **PILEX Tab. Medicon**
Micronised diosmin INN 450mg & hesperidin INN 50mg/tablet (f.c)
30's pack: 240.00 MRP

Compound steroidal prepns.

BETAMETHASONE + PHENYLEPHRINE + LIGNOCAINE[21,47,126]

BETAMETHASONE + PHENYLEPHRINE + LIGNOCAINE: Rectal ointment.
This is a compound steroidal preparation available for ano-rectal use.
Comp: Betamethasone valerate 0.05% w/w, phenylephrine 0.1% w/w & lignocaine hydrochloride 2.5% w/w: rectal ointment.
Ind: Local anorectal conditions like haemorrhoids and fissures where, there is inflammation & pain.
C/I: Topical corticosteroids are contraindicated in: i. Primarily infected skin lesions caused by viral infections e.g herpes simplex, vaccinia or varicella (chicken pox), by bacteria e.g impetigo, by fungal infections e.g candidiasis, tineasis or by tuberculous infection of the anal region; ii. Sensitivity to any of the components of the product; iii. Dermatoses in children under 1 year of age.
S/E: As with all topical corticosteroids, its use for prolonged periods, may cause systemic absorption, specially in children. Prolonged and intensive treatment with active corticosteroid preparations may also cause local atrophic changes in the skin. There are reports of pigmentation changes and hypertrichosis with topical steroids, and in this situation it should be discontinued.
Some patients may experience burning upon application, specially if the mucous membrane is not intact.
Precautions: Long-term continuous treatment should be avoided. Discontinue if sensitization occurs.
Pregnancy & lactation: The safe use of topical corticosteroids in human pregnancy has not been fully established. Topical administration of corticosteroids to pregnant animals can cause abnormalities of fetal development including cleft palate and intrauterine growth retardation. Therefore, there may be a very small risk of such effects in the human fetus. So, it should not be used unnecessarily in large amounts or for prolonged period.
Use & application: Apply locally 2 or 3 times daily initially, using the applicator if internal administration is required. When inflammation is subsiding once-daily application is sufficient in most cases.
Drug inter: Not known.

❖ **METHOVATE Rectal Oint. Gaco**
Betamethasone valerate 0.05% w/w, phenylephrine 0.1% w/w & lignocaine hydrochloride 2.5% w/w: rectal ointment.
15gm tube: 28.33 MRP

❖ **RELITCH Rectal Oint. Drug Inter.**
Betamethasone valerate 0.05% w/w, phenylephrine 0.1% w/w & lignocaine hydrochloride 2.5% w/w: rectal ointment.
15gm tube: 30.00 MRP

HYDROCORTISONE + AESCULIN + CINCHOCAINE + FRAMYCETIN/ NEOMYCIN[21,42,46,48]

HYDROCORTISONE + AESCULIN + CINCHOCAINE + FRAMYCETIN/ NEOMYCIN: Rectal ointment/suppository
This is a compound steroidal preparation of four components, viz: hydrocortisone, aesculin, cinchocaine hydrochloride and framycetin or neomycin sulphate, available for ano-rectal use.
Comp: See below under individual product.
Ind: Ointment: Haemorrhoids (internal & external), prophylaxis between two attacks to prevent recurrence and complications, anal fissure, pruritus, and inflammatory anal conditions.
Suppository: Short term relief of pain and inflammation of hemorrhoids; post-partum hemorrhoids; anal fissures and proctitis; post-hemorrhoidectomy application to relieve pain and discomfort.
C/I; S/E; Precautions: See above under the text of 'betamethasone compound preparations'.
Pregnancy & lactation: See above under the text of 'betamethasone compound preparations'.
Use & application: Ointment: Adult & child- application of ointment on the painful or pruritic area by using finger, at morning and night and after defaecation.
Suppository: Use one suppository in the morning and one in the evening and after each stool.
Drug inter: Not known.

❖ **ANOREL Oint. Popular**
Aesculin 1%, cinchocaine HCl 0.5%, hydrocortisone 0.5%, framycetin sulphate 1% in an ointment preparation.
15gm tube: 50.00 IP

❖ **ANUSTAT Oint. Beximco**
Aesculin 1%, cinchocaine HCl 0.5%, hydrocortisone 0.5%, neomycin sulphate 1% in an ointment preparation.
15gm tube: 50.00 MRP

❖ **ERIAN Oint. Square**
Aesculin 1%, cinchocaine HCl 0.5%, hydrocortisone 0.5%, framycetin sulphate 1% in an ointment preparation.
15gm tube: 50.00 MRP

❖ **ERIAN Suppo. Square**
Each suppository contains hydrocortisone BP 5mg, aesculin INN 10mg, cinchocaine hydrochloride BP 5mg, framycetin sulphate 10mg.
10's pack: 60.00 MRP

10. DRUGS AFFECTING INTESTINAL SECRETIONS

10.1 Digestive enzyme: Pancreatin
10.2 Bile acid sequestrants
10.3 Aprotinin
10.4 Antigallstones drugs: bile acids

Digestive Enzyme

PANCREATIN[21,33]

PANCREATIN: Tablet/Capsule
Oral pancreatin preparation is used to compensate for reduced or absent pancreatin secretion in cystic fibrosis, and following pancreatectomy, total gastrectomy or chronic pancreatitis.
Ind: Digestive disorder due to enzyme deficiency as in children with cystic fibrosis; in adults following pancreatectomy , total gastrectomy, or chronic pancreatitis, dyspepsia.
S/E: It may irritate the skin surrounding the mouth and anus.
Adult: 2 gm of pancreatin BP daily in divided doses according to the patients need.
Child: upto 1 yr. 500 to 750 mg with each feed; 1-12 yrs. 0.75-1gm with (or just before) meals.
(As pancreatin is inactivated by gastric acid therefore pancratin preparations are best taken with food or immediately before or after food).

❖ **A-ZYME Tab. Acme**
Pancreatin 325mg/tablet (e.c)
100's pack: 172.00 MRP

❖ **CREZYME Tab. Opsonin**
Pancreatin 325mg/tablet (e.c)
100's pack: 120.00 MRP

❖ **PANCRESTAL Tab. Gaco**
Pancreatin BP 325mg/tablet (e.c)
100's pack: 131.18 MRP

❖ **POLYZYME Tab. Skylab**
Pancreatin BP 325mg/tablet (e.c)
100's pack: 136.00 MRP

❖ **U-ZYME Tab. Ultra Pharma**
Pancreatin 325 mg/tablet (e.c)
100's Pack: 150.00 MRP

❖ **ZYMET Tab. Beximco**
Pancreatin 325mg/tablet (e.c)
100's pack: 150.00 IP

Antigallstones drugs: Bile acids

URSODEOXYCHOLIC ACID[34]

URSODEOXYCHOLIC ACID: Tablet
Ursodeoxycholic acid is a bile acid & is available as ursodeoxycholic acid BP 300mg/tablet
Ind: Dissolution of cholesterol gallstones; primary biliary cirrhosis; primary sclerosing cholangitis; morbid obesity.
C/I: Non-functioning gallbladder. Calcified and pigment gallstones. Pregnancy and women may become pregnant. Inflammatory bowel disease.
S/E: Nausea, vomiting, diarrhea, gallstone calcification, pruritus.
Precaution: Pregnancy & lactation: The drug is best avoided during pregnancy and lactation as no information of its safety is available.
Dosage & admin: Dissolution of gallstones: 8-

12mg/kg daily as a single dose at bedtime or in two divided doses for up to 2 years; treatment is continued for 3-4 months after stones dissolved.

Primary biliary cirrhosis: 10-15mg/kg daily in 2-4 divided doses.

Drug inter: Ursodeoxycholic acid combined with a mixture of monoterpenes or a low cholesterol diet may enhance gallstone dissolution. Any drug that binds with bile acids in vitro (for example cholestyramine, charcoal, colestipol and antacids) may interfere with the absorption of ursodeoxycholic acid.

❖ **STONEX Tab. Opsonin**
Ursodeoxycholic acid BP 300mg/tablet
10's pack: 200.00 MRP

❖ **ULIV Tab. Acme**
Ursodeoxycholic acid BP 150mg & 300mg/tablet
150mg x 20's pack: 240.00 MRP
300mg x 10's pack: 200.00 MRP

❖ **URSOCOL Tab. Sun Pharma**
Ursodeoxycholic acid BP 150mg & 300mg/tablet
150mg x 30's pack: 300.00 MRP
300mg x 30's pack: 600.00 MRP

❖ **URSODIL Tab. General**
Ursodeoxycholic acid BP 300mg/tablet
10's pack: 200.00 MRP

Chapter-2
DRUGS ACTING ON CARDIOVASCULAR SYSTEM

DRUGS USED IN THE DISEASES OF THE CARDIOVASCULAR SYSTEM

The drugs used in the diseases of the cardiovascular system are classified in the following broad groups:

1. **Anti-arrhythmic drugs**
2. **Positive inotropic drugs: Cardiac glycosides**
3. **Anti-hypertensive drugs**
4. **Drugs used in angina & ischaemic heart diseases**
5. **Peripheral & cerebral vasodilator drugs**
6. **Sympathomimetics**
7. **Anticoagulants & Protamine**
8. **Antiplatelet drugs**
9. **Fibrinolytic drugs**
10. **Antifibrinolytic & haemostatic drugs**
11. **Antihaemophilic factor (Factor VIII)**
12. **Lipid-lowering drugs**
13. **Local sclerosants**

1. ANTI-ARRHYTHMIC DRUGS

1.1 Drugs for supraventricular arrhythmias viz. *Adenosine, Cardiac glycosides, Verapamil*
1.2 Drugs for supraventricular and ventricular arrhythmias viz. *Amiodarone, Beta-blockers, Disopyramide, Flecainide, Procainamide, Propafenone & Quinidine*
1.3 Drugs for ventricular arrhythmias viz. *Bretylium, Lignocaine, Mexiletine, Moracizine, Phenytoin & Tocainide*

ADENOSINE[133]

ADENOSINE: Injection
Adenosine BP 6mg/2ml ampoule: i.v injection
Mode of action: Adenosine slows conduction time through the A-V node, can interrupt the reentry pathways through the A-V node, and can restore normal sinus rhythm in patients with paroxysmal supraventricular tachycardia.
Ind: Intravenous adenosine is indicated for the following:
Conversion of paroxysmal supraventricular tachycardia (PSVT) to sinus rhythm, including that associated with accessory bypass tracts (Wolff-Parkinson-White syndrome).
C/I: Adenosine is contraindicated in: 1. Second or third degree A-V block (except in patients with a functioning artificial pacemaker). 2. Sinus node disease, such as sick sinus syndrome or symptomatic bradycardia (except in patients with a functioning artificial pacemaker). 3. Known hypersensitivity to adenosine.
S/E: The following reactions were reported with intravenous adenosine use: Cardiovascular: Facial flushing, headache, sweating, palpitations, chest pain, hypertention. Respiratory: Shortness of breath/ dyspnea, chest pressure, hyperventilation, and head pressure. Central nervous system: Lightheadedness, dizziness, tingling in arms, numbness, apprehension, blurred vision, burning sensation, heaviness in arms, neck & back pain. Gastrointestinal: Nausea, metallic taste, tightness in throat, pressure in groin.
In post-market clinical experience with adenosine use, following reactions have been reported: Prolonged asystole, ventricular tachycardia, ventricular fibrillation, transient increase in blood pressure, bradycardia, hypotension, atrial fibrillation and bronchospasm.
Precaution: Pregnancy & lactation: Since it is not known whether adenosine can cause fetal harm when administered to pregnant women, adenosine should be used during pregnancy only if clearly needed.
Dosage & admin: Adult: Initial dose, 6mg given as rapid i.v bolus (administered over 1-2 seconds period). Repeat dose: If the first dose does not result in elimination of the supraventricular tachycardia within 1-2 minutes, 12mg should be given as rapid intravenous bolus; this 12mg dose may be repeated for second time if required. Pediatric patients: The dosages used in neonates, infants, children & adolescents were equivalent to those administered to adults on a weight basis. Pediatric patients with a body weight <50kg: Initial dose, 0.05 to 0.1mg/kg as a rapid i.v bolus given either centrally or peripherally. A saline flush should follow. Repeat dose: If conversion of PSVT does not occur within 1-2 minutes, additional bolus injections of adenosine can be administered at incrementally higher doses, increasing the amount given by 0.05 to 0.1mg/kg. A saline flush should follow. This process should continue until sinus rhythm is established or a maximum single dose of 0.3mg/kg is used. Pediatric patients with a body weight >50kg: The adult dose is recommended. Doses greater than 12mg are not recommended for adult & pediatric patients.
Drug inter: Intravenous adenosine injection has been effectively administered in the presence of other cardioactive drugs, such as quinidine, beta-adrenergic blocking agents, calcium channel blocking agents and angiotensin converting enzyme inhibitors without any change in the adverse reaction profile. Digoxin and verapamil use may be rarely associated with ventricular fibrillation when combined with adenosine. Because of the potential for additive or synergistic depressant effects on the SA and AV nodes, however, adenosine should be used with caution in the presence of these agents. The use of adenosine in patients receiving digitalis may be rarely associated with ventricular fibrillation. The effects of adenosine are antagonized by methylxanthines, such as caffeine and theophylline.
Storage: Store in a cool dry place protected from light. Do not refrigerate as crystallization may occur. If crystallization has occurred, dissolve crystals by warming to room temperature. The solution must be clear at the time of use.

❖ **ADECARD Inj. Popular**
Adenosine BP 6mg/2ml ampoule: i.v injection
6mg (2ml) amp x 5's pack: 300.00 IP

AMIODARONE[48]

AMIODARONE: Tablet
Amiodarone is an antiarrhythmic drug, used to correct abnormal rhythms of the heart.
Mode of action: Amiodarone is considered as a 'broad spectrum' antiarrhythmic drug. Its important electrical effects are-
i. a delay in the rate at which the heart's electrical system 'recharges' after the heart contracts (repolarization); ii. a prolongation in the electrical phase during which the heart's muscle cells are electrically stimulated (action potential); iii. a slowing of the speed of electrical conduction (how fast each individual impulse is conducted through the heart's electrical system); iv. a reduction in the rapidity of firing of the normal generator of electrical impulses in the

heart (the heart's pacemaker); v. a slowing of conduction through various specialized electrical pathways (called accessory pathways) which can be responsible for arrhythmias. In addition to being an antiarrhythmic medication, amiodarone also causes blood vessels to dilate (enlarge), as a result, there is a drop in blood pressure. Because of this effect, it also may be of benefit in patients with congestive heart failure.

Ind: Amiodarone is used for many serious arrhythmias of the heart including ventricular fibrillation, ventricular tachycardia, atrial fibrillation, and atrial flutter.

S/E: The most severe side effects of amiodarone therapy are related to the lungs. These effects can be fatal. Patients should report any symptoms of cough, fever, or painful breathing. Although quite rare, fatal liver toxicity may occur with amiodarone therapy. Reversible corneal microdeposits (sometimes with night glare), rarely impaired vision due to optic neuritis; peripheral neuropathy and myopathy (usually reversible on withdrawal); bradycardia and conduction disturbances; phototoxicity and rarely persistent skin discoloration; hypothyroidism, hyperthyroidism; raised serum trasaminases (may require dose reduction or withdrawal if accompanied by acute liver disorders); jaundice, hepatitis and cirrhosis reported; rarely nausea, vomiting, metallic taste, tremor, sweating, vertigo, headache, sleeplessness, fatigue, alopecia, benign raised intracranial pressure, ataxia, rashes, hypersensitivity including vasculitis, renal involvement and thrombocytopenia; haemolytic or aplastic anaemia. In some cases, dose of amiodarone can be reduced. In other cases, amiodarone therapy may need to be stopped.

Pregnancy & lactation: In general, amiodarone should not be administered during pregnancy because there have been reports of hypo- or hyperthyroidism in infants from oral amiodarone use during pregnancy. If amiodarone use is considered essential, however, the patient should be warned of the risk to the fetus. The safe use of amiodarone in women who are breast-feeding has not neen established.

Dosage: Amiodarone usually is given in several daily doses to minimize stomach upset whcih is seen more frequently with higher doses. For this same reason, it is also recommended that amiodarone should be taken with meals.

Oral dose is 200mg 3 times daily for 1 week, reduced to 200mg twice daily, or the minimum dose required to control arrhythmia.

Drug inter: Amiodarone may interact with beta-blockers such as atenolol, propranolol, metoprolol, or certain calcium-channel blockers, such as verapamil or diltiazem, resulting in an excessively slow heart rate. Amiodarone increases the blood levels of digoxin when the two drugs are given together. Flecainide blood concentrations increase by more than 50% with amiodarone. Procainamide and quinidine concentrations increase by 30-50% during the first week of amiodarone therapy. Amiodarone also can interact with tricyclic antidepressants. Amiodarone interacts with warfarin and increases the risk of bleeding. Amiodarone inhibits the metabolism of dextromethorphan.

❖ **CARDIRON Tab. Drug Inter.**
Amiodarone hydrochloride BP 200mg/tablet.
200mg x 30's pack: 210.00 MRP

❖ **CORDARONE Tab. Sanofi-aventis**
Amiodarone hydrochloride BP 100mg & 200mg/tablet.
100mg x 30's pack: 221.10 MRP
200mg x 30's pack: 447.00 MRP

❖ **PACET Tab. Beximco**
Amiodarone hydrochloride BP 100mg & 200mg/tablet.
100mg x 30's pack: 150.00 IP
200mg x 30's pack: 300.00 IP

DISOPYRAMIDE[21,26]

DISOPYRAMIDE: Capsule
Disopyramide phosphate is a type 1 anti-arrhythmic drug.

Mode of action: In animal studies disopyramide decreases the rate of diastolic depolarization in cells with augmented automaticity, decreases the upstroke velocity and increases the action potential duration of normal cardiac cells, decreases the disparity of refractoriness between infarcted and adjacent normally perfused myocardium and has no effect on alpha and beta adrenergic receptors. As a result it reduces heartbeat.

Ind: Ventricular arrhythmias particularly following myocrdial infarction; also effective in supraventricular & paroxysmal supraventricular tachycardia and in wolf-parkinson-white syndrome.

C/I: Disopyramide is contraindicated in the pre-existing A-V heart block, shock, glaucoma, urinary retention and known hypersensitivity to the drug.

Precautions: Disopyramide should not be administered to patients with cardiomyopathy & associated congestive heart failure unless the patient is digitalized and adequately compensated. Disopyramide should be used with caution in the presence of digitalis intoxication.

S/E: Usually disopyramide is well tolerated but occasionally in some cases dry mouth, nose & eye; nausea, vomiting, diarrhea, bloating; blurred vision, urinary problems, headache, skin rash, dizziness, nervousness & impotence (1-3%) may occur.

Pregnancy & lactation: There are no adequate and well-controlled studies in pregnant women, so disopyramide should be used during pregnancy only if the potential benefit justifies the potential risk to the fefus. As the nursing infants are potentially in the risk of serious adverse reactions, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.

Dosage & admin: The recommended initial dose is 400mg daily in 4 divided doses i.e 100mg 6 hourly, then 150mg 6 hourly, adjusting to maintenance, 400-800mg daily in divided doses.

Patients in whom rapid control of ventricular arrhythmia is essential, an initial loading dose of 300mg disopyramide is recommended, followed by the appropriate maintenance dosage.

In patients with renal insufficiency, dosage schedule should be made according to the creatinine clearance rate. If clearance rate is 40-30ml/min, give 100mg 8 hourly; if 30-15ml/min, 100mg 12 hourly; if >15ml/min, 100mg in 24 hours.

Child: Not recommended.

Drug inter: Drug interactions may occur if disopyramide is used along with beta-adrenoceptor blockers or verapamil, lignocaine, phenytoin, procainamide or erythromycin.

❖ **NORBIT Cap. Incepta**
Disopyramide phosphate 100mg/capsule
30's pack: 240.00 MRP

LIGNOCAINE[21]

❖ **LIGNOCAINE Inj. Waldamar**
Lignocaine hydrochloride 2% solution in 50 ml bottle

Ind: Ventricular arrhythmias especially after myocardial infarction

C/I: Complete heart block, supraventricular tachycardia , Sino-atrial disorder.

S/E: Confusion, convulsion

Caution: Hepatic or Renal insufficiency, CCF.

Adult: 50 -100 mg i.v. followed by continuous i.v. infusion of usually 0.2% soln. (i.e. by diluting 2% soln. with. 5% dextrose soln.) at 2-4mg/min. rate.

Child: Not recommended

100's pack:

Prepns: May not be available.

SOTALOL : BETA-BLOCKER[129]

SOTALOL HCl: Tablet
Sotalol is an anti-arrhythmic drug with class-II (beta-adrenoreceptor blocking) and class-III (cardiac action potential duration prolongation) properties. It is available as sotalol hydrochloride USP 80mg tablet.

Ind: Treatment of life-threatening arrhythmias including ventricular tachyarrhythmias, symptomatic non-sustained ventricular tachyarrhythmias. Prophylaxis of paroxysmal atrial tachycardia or fibrillation, paroxysmal AV re-entrant tachycardias (both nodal and involving accessory pathways), paroxysmal supraventricular tachycardia after cardiac surgery, maintenance of sinus rhythm following cardioversion of atrial fibrillation or flutter.

C/I: Sotalol should not be given to patients with sinus bradycardia, sick sinus syndrome or second or third degree AV block (unless a functional pacemaker is present); congenital or acquired long QT syndromes, torsades de pointes, uncontrolled congestive heart failure, cardiogenic shock; anaesthesia that produces myocardial depression, hypotension (except due to arrhythmia), severe peripheral circulatory disturbances; chronic obstructive airway disease or bronchial asthma; renal failure (ceratinine clearance <40ml/min) and previous evidence of hypersensitivity to sotalol. Sotalol should not be given to patients suffering from diabetic keto-acidosis or metabolic acidosis; therapy with

sotalol can be recommenced or resumed when the metabolic condition has been corrected.
S/E: The most significant adverse effects are those which are typical of its class-I and class-II (cardiac action potential duration prolongation) effects.
Precaution & warnings: Sotalol is not for everyone with irregular heartbeats (atrial fibrillation). Sotalol is not indicated for those patients who have serious kidney problems or are on kidney dialysis, lung disease causing shortness of breath (such as asthma, chronic bronchitis or emphysema), symptoms of heart failure (such as shortness of breath when in exercise or physically active and swelling of the ankles or legs), very slow heart beat and do not have an implanted artificial pacemaker.
Pregnancy & lactation: Its use throughout pregnancy should be avoided unless it is absolutely necessary as it crosses the placenta and may cause foetal bardycardia. Infants should not be fed with breast milk from mothers being treated with sotalol.
Dosage & admin: Initially 80mg daily in single or 2 divided doses. After ECG monitoring and measurement of corrected QT interval, arrhythmias, dose is increased gradually at intervals of 2-3 days to usual dose of 160-320mg daily in 2 divided doses; higher doses of 480-640mg daily for life-threatening ventricular arrhythmias should he given under specialist supervision. The dosage should be reduced in renal impair-ment. If creatinine clearance is >60ml/min, recommended dose is 160mg twice daily; if creatinine clearance between 40 and 60ml/min, the dose is 160mg once daily. In patients with creatinine clearance less than 40ml/min, sotalol is contraindicated.
Drug inter: In combined therapy, clonidine should not be discontinued until several days after withdrawal of sotalol. Use with great caution with drugs that also prolong QT interval, e.g disopyramide, amiodarone, class-I antiarrhythmic agents, calcium antagonists of the verapamil type or tricyclic antidepressants. Interactions also occur with phenothiazines, terfenadine, astemizole and diltiazem. Concomitant use of reserpine, guanethidine, or alpha methyldopa requires close monitoring for evidence of hypotension and/or marked bradycardia. syncope. Hypoglycemia may occur and the dosage of insulin or antidiabetic drugs may require adjustment.

❖ **SOTALEX-80 Tab. UniMed Pharma**
Sotalol hydrochloride USP 80mg/tablet.
30's pack: 240.00 MRP

OTHER BETA-BLOCKERS- As anti-arrhythmic drug, see under antihypertensive drugs (later).

OTHER PREPNS.

CARDIAC GLYCOSIDES- As anti-arrhythmic drugs, see under cardiac glycosides.

VERAPAMIL: Tablet
See under calcium channel blocker.

2. POSITIVE INOTROPIC DRUGS

2.1 Cardiac glycosides
2.2 Phosphodiesterase inhibitors

Cardiac glycosides

DIGOXIN[21,33]

DIGOXIN: Tablet/Capsule/Injection
Ind: Heart failure, supraventricular arrhythmias. (Particularly atrial fibrillation).
C/I: Ventricular tachycardia. AV block. Sinus bradycardia. Elective electroconversion. Hypercalcaemia.
S/E: Nausea, vomiting, heart block, arrhythmias, rash.
Caution: Recent acute infarction, hypothyroidism, severe pulm. or hepatic disease, renal failure & elderly age. Cation imbalance.
Dosage & admin: Adult: Slow digitalization, 0.25-0.75mg daily; maintenance 0.25-0.5mg daily. Rapid digitalization, 0.75-1.5mg followed by 0.25mg. 6 hourly until ventricular rate 70-80/min.
Child: Under 10 years, digitalization 10-20 mcg/kg body-wt. 6 hourly; maintenance, ususally 10-20 mcg/kg body-wt. daily in single or divided doses.

❖ **AGOXIN Tab. Aristopharma**
Digoxin 0.25mg/tablet.
100's pack: 109.00 MRP
❖ **CENTOXIN Tab. Opsonin**
Digoxin 0.25mg/tablet.
50's pack: 54.50 MRP
❖ **CENTOXIN Elixir Opsonin**
Digoxin 0.25mg/5ml: syrup.
60ml bot: 75.00 MRP
❖ **DIGOXEN Soft Cap. Drug Inter.**
Digoxin USP 0.1mg & 0.2mg/capsule (soft).
0.1mg x 100's pack: 94.00 MRP
0.2mg x 50's pack: 67.00 MRP
❖ **LANOXIN Tab. GlaxoSmithKline**
Digoxin 0.25mg/tablet.
100's pack: 236.00 MRP

3. ANTIHYPERTENSIVE DRUGS

3.1 Centrally acting antihypertensive drugs
3.2 Ganglion (sympathetic) blocking drugs
3.3 Adrenergic neurone blocking drugs
3.4 Beta adrenoceptor blocking drugs
3.5 Alpha adrenoceptor blocking drugs
3.6 Drugs affecting the renin-angiotensin system
3.7 Vasodilator antihypertensive drugs
3.8 Drugs acting on blood volume: diuretics
3.9 Misc preparations:
i. Non-classified preparations
ii. Combined antihypertensive preparations

Centrally acting antihypertensive drugs

Centrally acting antihypertensive drugs include: Clonidine, Methyldopa, Moxonidine.

CLONIDINE[78]

❖ **CATAPRES Tab. Navana**
Clonidinedrochloride USP 0.1mg and 0.3mg/tablet.
Mode of action: Clonidine hydrochloride stimulates alpha-adrenoreceptors in the barin stem. This action results in reduced sympathetic outflow from the central nervous system and in decreased in peripheral resistance, renal vascular resistance, heart rate, and blood pressure.
Ind: Clonidine is indicated in multiple uses: i. Hypertensive urgencies, resistant hypertension and atrial fibrillation; ii. For the treatment of attention deficit hyperactivity disorder- ADHD (is characterized by behavioral and learning disorder); iii. Autism, (a development disturbance, characterized by an abnormal or impaired development in social communications and interaction skills and significantly restricted range of activities and interests); iv. Tourette's syndrome, (a neurological disorder in which the major symptom is tics which are sudden, brief, involuntary movements or sounds); v. For growth retardation, (clonidine has been reported to be a stimulant of growth hormone release, presumably as a result of central alpha adrenergic stimulation); vi. Menopausal hot flash; and vii. Opioid detoxification.
C/I: Any hypersensitivity to clonidine.
S/E: Most adverse effects are mild and tend to diminish with continued therapy. The most frequent adverse effects (which appear to be dose related) are dry mouth, drowsiness, dizziness, constipation and sedation. Less frequent adverse effects are headache, with-drawal syndrome, tachycardia, bradycardia, depression, nervousness, anxiety, restlessness, urticaria, urine retention etc.
Pregnancy & lactation: No adequate, well controlled stuides have been conducted in pregnant women. So, it should be used during pregnancy only if clearly needed. As clonidine is excreted in human milk, caution should be exercised when it is administered to nursing mother.
Dosage & admin: i. Hypertensive urgencies, 0.1mg twice daily to manage the hypertensive crisis than tailing off the therapy; resistant hypertension, 0.1mg twice daily; atrial fibrillation, 0.075mg once or twice daily alone or with digoxin; ii. For the treatment of attention deficit hyperactivity disorder (ADHD), 5mcg/kg/day. iii. Autism, 0.15mg to 0.2mg/day. iv. Tourette's syndrome, 150-200mcg/day. v. For growth retardation, 37.5-150mcg/m2/day. vi. Menopausal hot flash, 0.1mg to 0.4mg daily for up to 2 weeks.
Drug inter: Clonidine may potentiate CNS depressive effect of alcohol, barbiturates or other sedative drugs. Hypotensive effect may be reduced if a patient receives clonidine and

tricyclic anti-depressant, where increased dose of clonidine is required. Due to a potential for additive effects (such as bradycarida & A.V block) caution is warranted in patients receiving clonidine concomitantly with agents (e.g digitalis, calcium channel blockers & -blockers) known to affect sinus node function or A.V nodal conduction.
0.1mg x 50's pack: 150.00 IP

METHYLDOPA[21,33]

METHYLDOPA: Tablet/ Capsule/ Injection.
Ind: All grades of hypertension, inconjunction with a diuretic; hypertensive crisis.
C/I: History of depression, active liver disease, phaeochromocytoma. Renal impairment. Anaesthesia.
S/E: Sedation, headache, asthenia, depression, bradycardia, nasal congestion, dry mouth, G.I upset. Positive coombs test, jaundice, haemolytic anaemia.
Dose: Adult, initially, 250 mg 2 or 3 times daily increased to max. 3gm daily adjust at two day intervals. Child, initially 10mg/kg body-wt. daily in 2-4 divided doses.

❖ **DOPEGYT Tab. Ambee**
Methyldopa 250mg/tablet.
100's pack: 308.00 MRP
❖ **SARDOPA Tab. Incepta**
Methyldopa 250mg/tablet.
50's pack: 154.00 MRP

Ganglion (sympathetic) blocking drugs[21]

In this group the only drug used to reduce hypertension was Trimetaphan.
Now a day, it is not used therapeutically.

Adrenergic neurone blocking drugs[21]

The only member of adrenergic neurone blocking (i.e inhibiting the release of noradrenaline from postganglionic adrenergic neurones) agents that used as antihypertensive drug is Guanethidine.
But, due to some limitations and adverse effects such as, failure to control supine blood pressure and causing postural hypotension, its use has become very much restricted.

Beta-adrenoceptor blocking drugs

Beta-adrenoceptor blocking drugs (beta-blockers) are effectively used in the treatment of hypertension. They act by blocking the beta-adenoceptors in the heart, peripheral vasculature, bronchi, pancreas, and liver. These drugs include: *Propranolol, Acebutolol, Atenolol, Bisoprolol, Carvedilol, Celiprolol, Esmolol, Labetalol, Metoprolol, Nadolol, Nebivolol, Oxprenolol, Pindolol, Sotalol & Timolol.*

PROPRANOLOL[21.48,52]

PROPRANOLOL HCl: Tablet/Capsule/ Injection.
Propranolol hydrochloride is a selective β_1-blocker.
Mode of action: Propranolol, as a selective β_1-blocker, it blocks the effects of adrenergic stimulation mediated through these receptors. The cardio-selectivity is dose-related.
Propranolol causes a reduction in blood pressure by lowering cardiac output, decreasing the plasma renin activity and sympathetic outflow from CNS. Propranolol also causes a reduction in myocardial oxygen demand by virtue of its negative inotropic and negative chronotropic effects.
Ind: Propranolol is indicated in- i. the control of essential and renal hypertension, ii. the management of angina pectoris, iii. the long term prophylaxis after recovery from acute myocardial infarction, iv. the control of most forms of cardiac arhythmia, v. the prophylaxis of migraine, vi. the management of essential tremor, vii. the control of anxiety and anxiety tachycardia, viii. the adjunctive management of thyrotoxicosis and thyrotoxic crisis, ix. management of hypertrophic obstructive cardiomyopathy, x. management of phaeochromocytoma (with an alpha blocker).
C/I: Propranolol should not be used in the presence of- i. second or third degree heart block, ii. cardiogenic shock, iii. history of bronchospasm, iv. after prolonged fasting, v. metabolic acidosis (e.g in some diabetics), vi. several peripheral vascular disease (including intermittent claudication), vii. sick sinus syndrome, viii. uncontrolled heart failure, ix. hypotension, x. untreated phaeocromocytoma, xi. Prinzmetal's angina.
S/E: Pronounced fatigue and cold extremities have been observed in 10-20% of the treated subjects. Complaints about bradycardia, dizziness and gastrointestinal symptoms are less frequent. Despite its relative selectivity, atenolol can cause bronchospasms in asthma patients. Rarely observed side-effects are sleep disturbances, depression, paresthesiae, impotence, exanthema, psoriasis exacebations and arthropathies. Clinically relevant changes in the blood sugar have hardly occurred. There is no clarity as to the practical significance of the above mentioned changes in the lipid metabolism.
Precautions & warnings: Special care should be taken with patients whose cardiac reserve is poor. Beta-adrenoceptor blocking drugs should be avoided in overt heart failure. However, they may be used in patients whose signs of failure have been controlled. Heart failure due to thyrotoxicosis often responds to propranolol alone, but if other adverse factors co-exist myocardial contractility must be maintained and signs of failure controlled with digitalis and diuretics.
One of the pharmacological actions of propranolol is to reduce heart rate. In the rare instance when symptoms may be attributable to the slow heart rate, the dose may be reduced. Propranolol modifies the tachycardia, of hypoglycaemia. Caution should be exercised in the concurrent use of propranolol and hypoglycaemic therapy in diabetic patients. Propranolol may prolong the hypoglycaemic response to insulin.
In patients suffering from ischaemic heart disease, as with other beta-blocking agents, treatment should not be discontinued abruptly. Either the equivalent dosage of another beta-blocker may be substituted or the withdrawal of propranolol should be gradual. Care should be taken in the parenteral administration of preparations containing adrenaline to patients taking beta-blocking drugs as, in rare cases, vasoconstriction, hypertension and bradycardia may result.
Caution should be exercised when transferring patients from clonidine to beta-blocker. If beta-blockers and clonidine are given concurrently, clonidine should not be discontinued until several days after withdrawal of the beta-blocker (see also prescribing information on clonidine).
Care should be taken in prescribing a beta-blocker with class 1 antidysrhythmic agents such as disopyramide. Beta-blockers should be used with caution in combination with verapamil in patients with impaired ventricular function. The combination should not be given to patients with conduction abnormalities. Neither drug should be administered intravenously within 48 hours of discontinuing the other.
Anaesthesia: It is not advisable to withdraw beta-blockers prior to surgery in the majority of patients.
However, care should be taken when using anaesthetic agents such as ether, cyclopropane and trichloroethylene. Vagal dominance, if it occurs, may be corrected with atropine (1-2mg i.v).
Pregnancy & lactation: As with all other drugs, it should not be given in pregnancy unless its use is essential. There is no evidence of teratogenicity with propranolol.
Dosage & admin: ***By mouth:*** **Adult- Hypertension, initially 80mg twice daily increasing if necessary at weekly intervals to 160-320 mg daily. Anxiety, 40mg 2-3 times daily increasing if necessary at weekly interval upto 120-140mg/day.**
Phaeochromocytoma, 60mg daily with an alpha-blocker for 3 days preoperatively or 30mg daily in inoperable case.
Arrythmias, hypertrophic obstructive cardiomyopathy, anxiety tachycardia and thyrotoxicosis- 10-40mg 3-4 times daily.
Anxiety with symptoms such as palpitations, sweating, tremor etc., 40mg 2-3 times daily.
Child: 0.25-0'5mg/kg body-Wt. 3 or 4 times daily.
By intravenous injection:
1mg over 1 minute, preceded by atropine sulphate 1-2 mg; if necessary, repeat at 2 minutes intervals; maximum 10mg (5mg in anaesthesia).
Prophylaxis after infarction- 40mg 4 times daily for 2-3 days then 80mg thrice daily, begining 5-21 days after infarction.
Migraine prophylaxis- initially 40mg 2-3 times daily; maintenance 80-160mg daily.

❖ **ADLOCK Tab. Sonear**
Propranolol hydrochloride 10mg, 40mg & 80mg/tablet.
10mg x 100's pack: 24.00 MRP
40mg x 100's pack: 34.00 MRP

❖ **G-PROPRANOLOL Tab. Gonoshas.**
Propranolol hydrochloride 40mg/tablet.
100's pack: 34.00 MRP

❖ **INDEVER Tab. ACI**
Propranolol hydrochloride 10mg & 40mg/tablet.
10mg x 250's pack: 60.00 MRP
40mg x 250's pack: 85.00 MRP

❖ **INDEVER SR Cap. ACI**
Propranolol hydrochloride 40mg & 80mg/capsule (sustained release)
40mg x 100's pack: 92.00 MRP
80mg x 100's pack: 154.00 MRP

❖ **PROPRANOL Tab. Opsonin**
Propranolol hydrochloride 10mg, 40mg/tablet.
10mg x 200's pack: 42.00 MRP
40mg x 100's pack: 31.00 MRP

ATENOLOL[21,42,48,52]

ATENOLOL: Tablet/Injection
Atenolol, chemically a phenylacetamide, and functionally a selective β_1-blocker.
Mode of action: Atenolol as a beta-blocker, it has an effect on the heart by blocking the action of noradrenaline and adrenaline on β-receptor and controls its rate and rhythm of beating. By reducing the heart rate and the force of muscle contraction, atenolol reduces the need of heart muscle for oxygen (demanad). Because angina occurs when oxygen demand of the heart exceeds supply, atenolol is also helpful in treating angina.

Ind: Hypertension, angina, arrhythmias.
C/I: Atenolol is contraindicated with a known hypersensitivity to atenolol, severe bradycardia, second or third degree heart block, uncontrolled heart failure, hypotension, severe peripheral vascular disease (including intermittent claudication), sick sinus syndrome, cardiogenic shock, phaeocromocytoma (without a concomitant alpha blocker), metabolic acidosis.
S/E: Pronounced fatigue and cold extremities have been observed in 10-20% of the treated subjects. Complaints about bradycardia, dizziness and gastrointestinal symptoms are less frequent. Despite its relative selectivity, atenolol can cause bronchospasms in asthma patients. Rarely observed side-effects are sleep disturbances, depression, paresthesiae, impotence, exanthema, psoriasis exacebations and arthropathies. Clinically relevant changes in the blood sugar have hardly occurred. There is no clarity as to the practical significance of the above mentioned changes in the lipid metabolism.
Precautions: Poor cardiac reserve. Avoid in overt heart failure, anaesthesia and chronic obstructive airway disease or asthma. Withdrawal of beta-blocking drugs should be gradual in patients with ischaemic heart disease. Withdrawal of clonidine. Co-administration with verapamil or class 1 antidysrhythmic agents modifies the tachycardia of hypoglycaemia. If symptoms attributable to slow heart rate reduce dose. In renal disese reduce dose.
Pregnancy & lactation: Atenolol crosses the placenta. So it should not be given in pregnancy and lactation.

Dosage & admin: ***By mouth:***
Hypertension, 50mg daily (higher doses no longer considered necessay)
Angina, 100mg daily in 1 or 2 doses
Arrhythmias, 50-100 mg daily
By intravenous injection:
Arrhythmias, 1.5 mg at a rate of 1mg/min, repeated at 5-minute intervals to a maximum of 10mg.
By intravenous infusion:
Arrhythmias, 150mcg/kg over 20 minutes, repeated every 12 hours if required.
Early intervention within 12 hours of infarction, 5-10mg by slow i.v injection, then by mouth 50mg after 15 minutes, 50mg after 12 hours, then 100mg daily.

Note: Excessive bradycardia can be countered with intravenous injection of atropine sulphate 0.6-2.4mg in divided doses of 0.6mg.
Drug inter: The effects of other myocardial depressant agents, including anti-arrhythmics such as quinidine, procainamide, or lignocaine, phenytoin, and medicines which interfere with calcium transport, such as verapamil, may be enhanced by atenolol. The effects of atenolol are diminished by beta-adrenoceptor stimulating agents such as isoprenaline; the hypotensive effects of atenolol may be dangerously reversed and the peripheral vasoconstrictor effects enhaced by alpha-adrenoceptor stimulating agents such as noradrenaline or those with mixed alpha-and beta-adrenoceptor stimulating properties such as adrenaline; bradycardia may also occur. The effects of atenolol may be enhanced by adrenergic neuron blocking agents such as guanethidine or bethanidine, or catecholamine-depleting agents such as reserpine and the hypotensive effects by diuretics. Atenolol may enhance some of the cardiac effects of digitalis and diminish others. It has been suggested that clonidine withdrawal symptoms may be exacerbated in patients who are concurrently taking a beta blocker.
(For more detail, see under the text of propranolol).

❖ **ANETOL Tab. Ambee**
Atenolol 50mg/tablet
50mg x 100's: 77.00 MRP

❖ **ANOL Tab. Modern**
Atenolol 50mg/tablet
50mg x 100's: 77.00 MRP

❖ **ANOL-50 Tab. Medicon**
Atenolol 50mg/tablet
50mg x 100's: 76.00 MRP

❖ **ATENOL Tab. Pharmadesh**
Atenolol 50mg/tablet
50mg x 100's: 80.00 MRP

❖ **ATEZEN Tab. Zenith**
Atenolol 50mg & 100mg/tablet
50mg x 100's: 77.00 MRP
100mg x 100's: 136.00 MRP

❖ **ATIN Tab. Jayson**
Atenolol 50mg/tablet
100's pack: 76.00 MRP

❖ **ATOL Tab. Mystic**
Atenolol 50mg/tablet
100's pack: 75.00 MRP

❖ **B-CARD-50 Tab. Nipa**
Atenolol 50mg/tablet
50's pack: 70.00 MRP

❖ **BETANOL Tab. Sanofi-aventis**
Atenolol 25mg, 50mg & 100mg/tablet
25mg x 100's: 45.00 MRP
50mg x 100's: 77.00 MRP
100mg x 100's: 138.00 MRP

❖ **BETASEC Tab. Opsonin**
Atenolol 50mg/tablet
100's pack: 76.00 MRP

❖ **BPNOL Tab. Delta**
Atenolol 50mg/tablet
50mg x 100's: 76.06 MRP

❖ **CARDILOCK Tab. Alco Pharma**
Atenolol 50mg/tablet
50mg x 100's: 77.00 MRP

❖ **CARDIPRO Tab. Square**
Atenolol 50mg & 100mg/tablet
50mg x 100's: 77.00 MRP
100mg x 100's: 143.00 MRP

❖ **CARDISEF Tab. Supreme**
Atenolol 50mg & 100mg/tablet
50mg x 100's: 77.00 MRP
100mg x 100's: 136.00 MRP

❖ **CARSEC Tab. Medimet**
Atenolol 50mg & 100mg/tablet
50mg x 140's: 106.40 MRP
100mg x 140's: 184.80 MRP

❖ **ENOL Tab. Edruc**
Atenolol 50mg/tablet.
100's pack: 77.00 MRP

❖ **ETNOL Tab. Bio-pharma**
Atenolol 50mg & 100mg/tablet
50mg x 100's pack: 77.00 MRP
100mg x 100's pack: 137.00 MRP

❖ **LONET 50 Tab. Beximco**
Atenolol 50mg/tablet.
100's pack: 77.00 MRP

❖ **LOPRES Tab. Orion**
Atenolol 50mg/tablet.
100's pack: 70.00 MRP

❖ **NORMATEN Tab. Navana**
Atenolol 50mg/tablet.
100's pack: 76.00 MRP

❖ **NORPRESS Tab. Chemico**
Atenolol 50mg & 100mg/tablet.
50mg x 100's pack: 75.00 MRP
100mg x 60's pack: 75.00 MRP

❖ **PRECINOL Tab. Doctor's**
Atenolol 50mg/tablet
100's pack: 73.00 MRP

❖ **RECARD Tab. Rephco**
Atenolol 50mg & 100mg/tablet.
50mg x 100's pack: 75.00 MRP

❖ **TENOCARD Tab. Aristopharma**
Atenolol 50mg/tablet
100's pack: 75.00 MRP

❖ **TENOL Tab. Sonear**
Atenolol 50mg/tablet
50mg x 100's pack: 75.00 MRP

❖ **TENOLOC Tab. Acme**
Atenolol 50mg & 100mg/tablet.
50mg x 100's: 77.00 MRP
100mg x 100's: 136.00 MRP

❖ **TENOREN Tab. ACI**
Atenolol 25mg, 50mg & 100mg/tablet.
25mg x 50's: 22.50 MRP
50mg x 250's: 192.50 MRP
100mg x 100's: 138.00 MRP

BISOPROLOL[137]

BISOPROLOL FUMARATE: Tablet
Bisoprolol fumarate is a cardio-selective 1-adrenoceptor blocker.
Mode of action: See under the text of propranolol.
Ind: Hypertension, angina pectoris & stable chronic moderate to severe heart failure (in addition to ACE inhibitors & diuretics).
C/I: Untreated cardiac failure, cardiogenic shock, sinoatrial block, second or third degree AV block, marked bradycardia (heart rate less than 60 beat per minute) or extreme hypotension.
S/E: Bisoprolol is well tolerated. Those reported are due to its pharmacological actions- lassitude, dizziness, mild headache, perspiration, aggravation of intermittent claudication or Raynaud's disease & paresthesia observed. Sleep disturbances only rarely reported.
Precaution: Use with care in patients with prolonged PR interval, poor cardiac reserve & peripheral circulatory disturbances, such as- Raynaud's phenomenon, chronic obstructive airways disease and diabetes. In patients with ischaemic heart disease, treatment should not be withdrawn abruptly.
Pregnancy & lactation: Like other -blockers, use only if essential. Safety in humans not established.
Dosage: Hypertension & angina: Usually 5mg once daily; recommended range 5mg-10mg daily. Chronic heart failure: The treatment should be started with a small dose; the dose should be slowly & progressively up-titrated according to tolerance up to the maximum recommended dose of 10mg (if needed, please see detailed prescribing information in the text). In patients with final stage renal or liver disease, dose should not exceed to 10mg bisoprolol once daily. No dose adjustment required for the elderly.
Child: Not recommended for children.
Drug inter: May potentiate the effects of other cardiovascular agents, insulin or other oral hypoglycemic drugs. Rifampicin can reduce the half-life of bisoprolol.

❖ **BISLOL Tab. Opsonin**
Bisoprolol hemifumarate 2.5mg & 5mg/tablet
2.5mg x 30's pack: 180.00 MRP
5mg x 30's pack: 300.00 MRP
❖ **CONCOR Tab. Popular**
Bisoprolol hemifumarate 2.5mg & 5mg/tablet
2.5mg x 30's pack: 369.00 MRP
5mg x 30's pack: 492.30 MRP

CARVEDILOL[21,26]

CARVEDILOL: Tablet
It is a nonselective b-adrenergic receptor blocker, having an additional peripheral arteriolar vasodilator action by diverse mechanisms, and thus lower peripheral resitance. It also has antiproliferative properties and is a scavenger of reactive free oxidant radicals. It is used in the treatment of hypertension, angina pectoris and congestive heart failure.
Ind: Treatment of hypertension, angina pectoris and mild or moderate (NYHA- New York Heart association class II or III) chronic congestive heart failure. In the treatment of heart failure, carvedilol is usually given in conjunction with diuretics, digitalis and ACE inhibitors. It may be used in patients unable to tolerate an ACE inhibitor. Carvedilol may also be used in patients who are not receiving digitalis, hydralazine or nitrate therapy.
C/I: Carvedilol is contraindicated in patients with NYHA class IV (New York Heart Association class IV) decompensated cardiac failure requiring intravenous inotropic therapy; bronchial asthma or related bronchospastic conditions; second or third-degree AV block, sick sinus syndrome (unless a permanent pacemaker is placed); cardiogenic shock or severe bradycardia. Therapy is not to be initiated in severe heart failure.
S/E: Postural hypotension, dizziness, headache, fatigue, gastrointestinal disturbances, bradycardia; occasionally diminished peripheral circulation, peripheral oedema and painful extremities, dry mouth, dry eyes, eye irritation or disturbed vision, impotence, disturbances of micturition, influenzae-like symptoms, rarely angina, AV block, exacerbation of intermittent claudication or Raynaud's phenomenon, allergic skin reactions, exacerbation of psoriasis, nasal stuffiness, wheezing, depressed mood, sleep disturbances, paresthesia, heart failure, changes in liver enzymes, thrombocytopenia, leukopenia are also reported.
Cautions: Take caution in hepatic impairment, and in heart failure, monitor clinical status for 2-3 hours after initiation and after increasing each dose. Before increasing dose ensure that the renal function and heart failure are not deteriorating.
Pregnancy & lactation: Carvedilol should not be used during pregnancy & breast- feeding, since no studies have been performed in pregnant & lactating women; animal studies have shown that carvedilol crosses the placental barrier & also excreted in breast milk. Safety and efficacy of carvedilol in neonates & children have not been established.

Dosage & admin: In hypertension- treatment should be started with 12.5mg once daily, then increased to 25mg daily after 2 days; the dose may further be increased to max. 50mg daily in single or divided doses, at intervals of at least 2 weeks, if necessary. In elderly patients, the initial dose of 12.5mg daily may be sufficient for adequate control.
In angina- initially 12.5mg twice daily, then increased to 25mg twice daily after 2 days.
In heart failure- carvedilol may be given initially 3.125mg twice daily with food; dose may be increased at intervals of at least 2 weeks to 6.25mg twice daily, then to 12.5mg twice daily, then to 25mg twice daily. The dose may be increased to highest dose tolerated, in patients less than 85kg body-weight, max. 25mg twice daily and in patients over 85kg, max. 50mg twice daily.

Drug inter: Digoxin- in normal healthy volunteers a single dose of carvedilol taken together with a single dose of digoxin resulted in significantly increased levels of digoxin 24-hour later. Patients with congestive heart failure stabilized on digoxin have been given carvedilol concomitantly without any adverse effects. Increased monitoring of digoxin is recommended when initiating, adjusting, or discontinuing the dose of carvedilol. Rifampin- pretreatment with rifampin resulted in a 60% decrease in Cmax and AUC. Clonidine- b-receptor antagonists potentiate the pressor reaction which may follow sudden withdrawal of treatment with clonidine although, in theory, the a-blocking action of carvedilol should modify the pressure rise.

❖ **ARILOL Tab. Pacific**
Carvedilol 6.25mg 12.5mg & 25mg/tablet
6.25mg x 30's pack: 90.00 MRP
12.5mg x 30's pack: 150.00 MRP
25mg x 30's pack: 240.00 MRP
❖ **CARDIVAS Tab. Sun Pharma**
Carvedilol 6.25mg & 12.5mg/tablet
6.25mg x 50's pack: 225.00 MRP
12.5mg x 30's pack: 195.00 MRP
❖ **CARVETAB Tab. Medimet**
Carvedilol 6.25mg & 12.5mg/tablet
6.25mg x 50's pack: 150.00 MRP
12.5mg x 50's pack: 250.00 MRP
❖ **CARVIDA Tab. Delta**
Carvedilol 6.25mg & 12.5mg/tablet
6.25mg x 30's pack: 89.99 MRP
12.5mg x 30's pack: 150.02 MRP
❖ **CARVISTA Tab. Incepta**
Carvedilol 6.25mg, 12.5mg & 25mg/tablet
6.25mg x 100's pack: 300.00 MRP
12.5mg x 50's pack: 250.00 MRP
25mg x 30's pack: 240.00 MRP
❖ **CAVELON Tab. Drug Inter.**
Carvedilol 6.25mg & 12.5mg/tablet
6.25mg x 50's pack: 150.00 MRP
12.5mg x 50's pack: 300.00 MRP
❖ **CARVIPRESS Tab. Acme**
Carvedilol 6.25mg & 12.5mg/tablet
6.25mg x 30's pack: 90.00 MRP
12.50mg x 30's pack: 150.00 MRP
❖ **COREL Tab. Rephco**
Carvedilol 6.25mg & 12.5mg/tablet
6.25mg x 30's pack: 75.00 IP
12.5mg x 30's pack: 120.00 IP
❖ **DILAPRESS Tab. Beximco**
Carvedilol 6.25mg, 12.5mg & 25mg/tablet
6.25mg x 30's pack: 90.00 IP
12.50mg x 30's pack: 150.00 IP
25mg x 30's pack: 240.00 IP
❖ **DILATREND Tab. Roche**
Carvedilol 6.25mg, 12.5mg & 25mg/tablet
6.25mg x 30's pack: 270.00 MRP
25mg x 30's pack: 660.00 MRP
❖ **DILGARD Tab. General**
Carvedilol 6.25mg, 12.5mg & 25mg/tablet
6.25mg x 30's pack: 90.00 MRP
12.5mg x 30's pack: 150.00 MRP
25mg x 30's pack: 240.00 MRP
❖ **DILOL Tab. Mystic**
Carvedilol 6.25mg & 12.5mg/tablet
6.25mg x 100's pack: 300.00 MRP
12.5mg x 50's pack: 250.00 MRP
❖ **DILOCARD Tab. White Horse**
Carvedilol 6.25mg & 12.5mg/tablet
6.25mg x 50's pack: 150.00 MRP
12.5mg x 50's pack: 250.00 MRP
❖ **DIOLA Tab. Sandoz/Novartis**
Carvedilol 6.25mg, 12.5mg & 25mg/tablet
6.25mg x 30's pack: 120.00 MRP
12.5mg x 30's pack: 210.00 MRP

❖ **DUROL Tab. Square**
Carvedilol 6.25mg, 12.5mg & 25mg/tablet
6.25mg x 30's pack: 90.00 MRP
12.50mg x 30's pack: 150.00 MRP
25mg x 30's pack: 210.00 MRP
❖ **EXEPRESS Tab. Opsonin**
Carvedilol 6.25mg, 12.5mg & 25mg/tablet
6.25mg x 50's pack: 150.00 MRP
12.5mg x 30's pack: 150.00 MRP
25mg x 20's pack: 160.00 MRP
❖ **KARVEDIL Tab. ACI**
Carvedilol 6.25mg, 12.5mg & 25mg/tablet
6.25mg x 50's pack: 150.00 MRP
12.5mg x 30's pack: 120.00 IP
25mg x 30's pack: 240.00 MRP
❖ **KOREG Tab. Silva**
Carvedilol 6.25mg, 12.5mg & 25mg/tablet
6.25mg x 30's pack: 90.00 MRP
12.5mg x 30's pack: 150.00 MRP
25mg x 30's pack: 240.00 MRP
❖ **UCARDOL Tab. UniHealth**
Carvedilol 6.25mg, 12.5mg & 25mg/tablet
6.25mg x 30's pack: 90.00 MRP
12.5mg x 30's pack: 150.00 MRP
25mg x 30's pack: 270.00 MRP
❖ **VESODIL Tab. Rangs Pharma**
Carvedilol 6.25mg, 12.5mg & 25mg/tablet
6.25mg x 30's pack: 90.00 MRP
12.5mg x 30's pack: 150.00 MRP
25mg x 30's pack: 240.00 MRP

CELIPROLOL[65]

CELIPROLOL HCl: Tablet
Celiprolol is a $beta_1$-selective beta-adrenoreceptor blocking agent. It is available as celiprolol hydrochloride BP 200mg & 400mg tablet.
Mode of action: Celiprolol is a $beta_1$-selective (cardioselective), beta-adrenoreceptor blocking agent, which possesses mild $beta_2$ agonist activity and weak $alpha_2$-blocking activity, but does not exhibit quinidine-like membrane stabilizing properties. These and other receptor modulating effects may account for its absence of cardiodepressant effect, lack of adverse effects on serum lipids, decrease in peripheral vascular resistance as well as a reduced risk of adverse bronchopulmonary effects compared with other beta-adrenoreceptor blocking agents.
Ind: Celiprolol is indicated for the treatment of hypertension and effort-induced angina pectoris.
C/I: All beta blockers are contraindicated in bronchial asthma or other obstructive lung disorders, uncontrolled heart failure, cardiogenic shock, sick-sinus syndrome, grade 2 and 3 A-V block, intranodal A-V block and severe bradycardia and also avoid in severe renal impairment.
S/E: Adverse effects are transient and mild. The most frequently observed are headache, dizziness, fatigue, abdominal discomfort, weakness, rash, bradycardia, oedema, palpitation and muscle cramps; depression and pneumonitis reported rarely.
Precautions: Avoid abrupt withdrawal specially in angina; first-degree AV block; reduce oral dose of celiprolol in liver disease; renal impairment: diabetes; history of obstructive airways disease. Celiprolol therapy must be reported to the anaesthetist prior to general anaesthesia.
Pregnancy & lactation: Celiprolol in not teratogenic in experimental animals but is embryotoxic in rabbits and rats at 54 to 60 times the highest recommended human oral dose. It crosses the placenta in animals but is not known to what extent it crosses the placenta in humans. So, it should not be given in pregnancy unless its use is considered to be essential. The extent to which celiprolol is excreted in breast milk has not been established therefore, breast-feeding should not be continued by mothers receiving this product.
Dosage & admin: Hypertension: The recommended initial dose is 200mg once daily. The effect will be fully established after one to two weeks. The dose may be increased to 400mg once daily if necessary at 2 to 4 week intervals.
Angina pectoris: It is indicated for the long-term management of patients with angina pectoris. The usual dose is 200mg once daily; dosage may be increased to 400mg or 600mg once daily after 2 to 4 weeks intervals until optimum clinical response obtained. If treatment is to discontinue, reduce the dosage gradually over a period of 1 to 2 weeks. Celiprolol should be taken at least one hour before or two hours after meals.
Drug inter: Verapamil and celiprolol both slow A-V conduction and depress myocardial contractility through different mechanisms. Therefore, clinical signs and ECG should be carefully monitored during the treatment with this combination particularly when initiating therapy. The bioavailability of celiprolol has been shown to be reduced by the concomitant administration of chlorthalidone, hydrochlorothiazide or theophylline. While no effect on the efficacy of celiprolol has been demonstrated, patients response should be monitored after dosage adjustments involving these medications.

❖ **CELIPRESS Tab. SK+F**
Celiprolol hydrochloride 200mg & 400mg/tablet
200mg x 20's pack: 160.00 MRP
400mg x 10's pack: 150.00 MRP

LABETALOL[48,133]

LABETALOL: Tablet/Injection
Labetalol is an adrenergic receptor blocking agent possessing both alpha-1 (post-synaptic) and beta-receptor blocking activity. It is available as labetalol hydrochloride USP 100mg & 200mg tablet & 50mg in 10ml ampoule (i.e 5mg/ml) for intravenous (i. v) injection.
Mode of action: Labetalol lowers blood pressure by blocking peripheral arteriolar a-adrenoceptors, thus reducing peripheral resistance, and by concurrent β-blockade, protects the heart from reflex sympathetic drive that would otherwise occur. Cardiac output is not significantly reduced at rest or after moderate exercise. Increases in systolic blood pressure during exercise are reduced but corresponding changes in diastolic pressure are essentially normal. All these effects would be expected to benefit hypertensive patients.
Ind: Labetalol is indicated for hypertension (including hypertension in pregnancy, hypertension with angina, and hypertension following acute myocardial infarction). Parenteral therapy is specially indicated in severe hypertension when rapid control of blood pressure is essential; controlled hypotension in anaesthesia.
C/I: Labetalol is contraindicated in second or third degree heart block, cardiogenic shock and other conditions associated with severe and prolonged hypotension or severe bradycardia. When peripheral vasoconstriction suggests low cardiac output, the use of injection to control hypertensive episodes following acute myocardial infarction is contraindicated.
S/E: Adverse effects reported are postural hypotension (avoid upright position during and for 3 hours after i.v administration), tiredness, weakness, headache, rashes, scalp tingling, difficulty in micturition, epigastric pain, nausea, vomiting, liver damage.
Precautions: There have been rare reports of severe hepatocellular injury with labetalol therapy. The hepatic injury is usually reversible and has occurred after both short and long term treatment. Appropriate laboratory testing should be done at the first sign or symptom of liver dysfunction. If there is laboratory evidence of liver injury or the patient is jaundiced, labetalol therapy should be stopped and not re-started. Labetalol does not adversely affect renal function and is particularly suitable for use in hypertensive patients with renal disease.
Pregnancy & lactation: Although no teratogenic effects have been demonstrated in animals, labetalol should only be used during the first trimester of pregnancy if the potential benefit outweighs the potential risk. Adverse events of unknown causality have been reported very rarely in breast-fed neonates. Caution should be exercised when labetalol is administered to breast feeding women.
Dosage & admin: *By mouth:* The recommended initial dose is 100mg twice daily with food, increased at intervals of 14 days to usual dose of 200mg twice daily, upto 800mg daily in 2 divided doses. Maximum 2.4gm daily in divided doses. The usual maintenance dose is 200 to 400mg twice daily. Optimal doses are usually lower in patients also receiving a diuretic since an additive antihypertensive effect can be expected.
***By i.v injection:* 50mg over at least 1 minute, repeated after 5 minutes if necessary; maximum total dose 200mg.**
***By i.v infusion:* 2mg/minute until satisfactory response then discontinue; usual total dose 50-200mg. Hypertension of pregnancy: 20mg/hour, doubled every 30 minutes; usual maximum 160mg/hour. Hypertension following myocardial infarction: 15mg/hour, gradually increased to maximum 120mg/hour.**
***Dilution fluid can be used:* Lahetalol injection is compatible with 5% dextrose BP, 0.18% sodium chloride and 4% dextrose BP, 0.3% potassium chloride and 5% dextrose BP, compound sodium lactate BP i.v infusion fluids.**
Overdosage: If needed please consult

manufacturer's literature.
Drug inter: Labetalol may enhance the hypotensive effects of halothane. Care should be taken if labetalol is used concomitantly with either class I antiarrhythmic agents or calcium antagonists of the verapamil type. The hypotensive effect of labetalol may be reduced when used in combination with prostaglandin synthetase inhibitors (NSAIDs). Dosage adjustments may therefore be necessary.

❖ **LABECARD I.V Inj. Popular**
Labetalol hydrochloride USP 50mg in 10ml ampoule (i.e 5mg/ml): i.v injection.
10ml (50mg) ampoule x 1's pack: 100.00 MRP
❖ **LABETA Tab. Beximco**
Labetalol hydrochloride USP 100mg & 200mg/tablet.
100mg x 60's pack: 360.00 MRP
200mg x 30's pack: 300.00 MRP

METOPROLOL[21,33]

METOPROLOL: Tablet/Injection
Ind: Hypertension, arrhythmias, angina, migraine prophylaxis, thyrotoxicosis.
C/I; S/E; Cautions: See under propranolol hydrochloride; reduce dose in hepatic and renal impairment.
Dosage & admin: ***By mouth:***
Hypertension, the usual initial dosage is 25 to 100mg daily in a single dose, whether used alone or added to a diuretic; maintenance 100-200mg daily in 1-2 doses.
Angina, 50-100mg 2-3 times daily.
Arrhythmias, usually 50mg 2-3 times daily; up to 300mg daily in divided doses if necessary
Migraine prophylaxis, 100-200mg daily in divided doses
Thyrotoxicosis (adjunct), 50mg 4 times daily.
By intravenous injection:
Arrhythmias, up to 5mg at a rate 1- 2mg/min, repeated after 5 minutes if necessary, total dose 10-15mg.
In surgery, 2-4mg by slow i.v injection at induction or to control arrhythmias developing during anaesthesia; 2mg doses may be repeated to a max. of 10mg.
Note: Excessive bradycardia can be countered with i.v injection of atropine sulphate 0.6-2.4mg in divided doses of 0.6mg.

❖ **BETALOC Tab. Drug Inter.**
Metoprolol tartrate 25mg & 50mg/tablet
25mg x 100's pack: 150.00 MRP
50mg x 100's pack: 200.00 MRP
❖ **BETALOC-XR Tab. Drug Inter.**
Metoprolol succinate 47.5mg equivalent to metoprolol tartrate 50mg/tablet & metoprolol succinate 95mg equivalent to metoprolol tartrate 100mg/tablet
50mg x 100's pack: 400.00 MRP
100mg x 50's pack: 250.00 MRP
❖ **LOPRESOR Tab. Bristol**
Metoprolol tartrate 50mg/tablet
100's pack: 131.00 MRP
❖ **METALOC Tab. Renata**
Metoprolol tartrate 50mg & 100mg/tablet
50mg x 100's pack: 131.00 MRP
100mg x 50's pack: 125.00 MRP
❖ **METOCARD I.V Inj. Popular**
Metoprolol tartrate 1mg/1ml; 5ml ampoule: i.v injection.
5mg (5ml) amp x 1's pack: 600.00 MRP
❖ **PRELOC Tab. Opsonin**
Metoprolol tartrate 50mg/tablet
50's pack: 65.00 MRP
❖ **PRESONIL Tab. Incepta**
Metoprolol tartrate 50mg/tablet
100's pack: 130.00 MRP
❖ **SELOMET Tab. UniHealth/UniMed**
Metoprolol tartrate 50mg/tablet
50mg x 30's pack: 60.00 MRP
❖ **SELOMET-SR Tab. UniHealth/UniMed**
Metoprolol succinate USP 47.5mg equivalent to metoprolol tartrate USP 50mg/tablet (sustained release).
Dosage & admin: Dosages are same as other normal tablet preparations - see above under the text.
50mg x 30's pack: 120.00 MRP
❖ **TOPRESS Tab. SK+F**
Metoprolol tartrate 50mg/tablet
100's pack: 200.00 MRP

NEBIVOLOL[52]

NEBIVOLOL: Tablet
Nebivolol is a competitive and selective ?1-receptor antagonist with mild vasodilating properties. Nebivolol reduces heart rate & blood pressure at rest & during exercise. It is available as 5mg film coated tablet.
Mode of action: See description above.
Ind: Nebivolol is indicated in: 1. Mild to moderate essential hypertension; 2. Mild to moderate hypertension, with coronary artery diseases (CAD), with hyperlipidemia, in elderly, with diabetes mellitus; 3. Chronic heart failure (CHF).
C/I: Known hypersensitivity to nebivolol, cardiogenic shock, untreated phaeochromocytoma, sick sinus syndrome, 2nd & 3rd degree heart block, liver insufficiency or liver function impairment, pregnancy and lactation, bradycardia (heart rate < 50/m), metabolic acidosis, bronchial asthma, history of bronchospasm.
S/E: The most common side effects are-headache, dizziness, tiredness, paraesthesia, diarrhea, constipation, nausea, dyspnoea, and edema. Other side effects include bradycardia, slowed AV conduction/AV block, hypotension, heart failure, intermittent claudication, impaired vision, impotence, depression, nightmares, dyspepsia, flatulence, vomiting, bronchospasm, rash.
Precautions: β_1- receptor antagonist should not be used in ischemic heart disease, circulatory disorders, first degree heart block, anesthesia, diabetes, hyperthyroidism, chronic obstructive pulmonary disorders, and allergen sensitivity.
Pregnancy & lactation: Nebivolol is contraindicated in pregnancy and lactation.
Dosage & admin: Hypertension: Adults: 5mg (1tablet) daily, preferable at the same time of the day. Elderly (patients over 65 years): The recommended starting dose is 2.5mg (half-tablet) daily. The dose may be increased to 5mg (1tablet) daily if needed. Due to limited experience in patients above 75 years, caution must be exercised and these patients to be monitored closely. Patient with renal insufficiency: The recommended starting dose is 2.5mg (half- tablet) daily. The daily dose may be increased to 5mg (1tablet) if needed. Nebivolol 5mg if given in combination with 12.5-25mg hydrochlorothiazide, an additional antihypertensive effect has been observed. Chronic heart failure: The initial uptitration in case of chronic heart failure patients should be done according to the following steps at 1-2 weekly intervals based on patient tolerability: 1.25mg daily, to be increased to 2.5mg once daily, then to 5mg once daily and then to 10mg once daily. The maximum recommended dose is 10mg daily.
Children: In children safety and efficacy of nebivolol has not been demonstrated.
Overdosage: The symptoms of overdose are bradycardia, hypotension, bronchospasm and acute cardiac insufficiency. Symptomatic and supportive therapy should be given in overdose.
Drug inter: Nebivolol interacts with calcium channel antagonists (e.g. verapamil. diltiazem). class 1 antiarrythmic drugs and amiodarone.
Storage: Store below 25?C.

❖ **BIPINOR Tab. ACI**
Nebivolool 5mg/tablet (film-coated)
5mg x 30's pack: 240.00 IP

Alpha adrenoceptor blocking drugs

The useful alpha-adrenoceptor blocking drugs include: *Prazosin, Doxazosin, Indoramin & Terazosin.*
Mode of action: Alpha-adrenoceptor blocking drugs have post synaptic alpha-blocking effect, results in vasodilatation. These drugs however, cause a rapid reduction in blood pressure after the first dose and should be introduced with caution. Alpha-blockers may be used with other antihypertensive drugs in the treatment of hypertension.
Note: For furhter infomation, see below under the text of individual products.

PRAZOSIN[21.33]

❖ **ALPHAPRESS Tab. Renata**
Prazosin hydrochloride 1mg & 2mg/tablet.
Ind: Hypertension, congestive cardiac failure.
S/E: Postural hypotension, drowsiness, weakness, headache, vertig, asthma.
Cautions: First dose may cause collapse due to hypotension; reduce initial dose in renal failure.
Dosage & admin: Adult: 0.5 mg on first evening, then 0.5 mg 2 or 3 times daily for 3-7 days followed by 1 mg 2 or 3 times daily for 3-7 days; there after, increase gradually as required. Max. 20mg daily.
Child: Not recommended.
1mg x 100's pack: 243.00 MRP
2mg x 100's pack: 450.00 MRP

TERAZOSIN[21,26,49]

TERAZOSIN HCl: Tablet
Terazosin hydrochloride is a selective -1 adrenoceptor competitive blocking agent with a longer duration of action. It is a quinazoline derivative. When it is taken orally, it is absorbed very rapidly & action started within 15 minutes of ingestion.
Mode of action: See above under the text of alpha adrenoceptor blocking drugs.
Ind: Mild to moderate hypertension. In benign prostatic hyperplasia, single therapy is useful to relieve signs and symptoms.
C/I: Known to be hypersensitive to terazosin or its analogues.
S/E: Dizziness, lack of energy, peripheral oedema; urinary frequency and priapism reported.
Cautions: First dose may cause collapse due to hypotension (within 30-90 minutes, therefore should be taken on retiring to bed), may also occur with rapid dose increase. Caution should also be observed when terazosin is administered with other antihypertensive agents, avoid the possibility of significant hypotension. When adding terazosin to a diuretic or other antihypertensive agent, dosage reduction and adjustment may be necessary. In case of initiation of terazosin therapy patients should be cautioned to avoid driving & hazardous tasks, where injury could result due to syncope.
Use in pregnancy & lactation: Terazosin is not recommended during pregnancy unless the potential benefit overweighs the potential risk to mother & foetus. As terazosin is excreted in the breast milk, caution should also be exercised when administered in nursing mother.
Dose: Hypertension, initial dose- 1mg at bedtime (compliance with bedtime dose important, see cautions); dose can be increased or doubled after 7 days if necessary; usual maintenance dose- 2-10mg once daily; more than 20mg daily rarely improves efficacy.
Benign prostatic hyperplasia, initial dose- 1mg at bedtime is starting dose of all patients and this dose should not be exceeded; subsequent dose- the dose slowly increases to achieve the desired response, the usual recommended dose range is 5-10mg once daily.

❖ **PROSTOL Tab. Drug Inter.**
Terazosin hydrochloride 1mg & 2mg/tablet.
1mg x 50's pack: 150.00 MRP
2mg x 50's pack: 250.00 MRP
❖ **TERAZON Tab. Incepta**
Terazosin hydrochloride 2mg & 5mg/tablet.
2mg x 50's pack: 250.00 MRP
5mg x 30's Pack: 240.00 MRP

Drugs affecting the renin-angiotensin system

1. Angiotensin-converting enzyme (ACE) inhibitors
2. Angiotensin-II receptor antagonists or blocker

ACE Inhibitors[21,22,23]

Angiotensin converting enzyme (ACE) inhibitors include: ***Captopril, Cilazapril, Enalapril, Fosinopril, Imidapril, Lisinopril, Moexipril, Perindopril, Quinapril, Ramipril & Trandolapril.***
Mode of action: Angiotensin converting enzyme or ACE inhibitors inhibit the conversion of angiotensin I to angiotension II. They are effective and generally well tolerated.
Indications:
Hypertension: ACE inhibitors are usually considered in hypertension when thiazides and betablockers are contra-indicated, not tolerated, or failed to control blood pressure; they are particularly indicated for hypertension in insulin dependent diabetics with nephropathy.
Heart failure: ACE inhitiotrs have a valuable role in all grades of heart failure, combined when appropriate with diuretic and digoxin treatment.
Myocardial infarction: ACE inhibotors are used in the immediate and long term management of patients who have had a myocardial infarction.
Diabetic nephropathy: It is recommended that all diabetic patients with nephropathy causing albuminuria and all insulin-dependent diabetic patients with established microalbuminuria should be treated with an ACE inhibitor even if the blood pressure is normal .
C/I: Hypersensitivity to ACE inhibitors; known or suspected renovascular disease (unless the blood pressure cannot be controlled by other drugs); aortic stenosis; pregnancy; porphyria.
S/E: Hypotension, dizziness, headache, fatigue, asthenia, nausea (or occasionally vomiting), diarrhoea, muscle cramps, persistent dry cough, throat discomfort, voice changes, taste alteration, stomatitis, dyspepsia, abdominal pain, renal impariment, hyperkalaemia, angioedema, urticaria, rashes and hypersensitivity reactions; blood disorders (e.g agranulocytosis, neutropenia); other side-effects reported include upper respiratory symptoms, hyponatraemia, tachycardia, palpitations, arrhythmias, myocardial infarction and CVD, back pain, flushing, jaundice, pancreatitis, sleep disturbances, nervousness, mood changes, paraesthesia, impotence, alopecia.
Cautions: Renal function and electrolytes should be checked before starting ACE inhibitors and monitored during treatment. Caution with diuretics as the first dose may cause hypotension, because ACE inhibitors can cause rapid fall of blood pressure in volume depleted patients, therefore if possible, any diuretic should be discontinued or the dose reduced significantly 2-3 days before initiation of an ACE inhibitor. Diuretic therapy may be resumed if necessary after a few weeks.
Patients with renal impairment, S.L.E & other autoimmune collagen disorders & during concurrent use of immunosuppressant or leukopenic drugs monitor WBC counts & urinary protein before & during therapy. Lactation. Anaesthesia.
Dosage: See under the text of the individual preparation.

CAPTOPRIL[21,33]

CAPTOPRIL: Tablet.
Ind: In mild to moderate hypertension alone or with thiazide diuretics; severe hypertension resistant to other treatment; adjunct to diuretics & digitalis in severe refractory congestive cardiac failure; following myocardial infarction; diabetic nephropathy in insulin-dependent diabetes.
C/I; S/E; Caution: See above under the text of ACE inhibitor.
Dosage & admin: Mild to moderate hypertension- initially 12.5mg twice daily with a thiazide diuretic. Maintenance, 25mg twice daily increasing gradually at 2-4 weeks interval if necessary to maximum 50mg twice daily.
Severe hypertension- 25 mg twice daily increasing if necessary to 50mg three times daily.
Heart failure- as adjunct initially 6.25-12.5mg under close medical supervision; usual maintenance dose 25mg 2-3 times daily, and maximum 150mg daily.
Diabetic nephropathy- 75-100mg daily in divided doses; if further blood pressure reduction required, other antihypertensives may be used in conjuction with captopril; in severe renal impairment, initially 12.5mg twice daily.

❖ **ACETOR Tab. Drug Inter.**
Captopril 25mg/tablet.
100's pack: 300.00 MRP
❖ **ANGITEN Tab. Ibn Sina**
Captopril 25mg/tablet.
100's pack: 304.00 IP
❖ **CAPOTRIL Tab. Alco Pharma**
Captopril 25mg/tablet.
40's pack: 120.00 MRP
❖ **CATOPIL Tab. Zenith**
Captopril USP 12.5mg & 25mg/tablet.
12.5mg x 100's pack: 175.00 MRP
25mg x 100's pack: 300.00 MRP
❖ **CARDOPRIL Tab. Beximco**
Captopril 25mg & 50mg/tablet.
25mg x 100's pack: 300.00 IP
50mg x 100's pack: 600.00 IP
❖ **TOPRIL Tab. Jayson**
Captopril 25mg/tablet.
50's pack: 139.50 IP

ENALAPRIL[21,33]

ENALAPRIL MALEATE: Tablet
Ind: All grades of hypertension; treatment of congestive heart failure as adjunct; prevention of symptomatic heart failure and prevention of coronary ischaemic events in patients with left ventricular dysfunction.
C/I; S/E; Caution: See above under the text of ACE inhibitor.
Dosage & admin: Hypertension, used alone, initially 5mg once daily; if used in addition to diuretic, in elderly patients or in renal impairment, initially 2.5mg daily; usual maintenace dose 10-20mg once daily; in severe hypertension may be increased to max. 40mg once daily.

Heart failure- in asymptomatic left ventricular dysfunction, as an adjunct, initially 2.5mg daily under close medical supervision; usual maintenance 20mg daily in 1-2 divided doses.

❖ **ANAPRIL Tab. SK+F**
Enalapril maleate 5mg & 10mg/tablet.
5mg x 100's: 152.00 MRP
10mg x 100's: 278.00 MRP
❖ **ENARIL Tab. Beximco**
Enalapril maleate 5mg/tablet.
5mg x 100's: 100.00 IP
❖ **ERIL Tab. Orion**
Enalapril maleate 5mg & 10mg/tablet.
5mg x 50's: 50.00 MRP
10mg x 50's: 100.00 MRP
❖ **MINIPRIL Tab. Renata**
Enalapril maleate 5mg & 10mg/tablet.
5mg x 100's: 152.00 MRP
10mg x 100's: 202.00 MRP
❖ **VASOPRIL Tab. Square**
Enalapril maleate 5mg & 10mg/tablet.
5mg x 100's: 125.00 MRP
10mg x 50's: 112.50 MRP

FOSINOPRIL[21,51]

❖ **MONOPRIL Tab. Squibb/Kapricorn**
Fosinopril sodium 10mg/tablet
Ind: Hypertension; congestive heart failure (adjunct)
C/I; S/E; Caution: See above under the text of ACE inhibitor.
Dosage & admin: Hypertention, initially 10mg daily, increased if necessary after 4 weeks; usual dose range 10-40mg (doses over 40mg not shown to increase efficacy); the first dose should preferably be given at bedtime. If ACE inhibitor used in addition to diuretic, caution should be taken (see notes above under caution under ACE inhibitor).
Heart failure (adjunct), initially 10mg daily under close medical supervision (in hospital in severe heart failure; intiation in hospital is also recommended for patients with mild to moderate heart failure); if initial dose is well tolerated, may be increased to up to 40mg once daily.
20's pack: 400.00 MRP

LISINOPRIL[21,52]

LISINOPRIL: Tablet
Ind: All grades of essential hypertension and renovascular hypertension where standard therapy ineffective or inappropriate.
Congestive heart failure in conjunction with diuretics and/or digitalis.
C/I: Pregnancy, aortic stenosis, cor pulmonale.
S/E: Hypotension, renal failure, angioedema, rash, dizziness, headache, diarrhoea, cough, fatigue, palpitations, chest pain, asthenia.
Cautions: Renal impairment; monitor renal function before & during treatment; Lactation.
Dosage & admin: Adults: Initially, 2.5mg once daily increasing gradually over 2-4 weeks to maintenance of 10-20mg once daily.
Therapy to be initiated in hospital only.
In hypertension, if any diuretic is given concurrently, reduce the dose or discontinue the diuretic for 2-3 days beforehand and resume later if required.
Child: Not recommended.
Drug inter: K+ sparing diuretics, K+ supplements and indomethacin (should be avoided).

❖ **ACEPRIL Tab. Drug Inter.**
Lisinopril 5mg & 10mg/tablet
5mg x 50's: 200.00 MRP
10mg x 30's: 202.50 MRP
❖ **FASTRIL Tab. Gaco**
Lisinopril 5mg & 10mg/tablet
5mg x 50's: 139.13 MRP
10mg x 30's: 151.39 MRP
❖ **G-LISINOPRIL Tab. Gonoshasthaya**
Lisinopril 5mg/tablet
5mg x 50's: 100.00 MRP
❖ **LINORIL Tab. Rephco**
Lisinopril 5mg/tablet
5mg x 50's: 129.50 IP
❖ **LIPRIL Tab. Acme**
Lisinopril 5mg & 10mg/tablet
5mg x 50's: 150.00 MRP
10mg x 30's: 165.00 MRP
❖ **LISPRIL Tab. Medimet**
Lisinopril 5mg/tablet
5mg x 50's: 112.50 MRP
❖ **NEOPRIL Tab. Beximco**
Lisinopril 5mg/tablet
5mg x 100's: 300.00 IP
❖ **NOP Tab. Ambee**
Lisinopril 10mg/tablet
5mg x 50's: 177.00 MRP
❖ **STRIL Tab. ACI**
Lisinopril 5mg/tablet
5mg x 28's: 84.00 MRP

PERINDOPRIL[21,53]

PERINDOPRIL ERBUMINE: Tablet.
Perindopril erbunine is an angiotensin-converting enzyme (ACE) inhibitor. It is available as 2mg, 4mg & 8mg tablet.
Ind: Essential hypertension; congestive heart failure (as adjunct).
C/I; Caution: See above under the text of ACE inhibitor.
S/E: See notes above under the text of ACE inhibitor; asthenia, flushing, mood & sleep disturbances.
Dosage & Admin: Hypertension- 4mg once a day in the morning, if necessary, the dose may be increased to 8mg after 1 month of treatment; it should be taken before food. Congestive heart failure- perindopril should be started under close medical supervision at a starting dose of 2mg in the morning, this may be increased to 4mg once blood pressure acceptability has been demonstrated. Elderly patients, start treatment with 2mg daily.

❖ **CADNYL 4 Tab. Square**
Perindopril erbumine INN 4mg/tablet.
4mg x 30's pack: 360.00 MRP
❖ **COVERSYL Tab. Servier**
Perindopril erbumine 4mg & 8mg/tablet.
4mg x 10's pack: 165.00 MRP
8mg x 30's pack: 750.00 MRP
❖ **PENDORIL Tab. Renata**
Perindopril erbumine 2mg, 4mg & 8mg/tablet.
2mg x 10's pack: 70.00 MRP
4mg x 10's pack: 120.00 MRP
8mg x 10's pack: 240.00 MRP
❖ **PERIPRIL Tab. Incepta**
Perindopril erbumine 2mg, 4mg & 8mg/tablet.
2mg x 20's pack: 140.00 MRP
4mg x 20's pack: 240.00 MRP
8mg x 20's pack: 480.00 MRP

RAMIPRIL[26]

RAMIPRIL: Tablet
Ramipril is an angiotensin converting enzyme (ACE) inhibitor, which after hydrolysis to ramiprilat, blocks the conversion of angiotensin I to the vasocons-trictor substance, angiotensin II. So, inhibition of ACE by ramipril results in decreased plasma angiotensin II, which leads to decreased vasopressor activity and decreased aldosterone secretion. Thus, ramipril exerts its antihypertensive activity. It is long acting and well tolerated; so, can be used in long term therapy.
Ind: i. Mild to severe hypertension, where it may be used alone or in combination with thiazide diuretics. ii. Congestive heart failure.
iii. To reduce the risk of stroke, myocardial infarction and death from cardiovascular events in patients with a history of cardiovascular disease. iv. Proteinuric non-diabetic nephropathy.
C/I; S/E; Caution: See above under the text of ACE inhibitor.
Dosage & admin: Dosage of Ramipril must be adjusted according to the patient tolerance and response.
Hypertension- For the management of hypertension in adults not receiving a diuretic, the usual initial dose is 1.25-2.5mg once daily. Dosage generally is adjusted no more rapidly than at 2-week intervals. The usual maintenance dosage in adults is 2.5-20mg daily given as a single dose or in 2 divided doses daily. If BP is not controlled with Ramipril alone, a diuretic may be added. Congestive heart failure after myocardial infarction- In this case, Ramipril therapy may be initiated as early as 2 days after myocardial infarction. An initial dose of 2.5mg twice daily is recommended, but if hypotension occurs, dose should be reduced to 1.25mg twice daily. Therapy is then adjusted to a target daily dose of 5mg twice daily.
Prevention of major cardiovascular events- In this case, the recommended dose is 2.5mg twice daily for the first week of therapy and 5mg once daily for the following 3 weeks; dosage then may be increased, as tolerated to a maintenance dosage of 10mg once daily. Dosage in renal impairment- For the patients with hypertension and renal impairment, the recommended initial dose is 1.25mg once daily. Subsequent dosage should be adjusted according to individual tolerance and BP response, up to a maximum of 5mg daily. For the patients with heart failure and renal impairment, the recommended dose is 1.25mg once daily. The dose may be increased to 1.25mg twice daily and up to a maximum dose

of 2.5mg twice daily depending upon clinical response and tolerability.

Overdosage: Limited data on human overdosage are available. The most likely clinical manifestations would be symptoms attributable to hypotension. Because the hypotensive effect of Ramipril is achieved through vasodilation and effective hypovolemia, it is reasonable to treat Ramipril overdosage by infusion of normal saline solution.

Drug inter: Concomitant administration with diuretics may lead to serious hypotension and in addition dangerous hyperkalemia with potassium sparing diuretics. Concomitant therapy with lithium may increase the serum lithium concentration. Reduction in BP may affect the ability to drive and operate machinery and this may be exacerbated by alcohol. NSAIDs may reduce the antihypertensive effect of Ramipril and cause deterioration of renal function.

❖ **PIRAMIL Tab. Sandoz/Novartis**
Ramipril BP 2.5mg & 5mg/tablet
2.5mg x 28's: 168.00 IP
5mg x 28's: 252.00 IP
❖ **PRICARD Tab. White Horse**
Ramipril BP 2.5mg/tablet
2.5mg x 50's: 200.00 MRP
❖ **PRIMACE Cap. Beximco**
Ramipril BP 1.25mg, 2.5mg & 5mg/capsule
1.25mg x 30's: 75.00 IP
2.5mg x 30's: 150.00 IP
5mg x 30's: 240.00 IP
❖ **PROTACE Tab. UniHealth**
Ramipril BP 1.25mg, 2.5mg & 5mg/tablet
1.25mg x 30's: 90.00 MRP
2.5mg x 30's: 150.00 MRP
5mg x 30's: 240.00 MRP
❖ **RACARD Tab. Pacific**
Ramipril BP 1.25mg, 2.5mg & 5mg/tablet
1.25mg x 30's: 75.00 MRP
2.5mg x 30's: 138.00 MRP
5mg x 30's: 240.00 MRP
❖ **RAMACE Cap. Opsonin**
Ramipril BP 1.25mg, 2.5mg & 5mg/capsule
1.25mg x 50's: 125.00 MRP
2.5mg x 30's: 150.00 MRP
5mg x 30's: 240.00 MRP
❖ **RAMICARD Tab. Drug Inter.**
Ramipril BP 2.5mg & 5mg/tablet
2.5mg x 50's: 150.00 MRP
5mg x 50's: 350.00 MRP
❖ **RAMIL Tab. Popular**
Ramipril BP 2.5mg & 5mg/tablet
2.5mg x 30's: 150.00 IP
5mg x 30's: 240.00 IP
❖ **RAMIPRESS Tab. Silva**
Ramipril BP 1.25mg, 2.5mg & 5mg/capsule
1.25mg x 30's: 75.00 MRP
2.5mg x 30's: 150.00 MRP
5mg x 30's: 240.00 MRP
❖ **RAMIPRO Tab. General**
Ramipril BP 2.5mg & 5mg/tablet
2.5mg x 50's: 150.00 MRP
5mg x 30's: 150.00 MRP
❖ **RAMORIL Tab. Incepta**
Ramipril BP 1.25mg, 2.5mg, 5mg & 10mg/capsule
1.25mg x 50's: 125.00 MRP
2.5mg x 50's: 250.00 MRP
5mg x 50's: 400.00 MRP
10mg x 30's: 360.00 MRP
❖ **RAMPRIL Tab. Rangs Pharma**
Ramipril BP 2.5mg & 5mg/tablet
2.5mg x 30's: 120.00 MRP
5mg x 30's: 180.00 MRP
❖ **RIPRIL Tab. Square**
Ramipril BP 1.25mg, 2.5mg & 5mg/capsule
1.25mg x 30's: 75.00 MRP
2.5mg x 30's: 150.00 MRP
5mg x 30's: 240.00 MRP
❖ **R-PIL Tab. Bio-pharma**
Ramipril BP 1.25mg, 2.5mg & 5mg/capsule
1.25mg x 30's: 90.00 MRP
2.5mg x 30's: 150.00 MRP
5mg x 30's: 240.00 MRP
❖ **TRITACE Tab. Sanofi-aventis**
Ramipril BP 2.5mg, 5mg & 10mg/tablet
2.5mg x 28's: 240.80 MRP
5mg x 28's: 352.80 MRP
10mg x 28's: 504.00 MRP

Angiotensin-II receptor blocker (ARB)[21,26,54]

Introduction: The angiotensin-II receptor blockers are newer antihypertensive drugs, act by blocking the action of angiotensin-II on the heart, peripheral vasculature and kidney. They are also useful in the management of heart failure.
The angiotensin-II receptor blockers that known to us till this day are- Losartan, Valsartan & very recently introduced are- Candesartan, Eprosartan, Irbesartan and Telmisartan

Mode of action: Angiotensin-II is a potent vasoconstrictor, the primary vasoactive hormone of the renin-angiotensin system and an important component in the pathophysiology of hypertension. The angiotensin-II receptor blockers block the vasoconstrictor and aldosterone secreting effects of angiotensin-II by selectively blocking the binding of angiotensin-II. They have many properties & effects similar to those of the ACE inhibitors; but their merit over ACE inhibitors that they do not inhibit the breakdown of bradykinin and other kinins, thus they do not cause persistent dry cough as happens with ACE inhibitors.
Ind: Hypertension; congestive heart-failure & renal arterial stenosis.
C/I: Hypersensitivity to any of the components of angiotensin-II receptor blocking preparations, e.g losartan, valsartan etc. Contra-indicated in pregnancy & lactation, if pregnancy is detected during therapy should be discontinued as soon as possible.
S/E: The side-effects that experienced with angiotensin-II blockers are mild and rare. For specific side-effects see below under individual preparation.
Precautions & warnings: Sodium-depleted and/or volume-depleted patients, such as, those receiving high doses of diuretics, symptomatic hypotension may occur in rare cases after initiation of therapy. Sodium and/or volume depletion should be corrected before starting treatment with angiotensin-II receptor blockers for example, by reducing the diuretic dose. If hypotension occurs, the patient should be placed in the supine position and, if necessary, given an i.v infusion of normal saline. Treatment can be continued once the blood pressure has stablised.
Dosage: See below under individual preparation.

CANDESARTAN[42]

CANDESARTAN: Tablet
Candesartan cilexetil is a newer angiotensin-II receptor blocker. It is rapidly and completely bioactivated by ester hydrolysis during absorption from the gastrointestinal tract to candesartan, a selective AT1 subtype angiotensin II receptor antagonist.
Mode of action: See above under the text of 'angiotensin-II receptor blocker'.
Ind: It is indicated for the treatment of hypertension. It may be used alone or in combination with other antihypertensive agents.
C/I: Pregnancy. Known hypersensitivity to any component of this product.
S/E: *Body as a whole: Asthenia, fever. Central & peripheral nervous system: Paresthesia, vertigo. Gastrointestinal system: Dyspepsia, gastroenteritis. Cardiovascular system:* Tachycardia, palpitation. *Metabolic & nutritional:* Creatine phosphokinase increased, hyperglycaemia, hypertriglyceridemia, hyperuricemia. *Musculoskeletal system:* Myalgia. Platelet/bleeding-clotting disorders: Epistaxis. Psychiatric disorders: Anxiety, depression, somnolence. *Skin & appendages:* Rash, sweating increased. *Urinary system:* Hematuria.
Precautions & Warmings: See above under the text of 'angiotensin-II receptor blocker'.
Pregnancy & lactation: When pregnancy is detected candesartan should be discontinued as soon as possible.
It is not known whether candesartan is excreted in human milk, but has been shown to be present in rat milk. Therefore, a decision should be made whether to discontinue nursing or discontinue the drug, taking into account the importance of the drug to the mother.
Dosage & admin: Dosage must be individualized. Blood pressure response is dose related over the range of 2mg to 32mg. The usual recommended starting dose is 16mg once daily when it is used as monotherapy in patients who are not volume depleted. Candesartan can be administered once or twice daily with total daily dosage ranging from 8mg to 32mg. Larger doses do not appear to have a greater effect, and there is relatively little experience with such doses. Most of the antihypertensive effect is present within 2 weeks, and maximal blood pressure reduction is generally obtained within 4 to 6 weeks of treatment with candesartan.
No initial dosage adjustment is necessary for elderly patients, for patients with mildly impaired renal function, or for patients with mildly impaired hepatic function. For patients with possible depletion of intravascular volume (e.g patients treated with diuretics, particularly those with impaired renal

function), candesartan should be initiated under close medical supervision and consideration should be given to administration of a lower dose. Candesartan may be administered with or without food. If blood pressure is not controlled by candesartan alone, a diuretic can be added. Candesartan may be administered with other antihyper-tensive agents.
Paediatric patients: Safety and effectiveness in pediatric patients have not been established.
Drug inter: No significant interactions have been reported with other drugs such as glyburide, nifedipine, digoxin, warfarin, hydrochlorothiazide and oral contraceptives in healthy volunteers.
Because candesartan is not metabolised by the cytochrome P 450 system and has no effect on P 450 enzymes, interactions with drugs that inhibit, or are metabolised by, those enzymes could not be expected.

❖ **ARB 8 Tab. Square**
Candesartan cilexetil INN 8mg/tablet
8mg x 30's pack: 180.00 MRP
❖ **CANDESA Tab. General**
Candesartan cilexetil INN 4mg, 8mg & 16mg/tablet
4mg x 30's pack: 105.00 MRP
8mg x 30's pack: 180.00 MRP
16mg x 30's pack: 330.00 MRP
❖ **GIRAN Tab. Aristopharma**
Candesartan cilexetil INN 8mg & 16mg/tablet
8mg x 30's pack: 180.00 MRP
16mg x 30's pack: 330.00 MRP
❖ **VESOTAN Tab. Rangs Pharma**
Candesartan cilexetil INN 8mg & 16mg/tablet
8mg x 30's pack: 180.00 MRP
16mg x 30's pack: 330.00 MRP

IRBESARTAN[63]

IRBESARTAN: Tablet
Irbesartan is an angiotensin-II receptor antagonist, introduced very recently for the treatment of hypertension. It is available as irbesartan INN 75mg, 150mg & 300mg/tablet.
Mode of action: See above under the text of 'angiotensin-II receptor blocker'.
Ind: Irbesartan is indicated for the treatment of hypertension.
S/E: Adverse events in patients receiving irbesartan are generally mild and transient with no relationship to dose:
***Cardiovascular*:** Uncommon- subjective rhythm disturbance, flushing, ECG abnormality, cardiac murmur, cardiac rhythm disturbance, orthostatic hypotension, atrial rhythm disturbance, bradycardia, hypotension. Rare- syncope, conduction disorder, myocardial infarction.
Dermatologic: Uncommon- pruritus, facial erythema. Rare- dermatitis, acne, scalp-hair abnormality.
Endocrine/Metabolic/Electrolyte imbalance: Uncommon- sexual dysfunction, libido change. Rare- breast disorder, gout, hot flashes.
Gastrointestinal: Uncommon- constipation, flatulance, dry mouth, abdomen distention. Rare- abnormal stool, decreased or increased appetite, oral lesion, dysphagia, oesophagitis.
General: Uncommon- weakness, hyperhydrosis, malaise, weight gain. Rare- cold sensation, warmth sensation, pain.
Haematopoietic: Rare- anaemia.
Musculoskeletal/connective tissue: Uncommon- muscle cramp, swelling extremity. Rare- arthritis, muscleache, myalgia, extremity weakness, stiffness of lower extremity.
Nervous system: Uncommon- orthostatic dizziness, numbness, sleep disturbance, depression, emotion labile/disturbance, somnolence, vertigo, paresthesia. Rare- stress related disorder, tremor coordination disturbance, disturbing dreams.
Renal/Genitourinary: Uncommon- urination abnormality. ***Respiratory:*** Uncommon- epistaxis, dyspnea. Special senses: Uncommon- vision disturbance, hearing abnormality. Rare- eye disturbance, eyelid abnormality, visual field abnormality, medication bad taste, taste disturbance.
Others: As with other angiotensin-II receptor antagonists, rare cases of hypersensitivity reactions (urticaria, angioedema) have been reported since the marketing of irbesartan. The following have been reported very rarely during post-marketing surveillance: arthralgia, asthenia, hyperkalemia, myalgia, tinnitus jaundice, elevated liver function tests and impaired renal function including isolated cases of renal failure in patients at risk.
C/I; Precautions & Warnings: See above under the text. The safety of irbesartan in the presence of heart failure has not been fully defined.
Sudden death has occurred in some studies of patients with heart failure, and although such deaths may have reflected the natural history of the underlying heart failure, caution is recommended when treating such patients with irbesartan. At this time, experience is limited with irbesartan in the treatment of patients with ventricular dysfunction or cardiac arrythmias; caution is advised.
Pregnancy & lactation: Drugs that act directly on the renin-angiotensin system can cause fetal and neonatal morbidity and death when administered to pregnant women. Irbesartan is excreted in the milk of lactating rats, but not known whether irbesartan or its metabolites are excreted in human milk. So, a decision should be made whether to discontinue breast-feeding or to discontinue the drug, taking into account the importance of irbesartan in the therapy of the mother and the potential risk to the infant.
Dosage & admin: Irbesartan may be used either alone or in combination with other antihypertensive agents (e.g thiazide diuretic, beta-adrenergic blocking agent, long-acting calcium-channel blocking agent). The usual initial and maintenance dose of irbesartan is 150mg once daily. It may be administered with or without food. Therapy should be adjusted according to blood pressure response. Patients requiring further reduction in blood pressure, dose may be increased to 300mg once daily. If blood pressure is not adequately controlled with irbesartan alone, a diuretic (e.g hydrochlorothiazide 12.5mg daily) or another antihypertensive drug (e.g beta-adrenergic blocking agent, long-acting calcium channel blocking agent) may be added.
Patients with intravascular volume depletion: Volume and/or sodium-depletion should be corrected before initiating therapy with irbesartan or a lower starting dose (e.g 75mg) should be considered. Patients undergoing haemodialysis should receive a starting dose of 75mg, and the dose should be adjusted according to B.P response. If the blood pressure is not adequately controlled, the dose can be increased.
Paediatric use: Safety and effectiveness in paediatric patients have not been established.
Elderly and patients with renal or hepatic impairment: No dosage reductions is generally necessary in the elderly or in patients with impaired hepatic function (mild to moderate degree) or impaired renal function (regardless of degree), unless accompanied by uncorrected volume depletion.
Irbesartan is contra-indicated in those patients who are hypersensitive to irbesrtan.
Drug inter: No interactions would be expected to occur with drugs whose metabolism is dependent upon cytochrome P450 isoenzymes. Irbesartan is primarily metabolized by CYP2C9, however, during clinical studies, no significant drug interactions were observed when irbesartan was co-administered with warfarin (a drug metabolized by CYP2C9). Irbesartan does not affect the pharmacokinetics of digoxin. The pharmacokinetics of irbesartan is not affected by co-administration with nifedipine or hydrochlorothiazide. Based on experience with the use of other drugs that affect the renin-angiotensin system, concomitant use of potassium sparing diuretics, potassium supplements, or salt substitutes containing potassium may lead to increase in serum potassium. Reversible increases in lithium concentra-tions have been very rarely reported with irbesartan. Therefore, if co-administration of irbesartan and lithium proves necessary, careful monitoring of serum lithium is necessary.

❖ **CAVAPRO Tab. UniHealth**
Irbesartan INN 75mg, 150mg & 300mg/tablet.
75mg x 30's pack: 180.00 MRP
150mg x 30's pack: 360.00 MRP
300mg x 10's pack: 240.00 MRP
❖ **IRBES Tab. SK+F**
Irbesartan INN 75mg & 150mg/tablet.
75mg x 50's pack: 250.00 MRP
150mg x 30's pack: 270.00 MRP

LOSARTAN POTASSIUM[21,26]

LOSARTAN POTASSIUM: Tablet
It is an angiotensin-II receptor (type AT1) antagonist, & now regarded as the first-line therapy option for treating high blood pressure.
Mode of action: See above under the text of 'angiotensin-II receptor blocker'.
Ind: All grades of hypertension, congestive heart-failure & renal arterial stenosis. It may be used alone or in combination with other antihypertensive agents. It is an effective alternative for patients who have to discontinue an ACE inhibitor because of persistent dry

cough.
S/E: The side-effects that experienced with losartan are usually mild and occasional. Symptomatic hypotension may occur, particularly in patients with intravascular volume depletion (e.g those treating with diureics). Hyperkalaemia may occur occasionally. Other side-effects may include- diarrhoea, dizziness, myalgia, migraine, urticaria, pruritus, taste disturbance, upper respiratory infection, leg pain & altered liver function tests.
C/I & Precautions: See above under the text.
Dosage & Admin: The usual starting dose is 50mg once daily; but, in patients with possible depletion of intravascular volume (e.g patients treated with diuretics), patients with a history of hepatic or renal impairment & in case of very elderly patients (over 75 years) should be started with 25mg once daily. It can be administered once or twice daily with total daily doses ranging from 25mg to increasing upto 100mg after several weeks, if necessary. If blood pressure is not controlled by losartan alone, a diuretic may be added at a low dose. Losartan may be administered with or without food.
Children- not recommended.
Drug inter: Losartan potassium, as with other drugs that block angiotensin II or its effects, concomitant use of potassium-sparing diuretics (e.g spironolactone, triamterene, amiloride), potassium supplements, or salt substitutes containing potassium may lead to increases in serum potassium.
Besides, no significant drug interactions have been identified by clinical trials with hydrochlorothiazide, digoxin, warfarin, cimetidine, ketoconazole and phenobarbital.

❖ **ANGILOCK Tab. Square**
Losartan potassium INN 25mg, 50mg & 100mg/tablet.
25mg x 50's pack: 175.00 MRP
50mg x 50's pack: 300.00 MRP
100mg x 30's pack: 300.00 MRP

❖ **ANREB Tab. General**
Losartan potassium INN 25mg & 50mg/tablet.
25mg x 50's pack: 175.00 MRP
50mg x 30's pack: 180.00 MRP

❖ **ARATEN Tab. UniHealth**
Losartan potassium INN 25mg & 50mg/tablet.
25mg x 30's pack: 105.00 MRP
50mg x 30's pack: 180.00 MRP

❖ **CARDON Tab. SK+F**
Losartan potassium INN 25mg, 50mg & 100mg/tablet.
25mg x 30's pack: 105.00 MRP
50mg x 40's pack: 240.00 MRP
100mg x 20's pack: 200.00 MRP

❖ **COZARIL Tab. Hallmark**
Losartan potassium INN 25mg & 50mg/tablet.
25mg x 30's pack: 75.00 MRP
50mg x 30's pack: 120.00 MRP

❖ **E-TAN Tab. Edruc**
Losartan potassium INN 50mg/tablet.
50mg x 30's pack: 150.00 IP

❖ **LARB Tab. Opsonin**
Losartan potassium INN 25mg, 50mg & 100mg/tablet.
25mg x 30's pack: 105.00 MRP
50mg x 30's pack: 180.00 MRP
100mg x 30's pack: 300.00 MRP

❖ **LK Tab. Pacific**
Losartan potassium INN 25mg & 50mg/tablet.
25mg x 30's pack: 105.00 MRP
50mg x 30's pack: 180.00 MRP

❖ **LOK-50 Tab. Globe**
Losartan potassium INN 50mg/tablet.
50mg x 30's pack: 150.00 MRP

❖ **LOPO Tab. Bio-pharma**
Losartan potassium INN 25mg & 50mg/tablet.
25mg x 30's pack: 105.00 MRP
50mg x 30's pack: 180.00 MRP

❖ **LOPOS Tab. Zenith**
Losartan potassium INN 50mg/tablet.
25mg x 30's pack: 105:00 MRP
25mg x 100's pack: 350:00 MRP
50mg x 30's pack: 180:00 MRP
50mg x 100's pack: 600:00 MRP

❖ **LOSA-25 Tab. Alco Pharma**
Losartan potassium INN 25mg/tablet.
25mg x 30's pack: 105.00 MRP

❖ **LOSA-50 Tab. Alco Pharma**
Losartan potassium INN 50mg/tablet.
50mg x 30's pack: 151.50 MRP

❖ **LOSACARD Tab. Novo Healthcare**
Losartan potassium USP 25mg & 50mg/tablet.
25mg x 30's pack: 105.00 MRP
50mg x 30's pack: 150.00 MRP

❖ **LOSACOR Tab. Healthcare**
Losartan potassium INN 50mg/tablet.
50mg x 30's pack: 195.00 MRP

❖ **LOSAN Tab. Orion**
Losartan potassium INN 25mg & 50mg/tablet.
25mg x 30's pack: 105.00 MRP
50mg x 30's pack: 180.00 MRP

❖ **LOSANIL Tab. Medicon**
Losartan potassium INN 50mg/tablet.
50mg x 30's pack: 165.00 MRP

❖ **LOSAP Tab. Doctor's**
Losartan potassium INN 50mg/tablet.
50mg x 30's pack: 150.00 MRP

❖ **LOSAR Tab. Nipa**
Losartan potassium INN 50mg/tablet.
50mg x 30's pack: 165.00 MRP

❖ **LOSARCAR Tab. Medimet**
Losartan potassium INN 25mg & 50mg/tablet.
25mg x 50's pack: 175.00 MRP
50mg x 30's pack: 180.00 MRP

❖ **LOSARDIL Tab. Drug Inter.**
Losartan potassium INN 25mg & 50mg/tablet.
25mg x 50's pack: 175.00 MRP
50mg x 30's pack: 180.00 MRP

❖ **LOSART Tab. Acme**
Losartan potassium INN 25mg & 50mg/tablet.
25mg x 30's pack: 105.00 MRP
50mg x 30's pack: 180.00 MRP

❖ **LOSATAN Tab. Popular**
Losartan potassium INN 25mg, 50mg & 100mg/tablet.
25mg x 30's pack: 105.00 MRP
50mg x 30's pack: 180.00 MRP
100mg x 30's pack: 300.00 MRP

❖ **LOSIUM Tab. Ibn Sina**
Losartan potassium INN 25mg & 50mg/tablet.
25mg x 30's pack: 105.00 MRP
50mg x 30's pack: 180.00 MRP

❖ **LOSPIL Tab. White Horse**
Losartan potassium USP 50mg/tablet.
50mg x 50's pack: 300.00 MRP

❖ **LOSPRE Tab. Kumudini**
Losartan potassium INN 50mg/tablet.
50mg x 30's pack: 120.00 MRP

❖ **LOSTAN Tab. Ziska**
Losartan potassium INN 50mg/tablet.
50mg x 30's pack: 150.00 MRP

❖ **LOTAS Tab. Ambee**
Losartan potassium INN 50mg/tablet.
50mg x 30's pack: 170.00 MRP

❖ **OSARTAN Tab. Aristopharma**
Losartan potassium INN 25mg & 50mg/tablet.
25mg x 50's pack: 175.00 MRP
50mg x 30's pack: 180.00 MRP

❖ **OSARTEK Tab. Pharmadesh**
Losartan potassium INN 25mg & 50mg/tablet.
25mg x 50's pack: 150.00 MRP
50mg x 30's pack: 165.00 MRP

❖ **OSARTIL Tab. Incepta**
Losartan potassium INN 25mg, 50mg & 100mg/tablet.
25mg x 50's pack: 175.00 MRP
50mg x 50's pack: 300.00 MRP
100mg x 30's pack: 300.00 MRP

❖ **OSTAN Tab. Renata**
Losartan potassium INN 25mg & 50mg/tablet.
25mg x 30's pack: 105.00 MRP
50mg x 30's pack: 182.10 MRP

❖ **PARTEN Tab. Jayson**
Losartan potassium INN 25mg & 50mg/tablet.
25mg x 30's pack: 90.00 IP
50mg x 30's pack: 150.00 IP

❖ **PROSAN Tab. Beximco**
Losartan potassium INN 25mg & 50mg/tablet.
25mg x 50's pack: 175.00 IP
50mg x 50's pack: 300.00 IP

❖ **REPACE Tab. Sun Pharma**
Losartan potassium INN 25mg & 50mg/tablet.
25mg x 50's pack: 175.00 MRP
50mg x 50's pack: 300.00 MRP

❖ **ROSATAN Tab. ACI**
Losartan potassium INN 25mg & 50mg/tablet.
25mg x 30's pack: 105.00 IP
50mg x 30's pack: 180.00 IP

❖ **SARLO Tab. Rephco**
Losartan potassium INN 50mg/tablet.
50mg x 30's pack: 120.00 MRP

❖ **TARAN Tab. Chemico**
Losartan potassium INN 25mg & 50mg/tablet.
25mg x 50's pack: 175.00 MRP
50mg x 50's pack: 300.00 MRP

❖ **XELOTAN Tab. Pharmasia**
Losartan potassium INN 50mg/tablet.
50mg x 30's pack: 180.00 IP

OLMESARTAN[52]

OLMESARTAN MEDOXOMIL: Tablet
Olmesartan medoxomil is a selective angiotensin II receptor (subtype AT1) antagonist. It is available as olmesartan medoxomil INN 20mg & 40mg tablet.
Mode of action: Olmesartan medoximil blocks the vasoconstrictor effects of angiotensin II by selectively blocking the binding of angiotensin II to the AT1 receptor in vascular smooth muscle. Its action is, therefore, independent of the pathways for angiotensin II synthesis.
Ind: Olmesartan is indicated for the treatment of hypertension. It may be used alone or in combination with other antihypertensive agents.
C/I: Hypersensitivity to any of its ingredients.

S/E: In general, the side-effects are mild & in a small number undesired events have been reported, such as- dizziness, vertigo, hypotension (rare), tachycardia, abdominal pain, diarrhea, dyspepsia, gastroenteritis, nausea, bronchitis, cough (rare), pharyngitis, rhinitis, rash, angio-oedema (rare), arthritis (arthralgia), back pain, myalgia, haematuria, urinary tract infection, hyperlipidemia, hyperuricaemia, hyperkalaemia (rare), chest pain, fatigue, influenza-like symptoms and peripheral oedema.
Precautions: Angiotensin II receptor antagonist (olmeartan medoximil) should be used with caution in patients with impaired renal function and renal artery stenosis; patients with aortic or mitral valve stenosis and obstructive hypertrophic cardiomyopathy. The use of olmesartan is not recommended in patients with hepatic impairment, since there is limited experience in this patient group.

Pregnancy & lactation: There is no experience with the use of olmesartan medoxomil in pregnant women. But, drugs that act directly on the renin-angiotensin system administered during the second and third trimesters of pregnancy have been reported to cause foetal and neonatal injury and even death to the fetus. So it is probably best to avoid using the drug when pregnancy is detected. Olmesartan is excreted in the milk of lactating rats but it is not known whether olmesartan is excreted in human milk. However, mothers must not breast-feed if they are taking olmesartan medoxomil.

Dosage & admin: Dosage must be individualized. The usual initial dose is 10mg once daily. In patients whose blood pressure is not adequately controlled at this dose, the dose may be increased to 20mg once daily as the optimal dose. For patients requiring further reduction in blood pressure after 2 weeks of therapy, the dose of olmesartan may be increased to 40mg. Doses above 40mg do not appear to have greater effect.
Elderly & renal impairment: **The maximum dose in elderly and patients with mild to moderate renal impairment is 20mg once daily.**
Children & adolescents: **The safety and efficacy have not been established in children and adolescents up to 18 years of age.**

Drug inter: No significant drug interactions were reported when olmesartan was co-administered with digoxin or warfarin. The blood pressure lowering effect of olmesartan can be increased by concomitant use of other antihypertensive medications. Use of potassium-sparing diuretics, potassium supplements, and salt substitutes containing potassium or other drugs that may increase serum potassium levels (e.g heparin) may lead to increases in serum potassium, such concomitant use is therefore not recommended.

❖ **ABETIS Tab. ACI**
Olmesartan medoxomil INN 20mg & 40mg/tablet (film-coated).
20mg x 30's pack: 240.00 MRP
40mg x 30's pack: 450.00 MRP

TELMISARTAN[87]

TELMISARTAN: Tablet
Telmisartan is a nonpeptide angiotensin II receptor (type AT1) antagonist. It is available as telmisartan INN 40mg/tablet (film-coated).
Mode of action: See above under the text of 'angiotensin-II receptor blocker'.
Ind: Telmisartan is indicated for the treatment of hypertension and heart failure.
C/I: Telmisartan is contraindicated in patients who are hypersensitive to any component of the durg.
S/E: Dyspepsia, myalgia, abdominal pain, headache and fatigue.
Precaution: Impaired hepatic function: As the majority of the drug is eliminated by biliary excretion, caution should be taken for these patients. Renal impairment: Caution should be taken for the patients with renal impairment.
Pregnancy & lactation: Telmisartan should not be given in pregnancy and lactation.
Dosage & admin: The usual starting dose of telmisartan is 40mg once daily. The dose may be increased up to 80mg if required. Telmisartan tablet can be administered with or without food.
Children: Safety and effectiveness in pediatric patients has not been established.
Drug inter: See under the text of candesartan.

❖ **MITOSAN Tab. Sandoz/Novartis**
Telmisartan INN 40mg & 80mg/tablet.
40mg x 30's pack: 375.00 MRP
80mg x 30's pack: 600.00 MRP

VALSARTAN[21,54]

VALSARTAN: Capsule/Tablet
Ind: Treatment of hypertension.
C/I: Hypersensitivity to any of the components of valsartan. Pregnancy & lactation.
S/E: The adverse effects that experienced in a few percentage of people are- headache, dizziness, viral infection, upper respiratory tract infection, coughing, diarrhoea, fatigue, rhinitis, sinusitis, back pain, abdominal pain, nausea, pharyngitis, arthralgia. Other adverse experiences with a frequency below 1% included- oedema, asthenia, insomnia, rash, decreased libido & vertigo. There are some changes found during laboratory study, such as, decrease in haemoglobin & haematocrit, neutropenia. Occasional elevations of liver function values.
Precautions & warnings: Sodium and/or volume depleted patients, such as, those receiving high doses of diuretics, symptomatic hypotension may occur in rare cases after initiation of therapy. Sodium and/or volume depletion should be corrected before starting treatment with valsartan; (for example, by reducing the diuretic dose). If hypotension occurs, the patient should be placed in the supine position and, if necessary, given an i.v infusion of normal saline. Treatment can be continued once the blood pressure has stablised.
Renal artery stenosis: no significant change has been found with short-term administration, yet monitoring is recommended as a safety measure. Effects on ability to drive and use machines: as with other antihypertensive agents, it is advisable to exercise caution when driving or operating machinery.
Pregnancy & lactation: Valsartan should not be given during pregnancy & lactation; if pregnancy is detected during therapy, should be discontinued as soon as possible.
Dosage & Admin: The recommended dose is 80mg once daily, irrespective of race, age, or gender. In patients whose blood pressure is not adequately controlled, the daily dose may be increased to160mg, or a diuretic may be added. No dosage adjustment is required for patients with renal impairment or for patients with hepatic insufficiency of nonbiliary origin and without cholestasis. Valsartan may also be administered with other antihypertensive agents.
Child: The safety and efficacy of valsartan have not been established in children.

Drug inter: No clinically significant interactions were observed when valsartan was coadministered with amlodipine, atenolol, cimetidine, digoxin, frusemide, glyburide, hydrochlorothiazide or indomethacin.

❖ **AROVAN-80 Cap. Aristopharma**
Valsartan 80mg/capsule.
80mg x 30's pack: 300.00 MRP
❖ **CARDIVAL Cap. Drug Inter.**
Valsartan INN 80mg/capsule.
80mg x 30's pack: 210.00 MRP
❖ **DIOVAN Tab. Novartis**
Valsartan 40mg, 80mg & 160mg/tablet.
40mg x 28's pack: 952.00 MRP
80mg x 28's pack: 1188.00 MRP
160mg x 28's pack: 1764.00 MRP
❖ **DISYS Tab. Healthcare**
Valsartan 80mg/tablet.
80mg x 30's pack: 255.90 MRP
❖ **REOVAN Tab. RAK Pharma**
Valsartan 80mg/tablet.
80mg x 30's pack: 300.00 MRP
❖ **VALPRESS 80 Cap. Silva**
Valsartan INN 80mg/capsule.
80mg x 30's pack: 240.00 MRP
❖ **VALSAN 80 Cap. Mystic**
Valsartan INN 80mg/capsule.
80mg x 20's pack: 500.00 MRP
❖ **VALSARTIL Tab. Incepta**
Valsartan 40mg, 80mg & 160mg/tablet.
40mg x 30's pack: 150.00 MRP
80mg x 30's pack: 270.00 MRP
160mg x 30's pack: 480.00 MRP

Vasodilator antihypertensive drugs

Commonly used vasodilator antihypertensive drugs include- ***Diazoxide, Hydralazine, Minoxidil, Sodium nitroprusside.***

SODIUM NITROPRUSSIDE[121]

❖ **SODIUM NITROPRUSSIDE Inj. DBL/Globex**
Sodium nitroprusside dihydrate B.P 50mg/5ml vial: Injection for i.v infusion.
Ind: Immediate reduction of blood pressure in patients with hypertensive crisis. Concomitant

oral antihypertensive medication should be started while the hypertensive emergency is being brought under control with sodium nitroprusside.
Producing controlled hypotension during anaesthesia in order to reduce bleeding in surgical procedures.
Short term therapy of cardiac failure. Patients should be commenced on oral therapy as soon as possible.
C/I: It should not be used in the treatment of compensatory hypertension.
It is also contraindicated in physically poor-risk patients, uncorrected anemia or hypovolemia, known inadequate erebral circulation, severe renal disease or disease states associated with vitamin B 12 deficiency and in congenital (Leber's) optic atrophy or tobacco amblyopia.
S/E: Most important side-effects are- excessive hypotension and cyanide toxicity. Others- methemoglobinemia, thiocyanate toxicity, nausea, retching, diaphoresis, apprehension, headache, restlessness, muscle twitching, retrosternal discomfort, palpitation, dizziness, drowsiness, paraesthesia warmth, abdominal pain, tachycardia, postural hypotension, bradycardia, electrocardiographic changes, dermatological irritation, rash and flushing, reddening of skin at the injection site and venous streaking, symptoms of hypothyroidism, decreased platelets aggregation and raised intracranial pressure.
Warnings: Only to be used as an infusion with sterile 5% glucose in water. It should not be administered by direct injection.
The principal hazards of sodium nitroprusside administration are excessive hypotension and accumulation of cyanide.
Precautions: Use with extreme caution in patients whose intracranial pressure is already elevated, with hepatic insufficiency, hypothyroidism, severe renal dysfunction, and patients who are of specially poor surgical risk. Pre-existing anemia nad hypovolemia should be corrected prior to administration.
Direct monitoring of blood pressure is mandatory.
Patients should remain recumbent during the infusion.
When the solution shows coloured reaction, it should be replaced.
Pregnancy & lactation: It is not known if sodium nitroprusside is harmful to the foetus or infants. Therefore, it should only be given to pregnant or nursing women when the expected benefits outweigh any potential risk.
Dosage & admin: Infusion should be started at a very low rate of 3mg/kg/min. with upward titration every few minutes until the desired effect achieved. The maximum recommended infusion rate is 10mg/kg/min. The reconstituted solution should only be infused by infusion pump, micro-drip regulator. Care should be taken to avoid extravasation. Do not admix with other drugs.
Overdosage: Overdosage can be manifested as excessive hypotension, cyanide or thiocyanate toxicity.
Drug inter: Ganglion blocking agents and other antihypertensive agents, volatile liquid anaesthetics, inhaled anaesthetics, negative inotropics and most other circulatory depressants potentiate its hypotensive action.
The transition from sodium nitroprusside to oral antihypertensive therapy may predispose to severe, sudden hypotension.
Note: For further information, please consult manufacturer's literature.
50mg (5ml) vial: 235.95 MRP

Diuretics

1. **Thiazides and related diuretics**
2. **Loop diuretics**
3. **Potassium sparing diuretics**
4. **Aldosterone antagonists**
5. **Osmotic diuretics**
6. **Mercurial diuretics**
7. **Carbonic anhydrase inhibitors.**
8. **Diuretics with potassium**

Thiazides & related diuretics[21]

Thiazide & related diuretics include- ***Bendroflumethiazide (Bendrofluazide), Benzthiazide, Chlortalidone (Chlorthalidone), Cyclopenthiazide, Hydrochlorothiazide, Clopamide, Hydroflumethiazide, Indapamide, Mefruside and Polythiazide.***
But, benzthiazide, clopamide, cyclopenthiazide, and hydrochlorothiazide do not offer any significant advantage over bendroflumethiazide or chlortalidone.
Some newer thiazide related diuretics are available, found more potent and effective than the olders, which include- ***Indapamide, Metolazone, Xipamide.***

Thiazides group of drugs[21,33]

HYDROCHLOROTHIAZIDE

HYDROCHLOROTHIAZIDE: Tablet.
Hydrochlorothiazide is a thiazide diuretic. It is available as hydrochlorothiazide BP 25mg & 50mg/tablet.
Mode of action: Thiazides affect the renal tubular mechanisms of electrolyte reabsorption, directly increasing excretion of sodium and chloride in approximately equivalent amounts. Indirectly, the diuretic action of hydrochlorothiazide reduces plasma volume, with consequent increases in plasma renin activity, increases in aldosterone secretion, increases in urinary potassium loss, and decreases in serum potassium.
Ind: Oedema, hypertension.
C/I: Anuria, lactation, severe renal failure.
S/E: Rashes, thrombocytopenia.
Cautions: May cause hypokalemia; aggravates diabetes and gout; renal and hepatic impairment
Dosage & admin: Adult: Diuresis, 50-100mg once or twice daily or intermittently. Hypertension, initially 50-100mg daily as a single or divided doses, max. 200mg daily. Child: Under 6 months upto 3.5mg/kg body-wt. daily; 6 months to 2 yrs. 12.5-37.5mg daily; 2-12 yrs. 37.5-100mg daily. All in two divided doses.
Drug inter: Hydrochlorothiazide, when administered concurrently the following drugs may interact with thiazide diuretics, such as alcohol, barbiturates, or narcotics; these may cause potentiation of orthostatic hypotension.
Antidiabetic drugs (oral agents and insulin)- dosage adjustment of the antidiabetic drug may be required.
Other antihypertensive drugs-additive effect or potentiation.
Cholestyramine and colestipol resins- absorption of hydrochlorothiazide is impaired in the presence of anionic exchange resins.
Corticosteroids, ACTH- intensified electrolyte depletion, particularly hypokalemia.
Skeletal muscle relaxants, tubocurarine- possible increased responsiveness to the muscle relaxant.
Lithium- diuretic agents reduce the renal clearance of lithium and add a high risk of lithium toxicity.
NSAID can reduce the diuretic, natriuretic, and antihypertensive effects of loop, potassium-sparing and thiazide duretics.

❖ **ACUREN Tab. Incepta**
Hydrochlorothiazide 25mg & 50mg/tablet.
25mg x 100's pack: 70.00 MRP
50mg x 100's pack: 100.00 MRP
❖ **HTZ Tab. UniHealth**
Hydrochlorothiazide 25mg/tablet.
25mg x 100's pack: 70.00 MRP

Thiazide related diuretics[21]

CHLORTHALIDONE[133]

CHLORTHALIDONE: Tablet
Chlorthalidone is a thiazide related diuretic. Chemically it is a monosulfamyl diuretic which differs from thiazide group in that a double-ring system is incorporated in its structure.
Chlorthalidone is a long acting diuretic with low toxicity. Its diuretic effect occurs in approximately 2.6 hours and continues for up to 48-72 hours. It is available as chlorthalidone USP 25mg tablet.
Ind: 1. Essential hypertension- as a single drug or in combination with other antihypertensive drugs. 2. Ascites due to cirrhosis in stable patients. 3. Edema due to nephrotic syndrome. 4. Mild to moderate chronic heart failure.
C/I: Patients with anuria, diabetes mellitus, gout and/or hyperuricemia, hyperlipidemia and known hypersensitivity to chlorthalidone or other sulfonamide drugs.
S/E: Dry mouth, thirst, nausea, vomiting, stormach pain, loss of appetite, diarrhea, constipation, feeling weak, drowsy, restless, dizziness, headache, or light-headed, fast or uneven heartheat, orthostatic hypotension, muscle pain or weakness, low fever, urinating less than usual or not at all, easy bruising or bleeding, red or purple spots on skin, purpura, dark urine, clay-colored stools, unusual weakness, numbness or tingly feeling, photosensitivity, rash urticaria.
Precautions: *Renal impairment:* Chlorthalidone

dosage should be reduced in moderate renal failure - every 24 or 48 hours - and should not be used in advanced renal failure.
Liver disease: There is a risk of precipitating hepatic encephalopathy in patients with liver cirrhosis and ascites.
Pregnancy & lactation: It is better to avoid chlorthalidone in pregnancy as it crosses the placenta. Significant amount of chlorthalidone enter breast milk; like other long-acting thiazides, it can suppress lactation. Chlorthalidone should not be prescribed for lactating mother.
Dosage & admin: ***Hypertension:*** **Therapy, in most patients, should be initiated with 25mg single daily dose. If the response is insufficient after a suitable trial, the dosage may be increased to a single daily dose of 50mg. If additional control is required, the dosage of chlorthalidone may be increased to 100mg once daily.**
Edema: **Adults, initially 50 to 100mg daily, or 100mg on alternate days. Some patients may require 150 to 200mg at these intervals or up to 200mg daily. Dosages above this level, however, do not usually produce a greater response.**
In the elderly, this is a suitable drug for treating hypertension, in particular systolic hypertension. Dose of 50mg daily, or less, should be used to avoid hypovolemia and hypokalemia.
Drug inter: Chlorthalidone may add to or potentiate the action of other antihypertensive drugs. Potentiation occurs with ganglionic peripheral adrenergic blocking drugs.

❖ **THALIDON Tab. Popular**
Chlorthalidone USP 25mg/tablet.
30's pack: 60.00 MRP

INDAPAMIDE[21,53]

INDAPAMIDE: Tablet
Indapamide is a thiazide related diuretic, chemically related to chlorthalidone.
Ind: Treatment of essential hypertension.
C/I: This drug must not be taken in the following situations- known allergy to this drug or to sulphonamides; renal failure; serious liver disease; hypokalaemia.
S/E: Feeling of tiredness (fatigue). Allergic manifestations, rare cases of skin rash. Feelings of vertigo when changing f rom lying to standing position. Increased risk of dehydration in the elderly and heart failure patients.
Variations in certain blood parameters may occur, in particular excessive loss of potassium, particularly in the elderly or malnourished individuals.
Warnings: Administration of this drug must be stopped in case of liver disease.
Precautions: Use indapamide cautiously in the following situations- disturbed water/electrolyte balance, diabetes, gout, kidney disease.
Pregnancy & lactation: In case of pregnancy, breast-feeding or desiring pregnancy consult physician before taking indapamide.
Dosage: 2.5mg tablet (or 1.5mg SR tablet) daily in single dose, preferably in the morning. Duration of treatment as per physician's advice. In case of missing dose do not take a double dose on the following day.
Drug inter: To avoid possible interactions between several drugs, and in particular lithium and certain drugs used for cardiac arrhythmia, consult physician before taking any other medication.

❖ **HYPEN SR Tab. Opsonin**
Indapamide 1.5mg/tablet (sustained release).
20's pack: 150.00 MRP
❖ **IDATIX Tab. Incepta**
Indapamide 2.5mg/tablet.
50's pack: 250.00 MRP
❖ **IDATIX SR Tab. Incepta**
Indapamide 1.5mg/tablet (sustained release).
50's pack: 250.00 MRP
❖ **INDAPA Tab. Drug Inter.**
Indapamide 1.5mg/tablet (sustained release).
50's pack: 250.00 MRP
❖ **IPIDE-SR Tab. Renata**
Indapamide 1.5mg/tablet (sustained release).
30's pack: 150.00 MRP
❖ **MICTUREX Tab. Orion**
Indapamide 1.5mg/tablet (sustained release).
30's pack: 150.00 MRP
❖ **NATRILIX Tab. Servier**
Indapamide 2.5mg/tablet.
30's pack: 264.00 MRP
❖ **NATRILIX SR Tab. Servier**
Indapamide 1.5mg/tablet (sustained release).
10's pack: 88.00 MRP
❖ **NATRI-SR Tab. Renata**
Indapamide 1.5mg/tablet (sustained release).
30's pack: 150.00 MRP
❖ **REPRES SR Tab. Square**
Indapamide 1.5mg/tablet (sustained release).
30's pack: 150.00 MRP
❖ **TRILIX SR Tab. Silva**
Indapamide 1.5mg/tablet (sustained release).
20's pack: 100.00 MRP

Loop diuretics[21,26,105]

There are four diuretic agents, which are playing. their major role on the ascending limb of the loop of Henle, known as loop diuretics. These are- Bumetanide, Frusemide, Torasemide & Ethacrynic acid
Loop diuretics are the most effective drugs & are more useful in emergency manegment of acute edematous conditions, such as acute pulmonary edema.
Mode of action: Loop diuretics act on the lumen of thick ascending limb of loop of Henle, inhibit the Na+/K+/Cl- cotransport & thus decreasing reabsorption of Na+, K+, and Cl-. This leads to remove excess water from the body. It does not significantly alter glomerular filtration rate, renal plasma flow, or acid-base balance. Loop diuretics also increase the Ca++ content of urine, while thiazide diuretics decrease.

FRUSEMIDE[21,26,46]

FRUSEMIDE: Tablet/Syrup/Injection.
Frusemide is a short-acting loop diuretic of sulfonamide group. It is available as oral tablet & syrup and parenteral i.m or i.v injection.
Mode of action: Frusemide inhibits the Na+/K+/2Cl- co-transport in the ascending limb of loop of henle and blocks the reabsorption of electrolytes (Na+, K+ and Cl- ions) and water.
Ind: Oedema of cardiac, hepatic or renal origin. Toxaemia of pregnancy. Mild or moderate hypertension.
C/I: Precomatose state associated with liver cirrhosis.
S/E: Rashes; tinnitus and deafness in impaired renal function.
Cautions: Causes hypokalaemia & hyponatraemia; aggravates diabetes and gout, liver failure, prostatism.
Dosage & admin: ***Adult:*** **By mouth, initially 20-80mg once or twice daily, then adjusted according to response. Maximum upto 2gm daily in oliguria. By i.m or slow i.v injection, 20-40mg; by i.v infusion, in oliguria 0.25-1gm at a rate not exceeding 4mg/min.**

❖ **FRUSIN Tab. Opsonin**
Frusemide 40mg/tablet
100's pack: 50.00 MRP
❖ **FRUSIN Syp. Opsonin**
Frusemide 20mg/5ml: syrup
60ml bot: 85.00 MRP
❖ **FRUSIN Inj. Opsonin**
Frusemide 20mg/2ml ampoule: injection
25's pack: 82.50 MRP
❖ **FRUSIX Tab. Gaco**
Frusemide 40mg/tablet.
100's pack: 50.46 MRP
❖ **FRUSIX Inj. Gaco**
Frusemide 20mg/ampoule: injection
1 ampoule: 2.73 MRP
❖ **FURAMID Tab. Elixir**
Frusemide 40mg/tablet.
100's pack:
❖ **FUSID Tab. Square**
Frusemide 40mg/tablet.
100's pack: 53.00 MRP
❖ **FUSID Inj. Square**
Frusemide 20mg/ampoule: injection
10 amps pack: 35.20 MRP
❖ **G-FRUSEMIDE Tab. Gonoshas.**
Frusemide 40mg/tablet
100's pack: 51.00 MRP
❖ **G-FRUSEMIDE Inj. Gonoshas.**
Frusemide 20mg/2ml ampoule: injection
25 amps pack: 68.25 MRP
❖ **TROFURIT Tab. Ambee**
Frusemide 40mg/tablet
100's pack: 53.00 MRP
❖ **TROFURIT Inj. Ambee**
Frusemide 20mg/2ml ampoule: injection
10 amps pack: 35.30 MRP

TORASEMIDE[26]

TORASEMIDE: Tablet
Torasemide is also a loop diuretic of sulfonamide group.
Mode of action: See above under the loop diuretics.
Ind: Management of edmea of cardiac, renal and hepatic origin. Management of hypertension, as a sole therapeutic agent or in combination with other classes of antihypertensive agents.
C/I: Known hypersensitivity to torasemide and

other sulfonyl ureas. It is also contraindicated in patients with anuria.
S/E: Usually torasemide is well tolerated. However, a few side effects like dry mouth, dizziness, tiredness, skin rash, diarrhea, constipation, nausea, vomiting, orthostatic hypotension and muscle cramp may occur. All side effects are usually mild and transient.
Precautions: Precautions should be taken while torasemide is advised in patients with diabetes, gout, hypotension and liver failure.

Pregnancy & Lactation: As there are no adequate and well-controlled studies of torasemide have been carried out in pregnant & nursing mother, & animal reproduction studies are not always predictive of human response, torasemide can only be used during pregnancy if it is clearly needed, & caution should be exercised when administering to a nursing mother.
Dosage & admin: Edema- usual oral dose is 5mg once daily, preferably in the morning. If necessary, the dose can be increased stepwise up to 20mg once daily. The usual maximum dose is 40mg daily. Dosage can be taken without regard to meal.
Essential hypertension- an oral low dose of 2.5mg once daily is recommended. If necessary, the dose can be increased to 5mg once daily.
Children: Safety and efficacy of torasemide in children have not been established.
Drug inter: ACE inhibitors- potentiation of hypotension may occur. Aminoglycosides- torasemide may increase the ototoxicity of aminoglycosides.
Corticosteroids- increment of risk of hypokalemia.

❖ **DILAST 20 Tab. Incepta**
Torasemide INN 20mg/tablet
20mg x 30's pack: 240.00 MRP
❖ **LURETIC Tab. Drug Inter.**
Torasemide INN 2.5mg & 5mg/tablet
2.5mg x 50's pack: 100.00 MRP
5mg x 50's pack: 175.00 MRP

Potassium-sparing diuretics & Aldosterone antagonists

Potassium-sparing diuretics include- *Amiloride & Triamterene.* These two diuretics are weak in action, but, as they cause retention of potassium, they are used in combination with thiazide or loop diuretics as a more effective alternative to potassium supplements. For details- see below with combined preparatios.
Aldosterone antagonists include- *Eplerenone & Spironolactone.*

EPLERENONE[21,26]

EPLERENONE: Tablet
Eplerenone is a selective aldosterone antagonist and used as an adjunct in left ventricular dysfunction with evidence of heart failure following a myocardial infarction. It is available as Eplerenone INN 25mg tablet.

Mode of action: Eplerenone is a selective blocker of aldosterone binding at the mineralocorticoid receptor. Eplerenone binds to the mineralocorticoid receptor and blocks the binding of aldosterone, a component of the renin-angiotensin-aldosterone-system (RAAS). Aldosterone synthesis, which occurs primarily in the adrenal gland, is modulated by multiple factors, including angiotensin II and other mediators such as adrenocorticotropic hormone and potassium. Aldosterone binds to mineralocorticoid receptors in both epithelial (e.g. kidney) and nonepithelial (e.g. heart, blood vessels, and brain) tissues and increases blood pressure through induction of sodium reabsorption and possibly by other mechanisms. Eplerenone has been shown to produce sustained increases in plasma renin and serum aldosterone, consistent with inhibition of the negative regulatory feedback of aldosterone on renin secretion. The resulting increased plasma renin activity and aldosterone circulating levels do not overcome the effects of Eplerenone.
Ind: Congestive heart failure after an acute myocardial infarction. Hypertension.
C/I: Eplerenone is contraindicated in- hyperkalaemia, severe renal impairment (creatinine clearance less than 30ml/min), severe hepatic impairment. Concomitant use with potent CYP3A4 inhibitors like Ketoconazole, Itraconazole, Nefazodone, Troleandomycin, Clarithromycin, Ritonavir, and Nelfinavir or other potassium-sparing diuretics are also contraindicated.
S/E: Headache, dizziness, diarrhea, stomach pain, nausea, cough or flu-like symptoms may occur. Symptoms of a serious allergic reaction like rash, itching, swelling, severe dizziness, trouble breathing can occur.
Precautions: Eplerenone should be used with caution in hyperkalemia, severe kidney disease, diabetic patients with congestive heart failure after an acute myocardial infarction including those with proteinuria.
Potassium supplements must not be given with aldosterone antagonists.
Pregnancy & lactation: There are no adequate and well-controlled studies in pregnant women. Eplerenone should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. The concentration of Eplerenone in human breast milk after oral administration is unknown. Because many drugs are excreted in human milk and because of the unknown potential for adverse effects on the nursing infant, a decision should be made whether to discontinue nursing or discontinue the drug, taking into account the importance of the drug to the mother.

Dosage & admin: Congestive heart failure after an acute myocardial infarction: Eplerenone 50mg once daily. Treatment should be initiated at 25mg once daily and titrated to the target dose of 50mg once daily preferably within 4 weeks as tolerated by the patient. Eplerenone may be administered with or without food.
Hypertension: Eplerenone may be used alone or in combination with other antihypertensive agents. The recommended starting dose of Eplerenone is 50mg administered once daily. For patients with an inadequate blood pressure response to 50mg once daily, the dosage of Eplerenone should be increased to 50mg twice daily. Higher dosages of Eplerenone are not recommended either because they have no greater effect on blood pressure than 100mg or because they are associated with an increased risk of hyperkalemia. Pediatric use: The safety and effectiveness of eplerenone has not been established in pediatric patients.

❖ **EPLERON 25 Tab. Incepta**
Eplerenone INN 25mg/tablet
25mg x 20's pack: 900.00 MRP

SPIRONOLACTONE[21,26,46]

SPIRONOLACTONE: Tablet/Capsule
Spironolactone is a long-acting aldosterone antagonist, potassium-sparing diuretic.

Mode of action: Spironolactone inhibits the reabsorption of sodium and excretion of potassium at the distal tubule by blocking the action of aldosterone.
Ind: Congestive heart failure; hypertension; hepatic cirrhosis; idiopathic oedema; nephrotic syndrome; Conn's syndrome; potentiation of thiazide & loop diuretics.
C/I: Hyperkalaemia, renal failure, hepatic impairment.
S/E: Hyperkalaemia, gastro-intestinal disturbances, gyneacomastia.
Precautions: Potassium supplements must not be given with potassium-sparing diuretics. Administration of a potassium-sparing diuretic to a patient receiving an ACE inhibitor or an angiotensin-II receptor antagonist can also cause severe hyperkalaemia.
Dosage & Admin: Congestive heart failure, 100mg daily, increasing if necessary to 400mg daily; maintenance 75-200mg daily . Hypertension, 50-100mg daily increasing if necessary at two weekly intervals upto 200mg daily.

Children: Initially 3mg/kg body-wt. daily in divided doses.

❖ **VEROSPIRON Tab. Ambee**
Spironolactone 25mg/tablet
100's pack: 202.00 MRP

Potassium-sparing diuretics with other diuretics

FRUSEMIDE + SPIRONOLACTONE[26,46]

FRUSEMIDE + SPIRONOLACTONE: Tablet
This is a combination of two diuretics, viz: Frusemide, a short-acting loop-diuretic and spironolactone, a long-acting aldosterone antagonist, potassium-sparing diuretic. This combination produces synergistic or additive diuretic effects.
Mode of action: Frusemide inhibits the

Na+/K+/2Cl- co-transport in the ascending limb of loop of henle and blocks the reabsorption of electrolytes (Na+, K+ and Cl- ions) and water. Spironolactone inhibits the reabsorption of sodium and excretion of potassium at the distal tubule by blocking the action of aldosterone. So the excretion of sodium is increased and the excess loss of potassium, induced by the frusemide is decreased.
Ind: i. Essential hypertension, ii. Chronic congestive heart failure, iii. Ascites of liver cirrhosis, iv. Edema (swelling due to excess fluid retention), v. Hyperaldosteronism, and vi. Resistant oedema associated with secondary hyperaldosteronism.
C/I: This combination is contraindicated in patients with acute renal failure, renal insufficiency (creatinine clearance <30ml/min), anuric states, hyperkalemia, hyponatremia, Addison's disease; patients with hypersensitivity to frusemide, spironolactone or sulphonamide.
S/E: Generally, this combined preparation is well tolerated. However, a few side effects like fatigue, nausea, vomiting, malaise or gastric upset, abdominal pain, diarrhea, constipation, headache, hypotension, skin rash may be seen which disappears after withdrawal of the drug. Besides these, irregular menstrual cycle, impotence, gynecomastia rarely may occur.
Precautions: Caution should be taken in patients liable to electrolyte deficiency. This preparation should also be used with caution in diabetes, enlarged prostate, hypotension and in hypovolemia.
Pregnancy & lactation: Frusemide is safe in pregnancy but spironolactone may cross the placental barrier. So, it should be used in pregnancy only if strictly indicated & for short-term treatment and if expected benefits to the mother is greater than the possible risk to the fetus. This combined preparation is excreted into the breast milk, so it is contraindicated in lactating mother.
Dosage & admin: 1 to 4 tablets daily according to the patients response or as directed by the physician.
Children: Not recommended.
Drug inter: Precautions should be taken while co-administration with the following drugs: ACE inhibitors, nephrotoxic & ototoxic antibiotics, corticosteroids, NSAIDs, carbenoxolone and sucralfate.

❖ **DIRETIC Tab. Drug Inter.**
Frusemide 20mg & spironolactone 50mg/tablet.
50's pack: 300.00 MRP
❖ **DIRETIC-DS Tab. Drug Inter.**
Frusemide 40mg & spironolactone 50mg/tablet.
50's pack: 350.00 MRP
❖ **DIRUCOM Tab. Popular**
Frusemide 20mg & spironolactone 50mg/tablet.
30's pack: 180.00 IP
❖ **DIRUSID-Plus Tab. Delta**
Frusemide 20mg & spironolactone 50mg/tablet.
30's pack: 179.99 MRP
❖ **EDELOSS Tab. Incepta**
Frusemide 20mg & spironolactone 50mg/tablet.
30's pack: 180.00 MRP
❖ **EDELOSS Plus Tab. Incepta**
Frusemide 40mg & spironolactone 50mg/tablet.
30's pack: 240.00 MRP
❖ **EDEMIDE Tab. Acme**
Frusemide 20mg & spironolactone 50mg/tablet.
30's pack: 180.00 MRP
❖ **EDENIL 20 Tab. SK+F**
Frusemide 20mg & spironolactone 50mg/tablet.
30's pack: 180.00 MRP
❖ **EDENIL 40 Tab. SK+F**
Frusemide 40mg & spironolactone 50mg/tablet.
30's pack: 240.00 MRP
❖ **FRULAC Tab. Orion**
Frusemide 20mg & spironolactone 50mg/tablet.
50's pack: 300.00 MRP
❖ **FRULAC 40 Tab. Orion**
Frusemide 40mg & spironolactone 50mg/tablet.
30's pack: 240.00 MRP
❖ **FRUSEC Plus Tab. White Horse**
Frusemide 20mg & spironolactone 50mg/tablet.
30's pack: 180.00 MRP
❖ **FRUSELAC Tab. Aristopharma**
Frusemide 20mg & spironolactone 50mg/tablet.
30's pack: 180.00 MRP
❖ **FRUSELAC Plus Tab. Aristopharma**
Frusemide 40mg & spironolactone 50mg/tablet.
30's pack: 240.00 MRP
❖ **FRUSON-20 Tab. Ibn Sina**
Frusemide 20mg & spironolactone 50mg/tablet.
30's pack: 180.00 MRP
❖ **FUROPLUS Tab. Beacon**
Frusemide 20mg & spironolactone 50mg/tablet.
30's pack: 180.00 MRP
❖ **FUROTONE Tab. Novo Healthcare**
Frusemide USP 20mg & spironolactone USP 50mg/tablet.
30's pack: 180.00 MRP
❖ **FUSETON Tab. Alco Pharma**
Frusemide 20mg & spironolactone 50mg/tablet.
30's pack: 150.00 MRP
❖ **FUSID Plus Tab. Square**
Frusemide 20mg & spironolactone 50mg/tablet.
30's pack: 180.00 MRP
❖ **FUSID 40 Plus Tab. Square**
Frusemide 40mg & spironolactone 50mg/tablet.
30's pack: 240.00 MRP
❖ **LACITONE Tab. General**
Frusemide 20mg & spironolactone 50mg/tablet.
30's pack: 180.00 MRP
❖ **LASILACTONE Tab. Sanofi-aventis**
Frusemide 20mg & spironolactone 50mg/tablet.
50's pack: 300.00 MRP
❖ **LAXUR Tab. Healthcare**
Frusemide 20mg & spironolactone 50mg/tablet.
30's pack: 180.00 MRP
❖ **REDEMA 20 Tab. Rangs Pharma**
Frusemide 20mg & spironolactone 50mg/tablet.
30's pack: 180.00 MRP
❖ **REDEMA 40 Tab. Rangs Pharma**
Frusemide 40mg & spironolactone 50mg/tablet.
30's pack: 240.00 MRP
❖ **RESITONE Tab. Beximco**
Frusemide 20mg & spironolactone 50mg/tablet.
30's pack: 180.00 IP
❖ **TONEMIDE Tab. Pacific**
Frusemide 20mg & spironolactone 50mg/tablet.
30's pack: 180.00 MRP
❖ **UROSPIN Tab. Bio-pharma**
Frusemide 20mg & spironolactone 50mg/tablet.
50's pack: 180.00 MRP
❖ **VEROSPIRON Plus Tab. Ambee**
Frusemide 20mg & spironolactone 50mg/tablet.
30's pack: 150.00 MRP

THIAZIDE + AMILORIDE[21,57]

THIAZIDE + AMILORIDE: Tablet
Ind: Congestive heart failure, hepatic cirrhosis with ascites; hypertension.
C/I: Hyperkalaemia, severe renal failure, pregnancy, lactation.
Adult: 1-2 tabs. daily in single or divided doses, increasing if necessary to max. 4 tabs.
Child: Not recommended.

❖ **AMIZIDE Tab. Sanofi-aventis**
Hydrochlorothiazide 50mg + Amiloride hydrochlor. 5mg/tablet.
200's pack: 144.00 MRP
❖ **KALTIDE Tab. ACI**
Hydrochlorothiazide 50mg + Amiloride hydrochlor. 5mg/tablet.
100's pack: 200.00 MRP

THIAZIDE + TRIAMTERINE[21,33]

THIAZIDE + TRIAMTERINE:Tablet
Ind: Oedema; mild to moderate hypertension.
Adult: Oedema, initially 1 tab. twice daily after meals, reducing to usually 1 daily or 2 on alternate days. Max. 4 daily. Hypertension, initially 1 daily.
Child: Not recommended.

❖ **DEZIDE Tab. SK+F**
Hydrochlorothiazide 25mg + Triamterine 50mg/tablet.
100's pack: 75.00 MRP
❖ **G-THIAZIDE T Tab. Gonoshasthaya**
Hydrochlorothiazide 25mg + Triamterine 50mg/tablet.
100's pack: 51.00 MRP

Carbonic anhydrase inhibitors

ACETAZOLAMIDE[21,33]

ACETAZOLAMIDE: Tablet
Acetazolamide is a carbonic anhydrase inhibitor. It reduces bicarbonate in aqueous humour and water secreted with it, resulting in a fall in the intra-ocular pressure, hence it is used mostly by the ophthalmologist in the treatment of glaucoma. It also may be used in some other conditions.
Ind: Glaucoma, oedema, congestive cardiac failure, toxaemia of pregnancy, premenstrual tension.
C/I: Renal hyperchloraemic acidosis, adrenal insufficiency; severe renal or hepatic failure; chronic closed angle glaucoma.
Caution: Gout, diabetes, pregnancy.
Dosage & admin: Initially 250-375mg once daily in the morning or on alternate days. Premenstrual tension,125-375 mg as a single daily dose beginning 5-10 days before menstruation. Glaucoma, initially 500mg, subsequent doses 250mg every 6 hours.

❖ **ACEMOX Tab. Acme**
Acetazolamide 250mg/tablet.
100's pack: 150.00 MRP
❖ **EDIMOX Tab. Gaco**
Acetazolamide 250mg/tablet.
100's pack: 141.78 MRP

❖ **REMOX Tab. Reman**
Acetazolamide 250mg/tablet.
100's pack: 114.00 MRP

Osmotic diuretics

MANNITOL[21,56]

MANNITOL: 10% & 20% I.V Infusion
Mannitol, a hyperosmolar solution, used as dehydrating agent or to promote polyuria. It is availalbe as 10% & 20% solution for i.v infusion.
Ind: Cerebral oedema; forced diuresis (as in to prevent acute renal insufficiency of shock, in decreased renal perfusion, in exogenic & endogenic toxicoses, in oedemas of nephrotic, cardiac & hepatic origin).
C/I: Congestive cardiac failure, pulmonary oedema, acute tubular necrosis, severe cardiac decomposition.
S/E: Chills, fever.
Cautions: extravasation may cause inflammation & thrombophlebitis.
Dose: By i.v infusion 50-200gm over 24 hours, preceded by a test dose of 200mg/litre by slow i.v injection. Maximum 1000ml (litre) per day.

❖ **MANISOL 20% Inj. Orion**
Mannitol 200gm (20%)/litre: i.v infusion.
500ml bot: 125.00 MRP
❖ **MENNITOL 20% Inj. Opso Salaine**
Mannitol 200gm (20%)/litre: i.v infusion.
500ml bot with set: 125.00 MRP
❖ **OSMOSOL 20% Inj. Beximco**
Mannitol 200gm (20%)/litre: i.v infusion.
500ml bot with set: 126.40 MRP

Combined antihypertensive preparations

ATENOLOL + AMLODIPINE[48,52]

ATENOLOL + AMLODIPINE: Tablet
A fixed-dose combinations of atenolol and amlodipine are available for the treatment of hypertension alone or in co-existance with ischemic heart dease. The fixed-dose combinations are: i. atenolol 25mg + amlodipine 5mg and ii. atenolol 50mg + amlodipine 5mg. Amlodipine besilate is a dihydropyridine calcium channel blocker and atenolol is a phenylacetamide, a selective beta$_1$ blocker.
Mode of action: Given under the text of atenolol and amlodipine separately.
Ind: i. Hypertension not controlled by monitherapy, ii. angina pectoris & hypertension as co-existing diseases, iii. post-MI patients, iv. refractory angina pectoris where nitrate has failed.
S/E: Given under the text of atenolol & amlodipine separately.
C/I: Amlodipine is contraindicated in patients with a known sensitivity to dihydropyridines. It should not be used in cardiogenic shock, clinically significant aortic stenosis, unstable angina (excluding Prinzmetal's angina).
Atenolol is contraindicated with a known hypersensitivity to atenolol, severe bradycardia, second or third degree heart block, uncontrolled heart failure, hypotension, severe peripheral vascular disease (including intermittent claudication), sick sinus syndrome, cardiogenic shock, phaeocromocytoma (without a concomitant alpha blocker), metabolic acidosis.
Precaution: *Renal impairment:* The combination can be used in patients with renal impairment. However, caution may be necessary if the creatinine clearance is less than 30ml/min because of possible reduction in the excretion of unchanged atenolol.
Hepatic impairment: Caution may be necessary in the use of the combination in patients with severe liver damage because of prolongation of the elimination halflife of amlodipine.
Bronchospasm: The combination should be used with caution in patients with airway obstruction.
Drug withdrawal: Since coronary heart disease may exist without being recognised, patients should be warned against stopping the drug suddenly. Any discontinuation should be gradual and under observation.
Pregnancy & lactation:
Atenolol crosses the placenta. On the other hand, the use of amlodipine in pregnancy and lactation has yet not been established. So, the combination is contraindicated in pregnancy and lactation.
Dosage & admin: The recommended dosage is one tablet of amlodipine 5mg and atenolol 25mg or 50mg daily. Depending upon the therapeutic response, titration of the dosage is recommended. If necessary, the dosage may be doubled to two tablets daily. In elderly patients, it is advisable to initiate the therapy with lower dosage, such as, amlodipine 2.5mg and atenolol 25mg daily.
Drug inter: Given under the text of atenolol and amlodipine separately.

❖ **ALOTEN Tab. Chemico**
Atenolol 25mg & amlodipine 5mg/tablet.
50's pack: 212.50 MRP
❖ **AMDIN PLUS Tab. Alco Pharma**
Atenolol 50mg & amlodipine 5mg/tablet.
50's pack: 200.00 MRP
❖ **AMDOCAL Plus 25 Tab. Beximco**
Atenolol 25mg & amlodipine 5mg/tablet.
30's pack: 127.00 IP
❖ **AMDOCAL Plus 50 Tab. Beximco**
Atenolol 50mg & amlodipine 5mg/tablet.
60's pack: 270.30 IP
❖ **AMICARD Plus Tab. Aexim**
Atenolol 50mg & amlodipine 5mg/tablet.
50's pack: 150.00 MRP
❖ **AMLOBET Tab. Sun Pharma**
Atenolol 50mg & amlodipine 5mg/tablet.
50's pack: 225.00 MRP
❖ **AMLOCARD Plus-25 Tab. Drug Inter.**
Atenolol 25mg & amlodipine 5mg/tablet.
50's pack: 225.00 MRP
❖ **AMLOCARD Plus-50 Tab. Drug Inter.**
Atenolol 50mg & amlodipine 5mg/tablet.
50's pack: 250.00 MRP
❖ **AMLOCOM Tab. Beacon**
Atenolol 50mg & amlodipine 5mg/tablet.
50's pack: 225.00 MRP
❖ **AMLOSIN Plus Tab. Doctor's**
Atenolol 50mg & amlodipine 5mg/tablet.
30's pack: 120.00 MRP
❖ **AMLOTEN 25 Tab. Acme**
Atenolol 25mg & amlodipine 5mg/tablet.
30's pack: 127.50 IP
❖ **AMLOTEN 50 Tab. Acme**
Atenolol 50mg & amlodipine 5mg/tablet.
30's pack: 135.00 MRP
❖ **AMLOVAS AT Tab. Popular**
Atenolol 50mg & amlodipine 5mg/tablet.
30's pack: 120.00 IP
❖ **AMOCAL-AT Tab. Opsonin**
Atenolol 50mg & amlodipine 5mg/tablet.
30's pack: 135.00 MRP
❖ **AMPIL Plus Tab. White Horse**
Atenolol 50mg & amlodipine 5mg/tablet.
50's pack: 225.00 MRP
❖ **AMPRE-Plus Tab. Kumudini**
Atenolol 50mg & amlodipine 5mg/tablet.
30's pack: 120.00 MRP
❖ **ATEPINE Tab. Pharmadesh**
Atenolol 50mg & amlodipine 5mg/tablet.
30's pack: 120.00 MRP
❖ **BETACAL Tab. Orion**
Atenolol 50mg & amlodipine 5mg/tablet.
50's pack: 225.00 MRP
❖ **BPNOL-Plus Tab. Delta**
Atenolol 50mg & amlodipine 5mg/tablet.
30's pack: 120.01 MRP
❖ **CALBETA Tab. UniHealth**
Atenolol 50mg & amlodipine 5mg/tablet.
30's pack: 135.00 MRP
❖ **CALCHEK Plus Tab. General**
Atenolol 50mg & amlodipine 5mg/tablet.
30's pack: 135.00 MRP
❖ **CALOCK Plus 25 Tab. Medimet**
Atenolol 25mg & amlodipine 5mg/tablet.
50's pack: 200.00 MRP
❖ **CALOCK Plus 50 Tab. Medimet**
Atenolol 50mg & amlodipine 5mg/tablet.
50's pack: 225.00 MRP
❖ **CALPIN Plus 25 Tab. Globe**
Atenolol 25mg & amlodipine 5mg/tablet.
30's pack: 120.00 MRP
❖ **CALPIN Plus 50 Tab. Globe**
Atenolol 50mg & amlodipine 5mg/tablet.
30's pack: 135.00 MRP
❖ **CAMLODIN Plus Tab. Square**
Atenolol 50mg & amlodipine 5mg/tablet.
30's pack: 135.00 MRP
❖ **CAMLODIN Plus 25 Tab. Square**
Atenolol 25mg & amlodipine 5mg/tablet.
30's pack: 120.00 MRP
❖ **CARDIPIN Plus Tab. Renata**
Atenolol 50mg & amlodipine 5mg/tablet.
50's pack: 225.00 MRP
❖ **COMBICARD Tab. Healthcare**
Atenolol 50mg & amlodipine 5mg/tablet.
30's pack: 135.00 MRP
❖ **CV NOR-A Tab. Navana**
Atenolol 50mg & amlodipine 5mg/tablet.
30's pack: 135.00 MRP
❖ **DIPICARD-25 Tab. Peoples**
Atenolol 25mg & amlodipine 5mg/tablet.
50's pack: 200.00 MRP
❖ **DIPLOR Plus-25 Tab. Ibn Sina**
Atenolol 25mg & amlodipine 5mg/tablet.
30's pack: 105.00 MRP
❖ **DIPLOR Plus-50 Tab. Ibn Sina**
Atenolol 50mg & amlodipine 5mg/tablet.
30's pack: 135.00 MRP
❖ **EMLON Plus Tab. Bio-pharma**
Atenolol 50mg & amlodipine 5mg/tablet.
30's pack: 120.00 MRP

❖ **FIXOCARD 25 Tab. Incepta**
Atenolol 25mg & amlodipine 5mg/tablet.
50's pack: 212.50 MRP
❖ **FIXOCARD 50 Tab. Incepta**
Atenolol 50mg & amlodipine 5mg/tablet.
50's pack: 225.00 MRP
❖ **HIPRE Plus Tab. Pacific**
Atenolol 50mg & amlodipine 5mg/tablet.
30's pack: 150.00 MRP
❖ **LODICARD Tab. Aristopharma**
Atenolol 50mg & amlodipine 5mg/tablet.
50's pack: 225.00 MRP
❖ **PRISTIN-OL Tab. Novo Healthcare**
Atenolol 50mg & amlodipine 5mg/tablet.
30's pack: 120.00 MRP
❖ **SIDOPLUS 25 Tab. SK+F**
Atenolol 25mg & amlodipine 5mg/tablet.
40's pack: 170.00 MRP
❖ **SIDOPLUS 50 Tab. SK+F**
Atenolol 50mg & amlodipine 5mg/tablet.
40's pack: 180.00 MRP
❖ **TENOCAB 25 Tab. ACI**
Atenolol 25mg & amlodipine 5mg/tablet.
50's pack: 200.00 MRP
❖ **TENOCAB 50 Tab. ACI**
Atenolol 50mg & amlodipine 5mg/tablet.
50's pack: 225.00 MRP
❖ **VASOPIN 50 Plus Tab. Silva**
Atenolol 50mg & amlodipine 5mg/tablet.
30's pack: 120.00 MRP
❖ **VESOCAL Plus Tab. Rangs Pharma**
Atenolol 50mg & amlodipine 5mg/tablet.
30's pack: 135.00 MRP

ATENOLOL + CHLORTHALIDONE[52]

ATENOLOL + CHLORTHALIDONE: Tablet
This is a combination preparation of atenolol and chlorthalidone. Atenolol is a selective (cardioselective) beta-adrenergic receptor blocking agent. Chlorthalidone is a thiazide-type oral diuretic with prolonged action. The combination of atenolol & chlorthalidone offers complementary mechanisms of action with additive or synergistic effects and better tolerability.
This combination is available in two fixed presentations, viz: i. tablet containing atenolol BP 50mg and chlorthalidone USP 25mg, ii. tablet containing atenolol BP 100mg and chlorthalidone USP 25mg.
Mode of action: Atenolol is a cardioselective 1-adrenergic receptor blocker. In the heart atenolol binds with the 1 receptors and antagonizes epinephrine/norepinephrine, thus it blocks the adrenergic stimulation of heart muscles and decreases cardiac output. The diuretic action of chlorthalidone occurs within 2 hours of an oral dose. It produces diuresis by increasing excretion of sodium and chloride, plus inhibiting reabsorption of sodium and water in the tubules. In this way, the action of chlorthalidone also results in decrease in cardiac output. The antihypertensive effects of these two agents are additive or synergistic.
Ind: This combination is indicated in the treatment of hypertension.
C/I: This combination is contraindicated in hypersensitivity to this product or to sulfonamide-derived drugs. It is also contraindicated in patients with sinus bradycardia, heart block greater than first degree, cardiogenic shock, overt cardiac failure & anuria.
S/E: Atenolol and chlorthalidone combination is usually well tolerated. Most adverse effects have been mild and transient. However dizziness, fatigue, vertigo, nausea, diarrhea and bradycardia have been reported rarely.
Precautions & warnings: Atenolol and chlorthalidone combination should be given with caution to patients with severe renal impairment, uncontrolled heart failure, impaired hepatic function or liver disease. In patients receiving thiazides, sensitivity reactions may occur with or without a history of allergy or bronchial asthma. The possible exacerbation or activation of systemic lupus erythematosus has been reported. The antihypertensive effects of thiazides may be enhanced in the postsympathectomy patient.
Use in elderly: Clinical studies of atenolol & cholrthalidone combination did not include sufficient mumbers of sunjects aged 65 and over to determine whether they respond differently from younger subjects.
Pregnancy & lactation: Atenolol & chlorthalidone combination can cause harm to the developing fetus and may appear in breast milk. So, it should not be given during pregnancy & lactation.
Dosage & admin: Dosage of this combination must be individualized.
The initial dose should be one tablet (atenolol 50mg + chlorthalidone 25mg) given once a day.
Drug inter: Atenolol and chlorthalidone combination may potentiate the action of other antihypertensives, such as clonidine, diltiazem. Prostaglandin synthetase inhibiting drugs e.g indomethacin may decrease the hypotensive effects of beta-blockers. This combination should not be given with lithium due to high risk of lithium toxicity.

❖ **ATECHLOR 50 Tab. Silva**
Atenolol 50mg & chlorthalidone 25mg/tablet.
50's pack: 125.00 MRP
❖ **ATECHLOR 100 Tab. Silva**
Atenolol 100mg & chlorthalidone 25mg/tablet.
50's pack: 150.00 MRP
❖ **CARDIPRO 50 Plus Tab. Square**
Atenolol 50mg & chlorthalidone 25mg/tablet.
30's pack: 82.50 MRP
❖ **CARDIPRO 100 Plus Tab. Square**
Atenolol 100mg & chlorthalidone 25mg/tablet.
30's pack: 90.00 MRP
❖ **TENOREN PLUS Tab. ACI**
Atenolol 50mg & chlorthalidone 25mg/tablet.
50's pack: 125.00 IP

ATENOLOL + NIFEDIPINE[42]

ATENOLOL + NIFEDIPINE: Capsule
A fixed-dose combination of atenolol and nifedipine is available for the treatment of hypertension alone or in co-existance with ischemic heart dease. The fixed-dose combination is- atenolol USP 50mg + nifedipine USP 20mg presented as sustained release capsule. In this combination, atenolol is a selective β_1 blocker & nifedipine is a cacium-channel blocker.
Mode of action: See under the text of atenolol and nifedipine separately.
Ind: Management of hypertension where therapy with either a β-blocking drug or a calcium channel blocker proves inadequate.
Management of chronic stable angina pectoris where therapy with calcium channel blocker or a β-adrenoceptor blocking drug proves inadequate.
C/I: This combination should not be used in patients with any of the following conditions: Known hypersensitivity to either active component, or any other excipient or other dihydropyridines; bradycardia; cardiogenic shock; hypotension; metabolic acidosis; severe peripheral arterial circulatory disturbances; second or third degree heart block; sick sinus syndrome; untreated phaeochromocytoma; uncontrolled heart failure; women capable of childbearing or during pregnancy or during lactation; patients with clinically significant aortic stenosis; patients with marked renal impairment. This combination should not be used for secondary prevention of myocardial infarction.
S/E: The following undesired events have been reportd: *Cardiovascular:* Flushing, edema; *CNS:* dizziness, headache; *Gastrointestinal:* gastrointestinal disturbance; *Haematological:* purpura; *Reproductive:* inpotence; *Others:* fatigue.
Precautions: Due to its beta-blocker component this combination may increase the number and duration of angina attacks in patients with Prinzmetal's angina due to unopposed alpha receptor mediated coronary artery vasoconstriction. Due to its negative effect on conduction time, caution must be exercised if it is given to patients with first degree heart block.
Pregnancy & lactation: This combination is contraindicated in women capable of childbearing or during pregnancy or during lactation.
Dosage & admin: Adult: *Hypertension:* One capsule daily swallowed with water. If necessary, the dosage may be increased to 1 capsule every 12 hours.
***Angina:* One capsule every 12 hours swallowed with water. Where additional efficacy is necessary, prophylactic nitrate therapy or additional nifedipine may be of benefit.**
***Elderly:* Dosage should not exceed 1 capsule daily in hypertension or 1 capsule twice daily in angina.**
Drug inter: This combination must not be used in conjunction with calcium channel blocker with negative inotropic effects e.g verapamil, diltiazem. Concomitant therapy with additional dihydropyridines, e.g nifedipine, may increase the risk of hypotension, and cardiac failure may occur in patients with latent cardiac insufficiency. In this combination, atenolol and nifedipine has little effect on the pharmacokinetics of either. In the elderly, the systemic bioavailability and elimination half-life of both components are increased.

❖ **NIDIPRO Cap. Square**
Atenolol USP 50mg & nifedipine USP 20mg/capsule (sustained release).
50's pack: 134.50 MRP

BENAZEPRIL + AMLODIPINE[26]

BENAZEPRIL + AMLODIPINE: Capsule

This is a fixed combination preparation of benazepril and amlodipine. The products are available as capsules in three presentations: i. capsule contaning benazepril hydrochloride USP 10mg and amlodipine besylate BP equivalent to amlodipine 2.5mg; ii. capsule contaning benazepril hydrochloride USP 10mg and amlodipine besylate BP equivalent to amlodipine 5mg; iii. capsule contaning benazepril hydrochloride USP 20mg and amlodipine besylate BP equivalent to amlodipine 5mg.

Mode of action: Benazepril inhibits angiotensin-converting enzyme (ACE). This ACE is a peptidyl dipeptidase that catalyzes the conversion of angiotensin I to the vasoconstrictor substance angitensin II. Angiotensin II also stimulates aldosterone secretion by the adrenal cortex. Inhibition of ACE results in decreased plasma angiotensin II, which leads to decreased vasopressor activity and aldosterone secretion. Mechanism through which benazepril lowers blood pressure is belived to be primarily suppression of the renin-angiotensin-aldosterone system. Benazepril has an antihypertensive effect even in patients with low-renin hypertension. Amlodipine is a dihydropyridine calcium antagonist which inhibits the transmembrane influx of calcium ions into vascular smooth muscle and cardiac muscle. It has greater effect on vascular smooth muscle cells than on cardiac muscle cells. Amlodipine causes a preipheral arterial vasodilatation that leads to reduction in peripheral vascular resistance and reduction in blood pressure. Serum calcium concentration is not affected by amlodipine.

Ind: This combination product is indicated for the treatment of hypertension, where monotherapy is not sufficient.

C/I: Known hypersensitivity to benazepril, to any other ACE inhibitor, or to amlodipine.

S/E: Cough, headache, dizziness, and edema; persistent nonproductive cough has been reported with all ACE inhibitors, and always resolving after discontinuation of therapy. Other side effects considered possibly or probably related to the drugs are- angioedema, asthenia and fatigue, insomnia, nervousness, anxiety, tremor; dry mouth, nausea, abdominal pain, constipation, diarrhea, dyspepsia, and esophagitis; hypokalemia, back pain, musculoskeletal pain, cramps; polyuria, decreased libido, impotence etc.

Precautions: Impaired renal function: When the renin-angiotensin-aldosterone system is inhibited by benazepril, changes in renal function may be anticipated in severe renal disease. Treatment with benazepril was associated with increases in blood urea and serum creatinine in hypertensive patients with unilateral or bilateral renal artery stenosis.

Hyperkalemia: Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes.

Patients with congestive heart failure: In general, all calciun channel blockers should be used with caution in patients with heart failure. In patients with severe congestive heart failure, whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors (including benazepril) may be associated with oliguria and/or progressive azotemia and (rarely) with acute renal failure. Patitnts with hepatic failure: Since amlodipine is extensively metabolized by the liver, caution should be exercised when administering amlodipine and benazepril to patients with severe hepatic impairment.

Pregnancy & lactation: Caution should be exercised in first trimester of pregnancy categories C and in second and third trimesters of pregnancy categories D.

Although it is not known whether amlodipine is excreted in human, but, minimal amounts of unchanged benazepril is excreted into the breast milk of lactating mothers, so, it is recommended that nursing should be discontinued while amlodipine and benazepril combined preparations are administered.

Dosage & admin: Amlodipine and benazepril combination therapy to be given once daily. Usual dose: In this combination therapy amlodipine doses range from 2.5mg to 10mg and benazepril doses range from 10mg to 20mg; the physician can initiate the therapy with any fixed combination as preferred; the antihypertensive effect can be increased by increasing and adjusting the doses of amlodipine and/or benazepril in all patient groups. From this combination therapy all patients are benefited from the reduction in amlodipine-induced edema.

Children: Safety and effectiveness in paediatric patients have not been established.

Drug inter: Diuretics: patients on diuretics may occasionally experience an excessive reduction of blood pressure after initiation of therapy with amlodipine and benazepril. Potassium-sparing diuretics (e.g spironolactone) or potassium supplement can increase the risk of hyperkalemia.

Lithium: Increased serum lithium level and symptoms of lithium toxicity have been reported in patients receiving ACE inhibitors during therapy with lithium.

❖ **AMDOPRIL 10/2.5 Cap. Beximco**
Benazepril 10mg & amlodipine 2.5mg/capsule.
60's pack: 240.00 IP

❖ **AMDOPRIL 10/5 Cap. Beximco**
Benazepril 10mg & amlodipine 5mg/capsule.
60's pack: 360.00 IP

❖ **AMDOPRIL 20/10 Cap. Beximco**
Benazepril 20mg & amlodipine 10mg/capsule.
30's pack: 300.00 IP

❖ **AMLOZEP 10/5 Cap. Beacon**
Benazepril 10mg & amlodipine 5mg/capsule.
30's pack: 180.00 MRP

❖ **AMOCAL-BZ 10/2.5 Cap. Opsonin**
Benazepril 10mg & amlodipine 2.5mg/capsule.
30's pack: 120.00 MRP

❖ **AMOCAL-BZ 10/5 Cap. Opsonin**
Benazepril 10mg & amlodipine 5mg/capsule.
30's pack: 180.00 MRP

❖ **AMOCAL-BZ 20/5 Cap. Opsonin**
Benazepril 20mg & amlodipine 5mg/capsule.
20's pack: 160.00 MRP

❖ **BENADIP 10/2.5 Cap. Incepta**
Benazepril 10mg & amlodipine 2.5mg/capsule.
20's pack: 80.00 MRP

❖ **BENADIP 10/5 Cap. Incepta**
Benazepril 10mg & amlodipine 5mg/capsule.
20's pack: 120.00 MRP

❖ **BENADIP 20/5 Cap. Incepta**
Benazepril 20mg & amlodipine 5mg/capsule.
20's pack: 160.00 MRP

❖ **CACETOR 10/2.5 Cap. ACI**
Benazepril 10mg & amlodipine 2.5mg/capsule.
24's pack: 96.00 IP

❖ **CACETOR 10/5 Cap. ACI**
Benazepril 10mg & amlodipine 5mg/capsule.
24's pack: 144.00 IP

❖ **CACETOR 20/5 Cap. ACI**
Benazepril 20mg & amlodipine 5mg/capsule.
24's pack: 192.00 IP

❖ **CAMLOPRIL 10/2.5 Cap. Square**
Benazepril 10mg & amlodipine 2.5mg/capsule.
30's pack: 120.00 MRP

❖ **CAMLOPRIL 10/5 Cap. Square**
Benazepril 10mg & amlodipine 5mg/capsule.
30's pack: 180.00 MRP

❖ **CAMLOPRIL 20/5 Cap. Square**
Benazepril 20mg & amlodipine 5mg/capsule.
30's pack: 240.00 MRP

❖ **CAMLOPRIL 20/10 Cap. Square**
Benazepril 20mg & amlodipine 10mg/capsule.
30's pack: 300.00 MRP

INDAPAMIDE + PERINDOPRIL

INDAPAMIDE + PERINDOPRIL: Tablet

This is a fixed combination of indapamide and perindopril; preparations are available in two presentations, viz: i. tablet containing indapamide 0.625mg and perindopril erbumine 2mg, and ii. tablet containing indapamide 1.25mg and perindopril erbumine 4mg.

In this combination perindopril is an ACE inhibitor and indapamide is a thiazide-like diuretic, both of these lead to additive synergy of the antihypertensive effects of the product.

Mode of action: The pharmacological actions of these two components are derived from those of each of the components taken separately. In addition to those due to the additive synergistic action of the two constituents, when combined, it shows beneficial effets on vascular endothelium, arteriolocapillary microcirculation, and the target organs of hypertension.

Ind: Essential hypertension.

C/I: *Absolute:* Known allergy to perindopril erbumine, indapamide, or sulfonamides; history of Quincke's edema linked to previous ACE inhibitor therapy; severe renal failure; serious

liver disorder; hypokalemia; pregnancy & lactation.
Relative: Combination therapy with lithium, potassium salts, potassium-sparing diuretics, and certain medicines which can cause heart rhythm disorders.
S/E: Asthenia, dizziness, headache, mood swings and/or sleep disturbances, cramps, hypotension, allergic reactions, skin rashes, gastrointestinal disorders, dry cough, dry mouth, risk of dehydration in the elderly and in patients suffering from heart failure; changes in blood test results may occur.
Precautions: Disorders of electrolyte balance, diabetes, gout, hypotension, or strict sodium-free diets, heart or renal failure, atherosclerosis, renal artery stenosis, elderly.
Pregnancy & lactation: This combination is absolutely contraindicated in pregnancy and lactation.
Dosage & admin: One tablet daily (strength as advised by the physician), preferably to be taken in the morning and before a meal.
Elderly patients: Normal dosage.
Renal failure: Creatinine clearance (CrCl) >30ml/min: No dosage modification. CrCl <30ml/min: treatment contraindicated.
Drug inter: Not recommended: combinations with lithium, potassium-sparing diuretics, potassium (salts), antiarrhythmic drugs which cause torsade de pointes, anesthetic drugs, cytostatic or immunosuppressive agents.

❖ **INDAPRIL 2 Tab. Incepta**
Indapamide 0.625mg and perindopril erbumine 2mg/tablet
30's pack: 210.00 MRP
❖ **INDAPRIL 4 Tab. Incepta**
Indapamide 1.25mg and perindopril erbumine 4mg/tablet
20's pack: 240.00 MRP
❖ **INOPIL 2 Plus Tab. Delta**
Indapamide 0.625mg and perindopril erbumine 2mg/tablet
10's pack: 50.01 MRP
❖ **INOPIL Plus Tab. Delta**
Indapamide BP 1.25mg and perindopril erbumine INN 4mg/tablet
20's pack: 159.99 MRP
❖ **MIDOPRIL 2 Tab. General**
Indapamide 0.625mg and perindopril erbumine 2mg/tablet
30's pack: 210.00 MRP
❖ **MIDOPRIL 4 Tab. General**
Indapamide 1.25mg and perindopril erbumine 4mg/tablet
20's pack: 240.00 MRP
❖ **PENDORIL Plus 2 Tab. Renata**
Indapamide 0.625mg and perindopril erbumine 2mg/tablet
10's pack: 80.00 MRP
❖ **PENDORIL Plus 4 Tab. Renata**
Indapamide 1.25mg and perindopril erbumine 4mg/tablet
10's pack: 130.00 MRP
❖ **PERINDAL 2+ Tab. Opsonin**
Indapamide 0.625mg and perindopril erbumine 2mg/tablet
30's pack: 210.00 MRP
❖ **PERINDAL 4+ Tab. Opsonin**
Indapamide 1.25mg and perindopril erbumine 4mg/tablet
20's pack: 240.00 MRP
❖ **REPRES Plus 2 Tab. Square**
Indapamide 0.625mg and perindopril erbumine 2mg/tablet
30's pack: 210.00 MRP
❖ **REPRES Plus 4 Tab. Square**
Indapamide 1.25mg and perindopril erbumine 4mg/tablet
20's pack: 240.00 MRP

CANDESARTAN + HYDROCHLOROTHIAZIDE[36,48,52]

CANDESARTAN + HYDROCHLOROTHIAZIDE: Tablet
Combination preparation of candesartan and hydrochlorothiazide is available as candesartan cilexetil INN 8mg & hydrochlorothiazide BP 12.5mg/tablet.
Mode of action: Angiotensin II is a potent vasoconstrictor, the primary vasoactive hormone of the renin-angiotensin system and an important component in the pathophysiology of hypertension. It also stimulates aldosterone secretion by the adrenal cortex. Candesartan blocks the vasoconstrictor and aldosterone-secreting effects of angiotensin II by selectively blocking the binding of angiotensin II to the AT1 receptor found in many tissues, (e.g vascular smooth muscle, adrenal gland).
Hydrochlorothiazide is a thiazide diuretic. Thiazides affect the renal tubular mechanisms of electrolyte reabsorption, directly increasing excretion of sodium and chloride in approximately equivalent amounts. Indirectly, the diuretic action of hydrochlorothiazide reduces plasma volume, with consequent increases in plasma renin activity, increases in aldosterone secretion, increases in urinary potassium loss, and decreases in serum potassium. The renin-aldosterone link is mediated by angiotensin II, so coadministration of an angiotensin II receptor antagonist tends to reverse the potassium loss associated with these diuretics.
Ind: These combined preparations are indicated for the treatment of hypertension. These fixed dose combinations are not indicated for initial therapy of hypertension, except when the hypertension is severe enough that the value of achieving prompt blood pressure control exceeds the risk of initiating combination therapy in these patients.
C/I: This combination is contraindicated in patients- i. who are hypersensitive to any component of this product; ii. hydrochlorothiazide is particularly contraindicated in patients with anuria or hypersensitivity to other sulfonamide group of drugs; iii. pregnancy & lactation.
S/E: Adverse effects are generally mild and transient in nature. The overall incidence of adverse events reported with this combination occurring in greater than 2% of patients are-respiratory tract infection (3.6%), back pain (3.3%), influenza-like symptoms (2.5%), dizziness (2.9%), and headache (2.9%).
Precautions: In clinical trials of various doses of candesartan cilexetil and hydrochlorothiazide, the incidence of hypertensive patients who developed hypokalemia (serum potassium <3.5mEq/L) was 2.5% versus 2.1% for placebo; the incidence of hyperkalemia (serum potassium >5.7mEq/L) was 0.4% versus 1.0% for placebo. No patient receiving this combination 16-12.5mg had to discontinue the drug due to increases or decreases in serum potassium. Overall, the combination of candesartan cilexetil and hydrochlorothiazide had no clinically significant effect on serum potassium.
Pregnancy & lactation: When pregnancy is detected, this drug should be discontinued as soon as possible. It should not be used in lactation also.
Dosage & admin: Initially 4mg (2mg in hepatic and renal impairment) once daily adjusted according to response; usual maintenance dose is 8mg once daily; maximum 32mg once daily. Doses larger than 32mg do not appear to have a greater blood pressure lowering effect. Hydorchlorothiazide is effective in doses of 12.5 to 50mg once daily.
Drug inter: See above under the text of 'candesartan cilexetil' and 'hydrochlorothiazide' separately.

❖ **GIRAN-H Tab. Aristopharma**
Candesartan cilexetil INN 8mg & hydrochlorothiazide BP 12.5mg/tablet.
30's pack: 180.00 MRP

IRBESARTAN + HYDROCHLOROTHIAZIDE[81]

IRBESARTAN + HYDROCHLOROTHIAZIDE: Tablet
Combination preparations of irbesartan and hydrochlorothiazide are available in three fixed-dose presentations, viz: i. Irbesartan INN 150mg + Hydrochlorothiazide BP 12.5mg/tablet, ii. Irbesartan INN 300mg + Hydrochlorothiazide BP 12.5mg/tablet, and iii. Irbesartan INN 300mg + Hydrochlorothiazide BP 25mg/tablet.
Mode of action: See above under the text of 'Candesartan + Hydrochlorothiazide' preparation.
Ind: This combination is indicated for the treatment of hypertension for patients in whom combination therapy is appropriate.
C/I: See above under the text of 'Candesartan + Hydrochlorothiazide' preparation.
S/E; Precautions & warnings: See above under the text of 'Candesartan + Hydrochlorothiazide' preparation.
Pregnancy & lactation: When pregnancy is detected, this drug should be discontinued as soon as possible. It should not be used in lactation also.
Dosage & admin: A patient whose blood pressure is inadequately controlled by irbesartan or hydrochlorothiazide alone may be switched to this combination product once daily to minimize dose independent side effects. Recommended doses of this product, in order of increasing mean effect, are (irbesartan/hydrochlorothiazide) 150mg/12.5mg, 300mg/12.5mg, and 300mg/25mg. The largest incremental effect will likely be in the transition from monotherapy to 150mg/12.5mg. It takes 2-4 weeks for the blood pressure to stabilize

after a change in the dose of this combination product. The usual dose of product is one tablet (150mg/12.5mg) once daily. More than two tablets once daily is not recommended. The maximal antihypertensive effect is attained about 2-4 weeks after initiation of therapy. Use in patients with renal impairment: The usual regimens of therapy with this product may be followed as long as the patient's creatinine clearance is 30ml/min. Patients with hepatic impairment: No dosage adjustment is necessary in patients with hepatic impairment.
Drug inter: See above under the text of 'irbesartan' and 'hydrochlorothiazide' separately.

❖ **CAVAZIDE-75 Tab. UniHealth/UniMed**
Irbesartan INN 75mg & hydrochlorothiazide 12.5mg/tablet.
30's pack: 180.00 MRP
❖ **CAVAZIDE-150 Tab. UniHealth/UniMed**
Irbesartan INN 150mg & hydrochlorothiazide 12.5mg/tablet.
30's pack: 360.00 MRP
❖ **CAVAZIDE-300 Tab. UniHealth/UniMed**
Irbesartan INN 300mg & hydrochlorothiazide 12.5mg/tablet.
10's pack: 240.00 MRP

LOSARTAN + HYDROCHLOROTHIAZIDE[48,52]

LOSARTAN + HYDROCHLOROTHIAZIDE: Tablet
Combination preparations of losartan potassium and hydrochlorothiazide are available in two fixed strengths, viz: i. Losartan potassium INN 25mg + Hydrochlorothiazide BP 12.5mg, and ii. Losartan potassium INN 50mg + Hydrochlorothiazide BP 12.5mg.
Mode of action: See above under the text of 'Candesartan + Hydrochlorothiazide' preparation.
Ind: These combined preparations are indicated for the treatment of hypertension. These fixed dose combinations are not indicated for initial therapy of hypertension, except when the hypertension is severe enough that the value of achieving prompt blood pressure control exceeds the risk of initiating combination therapy in these patients.
C/I: This combination is contraindicated in patients who are hypersensitive to any component of this product. Hydrochlorothiazide is particularly contraindicated in patients with anuria or hypersensitivity to other sulfonamide group of drugs.
S/E: Generally this combination is well tolerated. However, few side-effects including abdominal pain, swelling, back pain, dizziness, rash and cough may occur in rare cases.
Precautions & warnings: In patients treated with various doses of losartan and hydrochlorothiazide, there was a dose-related decrease in the hypokalemic response to hydrochlorothiazide as the dose of losartan was increased, as well as a dose-related decrease in serum uric acid with increasing doses of losartan. Periodic determination of serum electrolytes to detect possible electrolyte imbalance should be performed at appropriate intervals.
In diabetic patients dosage adjustments of insulin or oral hypoglycemic agents may be required.
Hypotension: In patients who are intravascularly volume-depleted (e.g those treated with diuretics), symptomatic hypotension may occur after initiation of this combined therapy.
Impaired hepatic functions: This combination is not recommended for patients with hepatic impairment who require titration with losartan. The lower starting dose of losartan recommended for that patients.
Patients with renal impairment: In patients with more severe renal impairment this is not recommended.
Pregnancy & lactation: When pregnancy is detected, this drug should be discontinued as soon as possible. It should not be used in lactation also.
Dosage & admin: Dosing must be individualized.
The usual starting dose of losartan is 50mg once daily; 25mg is recommended for patients with intravascular volume depletion and patients with a history of hepatic impairment. Losartan can be administered once or twice daily at total daily doses of 25mg to 100mg. If the antihypertensive effect measured at trough using once-a-day dosing is inadequate, a twice-a-day regimen at the same total daily dose or an increase in dose may give a more satisfactory reporse.
Hydrochlorothiazide is effective in doses of 12.5mg to 50mg once daily and can be given at doses of 12.5mg to 25mg.
To minimize dose-dependent side effects, it is usually appropriate to begin combination therapy only after a patient has failed to achieve the desired effect with monotherapy. These combinations may also be administered with other antihypertensive agents if required. Paediatric use: Safety and effectiveness in paediatric patients have not been established.
Drug inter: See above under the text of 'losartan potassium' and 'hydrochlorothiazide' separately.

❖ **ANGILOCK Plus Tab. Square**
Losartan potassium 50mg & hydrochlorothiazide 12.5mg/tablet.
30's pack: 180.00 MRP
❖ **ANGILOCK Plus 100/12.5 Tab. Square**
Losartan potassium 100mg & hydrochlorothiazide 12.5mg/tablet.
30's pack: 270.00 MRP
❖ **ANGILOCK Plus 100/25 Tab. Square**
Losartan potassium 100mg & hydrochlorothiazide 25mg/tablet.
30's pack: 300.00 MRP
❖ **ANREB Plus Tab. General**
Losartan potassium 50mg & hydrochlorothiazide 12.5mg/tablet.
30's pack: 180.00 MRP
❖ **ARATEN Plus-25 Tab. UniHealth**
Losartan potassium 25mg & hydrochlorothiazide 12.5mg/tablet.
30's pack: 105.00 MRP
❖ **ARATEN Plus-50 Tab. UniHealth**
Losartan potassium 50mg & hydrochlorothiazide 12.5mg/tablet.
30's pack: 180.00 MRP
❖ **CARDOPLUS 50 Tab. SK+F**
Losartan potassium 50mg & hydrochlorothiazide 12.5mg/tablet.
20's pack: 120.00 MRP
❖ **CARDOPLUS 100 Tab. SK+F**
Losartan potassium 100mg & hydrochlorothiazide 12.5mg/tablet.
20's pack: 200.00 MRP
❖ **HYPANIL Tab. Aexim**
Losartan potassium 50mg & hydrochlorothiazide 12.5mg/tablet.
30's pack: 150.00 MRP
❖ **LARB 50 Plus Tab. Opsonin**
Losartan potassium 50mg & hydrochlorothiazide 12.5mg/tablet.
30's pack: 180.00 MRP
❖ **LARB 100 Plus Tab. Opsonin**
Losartan potassium 100mg & hydrochlorothiazide 12.5mg/tablet.
30's pack: 300.00 MRP
❖ **LK Plus Tab. Pacific**
Losartan potassium 50mg & hydrochlorothiazide 12.5mg/tablet.
30's pack: 180.00 MRP
❖ **LOK-50 Plus Tab. Globe**
Losartan potassium 50mg & hydrochlorothiazide 12.5mg/tablet.
30's pack: 180.00 MRP
❖ **LOPO Plus Tab. Bio-pharma**
Losartan potassium 50mg & hydrochlorothiazide 12.5mg/tablet.
30's pack: 180.00 MRP
❖ **LOPOS Plus Tab. Zenith**
Losartan potassium 50mg & hydrochlorothiazide 12.5mg/tablet.
50's pack: 500.00 MRP
❖ **LOSACARD-HZ Tab. Novo Healthcare**
Losartan potassium USP 50mg & hydrochlorothiazide USP 12.5mg/tablet.
30's pack: 180.00 MRP
❖ **LOSACOR Plus Tab. Healthcare**
Losartan potassium 50mg & hydrochlorothiazide 12.5mg/tablet.
30's pack: 195.00 MRP
❖ **LOSAN-D Tab. Orion**
Losartan potassium 50mg & hydrochlorothiazide 12.5mg/tablet.
30's pack: 180.00 MRP
❖ **LOSARCAR-PLUS Tab. Medimet**
Losartan potassium 50mg & hydrochlorothiazide 12.5mg/tablet.
50's pack: 300.00 MRP
❖ **LOSARDIL-Plus 25 Tab. Drug Inter.**
Losartan potassium 25mg & hydrochlorothiazide 12.5mg/tablet.
50's pack: 250.00 MRP

❖ **LOSARDIL-Plus 50 Tab. Drug Inter.**
Losartan potassium 50mg & hydrochlorothiazide 12.5mg/tablet.
50's pack: 300.00 MRP
❖ **LOSART Plus Tab. Acme**
Losartan potassium 50mg & hydrochlorothiazide 12.5mg/tablet.
30's pack: 180.00 MRP
❖ **LOSATAN HZ Tab. Popular**
Losartan potassium 50mg & hydrochlorothiazide 12.5mg/tablet.
30's pack: 180.00 IP
❖ **LOSIUM Plus Tab. Ibn Sina**
Losartan potassium 50mg & hydrochlorothiazide 12.5mg/tablet.
30's pack: 180.00 MRP
❖ **LOSPIL Plus Tab. White Horse**
Losartan potassium 50mg & hydrochlorothiazide 12.5mg/tablet.
50's pack: 300.00 MRP
❖ **LOTAS Plus Tab. Ambee**
Losartan potassium 50mg & hydrochlorothiazide 12.5mg/tablet.
30's pack: 150.00 MRP
❖ **OSARTAN-HZ Tab. Aristopharma**
Losartan potassium 50mg & hydrochlorothiazide 12.5mg/tablet.
30's pack: 180.00 MRP
❖ **OSARTIL 50 Plus Tab. Incepta**
Losartan potassium 50mg & hydrochlorothiazide 12.5mg/tablet.
30's pack: 180.00 MRP
❖ **OSARTIL 100 Plus Tab. Incepta**
Losartan potassium 100mg & hydrochlorothiazide 12.5mg/tablet.
30's pack: 300.00 MRP
❖ **PROSAN HZ Tab. Beximco**
Losartan potassium 50mg & hydrochlorothiazide 12.5mg/tablet.
30's pack: 180.00 IP
❖ **REPACE H Tab. Sun Pharma**
Losartan potassium 50mg & hydrochlorothiazide 12.5mg/tablet.
50's pack: 350.00 MRP
❖ **ROSATAN-H 25 Tab. ACI**
Losartan potassium 25mg & hydrochlorothiazide 12.5mg/tablet.
50's pack: 200.00 MRP
❖ **ROSATAN-H 50 Tab. ACI**
Losartan potassium 50mg & hydrochlorothiazide 12.5mg/tablet.
50's pack: 300.00 MRP

RAMIPRIL + HYDROCHLOROTHIAZIDE[26]

RAMIPRIL + HYDROCHLOROTHIAZIDE: Tablet
This is a fixed combination of ramipril and hydrochlorothiazide; preparations are available in two presentations, viz: i. tablet containing ramipril BP 2.5mg and hydrochlorothiazide BP 12.5mg, and ii. tablet containing ramipril BP 5mg and hydrochlorothiazide BP 25mg.
Ind: This combined preparation is indicated for the treatment of hypertension.
C/I; S/E; Precautions: See under the text of ramipril & hydrochlorothiazide separately.
Pregnancy & lactation: Not recommended in pregnancy & lactation.
Dosage & admin: A patient whose blood pressure is not adequately controlled with ramipril (or another ACE inhibitor) alone or with hydrochlorothiazide (or another thiazide diuretic) alone, may be switched to any of the combination therapy. The usual starting dose of this combination is either one tablet of 2.5mg/12.5mg or 5mg/25mg once daily. If necessary, the dose may be increased up to two tablets of 5mg/25mg once daily.
Dosage in renal ilpairment: **In patients with a creatinine clearance between 60 & 30ml/min, treatment should be initiated with ramipril 1.25mg monotherapy. If blood pressure is not adequately controlled, the dose of ramipril may be increased to 2.5mg. If blood pressure is still not controlled, patient may be switched to one tablet of this combination 2.5mg/12.5mg once daily. Dosage may be titrated upward to 5mg/25mg until blood pressure is controlled.**
Drug inter: See under the text of ramipril & hydrochlorothiazide separately.

❖ **PIRAMIL Plus 2.5 Tab. Sandoz/Novartis**
Ramipril BP 2.5mg & hydrochlorothiazide BP 12.5mg/tablet.
28's pack: 168.00 MRP
❖ **PIRAMIL Plus 5 Tab. Sandoz/Novartis**
Ramipril BP 5mg & hydrochlorothiazide BP 25mg/tablet.
28's pack: 252.00 MRP
❖ **PROTACE-H 2.5 Tab. UniMed/UniHealth**
Ramipril BP 2.5mg & hydrochlorothiazide BP 12.5mg/tablet.
30's pack: 150.00 MRP
❖ **RAMORIL 2.5 Plus Tab. Incepta**
Ramipril BP 2.5mg & hydrochlorothiazide BP 12.5mg/tablet.
30's pack: 150.00 MRP
❖ **RAMORIL 5 Plus Tab. Incepta**
Ramipril BP 5mg & hydrochlorothiazide BP 25mg/tablet.
30's pack: 240.00 MRP
❖ **RIPRIL Plus 2.5/12.5 Tab. Square**
Ramipril BP 2.5mg & hydrochlorothiazide BP 12.5mg/tablet.
30's pack: 150.00 MRP
❖ **RIPRIL Plus 5/25 Tab. Square**
Ramipril BP 5mg & hydrochlorothiazide BP 25mg/tablet.
30's pack: 240.00 MRP

TELMISARTAN + HYDROCHLOROTHIAZIDE[82]

TELMISARTAN + HYDROCHLOROTHIAZIDE: Tablet
The combined preparations of telmisartan & hydrochlorothiazide are available in two fixed-dose presentations, viz: i. Telmisartan INN 40mg + Hydrochlorothiazide BP 12.5mg/tablet; ii. Telmisartan INN 80mg + Hydrochlorothiazide BP 12.5mg/tablet.
Mode of action: See above under the text of 'Candesartan + Hydrochlorothiazide' preparation.
Ind: These combined preparations are indicated for the treatment of hypertension. These fixed dose combinations are not indicated for initial therapy of hypertension.
C/I: This combined preparation is contraindicated in patients who are hypersensitive to any component of this product; patients with anuria or hypersensitivity to other sulfonamide derived drugs.
S/E: Most side effects are mild in intensity & transient in nature & did not require discontinuation of therapy. Common side effects are diarrhea, nausea, dizziness, cough & fatigue.
Precautions: Impaired hepatic functions: As the majority, telmisartan is eliminated by biliary excretion, patients with biliary obstructive disorders or hepatic insufficiency can be expected to have reduced clearance. Telmisartan should be used with caution in these patients.
Impaired renal function: As a consequence of inhibiting the renin- angiotensin- aldosterone system, changes in renal function may be anticipated in susceptible individuals. Caution should be taken for these patients.
Pregnancy & lactation: When pregnancy is detected, this drug should be discontinued as soon as possible. It should not be used in lactation also.
Dosage & admin: The usual starting dose of this combination preparation is telmisartan 40mg once daily; blood pressure response is dose related over the range of 40-80mg. Hydrochlorothiazide is effective in doses of 12.5mg to 50mg once daily and can be given at doses of 12.5mg to 25mg.
It is usually appropriate to begin combination therapy only after a patient has failed to achieve the desired effect with monotherapy. Telmisartan combination therapy may be administered with other antihypertensive drugs & it also may be administered with or without food.
Drug inter: Digoxin levels be monitored when initiating, adjusting & discontinuing telmisartan. Alcohol, barbiturates, anti-diabetic drugs may interact with thiazide diuretics.

❖ **MITOSAN 40 Plus Tab. Sandoz/Novartis**
Telmisartan INN 40mg & hydrochlorothiazide BP 12.5mg/tablet.
20's pack: 250.00 MRP
❖ **MITOSAN 80 Plus Tab. Sandoz/Novartis**
Telmisartan INN 80mg & hydrochlorothiazide BP 12.5mg/tablet.
20's pack: 400.00 MRP

VALSARTAN + AMLODIPINE[62,133]

The combined preparations of valsartan & amlodipine are available in three fixed-dose presentations, viz: i. Valsartan 80mg + Amlodipine BP 5mg/tablet; ii. Valsartan 160mg + Amlodipine BP 5mg/tablet; & Valsartan 160mg + Amlodipine BP 10mg/tablet.
Mode of action: See above under the text of valsartan & amlodipine given separately.
Ind: Amlodipine and valsartan combination is indicated for the treatment of hyertension. This fixed combination preparations are not indicated for the initial therapy of hypertension.
C/I: Known hypersensitivity to any component of the preparations.
S/E: Adverse experiences have generally been mild and transient in nature and have only infrequently required discontinuation of therapy.

Precautions: Impaired hepatic function, beta-blocker withdrawal. Renal insufficiency: There is no apparent correlation between renal function (measured by creatinine clearance) and exposure (measured by AUC) to valsartan in patients with different degrees of renal impairment.
Pregnancy & lactation: Preparations containing valsartan should not be given during pregnancy & lactation; if pregnancy is detected during therapy, should be discontinued as soon as possible. It should not be used in lactation also.
Dosage & admin: Amlodipine is an effective treatment of hypertension in once daily doses of 2.5mg-10mg while valsartan is effective in doses of 80mg to 320mg. In clinical trials with amlodipine and valsartan combination using amlodipine doses of 5mg-10mg and valsartan doses of 160mg-320mg, the antihypertensive effects increased with increasing doses.
Pediatric use: **Safety and effectiveness of amlodipine and valsartan combination in pediatric patients have not been established.**
Drug inter: See under the text of 'valsartan' and 'amlodipine' separately.

❖ **AMLOSARTAN 80/5 Tab. Incepta**
Valsartan INN USP 80mg + Amlodipine BP 5mg/tablet (f.c).
30's pack: 270.00 MRP
❖ **AMLOSARTAN 160/5 Tab. Incepta**
Valsartan INN USP 160mg + Amlodipine BP 5mg/tablet (f.c).
30's pack: 480.00 MRP
❖ **AMLOSARTAN 160/10 Tab. Incepta**
Valsartan INN USP 160mg + Amlodipine BP 10mg/tablet (f.c).
30's pack: 480.00 MRP
❖ **AMLOVAS VS 80/5 Tab. Popular**
Valsartan INN USP 80mg + Amlodipine BP 5mg/tablet (f.c).
30's pack: 270.00 MRP
❖ **AMLOVAS VS 160/5 Tab. Popular**
Valsartan INN USP 160mg + Amlodipine BP 5mg/tablet (f.c).
30's pack: 300.00 MRP

VALSARTAN + HYDROCHLOROTHIAZIDE[62]

VALSARTAN + HYDROCHLOROTHIAZIDE: Tablet
Combination preparations of valsartan and hydrochlorothiazide are available in two fixed presentations, viz: i. valsartan INN USP 80mg + hydrochlorothiazide BP 12.5mg, and ii. valsartan INN USP 160mg + hydrochlorothiazide BP 12.5mg.
Mode of action: See above under the text of 'candesartan + hydrochlorothiazide' combined preparation.
Ind: These combined preparations are indicated for the treatment of hypertension. These fixed dose combinations are not indicated for initial therapy of hypertension.
C/I: Hypersensitive to any component of this product; particularly hydrochlorothiazide component is contraindicated in patients with anuria or hypersensitivity to other sulfonamide-derived drugs. Pregnancy & lactation.
S/E: Allergic reaction, anaphylaxis, asthenia and dependent edema. Palpitations, syncope, and tachycardia. Flushing, rash, sunburn and increased sweating. Increased appetite, constipation, dyspepsia, flatulence, dry mouth, dehydration, nausea, abdominal pain, and vomiting. Arthralgia, gout, muscle cramps, muscle weakness, arm pain, and leg pain etc.
Precautions: Impaired hepatic function, beta-blocker withdrawal. Renal insufficiency: There is no apparent correlation between renal function (measured by creatinine clearance) and exposure (measured by AUC) to valsartan in patients with different degrees of renal impairment.
Pregnancy & lactation: When pregnancy is detected, this drug should be discontinued as soon as possible. It should not be used in lactation also.
Dosage & admin: The recommended starting dose of valsartan is 80mg or 160mg once daily when used as monotherapy in patients who are not volume depleted. Patients requiring greater reductions may be started at a higher dose. Valsartan may be used over a dose range of 80mg to 320mg daily, administered once-a-day. A patient whose blood pressure is not adequately controlled with valsartan monotherapy, patient may be switched over to valsartan combination formula with hydrochlorothiazide. Hydrochlorothiazide is effective in doses of 12.5 to 50mg daily, and can be given at doses of 12.5mg to 25mg in combination with valsartan (valsartan 80mg/hydrochlorothiazide 12.5mg or valsartan 160mg/ hydrochlorothiazide 12.5mg) once daily. If blood pressure remains uncontrolled after about 3-4 weeks of treatment, either valsartan or both components may be increased depending on clinical response.
Children: The efficacy and effectiveness of this combination preparation have not been established in patients <18 years of age.
Drug inter: See above under the text of 'valsartan' and 'hydrochlorothiazide' separately.

❖ **CO-DIOVAN 80/12.5 Tab. Novartis**
Valsartan INN USP 80mg + hydrochlorothiazide BP 12.5mg/tablet (f.c).
28's pack: 1288.00 MRP
❖ **CO-DIOVAN 160/12.5 Tab. Novartis**
Valsartan INN USP 160mg + hydrochlorothiazide BP 12.5mg/tablet (f.c).
28's pack: 1764.00 MRP
❖ **DISYS Plus Tab. Healthcare**
Valsartan INN USP 80mg + hydrochlorothiazide BP 12.5mg/tablet (f.c).
30's pack: 255.00 MRP
❖ **REOVAN H Tab. RAK Pharma**
Valsartan INN USP 80mg + hydrochlorothiazide BP 12.5mg/tablet (f.c).
30's pack: 360.00 MRP
❖ **VALSARTIL 80 Plus Tab. Incepta**
Valsartan INN USP 80mg + hydrochlorothiazide BP 12.5mg/tablet (f.c).
30's pack: 270.00 MRP
❖ **VALSARTIL 160/12.5 Tab. Incepta**
Valsartan INN USP 160mg + hydrochlorothiazide BP 12.5mg/tablet (f.c).
30's pack: 480.00 MRP
❖ **VALSARTIL 160 Plus Tab. Incepta**
Valsartan INN USP 160mg + hydrochlorothiazide BP 25mg/tablet (f.c).
30's pack: 480.00 MRP
❖ **VALZIDE 80/12.5 Tab. Renata**
Valsartan INN USP 80mg + hydrochlorothiazide BP 12.5mg/tablet (f.c).
20's pack: 180.00 MRP
❖ **VALZIDE 160/12.5 Tab. Renata**
Valsartan INN USP 160mg + hydrochlorothiazide BP 12.5mg/tablet (f.c).
20's pack: 320.00 MRP

4. DRUGS USED IN ANGINA & ISCHAEMIC HEART DISEASES

Drugs used in angina & ischaemic heart diseases can further be divided in the following groups:

4.1 Nitrates: Coronary vasodilators
4.2 Calcium-channel blockers
4.3 Potassium-channel activators
4.4 Misc. Antianginal & anti-ischaemic drugs

Nitrates: Coronary vasodilators

Nitrate coronary vasodilator drugs available for therapeutic use are:
Glyceryl trinitrate, Isosorbide dinitrate, Isosorbide mononitrate.

GLYCERYL TRINITRATE[21,33,64]

GLYCERYL TRINITRATE: Tablet Injection/Ointment/Inhalation or Spray.
Ind: Prophylaxis and treatment of angina pectoris including variant angina, left ventricular failure.
C/I: Marked anaemia, head trauma, cerebral haemorrhage, closed angle glaucoma.
S/E: Throbbing headache, flushing, dizziness, tachycardia, postural hypotension.
Cautions: Hypotensive condition, development of tolerance.
Dosage & admin: ***Sublingually:*** **0.5-1mg, repeat as required.**
By mouth: **2.6-6.4mg as sustained release tablets, 2-3 times daily.**
By i.v infusion: **10-200mcg/min.**
By spray: **Treatment or prophylaxis of angina, spray 1-2 dose under tongue & then close mouth.**

❖ **ANGICARD Tab. Drug Inter.**
Glyceryl trinitrate 0.5mg/tablet.
100's pack: 300.00 MRP
❖ **ANGIST SR Tab. Acme**
Glyceryl trinitrate (nitroglycerine) 2.6mg/tablet (sustained release).
30's pack: 120.00 MRP
❖ **ANRIL Tab. Square**
Glyceryl trinitrate (nitroglycerine) 0.5mg/tablet.
30's pack: 90.00 MRP
❖ **ANRIL SR Tab. Square**
Glyceryl trinitrate (nitroglycerine) 2.6mg/tablet (sustained release).
30's pack: 120.00 MRP
❖ **ANRIL Spray Square**
Glyceryl trinitrate (nitroglycerine)

400mcg/metered dose: aerosol spray.
200 doses unit: 215.00 MRP
❖ **G.T.N Inj. DBL/Globex**
Glyceryl trinitrate 1mg/ml; 50ml ampoule: i.v infusion
50ml amp x 1's pack: 163.97 MRP
❖ **GTN 2.6 SR Tab. SK+F**
Glyceryl trinitrate (nitroglycerine) 2.6mg/tablet (sustained release).
50's pack: 200.00 MRP
❖ **NIDOCARD Retard Tab. Drug Inter.**
Glyceryl trinitrate (nitroglycerine) 2.6mg/capsule (sustained release).
100's pack: 400.00 MRP
❖ **NIDOCARD Spray Drug Inter.**
Glyceryl trinitrate (nitroglycerine)
400mcg/metered dose: aerosol spray.
200 doses unit: 200.00 MRP
❖ **NITRIN SR Cap. Healthcare**
Glyceryl trinitrate (nitroglycerine) 2.6mg/capsule (sustained release).
60's pack: 279.00 MRP
❖ **NITROCAP Cap. Orion**
Glyceryl trinitrate (nitroglycerine) 2.6mg/capsule (sustained release pellets).
30's pack: 150.00 MRP
❖ **NITROCARD Tab. Aristopharma**
Glyceryl trinitrate (nitroglycerine) 2.6mg/tablet.
50's pack: 200.00 MRP
❖ **NITRODIL Cap. Medimet**
Glyceryl trinitrate (diluted nitroglycerine) 2.6mg/capsule.
50's pack: 232.50 MRP
❖ **NITROMINT Retard Tab. Egis/City Overseas**
Glyceryl trinitrate (nitroglycerine) 2.6mg/tablet (controlled release).
30's pack: 135.00 TP
❖ **NITROMINT Spray Egis/City Overseas**
Glyceryl trinitrate (nitroglycerine)
400mcg/metered dose: aerosol spray.
180 doses unit: 195.00 TP
❖ **NITRONAL Spray Pohl Boskamp/Medinam**
Glyceryl trinitrate (nitroglycerine) 400mcg/ metered dose: aerosol spray.
200 doses unit: 285.00 MRP
❖ **NITRONAL Inj. Pohl Boskamp/Medinam**
Glyceryl trinitrate 1mg/ml; 10ml ampoule & 50ml vial: injection for infusion
10ml (10mg) amp x 1's pack: 115.00 MRP
50ml (50mg) vial x 1's pack: 360.00 MRP
❖ **NITROSOL Spray Beximco**
Glyceryl trinitrate (nitroglycerine) 400mcg/ metered dose: aerosol spray.
200 doses unit: 215.00 MRP
❖ **NITRO-SR Tab. UniHealth/UniMed**
Glyceryl trinitrate (nitroglycerine) 2.6mg/tablet (sustained release).
30's pack: 120.00 MRP
❖ **NITROVAS SR Tab. Popular**
Glyceryl trinitrate (nitroglycerine) 2.6mg/tablet (sustained release).
30's pack: 120.00 MRP
❖ **NITROVAS Oint. Popular**
Glyceryl trinitrate (nitroglycerine) 0.4% (i.e 4mg/gm): ointment (sublingual application).
30gm pack: 130.00 MRP
❖ **PACTORIN Retard Tab. ACI**
Glyceryl trinitrate (nitroglycerine) 2.6mg/tablet (retard).
50's pack: 200.00 IP
❖ **TROCER 2.6 SR Tab. Incepta**
Glyceryl trinitrate (nitroglycerine) 2.6mg/tablet (sustained release).
30's pack: 120.00 MRP
❖ **TROCER 2.6 SR Cap. Incepta**
Glyceryl trinitrate (nitroglycerine) 2.6mg/capsule (sustained release).
30's pack: 120.00 MRP
❖ **XENOCARD Tab. White Horse**
Glyceryl trinitrate (nitroglycerine) 2.6mg/tablet.
50's pack: 150.00 MRP

ISOSORBIDE DINITRATE[21,33]

ISOSORBIDE DINITRATE: Tablet/ Capsule/Injection.
Ind: Prophylaxis and treatment of angina; left ventricular failure.
C/I,S/E, Cautions: Same as glyceryl trinitrate.
Dosage & admin: Acute attack, 5-10mg sublingually.
By mouth, prophylaxis, angina 30-120mg daily in 3 or 4 divided doses; left ventricular failure, 40-160mg upto 240mg daily if required, in divided doses.
By i.v infusion, 2-10mg/hour, higher doses upto 20mg/hour may be required.

❖ **ISOCARD Tab. Sonear**
Isosorbide dinitrate 10mg/tablet
100's pack: 35.00 MRP

ISOSORBIDE MONONITRATE[21,33]

ISOSORBIDE MONONITRATE: Tablet
Ind: Prophylaxis and treatment of angina; adjunct in congestive heart failure.
C/I; S/E; Cautions: See under 'glyceryl trinitrate'.
Dose: Initially 20mg 2-3 times daily or 40mg twice daily (10mg twice daily in those who have not previously received nitrates); up to 120mg daily in divided doses if required.

❖ **A-CARD Tab. Acme**
Isosorbide mononitrate 20mg/tablet
100's pack: 142.00 MRP
❖ **ANGIFIX 20 Tab. Incepta**
Isosorbide-5-mononitrate 20mg/tablet
50's pack: 71.00 MRP
❖ **ESMO Tab. Square**
Isosorbide mononitrate 20mg/tablet
100's pack: 142.00 MRP
❖ **ESMO LA Cap. Square**
Isosorbide mononitrate 50mg/capsule (long acting)
30's pack: 210.00 MRP
❖ **ISM Tab. Aristopharma**
Isosorbide mononitrate 20mg/tablet
100's pack: 140.00 MRP
❖ **ISOCONTIN Tab. White Horse**
Isosorbide mononitrate 20mg/tablet
50's pack: 71.00 MRP
❖ **MONATE Tab. Beximco**
Isosorbide mononitrate 20mg/tablet
100's pack: 142.00 MRP
❖ **MONITEN Tab. ACI**
Isosorbide mononitrate 20mg/tablet
100's pack: 142.00 MRP
❖ **MONOCARD Tab. Drug Inter.**
Isosorbide mononitrate 20mg/tablet
100's pack: 142.00 MRP
❖ **MONOCARD SR Cap. Drug Inter.**
Isosorbide mononitrate 50mg/capsule (sustained release)
50's pack: 354.00 MRP
❖ **MONOTRATE Tab. Sun Pharma**
Isosorbide-5-mononitrate 20mg/tablet
50's pack: 71.00 MRP
❖ **MONOTRATE OD Tab. Sun Pharma**
Isosorbide-5-mononitrate 50mg/tablet
30's pack: 123.90 MRP
❖ **UNICARD Tab. Sonear**
Isosorbide mononitrate 20mg/tablet
100's pack: 140.00 MRP

Calcium-channel blocker[21]

Calcium-channel blockers currently available for therapeutic use are: Amlodipine, Diltiazem, Felodipine, Isradipine, Lacidipine, Lercanidipine, Nicardipine, Nifedipine, Nimodipine, Nisoldipine, Verapamil.

AMLODIPINE[21,48,52]

AMLODIPINE BESYLATE: Tablet
Amlodipine besilate is a dihydropyridine calcium channel blocker.
Mode of action: As calcium antagonist amlodipine besilate inhibits the transmembrane influx of calcium ions into vascular smooth muscle and cardiac muscle. The contractile process of cardiac muscle and vascular smooth muscle is dependent upon the movement of extracellular calcium ions into these cells through specific ion channels. Amlodipine inhibits calcium ion influx across cell membranes selectively, with a greater effect on vascular smooth muscle cells than on cardiac muscle cells. It acts directly on vascular smooth muscle to cause a reduction in peripheral vascular resistance and reduction in blood pressure.
Ind: Essential hypertension, angina pectoris, vasospastic angina.
C/I: Amlodipine is contraindicated in patients with a known sensitivity to dihydropyridines. It should not be used in cardiogenic shock, clinically significant aortic stenosis, unstable angina (excluding Prinzmetal's angina). It is also contraindicated in pregnant woman.
S/E: The most common side-effects are associated with vasodilator action, such as, dizziness, flushing, headache, hypotension and peripheral oedema. Gastrointestinal disturbances,

increased frequency of micturition, lethargy, eye pain and mental depression may also occur. A paradoxical increase in ischaemic chest pain may occur at the start of the treatment and in a few patients excessive fall in blood pressure may lead to cerebral or myocardial ischaemia or transient blindness. Gum hyperplasia, erythema multiforme also reported.

Cautions: Caution should be taken in patients with hepatic impairment, during pregnancy and breast-feeding.

Pregnancy & lactation: Use of amlodipine in pregnancy and lactation has yet not been established.

Dosage & Admin: Hypertension- usual dose is 5mg once daily; maximum dose is 10mg once daily; elderly patients with hepatic insufficiency may be started with 2.5mg once daily. In hypertension it may be used alone or in combination with other antihypertensive therapy.

Angina- 5-10mg once daily; using the lower dose in the elderly and in patients with hepatic insufficiency. Most patients require 10mg. Amlodipine may be taken without regard to meals.

Drug inter: No significant drug interaction.

❖ **AMDIN Tab. Alco Pharma**
Amlodipine 5mg & 10mg/tablet.
5mg x 50's pack: 150.00 MRP
10mg x 30's pack: 150.00 MRP

❖ **AMDOCAL Tab. Beximco**
Amlodipine 5mg & 10mg/tablet.
5mg x 100's pack: 400.00 IP
10mg x 60's pack: 360.00 IP

❖ **AMDOPER Tab. Hallmark**
Amlodipine 5mg/tablet.
5mg x 30's pack: 90.00 MRP

❖ **AMDOPIN Tab. Ziska**
Amlodipine 5mg/tablet.
5mg x 50's pack: 175.00 MRP

❖ **AMLO Tab. Pharmadesh**
Amlodipine 5mg/tablet.
5mg x 50's pack: 150.00 MRP

❖ **AMLOCARD Tab. Drug Inter.**
Amlodipine 5mg & 10mg/tablet.
5mg x 100's pack: 450.00 MRP
10mg x 50's pack: 350.00 MRP

❖ **AMLOMARK 5 Tab. Marksman**
Amlodipine 5mg/tablet.
5mg x 30's pack: 60.00 MRP

❖ **AMLOPIN Tab. Acme**
Amlodipine 5mg & 10mg/tablet.
5mg x 30's pack: 120.00 MRP
10mg x 30's pack: 180.00 MRP

❖ **AMLOSIN-5 Tab. Doctor's**
Amlodipine 5mg/tablet.
5mg x 30's pack: 102.30 MRP

❖ **AMLOSUN Tab. Sun Pharma**
Amlodipine 5mg/tablet.
5mg x 100's pack: 400.00 MRP

❖ **AMLOTAB Tab. Incepta**
Amlodipine 5mg/tablet.
5mg x 50's pack: 175.00 MRP

❖ **AMLOVAS Tab. Popular**
Amlodipine 5mg & 10mg/tablet.
5mg x 30's pack: 105.00 MRP
10mg x 30's pack: 180.00 MRP

❖ **AMLOWIDE Tab. Beacon**
Amlodipine 5mg/tablet.
5mg x 50's pack: 150.00 MRP

❖ **AMOCAL Tab. Opsonin**
Amlodipine 5mg/tablet.
5mg x 30's pack: 120.00 MRP
10mg x 30's pack: 180.00 MRP

❖ **AMO 5 Tab. Delta Pharma**
Amlodipine 5mg/tablet.
5mg x 50's pack: 149.99 MRP

❖ **AMPIL Tab. White Horse**
Amlodipine 5mg/tablet.
5mg x 50's pack: 200.00 MRP

❖ **AMPRE Tab. Kumudini**
Amlodipine 5mg/tablet.
5mg x 30's pack: 105.00 MRP

❖ **CAB Tab. ACI**
Amlodipine 5mg/tablet.
5mg x 50's pack: 200.00 MRP

❖ **CALCHEK Tab. General**
Amlodipine 5mg/tablet.
5mg x 50's pack: 200.00 MRP

❖ **CALOCK Tab. Medimet**
Amlodipine 5mg & 10mg/tablet.
5mg x 50's pack: 175.00 MRP
10mg x 50's pack: 187.50 MRP

❖ **CALPIN Tab. Globe**
Amlodipine 5mg & 10mg/tablet.
5mg x 50's pack: 150.00 MRP

❖ **CALVASC Tab. UniHealth**
Amlodipine 5mg & 10mg/tablet.
5mg x 30's pack: 120.00 MRP
10mg x 30's pack: 240.00 MRP

❖ **CAMLODIN Tab. Square**
Amlodipine 5mg & 10mg/tablet.
5mg x 60's pack: 240.00 MRP
10mg x 30's pack: 180.00 MRP

❖ **CARDIPIN Tab. Renata**
Amlodipine 5mg/tablet.
5mg x 50's pack: 200.00 MRP

❖ **CARDOSIA Tab. Pharmasia**
Amlodipine 5mg/tablet.
5mg x 30's pack: 120.00 IP

❖ **CCB Tab. Orion**
Amlodipine 5mg & 10mg/tablet.
5mg x 50's pack: 150.00 MRP
10mg x 50's pack: 275.00 MRP

❖ **CORDIL Tab. Techno Drugs**
Amlodipine 5mg/tablet.
5mg x 30's pack: 90.00 MRP

❖ **CV NOR-5 Tab. Navana**
Amlodipine 5mg/tablet.
5mg x 30's pack: 120.00 MRP

❖ **CV NOR-10 Tab. Navana**
Amlodipine 10mg/tablet.
10mg x 30's pack: 180.00 MRP

❖ **DIPLOR Tab. Ibn Sina**
Amlodipine 5mg & 10mg/tablet.
5mg x 30's pack: 120.00 MRP
10mg x 30's pack: 210.00 MRP

❖ **DOPIN Tab. Medicon**
Amlodipine 5mg/tablet.
5mg x 30's pack: 120.00 MRP

❖ **EMLON Tab. Bio-pharma**
Amlodipine 5mg & 10mg/tablet.
5mg x 50's pack: 225.00 MRP
10mg x 30's pack: 165.00 MRP

❖ **G-AMLODIPINE Tab. Gonoshasthaya**
Amlodipine 5mg & 10mg/tablet.
5mg x 30's pack: 75.00 MRP
10mg x 30's pack: 120.00 MRP

❖ **HIPRE Tab. Pacific**

Amlodipine 5mg & 10mg/tablet.
5mg x 50's pack: 200.00 MRP
10mg x 30's pack: 180.00 MRP

❖ **HYPOTEN Tab. Cosmic**
Amlodipine 5mg/tablet.
5mg x 30's pack: 105.00 MRP

❖ **IMPED Tab. Rephco**
Amlodipine 5mg/tablet.
5mg x 30's pack: 105.00 MRP

❖ **IPIN Tab. Chemist**
Amlodipine 5mg/tablet.
5mg x 30's pack: 105.00 MRP

❖ **LOCARD Tab. Jayson**
Amlodipine 5mg/tablet.
5mg x 50's pack: 151.50 IP

❖ **LODIPIN-5 Tab. Aristopharma**
Amlodipine 5mg/tablet.
5mg x 50's pack: 200.00 MRP

❖ **LOPIN Tab. Edruc**
Amlodipine 5mg/tablet.
5mg x 30's pack: 90.00 MRP

❖ **M-CARD Tab. Zenith**
Amlodipine 5mg/tablet.
5mg x 50's pack: 200 MRP

❖ **NELOD Tab. Chemico**
Amlodipine 5mg & 10mg/tablet.
5mg x 50's pack: 175.00 MRP
10mg x 50's pack: 300.00 MRP

❖ **PRISTIN Tab. Novo Healthcare**
Amlodipine 5mg/tablet.
5mg x 30's pack: 105.00 MRP

❖ **RODIPINE Tab. Rasa**
Amlodipine 5mg/tablet.
5mg x 50's pack: 175.00 MRP

❖ **SIDOPIN Tab. SK+F**
Amlodipine 5mg/tablet.
5mg x 50's pack: 200.00 MRP

❖ **VASOPIN Tab. Silva**
Amlodipine 5mg & 10mg/tablet.
5mg x 30's pack: 90.00 MRP
10mg x 30's pack: 150.00 MRP

❖ **VESOCAL Tab. Rangs Pharma**
Amlodipine 5mg & 10mg/tablet.
5mg x 50's pack: 225.00 MRP
10mg x 30's pack: 240.00 MRP

❖ **XELCARD Tab. Healthcare**
Amlodipine 5mg/tablet.
5mg x 30's pack: 120.00 MRP

DILTIAZEM[21,33]

DILTIAZEM HCl: Tablet/Capsule
Ind: Prophylaxis and treatment of angina; hypertension.
C/I: Severe bradycardia, left ventricular failure, second- or third-degree AV block (unless pacemaker fitted), sick sinus syndrome; pregnancy (toxicity in animal studies); porphyria.
S/E: Bradycardia, sino-atrial block, atrioventricular block, hypotension, malaise, headache, hot flushes, gastro-intestinal disturbances, ankle oedema; rarely rashes (erythema multiforme reported); altered liver function tests; hepatitis and depression reported.
Cautions: Reduce dose in hepatic and renal impairment; heart failure or significantly impaired left ventricular function, mild bradycardia (avoid if severe), first degree AV block, or prolonged PR interval.
Dose: Angina, 60mg 3 times daily (ederly initially twice daily); increased if necessary to 360mg daily (max. 480mg daily).
SR (sustained relielease) preparations- angina and mild to moderate hypertension, initially 90mg twice daily (elderly and in hepatic and renal impairment, dose form not appropriate for initial dose titration); increased if necessary to 120mg or 180mg twice daily.

❖ **CARDIL Tab. Ibn Sina**
Diltiazem hydrochloride 30mg & 60mg/tablet
30mg x 100's pack: 202.00 IP
60mg x 100's pack: 385.00 IP

❖ **CARDIZEM Tab. Drug Inter.**
Diltiazem hydrochloride 30mg & 60mg/tablet
30mg x 100's pack: 200.00 MRP
60mg x 100's pack: 380.00 MRP.

❖ **CARDIZEM-SR Cap. Drug Inter.**
Diltiazem hydrochloride 90mg & 120mg/capsule (sustained release)
90mg x 50's pack: 250.00 MRP
120mg x 50's pack: 400.00 MRP

❖ **DIAL Tab. Nipa**
Diltiazem hydrochlor. 60mg/tablet
60mg x 100's pack: 380.00 MRP

❖ **DILTIZEM-SR Tab. Square**
Diltiazem hydrochloride 90mg/tablet (sustained release)
90mg x 40's pack: 223.20 MRP

❖ **DILZEM Tab. Sonear**
Diltiazem hydrochloride 30mg & 60mg/tablet
30mg x 100's pack: 200.00 MRP
60mg x 100's pack: 350.00 MRP

❖ **EVASCON Tab. Renata**
Diltiazem hydrochloride 30mg & 60mg/tablet
30mg x 100's pack: 202.00 MRP
60mg x 100's pack: 385.00 MRP.

❖ **LITIZEM Tab. Incepta**
Diltiazem hydrochloride 30mg & 60mg/tablet
30mg x 50's pack: 100.00 MRP
60mg x 30's pack: 114.00 MRP

❖ **TIZEM Tab. Delta**
Diltiazem hydrochloride 30mg & 60mg/tablet
30mg x 100's pack: 199.94 MRP
60mg x 50's pack: 190.01 MRP

LERCANIDIPINE[26]

LERCANIDIPINE HCl: Tablet
Lercanidipine is an antihypertensive drug. It is a selective calcium channel blocker of the dihydropyridine group.
Mode of action: Lercanidipine acts by selective inhibition of the transmembrane influx of calcium into smooth muscle. Its antihypertensive action is due to a direct relaxant effect on vascular smooth muscle, thus lowering total peripheral resistance. Lercanidipine is endowed with a prolonged antihypertensive activity because of its high membrane partition coefficient, and is devoid of negative inotropic effects due to its high vascular selectivity.
Ind: Mild to moderate essential hypertension.
C/I: Lercanidipine is contraindicated in patients with left ventricular outflow tract obstruction, untreated congestive cardiac failure, unstable angina pectoris, within 1 month of a myocardial infarction and known hypersensitivity to any dihydropyridine. Lercanidipine should not be taken with grapefruit juice.
S/E: Treatment with lercanidipine is generally well tolerated. The most common side effects are related to the vasodilator properties of lercanidipine such as flushing, peripheral edema, headache, dizziness and asthenia. Other side effects, which occurred in less than 1% of patients include fatigue; GI disturbances such as dyspepsia, nausea, voniting, epigastric pain and diarrhea, polyurea, rash, somnolence & myalgia.
Precaution: Special care should be exercised when lercanidipine is used in patients with sick sinus syndrome, left ventricular dysfunction and ischaemic heart disease.
Pregnancy & lactation: Since there is no clinical data with lercanidipine in pregnancy, it should not be administered during pregnancy or to woman with child bearing potential unless effective contraception is used.
Lercanidipine is highly lipophilic and distribution in milk may be expected. Therefore, it should not be administered to nursing mother.
Dosage & admin: Adult: 10mg orally once daily at least 15 minutes before meals; the dose may he increased to 20mg depending on the individual patient's response. It may take about 2 weeks before the maximal antihypertensive effect is apparent.
Some individuals, not adequately controlled on a single antihypertensive agent, may benefit from the addition of lercanidipine to therapy with a heta-adrenoceptor blocking drug (atenolol), a diuretic (hydrochlorothiazide) or an ACE inhibitor (ramipril).
Use in children: Use in children under the age of 18 years is not currently recommended.
Use in renal or hepatic dysfunction: Special care should be exercised in patients with mild to moderate renal or hepatic dysfunction. Dosage above 20mg daily must be approached with caution. Lercanidipine is not recommended for use in patients with severe hepatic or renal dysfunction.
Drug inter: Concomitant treatment of lercanidipine with cyclosporin, phenytoin, carbamazepine, rifampicin, ketoconazole, itraconazole, ritonavir, erythromycin, troleandomycin, and midazolam should be avoided. Caution should be exercised when lercanidipine is co-prescribed with astemizole, amiodarone, quinidine, cimetidine, metoprolol and simvastatin.

❖ **CANIDER Tab. ACI**
Lercanidipine hydrochloride INN 10mg/tablet.
30's pack: 150.00 IP

❖ **LARCADIP Tab. Incepta**
Lercanidipine hydrochloride INN 10mg/tablet.
30's pack: 150.00 MRP

❖ **LOTENSYL Tab. Sun Pharma**
Lercanidipine hydrochloride INN 10mg/tablet.
50's pack: 275.00 MRP

LACIDIPINE[36]

LACIDIPINE: Tablet
Lacidipine is a lipophilic calcium-channel blocker. It belongs to dihydropyridine class and is used in the treatment of hypertension. It is available as lacidipine BP 2mg & 4mg film-coated tablet.

Mode of action: Lacidipine inhibits the influx of calcium into smooth muscle cells by the competitive inhibition of voltage-dependent calcium 'L' channels. But it is more vasoselective than other calcium channel blockers, i.e it works more on blood vessels than on heart muscle. Hence, in additon to controlling blood pressure it seems suitable for heart failure patients as well. Moreover, it works as an antioxidant and thereby reduces the progression of atherosclerosis. It also increases insulin sensitivity in diabetic patients.
Ind: Treatment of hypertension, either alone or in combination with other antihypertensive agents such as beta-blockers and diuretics. In different studies it has found suitable for congestive heart failure patients who remain symptomatic despite receiving long-term therapy with ACE inhibitors, digoxin and diuretics.
C/I: Hypersensitivity to dihydropyridine derivatives. Cardiogenic shock, aortic stenosis, avoid within 1 month of myocardial infarction, pregnancy and breast-feeding.
S/E: Flushing, palpitation, headache, dizziness, rarely gastro-intestinal disturbances, gum hyperplasia, mood disturbances, asthenia, polyuria, muscle cramps, skin rash (including pruritus and erythema).
Precaution: Cardiac conduction abnormalities, poor cardiac reserve, hepatic impairment, withdraw if ischemic pain occurs shortly after initiating treatment or if cardiogenic shock develops, avoid grapefruit juice.
Pregnancy & lactation: Although no teratogenic effects of lacidipine have been established in animals there are no data on the safety of lacidipine in human pregnancy & therefore, it is contraindicated. Milk transfer studies in animals have shown that lacidipine is excreted into breast milk and therefore, lacidipine should not be used during lactation.
Dosage & admin: Initially 2mg once daily preferably in the morning; increased if necessary to 4mg daily after 3-4 weeks, then if necessary to 6mg daily.
Elderly: **The efficacy and tolerability of lacidipine in elderly hypertensive patients is comparable with that in younger patients. Therefore, dosage adjustment is not required.**
Children: **Treatment with lacidipine has not been evaluated in children.**
Drug inter: Cimetidine increases the concentration of lacidipine. Lacidipine increases the concentration of digoxin & propranolol, but propranolol derceases the maximum concentration & AUC of lacidipine.

❖ **LACICARD-2 Tab. Aristopharma**
Lacidipine hydrochloride BP 2mg/tablet (f.c).
2mg x 50's pack: 200.00 MRP
❖ **LACICARD-4 Tab. Aristopharma**
Lacidipine hydrochloride BP 4mg/tablet (f.c).
4mg x 30's pack: 180.00 MRP

NIFEDIPINE[21,33,42]

NIFEDIPINE: Tablet/Capsule/Injection
Nifedipine is a cacium-channel blocker. It is available as tablet, capsule & injection.
Mode of action: Nifedipine as a cacium-channel blocker, it blocks the transport of calcium, via holes called channels, into the smooth muscle cells lining the coronary blood vessels and other peripheral blood vessels of the body. Blocking calcium transport relaxes the muscles of the blood vessels and makes them wider. Unlike verapamil it has no anti-arrhythmic activity.
Ind: Prophylaxis and treatment of angina, hypertension, raynauds phenomenon.
C/I: Women of child bearing age.
S/E & Cautions: See under amlodipine.
Dosage & admin: Adults: 5-20mg 3 times daily with or after meals. If immediate effect required, bite capsule & allow liquid to retain in the mouth. Children: Not recommended.

❖ **NIDIPINE Tab. Square**
Nifedipine 10mg/tablet
200's pack: 68.00 MRP
❖ **NIDIPINE-SR Tab. Square**
Nifedipine 20mg/tablet (sustained release)
100's pack: 64.00 MRP
❖ **NIFECAP Cap. Drug Inter.**
Nifedipine 10mg in soft capsule.
10mg x 30's pack: 63.00 MRP
❖ **NIFIN Tab. Acme**
Nifedipine 10mg/tablet
100's pack: 34.00 MRP

NIMODIPINE[42]

NIMODIPINE: Tablet (film-coated)
Nimodipine is a calcium channel blocker. It is available as nimodipine BP 30mg tablet (f.c).
Mode of action: The contractile process of smooth muscle cells are dependent upon calcium ions, which enter these cells during depolarization as slow ionic transmembrane currents. Nimodipine inhibits calcium ion transfer into these cells and thus inhibits contractions of vascular smooth muscle. Nimodipine had a greater effect on cerebral arteries than on arteries elsewhere in the body perhaps because it is highly lipophilic, allowing it to cross the blood-brain barrier. It is therefore preferable in treating subarachnoid hemorrhage (SAH) patients.
Ind: For the improvement of neurological outcome by reducing the incidence and severity of ischemic deficits in patients with subarachnoid hemorrhage from ruptured intracranial berry aneurysms regardless of their post-ictus neurological condition.
C/I: Not known.
S/E: Although side effects from nimodipine are not common, the following can occur, such as: headache, dizziness or light-headedness, flushing (feeling of warmth), heartburn, fast heartbeat, slow heartbeat, upset stomach, stomach pain, constipation, depression, feeling low, or the 'blues' unusual bruising or bleeding.
Precautions: Blood pressure: Blood pressure should be carefully monitored during treatment with nimodipine based on its known pharmacology and the known effects of calcium channel blockers.
Hepatic disease: In patients with impaired hepatic function, the metabolism of nimodipine is decreased. In these patients nimodipine should be given in a lower dose; blood pressure & pulse rate of the patients should be monitored closely.
Pregnancy & lactation: Large doses of nimodipine have been shown to cause birth defects in animals. Human studies have not been done. However, in pregnancy it should not be given. Nimodipine may pass into breast milk but has not been reported to cause problems; caution is advised.
Dosage & admin: Initial dose is 60mg (2 tablets) every four hours for 21 consecutive days, preferably not less than one hour before or two hours after meals. Oral nimodipine therapy should be commencing within 96 hours of the subarachnoid hemorrhage.

❖ **NIMOCAL Tab. Square**
Nimodipine BP 30mg/tablet (f.c).
30's pack: 150.00 MRP
❖ **NIMODI Tab. SK+F**
Nimodipine BP 30mg/tablet (f.c).
30's pack: 150.00 MRP

VERAPAMIL[21,33]

VERAPAMIL HCl: Tablet.
It is a calcium channel blocker & acts by interfering with the slow inward depolarising calcium flow particularly in the S.A and A.V nodal cells.
Ind: Supraventricular arrhythmias, paroxysmal ventricular tachyarrythmias, angina, hypertension.
C/I: Hypotension, bradycardia, second and third degree heart block, sick sinus syndrome, cardiogenic shock, sino-atrial block, uncompensated heart failure, atrial flutter or fibrillation complicating Wolff-parkinson white (WPW) syndrome.
S/E: Constipation, less commonly nausia, vomiting, flushing, headache, dizziness, fatigue, ankle oedema. After intravenous administration, hypotension, bradycardia, heart block, ventricular fibrillation and asystole.
Dosage & admin: By mouth: Supraventricular arrhythmias, 40-120mg t.d.s. Angina, 80-120mg t.d.s. daily. Hypertension, 240-480mg daily in 2-3 divided doses.
By slow i.v injection: Over 2 minutes 5-10mg (preferably with E.C.G. monitoring); in paroxysmal tachyarrhythmias a further 5mg after 5-10 minutes if required.
Note: Verapamil should not be injected into patients recently treated with beta-blockers because of the risk of hypotension and asystole. It is sugg-ested an interval of 30 minutes before giving beta-blocker is sufficient but this too is open to doubt.

❖ **ANGIMIL Tab. Medimet**
Verapamil hydrochloride 40mg & 80mg/tablet.
40mg x 100's pack: 225.00 MRP
80mg x 100's pack: 425.00 MRP
❖ **ANGIMIL SR Tab. Medimet**
Verapamil hydrochloride 240mg/tablet (s.r).
240mg x 15's pack: 105.00 MRP
❖ **VERACAL Tab. Incepta**
Verapamil hydrochloride 40mg & 80mg/tablet.
40mg x 50's pack: 112.50 MRP
80mg x 50's pack: 150.00 MRP
❖ **VERACAL SR 180 Tab. Incepta**
Verapamil hydrochloride 180mg/tablet (sustained release).

180mg x 30's pack: 180.00 MRP

❖ **VERACAL SR Tab. Incepta**
Verapamil hydrochloride 240mg/tablet (sustained release).
240mg x 30's pack: 210.00 MRP

❖ **VERACAL Inj. Incepta**
Verapamil hydrochloride 2.5mg/ml; 2ml ampoule: injection.
2ml amp (5mg) x 5's pack: 150.00 MRP

❖ **VERAMIL Tab. Rangs Pharma**
Verapamil hydrochloride 80mg/tablet.
50's pack: 150.00 MRP

❖ **VERAMIL SR Tab. Rangs Pharma**
Verapamil hydrochloride 240mg/tablet (sustained release).
240mg x 30's pack: 210.00 MRP

Potassium-channel activators

Drug currently available as potassium-channel activator: Nicorandil

NICORANDIL[21,34]

NICORANDIL: Tablet
Nicorandil INN 5mg & 10mg/tablet.
Mode of action: It is a potassium-channel activator, and causes both arterial and venous vasodilation.
Ind: Prevention and long-term treatment of chronic stable angina pectoris.
C/I: Cardiogenic shock. Left ventricular failure with low filling pressure. Hypotension.
S/E: Headache; cutaneous vasodilatation with flushing; nausea, vomiting; dizziness, weakness also reported; rarely oral ulceration and myalgia; at high dosage reduction in blood pressure and/or increase in heart rate; angioedema, hepatic dysfunction also reported.
Precautions: It should be used with caution in patients with hypovolaemia, low systolic pressure, acute pulmonary oedema, acute myocardial infarction with acute left ventricular failure and low filling pressure.
Pregnancy & lactation: It should not be given to pregnant women as well as lactating mothers, as there is no evidence of safety profile for these cases.
Dosage & admin: Initially 10mg twice daily (if susceptible to headache 5mg twice daily); usual dose is 10-20mg twice daily, up to 30mg twice daily may be used.
Drug inter: Nicorandil does not have any pharmacokinetic interaction with commonly prescribed drugs.

❖ **CORANGI-10 Tab. UniHealth**
Nicorandil INN 10mg/tablet.
10mg x 30's pack: 105.00 MRP

Misc. Antianginal & Anti-ischaemic drugs

TRIMETAZIDINE[26,87]

TRIMETAZIDINE: Tablet
Trimetazidine is an antianginal and anti-ischaemic agent that display anti-ischaemic effects without inducing haemodynamic changes and improves the status of the ischaemic myocardium.
It is available as trimetazidine dihydrochloride INN 20mg/tablet (f.c) and 35mg/tablet (modified release).
Mode of action: By preserving the energy metabolism in cells exposed to hypoxia or ischemia, trimetazidine prevents a decrease in intracellular ATP levels, thereby ensuring the proper functioning of ionic pumps and transmembranous sodium-potassium flow while maintaining cellular homeostasis. The disturbances of tissue oxygen supply during ischemia decrease mitochondrial ATP production and increase the generation of free radicals (O2-, OH). By diminishing the bioavailability of free radicals, trimetazidine lessens all their toxic effects. Trimetazidine acts on the inactivation of enzymatic membrane proteins; it antagonizes free radical-induced stimulations of phospholipase A2 and thromboxane synthetase.
Ind: Trimetazidine is indicated in- i. prophylactic treatment of episodes of angina pectoris and sequelae of infarction 'heart failure'; ii. adjuvant symptomatic treatment of vertigo and tinnitus; iii. adjuvant treatment of the decline of visual acuity and visual field disturbances, presumably of vascular origin.
C/I: Hypersensitivity to trimetazidine.
S/E: Rare cases of gastrointestinal disorders, nausea, headache and vertigo. The side effects are mild and non-spcific.
Precautions: Not recommended in pregnancy and nursing mother.
Pregnancy & lactation: Studies in animals have not demonstrated any teratogenic effect. However, in the absence of clinical data and for safety reasons, prescription should be avoided during pregnancy.
There is no information on the secretion of trimetazidine into breast milk. So, in the absence of data, breastfeeding is not recommended during treatment.
Dosage & admin: 20mg tablet preparations: 1 tablet 3 times daily after meals.
35mg tablet preparations: 1 tablet at mealtimes in the morning and evening.
No dosage adjustments are required in patients with impaired renal and hepatic function.
Child: Not recommended.

❖ **ANGIMET Tab. Orion**
Trimetazidine dihydrochloride INN 20mg/tablet (film-coated).
50's pack: 150.00 MRP

❖ **ANGINOX Tab. General**
Trimetazidine dihydrochloride INN 20mg/tablet (film-coated).
30's pack: 90.00 MRP

❖ **ANGIVENT MR Tab. Square**
Trimetazidine dihydrochloride INN 35mg/tablet (modified release).
35mg x 30's pack: 150.00 MRP

❖ **ANTORIS MR Tab. Opsonin**
Trimetazidine dihydrochloride INN 35mg/tablet (modified release).
35mg x 30's pack: 150.00 MRP

❖ **FEELNOR Tab. Incepta**
Trimetazidine dihydrochloride INN 20mg/tablet (film-coated).
50's pack: 90.00 MRP

❖ **METACARD MR Tab. Aristopharma**
Trimetazidine dihydrochloride INN 35mg/tablet (modified release).
35mg x 30's pack: 150.00 MRP

❖ **TRIMET Tab. Drug Inter.**
Trimetazidine dihydrochloride BP 20mg/tablet (film-coated).
50's pack: 150.00 MRP

❖ **TRIMET MR Tab. Drug Inter.**
Trimetazidine dihydrochloride INN 35mg/tablet (modified release).
35mg x 30's pack: 150.00 MRP

❖ **VASTAREL MR Tab. Servier**
Trimetazidine dihydrochloride INN 35mg/tablet (modified release).
35mg x 30's pack: 249.90 MRP

5. PERIPHERAL & CEREBRAL VASODILATOR & NEUROSENSORY OXYGENATOR DRUGS

Cerebral vasodilator & Neurosensory oxygenator drugs

ALMITRINE + RAUBASINE[53]

❖ **DUXIL Tab. Servier**[53]
Almitrine bismesylate 30mg & Raubasine 10mg/tablet.
Mode of action: It is a neurosensory oxyge-nator drug effective in cerebral insufficiency.
Ind: Minor, age-related neurological disorders (such as disorders of memory, concentration etc); some visual disorders & disorders of the inner ear (such as hearing loss, dizziness, buzzing sounds in the ear) related to the ischaemic circulation.
C/I: Known allergy to the drug. Severe liver disease. Don't give with MAOIs.

A/E: Mild gastrointestinal disorders, nausea, sensations of heaviness and burning in the stomach, diarrhea, or constipation. Insomnia, drowsiness, agitation, anxiety, dizziness. Palpitations. During long-term treatment (1 year or more), rarely, sensation of 'pins and needles', stinging, or numbness in the lower limbs, or weight loss and usually disappear after discontinuation of the treatment.
Cautions: Do not exceed the recommended dose. During long-term treatment, if abnormal sensation in the lower limbs, or weight loss occurs, discontinue treatment and consult physician. Avoid concomitant use of other drugs containing almitrine.
Pregnancy & lactation: It is not recommended in women during pregnancy & lactation unless the therapeutic benefits outweigh any potential risk.
Dosage: 1 tablet once or twice daily (one in the morning & one in the evening). In case of missing dose, take the next dose at the normal time; do not take a double dose.
Overdosage: In case of massive overdosage with cardio-respiratory signs gastric lavage and symptomatic supportive measures should be applied under close cardiorespiratory observation with repeated monitoring of blood gases.
30's pack: 299.20 MRP

VINPOCETINE[21,58]

VINPOCETINE: Tablet/Injection.
Ind: Mental and neurological symptoms of reversible cerebrovascular disturbances, viz. amnesia, aphasia, apraxia, locomotor disorders, vertigo, headache. Hypertensive encephalopathy, intermittent cerebrovascular insufficiency, cerebral endarteritis etc.
C/I: Pregnancy
S/E: Slight fall in blood pressure, occasional tachycardia
Dose: initially 1-2 tabs. 3 times daily; maintenance, 1 tab. 3 times daily.

❖ **CAMITON Tab. Drug Inter.**
Vinpocetine (apovincaminic ethylester) INN 5mg/tablet.
100's pack: 400.00 MRP
❖ **CAVINTON Tab. Richter/City Overseas**
Vinpocetine (apovincaminic ethylester) 5mg/tablet.
50's pack: 360.00 TP
❖ **CAVINTON Inj. Richter/City Overseas**
Vinpocetine 10mg/2ml ampoule: injection
Dose: In acute case, 10mg slow i.v or in infusion, daily 2 to 3 times, then followed by oral dose, 1-2 tabs t.i.d.
10 amps pack: 408.70 TP
❖ **CAVITON Tab. Opsonin**
Vinpocetine (apovincaminic ethylester) INN 5mg/tablet.
50's pack: 150.00 MRP
❖ **CERENIN Tab. Ambee**
Vinpocetine (apovincaminic ethylester) INN 5mg/tablet.
50's pack: 177.00 MRP
❖ **CERETON Tab. General**
Vinpocetine (apovincaminic ethylester) INN 5mg/tablet.
50's pack: 200.00 MRP
❖ **CEREVAS Tab. Square**
Vinpocetine (apovincaminic ethylester) INN 5mg/tablet.
50's pack: 200.00 MRP
❖ **CERIVIN Tab. Beximco**
Vinpocetine (apovincaminic ethylester) INN 5mg/tablet.
100's pack: 400.00 IP
❖ **VINCET Tab. SK+F**
Vinpocetine (apovincaminic ethylester) INN 5mg/tablet.
50's pack: 200.00 MRP
❖ **VINTON Tab. Aristopharma**
Vinpocetine (apovincaminic ethylester) INN 5mg/tablet.
100's pack: 300.00 MRP

Peripheral Vasodilator drugs: Intermitent Claudication

CILOSTAZOL[48]

❖ **ZOCIL Tab. Beximco**
Cilostazol INN 50mg & 100mg/tablet
Cilostazol is a quinolinone derivative.
Mode of action: Cilostazol acts by specific inhibition of cellular phosphodiesterase III (PDE III) and suppreses cAMP degradation with a resultant increase in cAMP and decrease in intracellular calcium ion in platelets and blood vessels, leading to inhibition of platelet aggregation and vasodilation.
Ind: It is indicated for the reduction of symptoms of intermittent claudication, as indicated by an increased walking distance.
C/I: Congestive heart failure of any severity; known or suspected hypersensitivity to any of its components.
S/E: Cilostazol is well tolerated with some most common side effects such as headache, diarrhoea, vomiting, rash etc. A few less frequent side effects also been reported such as anorexia, face oedema etc.
Precautions: As grapefruit juice inhibits CYP3A4, avoid concurrent use with cilostazol. Renal impairment- the total activity of cilostazol and its metabolites is similar in subjects with mild to moderate renal impairment and in healthy subjects.
Pregnancy & lactation: There are no adequate and well controlled studies in pregnant women, so use during pregnancy only if the potential benefit justifies the potential risk to the fefus. As cilostazol is secreted into the milk of experimental animals, there is potential risk for the nursing infants, so a decision should be made to discontinue nursing or to discontinue cilostazol.
Dosage & admin: The recommended dosage is 100mg orally twice daily, taken at least half an hour before or two hours after breakfast and dinner. A dose of 50mg b.i.d should be considered during coadministration of inhibitors of CYP3A4 (e.g ketoconazole, itraconazole, erythromycin and diltiazem) and during coadministration of inhibitors of CYP2C19 (e.g omeprazole). Patients may respond as early as 2 to 4 weeks after the

initiation of therapy but treatment for up to 12 weeks may be needed before a beneficial effect is experienced.
Pediatric use: The safety and effectiveness of cilostazol in pediatric patients have not been established.
Overdosage: Information on acute overdosage with cilostazol in humans is limited. The signs and symptoms of an acute overdose are severe headache, diarrhea, hypotension, tachycardia, and possibly cardiac arrhythmias. The patient should be carefully observed and given supportive treatment.
Drug inter: Pharmacokinetic studies have demonstrated that omeprazole and erythromycin significantly increase the systemic exposure of cilostazol and/or its major metabolites. Patients concurrently treated with diltiazem may cause higher concentrations of cilostazol. There is no information with respect to the efficacy or safety of the concurrent use of cilostazol and clopidogrel. Short-term coadministration of aspirin with cilostazol showed an increase in inhibition of ADP-induced platelet aggregation; effects on long-term coadministration are unknown. Cilostazol did not inhibit the metabolism or the pharmacologic effects of warfarin following a single dose; effect of concomitant multiple dosing of warfarin or cilostazol on either drug is unknown.
50mg x 30's pack: 450.00 IP
100mg x 20's pack: 500.00 IP

OXPENTIFYLLINE[21,59]
Or
PENTOXIFYLLINE

PENTOXIFYLLINE (OXPENTIFYLLINE): Tablet
Ind: Peripheral vascular disease.
C/I: Acute myocardial infarction, profuse bleeding, brain haemorrhage.
S/E: G.I disturbances (nausea, vomiting, stomach pain), tension, dizziness, headache, rarely flushing tachycardia; ralely pruritus and urticaria.
Caution: Hypotension, coronary artery disease, porphyria.
Dose: Initial dose is 200mg 3 times daily (during the first week); the dose should be lowered to 100mg 3 times daily in the case of excessive blood pressure reduction, as well as in longterm treatment.
In slow release form 400mg tab. 2-3 times daily may be given. All dosages usually after meal.

❖ **OXIFYL CR Tab. Square**
Pentoxifylline 400mg/tablet (controlled release)
30's pack: 210.00 MRP
❖ **PENTOLIN Tab. Sonear**
Pentoxiphylline 400mg/tablet
100's pack: 1000.00 MRP

Drugs for muscular energy metabolism

LEVOCARNITINE[26,48]

LEVOCARNITINE: Tablet/Syrup
Levocarnitine is a naturally occurring substance required in mammalian energy metabolism. It is available in tablet & syrup form: i. levocarnitine USP 330mg/tablet, & ii. levocarnitine USP 100mg/ml of syrup.
Mode of action: Levocarnitine plays role as carrier molecule in mammalian energy metabolism. It facilitates long-chain fatty acid transport & entry into cellular mitochondria, thereby delivering substrate for oxidation and subsequent energy production. Fatty acids are utilized as energy substrate in all tissues except the brain. In skeletal and cardiać muscles, fatty acids are the main substrate for energy production.
Ind: Chronic fatigue syndrome, heart disease, congestive heart failure, high cholesterol, intermittent claudication, kidney disease, dementia and memory impairment, Down syndrome, male infertility, hyperthyroidism.
C/I: Not known.
S/E: Generally levocarnitine is well tolerated. However, few side effects including transient nausea and vomiting, abdominal cramps, and diarrhoea may occur.
Precautions: The safety and efficacy of oral levocarnitine has not been evaluated in patients with renal insufficiency. Chronic administration of high doses of oral levocarnitine in patients with severely compromised renal function or in ESRD patients on dialysis may result in accumulation of potentially toxic metabolites, trimethylamine (TMA) and trimethylamine-N-oxide (TMAO), since these metabolites are normally excreted in the urine.
Pregnancy & lactation: There is no adequate and well controlled studies in pregnant women. This drug should be used during pregnancy only if clearly needed.
Levocarnitine supplementation in nursing mothers has not been specifically studied. In nursing mothers receiving levocarnitine, any risks to the child of excess carnitine intake need to be weighed against the benefits of levocarnitine supplementation to the mother. Consideration may be given to discontinuation of nursing or of levocarnitine treatment.
Dosage & admin: Adults: 300mg 2 or 3 times daily, depending on clinical response.
Infants & children: 50-100mg/kg/day in divided doses, with a maximum of 3gm/day.
Dosage should begin at 50mg/kg/day. The exact dosage will depend on clinical response.
Drug inter: Not known.

❖ **CARNITAB Tab. Beximco**
Levocarnitine USP 330mg/tablet
30's pack: 150.00 IP
❖ **CARNITEN Tab. Drug Inter.**
Levocarnitine USP 330mg/tablet
48's pack: 240.00 MRP
❖ **ENVITOR Tab. Opsonin**
Levocarnitine USP 330mg/tablet
30's pack: 150.00 MRP
❖ **L-CARNI Tab. General**
Levocarnitine USP 330mg/tablet
30's pack: 150.00 MRP
❖ **LENIT Tab. Delta**
Levocarnitine USP 330mg/tablet
30's pack: 150.00 MRP
❖ **LENIT Syp. Delta**
Levocarnitine USP 100mg/ml: syrup
100ml bot: 100.00 MRP
❖ **LEVOCAR Tab. Square**
Levocarnitine USP 330mg/tablet
30's pack: 150.00 MRP
❖ **LEVOCAR Syp. Square**
Levocarnitine USP 100mg/ml: syrup
100ml bot: 100.00 MRP
❖ **OCARNIX Tab. Incepta**
Levocarnitine USP 330mg/tablet
20's pack: 100.00 MRP
❖ **OCARNIX Syp. Incepta**
Levocarnitine USP 100mg/ml: syrup
100ml bot: 100.00 MRP

6. SYMPATHOMIMETICS

6.1 Inotropic sympathomimetics
6.2 Vasoconstrictor sympathomimetics

Inotropic sympathomimetics[21]

Commonly used inotropic sympathomimetics include- Dobutamine, Dopamine, Dopexamine, Isoprenaline, Xamoterol.

DOBUTAMINE[49,121]

DOBUTAMINE HCl: Injection
Introduction & mode of action: Dobutamine hydrochloride injection is an inotropic agent whose primary activity results from stimulation of the receptors of the heart while producing comparatively mild chronotropic, hypertensive, arrhythmogenic and vasodilative effects. The drug is believed to be a direct agonist which, in animal studies, produces less increase in heart rate and less decrease in peripheral vascular resistance for a given inotropic effect than does isoprenaline.
Facilitation of atrioventricular conduction has been observed in human electrophysiologic studies in normal subjects and in patients with atrial fibrillation. Systematic vascular resistance is usually decreased with administration of dobutamine. Occasionally, minimal vasoconstriction has been observed.
The onset of action is within one to two minutes; however, as much as ten minutes may be required to obtain the peak effect of a particular infusion rate.
Ind: Dobutamine hydrochloride injection is indicated in adults who require short-term treatment of cardiac failure secondary to acute myocardial infarction, or cardiac surgery.
C/I: Dobutamine hydrochloride injection is contraindicated in patients with idiopathic hypertrophic subaortic stenosis and previous hypersensitivity to dobutamine.
S/E: Many of the side-effects of dobutamine are a quantitative extension of the pharmacological actions. The following adverse effects have been reported. Increased heart rate, blood pressure, and ventricular ectopic activity. Approximately 5% of patients have had increase premature ventricular beats during infusions. These effects are dose related and their occurrence may require

that the dose be reduced.
Misc. uncommon effects: The following adverse effects have been reported in 1-3% of patients-: nausea, headache, anginal pain, nonspecific chest pain, palpitations and shortness of breath. Hypersensitivity reactions including rash, fever, eosinophilia and bronchospasm. As with other catecholamines, decreases in serum potassium concentrations have occurred, rarely to hypokalaemic values.
Warnings: Increase in heart rate or blood pressure- dobutamine may cause a marked increase in heart rate or blood pressure, especially systolic pressure. Reduction of dosage usually reserves these effects promptly. Because dobutamine facilitates atrioventricular conduction, patients with atrial fibrillation are at risk of developing rapid ventricular response. patients with preexisting hyperten-sion appear to face an increased risk of developing an exaggerated pressor response.
Ectopic activity: Dobutamine may precipitate or exacerbate ventricular ectopic activity, but it rarely has caused ventricular tachycardia.
Anaesthetics: The myocardium may be sensitised to the effect of dobutamine by cyclopropane or halogenated hydrocarbon anaesthetics, and these should be avoided.
Dobutamine hydrochloride injection solution contains sodium metabisulfite, whcih may cause allergic-type reactions, including anaphylactic symptoms and life-threatening or less severe asthmatic episodes in susceptible people.
Precautions: During the administration of dobutamine, as with any adrenergic agent, ECG and blood pressure shuold be continuously monitored. In addition, pulmonary wedge pressure and cardiac output should be monitored whenever possible to aid in the safe and effective infusion of dobutamine.
Hypovolaemia should be corrected with suitable volume expanders before treatment with dobutamine is instituted.
In patients who have atrial fibrillation with rapid ventricular response, a digitalis preparation should be used prior to instituting therapy with dobutamine.
Animal studies indicate that dobutamine may be ineffective if the patient has recently received a beta-blocking drug. In such case, the peripheral vascular resistance may increase.
No improvement may be observed in the presence of marked mechanical obstruction, such as severe valvular aortic stenosis.
Pregnancy & lactation: Since there are no adequate and well-controlled studies in pregnant women, dobutamine hydrochloride should not be used during pregnancy unless the potential benefits outweigh the potential risk to the fetus. As it is not known if dobutamine is secreted into the breast milk, the use of dobutamine in lactating women should take into account the potential harmful effects to the infant.

Dosage & admin: Adults: The rate of infusion needed to increase cardiac output usually ranges from 2.5-15mcg/kg/min. On rare occasions, infusion rates up to 40mcg/kg/min have been required to obtain the desired effect. Dobutamine causes a dose related improvement in the cardiac output in patients with congestive heart failure. However, the possibility of intensifying myocardial ischaemia should be borne in mind and the lowest effective dose infused.
Use in children: The safety and efficacy of dobutamine for use in children have not been studied.

Dilution for i.v infusion: Dobutamine hydrochloride injection must be diluted at the time of administration to at least 50ml solution, such as in 5% or 10% Dextrose injection, 5% Dextrose & 0.45% or 0.9% Sodium chloride injection, or 0.9% Sodium chloride injection, Lactated Ringer's injection & Sodium lactate injection. Although chemically stable for 24 hours, prepared solutions should be used immediately after dilution.

Rates of infusion for concentrations of 250, 500 & 1,000mg/l:

Drug delivery rate	Infusion delivery rate		
	250mg/l[1]	500mg/l[2]	1,000mg/l[3]
mcg/kg/min	ml/kg/min	ml/kg/min	ml/kg/min
2.5	0.01	0.005	0.0025
5.0	0.02	0.010	0.0050
7.5	0.03	0.015	0.0075
10.0	0.04	0.020	0.0100
12.5	0.05	0.025	0.0125
15.0	0.06	0.030	0.0150

1. *250mg per litre of diluent*
2. *500mg per litre or 250mg per 500ml of diluent*
3. *1000mg per litre or 250mg per 250ml of diluent*

The rate of administration and the duration of therapy should be adjusted according to the patient's response, as determined by heart rate, presence of ectopic activity, blood pressure, urine flow, and whenever possible, measure-ment of central venous or pulmonary wedge pressure and cardiac output. Concentrations up to 5000mcg/ml have been administered to humans (250mg/50ml). The final volume administered should be determined by the fluid requirements of the patient.

Note: Do not add dobutamine hydrochloride injection to 5% sodium bicarbonate injection or any other strongly alkaline solutions.
Dobutamine hydrochloride should not be used in conjunction with other agents or diluents containing sodium bisulfite.

Overdosage: Overdoses of dobutamine have been reported rarely. The following is provided to serve as a guide if such an overdose is encountered.
Signs & symptoms: Toxicity from dobutamine hydrochloride is usually due to excessive cardiac receptor stimulation. The symptoms of toxicity may include anorexia, nausea, vomiting, tremor, anxiety, palpitations, headache, shortness of breath and anginal and nonspecific chest pain. The positive inotropic and chronotropic effects of dobutamine on the myocardium may cause hypertension, tachyarrhythmias, myocardial ischaemia, and ventricular fibrillation. Hypotension may result from vasodilation.
Treatment: Because the duration of action of dobutamine is short, reducing the rate of administration or temporarily discontinuing dobutamine therapy until the patients condition stabilises is usually adequate. However, in managing overdosage, consider the posibility of multiple durg overdoses, interaction among drugs, and unusual drug kinetics in the patient's body.
The initial actions to be taken in a dobutamine hydrochloride overdose are- discontinuing administration, establishing an airway, and ensuring oxygenation and ventilation. Resuscitative measures should be initiated promptly. Severe ventricular tachyarrhythmias may be successfully treated with propranolol or lignocaine. Hypertension usually responds to a reduction in dose or discontinuation of therapy. Protect the patient's airway and support ventilation and perfusion. If needed, meticulously monitor and maintain the patient's vital signs, blood gases, serum electrolytes etc. (within acceptable limits).

❖ **DOBUJECT Inj. Bayer Schering Oy/ Tajarat**
Dobutamine hydrochloride 250mg/5ml ampoule: injection for i.v infusion.
250mg (5ml) amp x 5's pack:
❖ **DOBUMIN Inj. ACI**
Dobutamine hydrochloride 250mg/20ml ampoule (i.e 1.25%): injection for i.v infusion.
250mg (20ml) amp: 250.00 IP
❖ **DOBUTAMINE Inj. DBL/Globex**
Dobutamine hydrochloride 250mg/20ml vial: injection for i.v infusion.
250mg (20ml) vial: 457.80 MRP
❖ **DOBUTAMINE Inj. Panpharma/City Overseas**
Dobutamine hydrochloride 250mg/20ml vial: injection for i.v infusion.
250mg (20ml) vial: 285.00 TP

DOPAMINE[21,33]

DOPAMINE HYDROCHLORIDE : Injection
Ind: Cardiogenic shock in infarction or cardiac surgery.
C/I: Tachyarrhythmia, phaeochromo-cytoma
S/E: Nausea and vomiting, peripheral vasoconstriction, hypotension, hypertension, tachycardia
Cautions: Correct hypovolaemia; low dose in shock due to acute myocardial infarction.
Dose: By i.v infusion, 2-5mcg/kg/min. initially.
Not: Dosage of dopamine is critical, since although low doses induce vasodilatation and increase renal perfusion, higher doses (more than 5mcg/kg/min) lead to vasoconstriction and may exacerbate heart failure, so the dosage regimen should be carefully maintained.

❖ **CARDOPA I.V Inj. ACI**
Dopamine hydrochloride 200mg/5ml ampoule: injection
5ml amp x 1's pack: 225.00 IP
❖ **DOPAMINE Inj. DBL/Globex**
Dopamine hydrochloride 200mg/5ml ampoule: injection
5ml amp x 1's pack: 59.18 MRP
❖ **DOPAMINE-ROTEX Inj. Rotex Medica/ City Overseas**
Dopamine hydrochloride 200mg/5ml ampoule: injection
5ml amp x 10's pack: 600.00 TP

Vasoconstrictor/Venotonic[53]

❖ **DAFLON Tab. Servier**
Each tablet contains 500mg- micronized purified flavonoid fraction corresponding to- diosmine 90%, flavonoids expressed as hesperidin 10%: coated tablet.
Ind: This medicine is a venotonic (increases venous tone) and a vasculoprotector (increases resistance in small blood vessels). It is recommended for treating venous circulation disorders (swollen legs, pain, restless legs) and for treating symptoms due to acute haemorrhoidal attack.
S/E: Some cases of routine gastric disorders and neurovegetative disorders (feeling of discomfort) have been reported, not requiring discontinuation of treatment. (Report any untoward or undesirable effect to your doctor or pharmacist which has not been mentioned here).
Precautions: Acute haemorrhoidal attack- if the haemorrhoid symptoms do not disappear within 15 days, consult your doctor for advice.
Venous circulation disorders- the most effective way of giving this treatment is in combination with a healthy lifestyle. Avoid exposure to the sun, heat, excessive standing and being overweight. Walking and wearing special support stockings stimulate blood circulation. If there is any doubt, ask the physician for advice.
Dosage & admin: The tablets should be taken at meal times.
Venous insufficiency- 2 tablets daily, one at midday and one in the evening.
Acute haemorrhoidal attack- a 4-day course of 6 tablets daily, followed by 4 tablets daily over the next 3 days.
Drug Inter: If the patient is under any other treatment or needs other treatmant, consult the physician regarding the medicine, whether there is any chanch of drug interaction.
Pregnancy & lactation: Consult the physician before the desired pregnancy. In the absence of data on breast milk, breast feeding shoud be avoided during treatment.
In general, if one is pregnant or on breast-feeding, she should always ask her physician for advice before using a medication.
30's pack: 363.00 MRP

7. ANTICOAGULANTS

7.1 Parenteral anticoagulants
a) Standard or unfractionated Heparin
b) Low molecular weight heparins
7.2 Oral anticoagulants

Parenteral anticoagulants

Standard or unfractionated Heparin

HEPARIN[21,33]

HEPARIN: Injection
Heparin sodium 1000 units, 5000 units & 25000 units per 1 ml ampoule
Ind: Treatment & prophylaxis against deep-vein thrombosis & pulmonary embolism; disseminated intravascular coagulation (DIC); prevention of post operative thrombosis; unstable angina & acute peripheral arterial occlusion; myocardial infarction.
C/I: Haemophilia and other haemorrhagic conditions, thrombocytopenia, peptic ulcer, recent cerebral haemorrhage, severe hypertension, severe liver disease (including oesophageal varices), renal failure, after major trauma or recent surgery; hypersensitivity to heparin.
S/E: Haemorrhage, skin necrosis, thrombocytopenia, hypersensitivity reactions (including urticaria, angioedema, & anaphylaxis); osteoporosis after prolonged use & rarely alopecia.
Cautions: Concurrent admn. of oral anticoagulants, dextran inj. or drugs affecting platelet function; pregnancy; thrombocytopenia- usually develops after 6 to 10 days of heparin use, so incase of patients receiving heparin for longer than 5 days, if any develops thrombocytopenia- stop heparin immediately. In these cases alternative therapy with low molecular weight heparin or oral anticoagulant may be given.
Dosage: Treatment of deep-vein thrombosis and pulmonary embolism: adult, by i.v injection, loading dose of 5000 units (10,000 units in severe pulmonary embolism) followed by continuous infusion of 1000-2000 units/hour, or by subcutaneous injection of 15,000 units every 12 hourly under laboratory monitoring.
Prophylaxis of deep vein thrombosis: 5000 units 2 hour before surgery then every 8-12 hours until patient is ambulant; in pregnancy, 10,000 units every 12 hourly (with monitoring).
***Child:* lower loading dose, then 15-25 units/kg/hour by i.v infusion or 250 units/kg every 12 hours by s.c injection.**
***Unstable angina & acute peripheral arterial occlusion:* intravenous treatment regimen as for deep-vein thrombosis and pulmonary embolism (above).**
***Prophylaxis in general surgery:* by s.c injection 5000 units 2 hours before surgery, then every 8-12 hours for 7 days or until patient is anbulant (monitoring not needed); during pregnancy (with monitoring), 5000-10,000 units every 12 hours.**
***Myocardial infarction:* for the prevention of coronary re-occlusion after thrombolysis, heparin is used in a variety of regimens according to locally agreed protocols.**
Prevention of mural thrombosis: heparin is considered effective when given by s.c injection of 12,500 units every 12 hours for at least 10 days.

❖ **HEPARIN-Rotex Inj. Rotex Medica/City Overseas**
Heparin sodium 5000 i.u/ml: injection
5ml vial x 1's pack: 185.00 TP

Low molecular weight Heparins

Common low molecular weight heparins are: *Certoparin, Dalteparin, Enoxaparin, and Tinzaparin.*

ENOXAPARIN[21,35]

ENOXAPARIN: Injection
Enoxaperin is a low molecular weight heparin, available as enoxaparin sodium 20mg (2000 IU)/0.2ml, 40mg (4000 IU)/0.4ml, 60mg (6000 IU)/0.6ml & 80mg (8000 IU)/0.8ml contained in ready-to-use prefilled syringe: for s.c injection.
Ind: i. Prophylaxis of venous thromboembolic diseases (prevention of blood clot formation in the veins) in particular after certain procedures, ii. prevention of thrombus formation in the extra corporal circulation during haemodialysis.
C/I; S/E; Cautions: See under heparin. Do not inject intramuscularly.
Dosage & Admin: Prophylaxis of deep vein thrombosis, by s.c injection (in the subcutaneous celluler tissue of the anterolateral or posterolateral abdominal wall, alternatively between the left and right sides), moderate risk, 20mg 1-2 hours before surgery then 20mg every 24 hours for 7-10 days; high risk, 40mg 12 hours before surgery then 40mg every 24 hours for 7-10 days.
In general surgery, the first injection should be given 2 hours before the surgical procedure; in orthopaedic surgery, the first injection is to be given 12 hours preoperatively. Enoxaparin therapy is usually prescribed for an average period of 7 to 10 days; longer treatment duration may be appropriate in certain cases and the treatment should be continued for as long as there is a risk of venous thrombo-embolism and until the patient is ambulatory.
***Prevention of extra corporeal thrombus during haemodialysis:* The recommended dose is 1mg/kg. Enoxaparin should be introduced in the arterial line of the circuit at the beginning of the dialysis session. The effect of this dose is usually sufficient for a 4-hour session; in the event, if fibrin rings are found, a further dose of 0.5-1mg/kg may be given.**
***Treatment of established deep vein thrombosis:* A dose of 1mg/kg should be given s.c every 12 hours. The duration of treatment should not exceed a period of 10 days.**
***Treatment of unstable angina & non-Q-wave myocardial infarction*: a dose of 1mg/kg should be given s.c every 12 hours. The recommended treatment should be prescribed for a period of 2 to 8 days, until clinical stabilization of the patient. Enoxaparin should be administered concurrently with aspirin (100 to 325mg daily per oral route).**
***Elderly:* No dosage adjustment is necessary in preventive therapy; in curative therapy measurement of anti-Xa activity is recommended.**
***Children:* Enoxaparin in not recommended in children.**
***Renal impairment:* No dosage adjustment is necessary at prophylactic doses, whereas dosage adjustment is necessary and the monitoring of anti-Xa activity is recommended at curative doses.**
***Patients under 40kg and over 100kg weight:* particular clinical surveillence is necessary in order to adjust dosage if necessary.**

Management of overdose: **accidental overdosage after s.c injection of massive doses of enoxaparin could lead to bleeding complications. Neutralization can be obtained by slow i.v injection of protamine (1mg protamine can be used to neutralize the anticoagulant effect of 1mg of enoxaparin).**
Drug inter: In order to avoid possible interactions not recommended combinations (substances increasing the risk of haemorrhage)- acetylsalicylic acid (and derivatives) at analgesic and antipyretic doses, NSAIDs (general route), ticlopidine, dextran 40 (parenteral use). Combinations to be used with caution- oral anticoagulant, thrombolytic drugs, acetylsalicylic acid at anticoagulant platelet doses (in the treatment of unstable angina & non-Q-wave myocardial infarc-tion), glucocorticoids (general route).

❖ **CARDINEX Inj. Drug Inter**
Enoxaperin sodium 40mg (4000 IU)/ampoule, 60mg (6000 IU)/ampoule & 80mg (8000 IU)/ampoule: for s.c injection.
40mg (or 4000 IU) ampoule: 325.00 MRP
60mg (or 6000 IU) ampoule: 475.00 MRP
80mg (or 8000 IU) ampoule: 525.00 MRP

❖ **CLEXANE Inj. Sanofi-aventis**
Enoxaperin sodium 20mg (2000 IU)/0.2ml, 40mg (4000 IU)/0.4ml, 60mg (6000 IU)/0.6ml & 80mg (8000 IU)/0.8ml contained in ready-to-use prefilled syringe. It is a low molecular weight heparin.
0.2ml (20mg or 2000 IU) prefilled syringe: 425.06 MRP
0.4ml (40mg or 4000 IU) prefilled syringe: 743.06 MRP
0.6ml (60mg or 6000 IU) prefilled syringe: 1049.52 MRP
0.8ml (80mg or 8000 IU) prefilled syringe: 1343.38 MRP

❖ **ENOPARIN Inj. Popular**
Enoxaperin sodium 40mg (4000 IU)/prefilled syringe, 60mg (6000 IU)/prefilled syringe & 80mg (8000 IU)/prefilled syringe: for s.c injection.
40mg (or 4000 IU) prefilled injection: 325.00 MRP
60mg (or 6000 IU) prefilled injection: 475.00 MRP
80mg (or 8000 IU) prefilled injection: 525.00 MRP

❖ **PARINOX Inj. Incepta**
Enoxaperin sodium 20mg (2000 IU)/ampoule, 40mg (4000 IU)/ampoule & 60mg (6000 IU)/ampoule & 80mg (8000IU)/ampoule: for s.c injection.
20mg (or 2000 IU) ampoule: 175.00 MRP
40mg (or 4000 IU) ampoule: 325.00 MRP
60mg (or 6000 IU) ampoule: 475.00 MRP
80mg (or 8000 IU) ampoule: 525.00 MRP

DALTEPARIN[21,60]

DALTEPARIN SODIUM: Injection
Preparation: May not be available.

Oral Anticoagulants

WARFARIN[21,26]

WARFARIN: Tablet

Warfarin sodium is an anticoagulant that acts by inhibiting the synthesis of vitamin K dependent cloting factors, viz. Factors II, VII, IX and X. Anticoagulant effect generally occurs within 24 hours after drug administration. This reaches a maximum in 36-48 hours and is maintained for 48 hours or more after administration is stopped. Warfarin sodium is widely used than others due to less allergic side-effects.
Ind: Prophylaxis of embolisation in rheumatic heart disease and atrial fibrillation; prophylaxis after insertion of prosthetic heart valve; prophylaxis & treatment of venous thrombosis & pulmonary embolism; transient ischaemic attacks.
C/I: Actual or potential haemorrhagic conditions e.g peptic ulcer; severe hypertension; severe hepatic or renal disease; pregnancy; known hypersensitivity to warfarin; bacterial endocarditis. Its use within 24 hours following surgery or labour should be undertaken with caution, it at all.

S/E: Haemorrhage is the principal adverse effect of oral anticoagulants. Other adverse reactions include nausea, vomiting, diarrhoea, hypersensitivity, rash, alopecia, and unexplained drop in haematocrit, 'purple toes', skin necrosis, jaundice, and hepatic dysfunction.
Cautions & Warnings: Hepatic or renal disease, recent surgery.
Periodic determination of prothrombin time (PT)/international normalized ratio (INR) or other suitable coagulation test is essential. It is generally good practice to monitor the patient's response with additional PT/INR determination in the period immediately after discharge from the hospital and whenever other medications are initiated, discontinued or taken irregularly. Careful additional laboratory control is necessary if the patient is to be changed from one formulation to another. Reversal of warfarin anticoagulation by vitamin K takes several days. In emergency situations fresh frozen plasma should be given.
Pregnancy & lactation: Warfarin is contraindicated in the first trimester of pregnancy because of the risk of teratogenicity. It should not be used in women who are or may become pregnant because the drug passes through the placental barrier and may cause fatal haemorrhage to the foetus. Warfarin appears in the milk of nursing mothers in an inactive form. Infants nursed by mothers treated with warfarin had no change in prothrombin times. Effects in premature infants have not been evaluated.
Dosage & Admin: The base-line prothrombin time should be determined before the initial dose of warfarin is given, whenever is possible. The usual adult induction dose of warfarin is 10mg daily for 2 days. The initial dose should be reduced if base-line prothrombin time is prolonged, the liver-function tests are abnormal or if the patient is in cardiac failure, is on parenteral feeding less than average body weight, or over 80 years of age.
The subsequent maintenance dose must depend upon the prothrombin time and is usually 3-9mg daily and should be taken at the same time each day. The mainte-nance dose is omitted if the prothrombin time is excessively prolonged. Once the maintenance dose is established in the therapeutic range, it is rarely necessary to alter. In emergencies, anticoagulant therapy should be initiated with heparin and warfarin together. Where there is less urgency, as in patients disposed to or at special risk of thromboembolism, anticoagulant therapy may be initiated with warfarin alone. Control tests must be made at regular intervals and maintenance dosage should be adjusted every time according to the results obtained.
Use in children: Safety and efficacy in children <18 years old have not been established. However, there is evidence of use and the initial dose in usually 0.1mg/kg/day adjusted subsequently to aim for an INR (international normalized ratio) range the same as in adults.
Drug Inger: Oral anticoagulants have a greater potential for clinically significant drug interactions. Warn all patients about potential hazards and instruct against taking any drug, including non-prescription products, without the advice of a physician.
Overdosage: If haemorrhage occurs or a potential bleeding state arises, excessive depression of the coagulation activity can be corrected by temporary withdrawal of warfarin accompanied, if necessary, by infusion of fresh-frozen plasma or whole blood. Vitamin K, 5 to 10mg orally or intravenously, may be required to supplement specific treatment with factor concentrates.

❖ **FAREVAN Tab. Gaco**
Warfarin sodium 5mg/tablet
100's pack: 303.43 MRP

❖ **WARIN Tab. Incepta**
Warfarin sodium 5mg/tablet
100's pack: 300.00 MRP

8. ANTIPLATELET DRUGS

Antiplatelet drugs, that act by decreasing platelet aggregation and thus inhibiting thrombus formation on the arterial side of the blood circulation. These include- ***Aspirin, Clopidogrel, Dipyridamole, Ticlopidine.***[21]

ASPIRIN[42,52]

ASPIRIN: Tablet
Aspirin (or acetyl salicylic acid) is a potent analgesic, antipyretic & anti-inflammatory drug belonging to the NSAID group. It also has got antiplatelet & antithrombotic action & hence used in the treatment of coronary & cerebro-vascular diseases. For vascular disorder, it is available as 75mg & 100mg enteric-coated tablet.
Mode of action: The antithrombotic action of aspirin is mediated through inhibition of platelet activation. Aspirin acts by causing irreversible inhibition of the cyclooxygenase (COX-1) enzyme, which is responsible for the formation of thromboxane A2 from arachidonic acid and this thromboxane A2 is ultimately responsible for platelet aggregation through a series of reactions.
Ind: Prophylaxis of cerebrovascular disease or

myocardial infarction; to reduce the risk of myocardial infarction in patients who have had a previous attack or in patients with unstable angina. Prevention of graft occlusion following aortocoronary by-pass surgery.
C/I: Children under 12 years (unless specially indicated) and in breast feeding mother, active peptic ulceration, haemophilia and other bleeding disorders. Aspirin should not be given to patients with asthma.
S/E: Side-effects are mild for usual dosage of aspirin. These are nausea, dyspepsia, gastrointestinal ulceration & bronchospasm. Aspirin may induce gastric irritation and gastrointestinal haemorrtage. There may be skin reactions in hypersensitive patients. Prolonged administration may give rise to hearing disturbances, such as tinnitus.
Precautios: Aspirin should be administered cautiously in uncontrolled blood pressure & in patients with history of brochospasm or asthma (if clearly needed); impaired renal or hepatic function; dyspepsia & dehydration.
It should be given with caution to patients with nasal polyps and nasal allergy.
Pregnancy & lactation: It is evident that aspirin is safe in pregnancy, but it may prolong labour and contribute to maternal and neonatal bleeding and is best avoided in the last trimester of pregnancy unless recommended by the physician. Aspirin is excreted in low concentration in breast milk, but is unlikely to cause adverse effect to the breast-fed infant.
Dosage & Admin: ***Thrombotic cerebrovascular or cardiovascular disease:*** **75mg tablet 1 to 4 daily.**
Myocardial infarction: **75mg tablet 1 to 2 daily.**
Followig by-pass surgery: **75mg tablet daily or as directed by the physician.**
Children: **Not to be given to children under 12 years, unless the expected benefits outweigh the possible risks.**
Drug Inter: Aspirin may enhance the effects of anticoagulants, oral hypoglycaemics and methotrexate and decreases the action of uricosuric drugs.

❖ **ACIPRIN CV Tab. ACI**
Aspirin 75mg/tablet (e.c)
100's pack: 38.00 MRP
❖ **ANGIN Tab. Pharmadesh**
Aspirin 75mg/tablet
100's pack: 43.00 MRP
❖ **ANGIPRIN-75 Tab. Rephco**
Aspirin 75mg/tablet (e.c)
100's pack: 37.00 MRP
❖ **ASORIN-75 Tab. Chemico**
Aspirin 75mg/tablet (e.c)
100's pack: 50.00 MRP
❖ **CAID Tab. Jayson**
Aspirin 100mg/tablet (enteric coated)
100mg x 100's pack: 37.00 MRP
❖ **CARDOPYRIN Tab. Gaco**
Acetylsalicylic acid 75mg/tablet
100's pack: 37.10 MRP
❖ **CARDOPYRIN-EC Tab. Gaco**
Acetylsalicylic acid 75mg/tablet (enteric coated)
100's pack: 41.08 MRP
❖ **CARVA Tab. Square**
Acetylsalicylic acid 75mg/tablet (enteric coated)
100's pack: 50.00 MRP
❖ **DISPRIN CV 100 Reckitt Benckiser**
Aspirin 100mg/tablet (e.c) for cardiovascular use.
10,000's pack: 2520.00 MRP
❖ **ECOSPRIN Tab. Acme**
Aspirin 75mg/tablet (enteric coated)
75mg x 100's pack: 50.00 MRP
❖ **ENCOPRIN L.D Tab. Medimet**
Aspirin 75mg/tablet (low dose).
100's pack: 37.00 MRP
❖ **ERAS-75 Tab. UniHealth**
Aspirin 75mg/tablet (e.c)
75mg x 100's pack: 50.00 MRP
❖ **G-ASPIRIN Tab. Gonoshas.**
Aspirin 100mg/tablet (e.c)
100's pack: 32.00 MRP
❖ **MONOSPRIN Tab. Ziska/Unicare**
Aspirin 75mg/tablet (e.c)
100's pack: 37.00 MRP
❖ **NEOSPIN Tab. Edruc**
Aspirin 75mg/tablet (e.c)
75mg x 100's pack: 37.00 MRP
❖ **SEEMAPYRIN Tab. Seema**
Aspirin 75mg/tablet
75mg x 100's pack: 37.00 MRP
❖ **SOLRIN Tab. Opsonin**
Aspirin 75mg/tablet
75mg x 100's pack: 50.00 MRP
❖ **S-PIRIN Tab. Navana**
Aspirin 100mg/tablet (e.c)
100's pack: 50.00 MRP

CLOPIDOGREL[87]

CLOPIDOGREL: Tablet
Clopidogrel is a thienopyridine derivative, and is effective as an antiplatelet agent. It is available as tablet of clopidogrel bisulphate INN 97.88mg equivalent to clopidogrel 75mg.
Mode of action: Clopidogrel is an inhibitor of platelet aggregation. It acts by interfering with the platelet activation cascade. It blocks the activation of platelets by adenosine diphosphate (ADP) receptor selectively and irreversibly inhibiting the binding of the glycoprotein GP IIb-IIIa complex, the major receptor for fibrinogen present in the platelet surface. Clopidogrel may antagonize the ADP induced inhibition of adenylate cyclase possibly resulting in an elevated platelet cyclic adenosine monophosphate level after stimulation by an appropriate agonist.
Ind: Clopidogrel is used for the reduction of atherosclerotic events in patients with atherosclerosis documented by recent stroke, recent myocardial infarction or with established peripheral arterial disease. The major indications are- stroke, myocardial infarction, peripheral vascular diseases.
C/I: Known case of hypersensitivity to the drug; active pathological bleeding such as peptic ulcer or intracranial haemorrhage.
S/E: Very rarely hypersensitivity reactions, such as- angioedema, bronchospasm and anaphylactic reactions. The clinical adverse reactions are as gastro-intestinal haemorrhage, agranulocytosis, dyspepsia, gastritis, diarrhoea, rash, palpitation and vomiting.
Precautions: Clopidogrel should be used with caution in patients who may be at risk of increased bleeding from trauma, surgery or other pathological onditions.
Pregnancy & lactation: No adequate and well-controlled studies have been done in pregnant & lactating women. Hence, during pregnancy, clopidogrel is only used if it is clearly needed & in lactation, usually not recommended.
Dosage & admin: 75mg once daily with or without food. No dosage administra-tion adjustment is necessary for elderly patients or patients with renal disease.
Children: Not recommended.
Drug inter: Aspirin does not modify the clopidogrel mediated inhibition of ADP-induced platelet aggregation. Concomitant administration of clopidogrel with NSAIDs such as naproxen is associated with gastro-intestinal blood loss. No clinically significant interactions have been observed when clopidogrel is co-administered with atenolol, nifedipine or both atenolol and nifedipine.

❖ **ANCLOG Tab. Square**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet
30's pack: 300.00 MRP
❖ **ANLET-75 Tab. Globe**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet
30's pack: 240.00 MRP
❖ **ANPLAT Tab. RAK Pharma**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet
30's pack: 300.00 MRP
❖ **ANTIPLET Tab. Rangs**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet
30's pack: 300.00 MRP
❖ **ATHOREL Tab. Aristopharma**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet
20's pack: 200.00 MRP
❖ **CLAVIX Tab. Techno Drugs**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet
30's pack: 420.00 MRP
❖ **CLOGNIL Tab. Orion**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet
20's pack: 200.00 MRP
❖ **CLONT Tab. Opsonin**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet
30's pack: 300.00 MRP

❖ **CLOPID Tab. Drug Inter.**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet
50's pack: 600.00 MRP

❖ **CLOPIDOL Tab. Alco Pharma**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet
30's pack: 240.00 MRP

❖ **CLOPIGEL Tab. Pacific**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet
30's pack: 273.00 MRP

❖ **CLOPILET Tab. Sun Pharma**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet
30's pack: 300.00 MRP

❖ **CLOPIREL Tab. Novo Healthcare**
Clopidogrel bisulphate INN equivalent to clopidogrel USP 75mg/tablet
30's pack: 300.00 MRP

❖ **CLOREL Tab. ACI**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet
10's pack: 100.00 IP

❖ **CLOTINIL Tab. Rephco**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet
30's pack: 330.00 MRP

❖ **DCLOT Tab. Acme**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet
30's pack: 300.00 MRP

❖ **DOREL Tab. General**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet
30's pack: 300.00 MRP

❖ **FREE Tab. Nipa**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet
20's pack: 200.00 MRP

❖ **LIREL 75 Tab. Silva**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet
20's pack: 140.00 MRP

❖ **LIVOCARD Tab. White Horse**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet
30's pack: 270.00 MRP

❖ **LOPIREL Tab. Incepta**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet
30's pack: 300.00 MRP

❖ **NOCLOG Tab. SK+F**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet
20's pack: 200.00 MRP

❖ **ODREL Tab. Beximco**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet
10's pack: 100.00 IP

❖ **PLADEX Tab. UniHealth**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet
30's pack: 360.00 MRP

❖ **PLAGRIN Tab. Renata**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet (film coated).
10's pack: 100.00 MRP

❖ **PLAVIX Tab. Navana**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet (film coated).
20's pack: 160.00 IP

❖ **PRECLOT Tab. Popular**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet (film coated).
20's pack: 200.00 IP

❖ **REPLET Tab. Healthcare**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg/tablet (film coated).
30's pack: 300.00 MRP

CLOPIDOGREL + ASPIRIN[26]

CLOPIDOGREL + ASPIRIN: Tablet
This is a fixed-dose combination formula comprising clopidogrel and aspirin; both are acting as antiplatelet agent. The preparation is available as film-coated tablet, each containing clopidogrel bisulphate INN 97.88mg equivalent to clopidogrel 75mg and aspirin BP 75mg
Mode of action: See under the text of clopidogrel and aspirin separately.
Ind: This combined preparation is indicated for the reduction of thrombotic events as in: i. Recent MI, recent stroke or established peripheral arterial disease; ii. Acute coronary syndrome (unstable angina/non-Q-wave MI).
C/I: Hypersensitivity to clopidogrel or aspirin or any NSAID. Recent history of gastrointes-tinal bleeding. Active pathological bleeding such as peptic ulcer or intracranial hemorrhage, or bleeding disorders like hemophilia.
S/E: The drug is generally well tolerated. Side effects that have been reported are- abdominal pain, dyspepsia, gastritis, diarrhea, nausea, vomiting, constipation, gastrointestinal hemorrhage, ulceration, neutropenia, rash, palpitation, syncope, drowsiness, asthenia, neuralgia, paresthesia and vertigo.
Precautions: General: As with other anti-platelet agents, this combination drug should be used with caution in patients who may be at risk of increased bleeding from trauma, surgery, or other pathological conditions. If patient is to undergo elective surgery and an anti-platelet effect is not desired, this drug should be discontinued 7 days prior to surgery.

GI bleeding: The combination of clopidogrel and aspirin prolongs the bleeding time. So, it should be used with caution in patients who have lesions with a propensity to bleed (such as ulcers). Thrombotic thrombocytopenic purpura (TTP): TTP has been reportedrarely following use of clopidogrel.
Reye's syndrome: Reye's syndrome may develop in individuals who have chicken pox, influenza or flu symptoms. This combination is not recommended for use in patients with chicken pox, influenza or flu symptoms.
Nasal polyps or nasal allergies: The combination drug of clopidogrel and aspirin should be administered with caution in patients with nasal polyps or nasal allergies.
Hepatic or renal impairment: This should be avoided in patients with impaired hepatic and renal function. Aspirin causes sodium and water retention in patients with renal impairment and increases the risk of gastrointestinal bleeding.
Pregnancy & lactation: Asdverse effects are increased in the mother and the fetus following chronic ingestion of aspirin. Because of possible adverse effects on the neonate and the potential for increased maternal blood loss, this combination should be avoided during the last three months of pregnancy. This product should also be avoided in nursing mothers because of the possible risk of developing Reye's syndrome. Regular use of high doses of aspirin could impair platelet function and produce hypoprothrombinemia in infants if neonatal vitamin K levels are low.
Dosage & admin: Recent MI, recent stroke, or established peripheral arterial disease: The recommended daily dose of this combined preparation (75mg + 75mg) is one tablet daily. Acute coronary syndrome: In acute coronary syndrome (unstable angina/non-Q-wave MI), the dose should be initiated with a 4 tablet stat loading dose and then continued at one tablet daily.
Pediatric use: Not recommended.
Drug inter: Given under the text of aspirin and clopidogrel separately.

❖ **ANCLOG Plus Tab. Square**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg & aspirin BP 75mg/tablet (f.c)
30's pack: 330.00 MRP

❖ **ANLET Plus Tab. Globe**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg & aspirin BP 75mg/tablet (f.c)
30's pack: 240.00 MRP

❖ **ASPIN Plus Tab. Aristopharma**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg & aspirin BP 75mg/tablet (f.c)
30's pack: 330.00 MRP

❖ **CLAS Tab. Delta**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg & aspirin BP 75mg/tablet (film-coated).
20's pack: 159.99 MRP

❖ **CLOGNIL Plus Tab. Orion**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg & aspirin BP 75mg/tablet (f.c)
20's pack: 220.00 MRP

❖ **CLONTAS Tab. Opsonin**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg & aspirin BP 75mg/tablet (f.c)
30's pack: 330.00 MRP

❖ **CLOPID-As Tab. Drug Inter.**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg & aspirin BP 75mg/tablet (f.c)
50's pack: 600.00 MRP

❖ **CLOPIDOL Plus Tab. Alco Pharma**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg & aspirin BP 75mg/tablet (f.c)
20's pack: 240.00 MRP
❖ **CLOPIGEL Plus Tab. Pacific**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg & aspirin BP 75mg/tablet (f.c)
30's pack: 300.00 MRP
❖ **CLOREL-A Tab. ACI**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg & aspirin BP 75mg/tablet (f.c)
30's pack: 330.00 IP
❖ **COMBIPLAT Tab. Beacon**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg & aspirin BP 75mg/tablet (f.c)
30's pack: 330.00 MRP
❖ **DOREL Plus Tab. General**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg & aspirin BP 75mg/tablet (f.c)
20's pack: 220.00 MRP
❖ **ECOSPRIN Plus Tab. Acme**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg & aspirin BP 75mg/tablet (f.c)
20's pack: 220.00 MRP
❖ **LIREL Plus Tab. Silva**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg & aspirin BP 75mg/tablet (f.c)
30's pack: 240.00 MRP
❖ **LIVOCARD Plus Tab. White Horse**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg & aspirin BP 75mg/tablet (f.c)
30's pack: 360.00 MRP
❖ **LOPIREL Plus Tab. Incepta**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg & aspirin BP 75mg/tablet (f.c)
20's pack: 220.00 MRP
❖ **LOPLATE PLUS Tab. Chemico**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg & aspirin BP 75mg/tablet (f.c)
30's pack: 330.00 MRP
❖ **NOCLOG Plus Tab. SK+F**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg & aspirin BP 75mg/tablet (f.c)
20's pack: 220.00 MRP
❖ **ODREL Plus Tab. Beximco**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg & aspirin BP 75mg/tablet (f.c)
30's pack: 330.00 IP
❖ **PLADEX-A Tab. UniHealth**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg & aspirin BP 75mg/tablet (f.c)
30's pack: 375.00 IP
❖ **PLAGRINPLUS Tab. Renata**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg & aspirin BP 75mg/tablet (f.c)
20's pack: 220.00 MRP
❖ **PLAVIX Plus Tab. Navana**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg & aspirin BP 75mg/tablet (f.c)
20's pack: 200.00 MRP
❖ **PRECLOT AS Tab. Popular**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg & aspirin BP 75mg/tablet (f.c)
30's pack: 330.00 IP
❖ **REPLET PLUS Tab. Healthcare**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg & aspirin BP 75mg/tablet (f.c)
30's pack: 330.00 MRP
❖ **ZESPRIN Tab. Zenith**
Clopidogrel bisulphate INN equivalent to clopidogrel 75mg & aspirin BP 75mg/tablet (f.c)
50's pack: 500.00MRP

9. FIBRINOLYTIC DRUGS

STREPTOKINASE[21,60]

STREPTOKINASE: Injection
Ind: Deep-vein thrombosis, pulmonary embolism, acute arterial thromboem-bolism, thrombosed arteriovenous shunts; acute myocardial infarction.
C/I: Recent haemorrhage, trauma, or surgery (including dental extraction), coagulation defects, bleeding diatheses, history of cerebrovascular disease specially recent events or with any residual disability, recent symptoms of possible peptic ulceration, heavy vaginal bleeding, severe hypertension, pulmonary disease with cavitation, acute pancreatitis, diabetic retinopathy, severe liver disease, oesophageal varices. In the case of streptokinase previous allergic reactions to drug, or therapy with the drug from 5 days to 12 months previously.
S/E: Side-effects are mainly mausea and vomiting and bleeding. Back pain has been reported. Bleeding is usually limited to the site of infection, but intracerebral haemorrhage or bleeding from other sites may occur. Serious bleeding calls for discontinuation of the drug and may require administration of coagulation factors and antifibrinolytic drugs (aprotinin or tranexamic acid). Streptokinase may cause allergic reactions & anaphylaxis has been reported.
Cautions: risk of bleeding from venepuncture or invasive procedures, any external chest compression, pregnancy, possibility of pre-existing thrombus as in abdominal aneurysm or enlarged left atrium with atrial fibrillation (risk of dissolution of clot and subsequent embolisation), recent or concurrent anticoagulant therapy.
Dosage & admin: By intravenous infusion, 250,000 units over 30 minutes, then 100,000 units every hour for up to 24-72 hours according to condition. Myocardial infarction, 1500,000 units over 60 minutes followed by aspirin 150mg daily by mouth for at least 4 weeks.

❖ **DURAKINASE Inj. Dong Kook/Hyeimpex**
Streptokinase powder (for reconstitution),
1.5 million unit/vial: Injection.
1.5 million unit vial: 2771.88 MRP
❖ **STREPTASE Inj. Sanofi-aventis**
Streptokinase powder (for reconstitution),
1.5 million unit/vial: Injection.
1.5 million unit vial: 3100.00 MRP

10. ANTIFIBRINOLYTIC/ COAGULANT/ HAEMOSTATIC DRUGS

ADRENOCHROME MONOSEMICARBAZONE[21,40]

❖ **ANAROXYL Tab. Nuvista**
Adrenochrome monosemicarbazone 2.5mg/tablet
Ind: Haemorrhagic disorder.
Dose: Orally, 1-2 tablets 3 times daily.
30's pack: 445.00 MRP
❖ **ANAROXYL Inj. Nuvista**
Adrenochrome monosemicarbazone 5mg/1ml ampoule: injection.
Ind: Haemorrhagic disorder.
Dose: By i.m. injection 1 amp. once to thrice daily, for medical haemorrhage.
5 amps.pack: 247.50 MRP

AMINOCAPROIC ACID[21,37]

AMINOCAPROIC ACID: Injection
It is an effective antifibrinolytic haemostatic agent.
Ind: All haemorrhagic syndromes due to enhanced fibrinolysis; post-partum & other obstetric haemorrhages with hyperfibrinolytic pathogenesis; haemorrhages after prostate, cardiac, pulmonary & other surgical procedures & haemophilia & dental extraction.
C/I: Thromboembolic diseases, arterial & venous thrombosis; early pregnancy.
S/E: Fatigue, conjunctival occlusion, pruritus, skin rashes. After oral admin.- nausea, diarrhoea, dizziness; if hypersen-sitization, avoid or stop treatment..
Cautions: Renal impairment; it is advisable to avoid in pregnancy (as transplacental transit occurs) particularly in first & 2nd trimester.
Dose: Usual dose is 4-5gm initially i.v. (or orally) followed by 1.25gm/hour until bleeding is controlled. The total dose should not exceed 30gm in 24 hours. The average dose is 8-16gm a day & is to be given as 1-2 amps. 6 hourly. Rapid i.v. admin. should be avoided to prevent hypotension, bradycardia & other arrhythmias.

❖ **CAPROLEX Inj. Techno Drugs**
Aminocaproic acid 1gm in 5ml & 2gm in 10ml ampoule: injection
5ml (1gm) amp x 5's pack: 72.00 MRP
10ml (2gm) amp x 5's pack: 130.00 MRP
❖ **CAPROLISIN Inj. Malesci/Pacific**
Aminocaproic acid 2gm in 10ml ampoule: injection
10 amps. pack: 500.00 MRP
❖ **E-CAPRO Inj. Edruc**
Aminocaproic acid 2gm in 10ml ampoule: injection
10ml (2gm) amp x 6's pack: 210.00 MRP
❖ **HEMOSIN Inj. Chemist**
Aminocaproic acid 1gm in 5ml ampoule: injection
10 amps pack: 151.70 MRP
❖ **MINOCAP Inj. ACI**
Aminocaproic acid 1gm in 5ml & 2gm in 10ml ampoule: injection
5ml (1gm) amp x 5's pack: 125.00 IP
10ml (2gm) amp x 5's pack: 250.00 IP

PHYTOMENADIONE[21,26,50]
(Natural Vit.-K)

PHYTOMENADIONE: Injection
Phytomenadione is a natural vitamin K1. It is available in injection form for oral, intramuscular and intravenous use.
Mode of action: Phytomenadione (Vitamin K1) is a procoagulant factor. As a component of a

hepatic carboxylase system, Vitamin K1 is involved in the post-translational carboxylation of clotting factors II (Prothrombin), VII, IX and X and the clotting inhibitors protein C and protein S. Coumarins inhibit the reduction of Vitamin K1 (quinone form) to Vitamin K1 (hydroquinone) and also prevent the Vitamin K1 epoxide arising after carboxylation from being reduced to the quinone form.
Vitamin K1 is an antagonist of coumarin-type anticoagulants, e.g. Phenprocoumon. It does not, however, neutralise the activity of Heparin; Protamine is the antagonist of Heparin.
Vitamin K1 is ineffective in hereditary hypoprothrombinemia or hypoprothrombinemia induced by severe hepatic failure.
Lack of Vitamin K1 leads to an increased tendency to haemorrhagic disease in the newborn. Vitamin K1 administration, which promotes synthesis of the above-mentioned coagulation factors by the liver, can reverse an abnormal coagulation status and bleeding due to vitamin K1 deficiency.
Ind: 1. Haemorrhage or risk of haemorrhage as a result of severe 'hypoprothrombinemia' (i.e. deficiency of clotting factors II, VII, IX and X) of various etiologies, including overdosage of courmarin-type anticoagulants, their combination with Phenylbutazone, and other forms of hypovitaminosis K (e.g in obstructive jaundice as well as liver and intestinal disorders, and after prolonged treatment with antibiotics, sulphonamides or salicylates).
2. Prophylaxis & treatment of haemorrhagic diseases of the newborn (synthetic analogues of vita-k, should be avoided in newborn because of the risk of kernicterus).
Caution: Anaphylactoid reactions may occur with parenteral administration.
Dosage & admin: ***By mouth:*** **Adults, 10-20mg, max. 40mg in 24 hours. Children: Neonates, 1mg; over 3 months, 5-10mg.**
By injection: **Adults, 10-20mg i.m or slow i.v, maximum 40mg in 24 hours.**
Children: Neonates, 1mg i.m; over 3 months, 5-10mg.

❖ **BABYKION Oral/IM/IV Inj. Chemist**
Phytomenadione 2mg/0.2ml ampoule: injection
2mg amp x 5's pack: 227.50 MRP
❖ **DINAKION-10 Oral/IM/IV Inj. Drug Inter.**
Phytomenadione 10mg/1ml ampoule: injection
10mg amp x 5's pack: 225.00 MRP
❖ **DINAKION-MM Pediatric Oral/IM/IV Inj. Drug Inter.**
Phytomenadione 2mg/0.2ml ampoule: injection
2mg amp x 5's pack: 99.10 MRP
❖ **K MM Oral/IM/IV Inj. Incepta**
Phytomenadione 10mg/1ml ampoule: injection
10mg amp x 5's pack: 228.50 MRP
❖ **K MM Pediatric Oral/IM/IV Inj. Incepta**
Phytomenadione 2mg/0.2ml ampoule: injection
2mg amp x 5's pack: 99.10 MRP
❖ **KONAKION MM Inj. Roche**
Phytomenadione 2mg/0.2 ml ampoule & 10mg per 1ml ampoule: injection
2mg amp x 5's pack: 421.88 MRP
10mg amp x 5's pack: 450.00 MRP
❖ **K-ONE MM Inj. Square**
Phytomenadione 2mg/ 0.2ml ampoule: injection
2mg (0.2ml) amp x 3's pack: 59.46 MRP

TRANEXAMIC ACID[21,33]

TRANEXAMIC ACID: Capsule/ Injection
Ind: It acts by inhibiting plasminogen activation & fibrinolysis, and useful in haemorrhage in prostatectomy, dental extraction in haemophiliacs or menorrhagia; also used in hereditary angioedema & in streptokinase overdose.
C/I: Thromboembolic disease.
S/E: Nausea, vomiting, diarrhoea (reduce dose); giddiness on rapid intravenous injection.
Cautions: Reduce dose in renal impairment; massive haematuria (avoid if risk of ureteric obstruction); regular eye examination and liver function tests in long-term treatment of hereditary angioedema.
Dose: Orally, 1-1.5gm 2-4 times daily. By slow intravenous injection, 0.5-1gm 3 times daily.

❖ **ANAXYL Cap. ACI**
Tranexamic acid 500mg/capsule
20's pack: 300.00 IP
❖ **ANAXYL Inj. ACI**
Tranexamic acid 500mg/5ml ampoule: slow i.v injection
5 amps pack: 250.00 IP
❖ **FRABEX Cap. Square**
Tranexamic acid 500mg/capsule
20's pack: 240.00 MRP
❖ **FRABEX Inj. Square**
Tranexamic acid 500mg/5ml ampoule: slow i.v injection
6 amps pack: 240.00 MRP
❖ **HEMOSTAT Cap. Aristopharma**
Tranexamic acid 500mg/capsule
20's pack: 300.00 MRP
❖ **HEMOSTAT Inj. Aristopharma**
Tranexamic acid 250mg/5ml ampoule: injection
5 amps pack: 150.00 MRP
❖ **INTRAX Cap. Incepta**
Tranexamic acid 500mg/capsule
20's pack: 320.00 MRP
❖ **INTRAX Inj. Incepta**
Tranexamic acid 500mg/5ml amp: i.m/i.v injection
5 amps pack: 250.00 MRP
❖ **TRACID Tab. Acme**
Tranexamic acid 500mg/tablet.
20's pack: 300.00 MRP
❖ **TRACID Inj. Acme**
Tranexamic acid 500mg/5ml ampoule: slow i.v injection
1 amps pack: 150.00 MRP
❖ **TRAMIC Cap. Pacific**
Tranexamic acid 500mg/capsule.
30's pack: 570.00 MRP
❖ **TRAXYL Cap. Nuvista**
Tranexamic acid 500mg/capsule.
500mg x 20's pack: 380.00 MRP
❖ **TRAXYL Inj. Nuvista**
Tranexamic acid 250mg/5ml ampoule: injection
5 amps pack: 150.00 MRP
❖ **TREXAM Cap. Healthcare**
Tranexamic acid 500mg/capsule.
30's pack: 450.00 MRP
❖ **XAMIC Cap. Renata**
Tranexamic acid 500mg/capsule.
20's pack: 300.00 MRP
❖ **XAMIC Inj. Renata**
Tranexamic acid 500mg/5ml amp: i.m/i.v injection
5 amps pack: 250.00 MRP

ANTIHAEMOPHILIC FACTOR (Factor VIII)[21,61]

HUMAN ANTIHAEMOPHILIC FACTOR (Factor VIII): Injection
Human antihaemophilic factor (Factor VIII) is a sterile, lyophilized concentrate preparation, collected from pooled plasma from suitable human donors.
It is supplied as a single dose for intravenous administration.
Ind: Control of haemorrhage in Haemophilia A; or acquired factor VIII deficiency.
S/E: Allergic reactions including chills, fever; hyperfibrinogenaemia occurred after massive doses with earlier products but less likely since fibrinogen content has now been substantially reduced.
Cautions: Intravascular haemolysis after large or frequently repeated doses in patients with blood groups A, B or AB
Dosage & Admin: This should be administered i.v within three hours after reconstitution with the diluent supplied. It may be administered by injection (plastic syringe only) or drip infusion. Administer at room temperature, do not refrigerate after reconstitution & discard any unused contents.
Dose calculation: The following formula provides a guide for dosage calculation-
Body wt. (in kg) x 0.40 IU/kg x percent of desired factor VIII increase (%) = required units of antihaemophilic factor.
In paediatric patients, a factor of 0.5 IU/kg can be calculated.
Mild to moderate haemorrhages can usually be treated with a single administration sufficient to raise the plasma Factor VIII level to 20-30%. In the event of more serious haemorrhage, the patient's plasma Factor VIII level should be raised to 30-50%. Infusions are generally required at twice daily intervals over several days. Surgery in patients with Factor VIII deficiency requires that postoperati-vely, the Factor VIII level be raised to 50-80% and maintained at or above 30%, for approximately two weeks. For dental extractions the Factor VIII level should be raised to 50% immediately prior to the procedure; further antihaemophilic Factor preparation may be given if bleeding occurs.
In patients with severe Factor VIII deficiency

who experience frequent haemorrhages, the antihaemophilic Factor preparation may be administered prophylactically on a daily or every other day schedule to raise the Factor VIII level to approximately 15%. Factor VIII levels should be monitored periodically to evaluate individual patient response to the dosage regime.
Preparations: As per information, no product is available now in our market, from any registered company.

❖ **ALPHANATE 250 IU Inj. Grifols/Shuvro Ltd.**
Human antihaemophilic factor or Factor VIII/ VWF (Von Willebrand factor) complex concentrate; double inactivated & highly purified: i.v injection.
Factor VIII & VWF naturally go together in the human blood. VWF is the natural carrier molecule of factor VIII. The survival of factor VIII depends on VWF by which it is protected in the plasma; the presence of VWF prevents factor VIII degeneration & creates a prolonged antigen presentation, which could be beneficial in terms of immune tolerance induction.
Ind; S/E; Cautions: See above under the text.
Dosage & admin: See above under the text.
250 I.U vial: 6569.70 MRP

12. LIPID-REGULATING DRUGS[21,26]

The lipid (cholesterol) content of the liver and blood circulation is derived predominantly from three sources. The liver can synthesize cholesterol, take up cholesterol from the circulating lipoproteins, or take up cholesterol absorbed by the small intestine. Intestinal cholesterol is derived primarily from cholesterol secreted in the bile and from dietary cholesterol. Therefore, the drugs that are using in lipid-regulation work on any of the lipid sources of the human body system.
Lipid-regulating drugs that are available, classified as:

1. **Anion-exchange resins:** Such as, Cholestyramine, Colestipol.
   These are used in the management of hypercholesterolaemia.
2. **Ezetimibe**
   Ezetimibe is a different class of lipid-lowering compounds that selectively inhibits the intestinal absorption of cholesterol and related phytosterols. It can be used alone or in combination with a statin (if appropriate)
3. **Fibrates & Ispaghula: Such as, Bezafibrate, Ciprofibrate, Clofibrate, Fenofibrate, Gemfibrozil.**
   These are considered as broad-spectrum lipid-regulating agents, they mainly decrease serum triglycerides & also tend to reduce LDL-cholesterol and raise HDL- cholesterol.
   Ispaghula husk
   It is a soluble fiber & is used as an adjunct to a lipid-lowering diet.
4. **Statins: Such as, Atorvastatin, Cerivastatin, Fluvastatin, Pravastatin, Rosuvastatin, Simvastatin.**
   Statins are drugs of first choice for treating hypercholestero-laemia & also used in the treatment of mixed hyperlipidaemia.
5. **Nicotinic acid group: Acipimox, Nicotinic acid, Inositol nicotinate.**
   Nicotinic acid and its ester inositol nicotinate are also lipid-lowering agents but their use is limited due to their side-effects specially vasodilatation.

Ezetimibe

EZETIMIBE[26,48]

EZETIMIBE: Tablet
Ezetimibe INN 10mg/tablet.
Mode of action: Ezetimibe belongs to a class of lipid-lowering compounds that selectively inhibits the intestinal absorption of cholesterol and related phytosterols. Ezetimibe reduces total-C, LDL-C, Apo-B and TG, and increases HDL-C in patients with hypercholesterolemia. Ezetimibe inhibits intestinal cholesterol absorption by about 54%, compared with placebo. Ezetimibe has a mechanism of action different from others. It does not inhibit cholesterol synthesis in the liver, or increase bile acid excretion. Instead, ezetimibe localizes and appears to act at the brush border of the small intestine and inhibits the absorption of cholesterol, leading to a decrease in the delivery of intestinal cholesterol to the blood circulation and liver. This causes a reduction of hepatic cholesterol stores and an increase in clearance of cholesterol from the circulation. This distinct mechanism is complementary to that of HMG-CoA reductase inhibitors (viz, statins). As a result, administration of ezetimibe with an HMG-CoA reductase inhibitor is effective in improving serum total-C, LDL-C, Apo-B, TG and HDL-C beyond either treatment alone.
Ind: Primary hypercholesterolemia (viz: i. Primary heterozygous familial and non-familial hypercholesterolemia, ii. Homozygous familial hypercholesterolemia (HoFH), iii. Homozygous familial sitosterolemia (phytosterolemia)).
C/I: Hypersensitivity to any component of this medication. The combination of ezetimibe with an HMG-CoA reductase inhibitor (statin) is contraindicated in patients with active liver disease or unexplained persistent elevations in serum transaminases.
S/E: In clinical trials ezetimibe was found generally well tolerated. The rare side effects include fatigue, abdominal pain, diarrhea, viral infection, pharyngitis, sinusitis, arthralgia, back pain, coughing.
Precautions: Concurrent administration of ezetimibe with a specific HMG-CoA reductase inhibitor (statin) should be in accordance with the product labeling for that HMG-CoA reductase inhibitor. When ezetimibe is co-administered with an HMG-CoA reductase inhibitor, liver function tests should be performed at initiation of therapy and according to the recommendations of the HMG-CoA reductase inhibitor therapy. Hepatic insufficiency- due to the unknown effects of the increased exposure to ezetimibe in patients with moderate or severe hepatic insufficiency, ezetimibe is not recommended in these patients.
Pregnancy & lactation: There are no adequate and well-controlled studies of ezetimibe in pregnant women. Therefore, ezetimibe should be used during pregnancy only if the potential benefit justifies the risk to the fetus.
Dosage & admin: Before starting treatment with ezetimibe, tbe patient should be placed on a standard cholesterol-lowering diet and should be continued on this diet during treatment with the drug. The recommended dose of ezetimibe is 10mg once daily. It can be administered with or without food.
Treatment with ezetimibe in children (<10 years) is not recommended.
Primary (heterozygous familial and non-familial) hypercholesterolemia:
Ezetimibe monotherapy:
Ezetimibe administered alone, is indicated as adjunct therapy to diet for the reduction of elevated total-C, LDL-C, and Apo-B in patients with primary (heterozygous familial and non-familial) hypercholesterolemia.
Ezetimibe combination therapy with HMG-CoA reductase inhibitors: Ezetimibe, administered in combination with an HMG-CoA reductase inhibitor, is also indicated as adjunct therapy to diet for the reduction of elevated total-C, LDL-C, and Apo-B in patients with primary (heterozygous familial and non-familial) hypercholesterolemia. In case of combination therapy, the daily dose of ezetimibe may be taken at the same time schedule as for the HMG-CoA reductase inhibitor therapy.
Homozygous familial hypercholesterolemia (HoFH):
Ezetimibe combination therapy with HMG-CoA reductase inhibitors: The combination of ezetimibe and atorvastatin or simvastatin, is indicated for the reduction of elevated total-C and LDL-C levels in patients with HoFH, as an adjunt to other lipid-lowering treatments (e.g LDL apheresis) or if such treatments are unavailable. In case of combination therapy, the daily dose of ezetimibe may be taken at the same time schedule as for the HMG-CoA reductase inhibitor therapy.
Homozygous familial sitosterolemia (phytosterolemia):
Monotherapy: Ezetimibe is indicated as adjunctive therapy to diet for the reduction of elevated sitosterol and campesterol levels in patients with homozygous familial sitosterolemia.
Patients with hepatic and renal insufficiency:
No dosage adjustment is necessary in patients with mild hepatic and renal insufficiency.
Elderly patients: **No dosage adjustment is necessary in geriatric patients.**
Co-administration with bile acid sequestrants:
Dosing of ezetimibe should occur either 2 hours before or 4 hours after administration of a bile acid sequestrant.
Drug inter: Ezetimbe has no significant effect on a series of porobe drugs (caffeine, dextromethorphan, tolbutamide, and i.v midazolam). This indicates that ezetimibe is neither an inhibitor nor an inducer of these cytochrome P450 isozymes, and it is unlikely that ezetimibe will affect the metabolism of

drugs that are metabolized by these enzymes. Concomitant administration of ezetimibe (10mg once daily) had no significant effect on warfarin, digoxin, oral contraceptives, and cimetidine. HMG-CoA reductase inhibitors: Concomitant administration of ezetimibe (10mg once daily) had no significant effect on the bioavailability of either atorastatin, lovastatin, simvastatin, pravastatin, or fluvastatin.
Fenofibrate: Fenofibrate (200mg once daily) administration increased the mean Cmax and AUC values of total ezetimibe approximately 64% and 48%, respectively. Pharmacokinetics of fenofibrate was not significantly affected by ezetimibe (10mg once daily).
Cholestyramine: In a study of forty healthy hypercholesterolemic (LDL-C>130mg/dl) adult subjects, concomitant cholestyramine (4gm twice daily) administration decreased the mean AUC values of total ezetimibe and ezetimibe approximately 55% and 80%, respectively.

❖ **CHOLINOR Tab. Square**
Ezetimibe INN 10mg/tablet.
30's pack: 300.00 MRP
❖ **EZETA Tab. Beximco**
Ezetimibe INN 10mg/tablet.
20's pack: 200.00 IP
❖ **EZETIM Tab. Incepta**
Ezetimibe INN 10mg/tablet.
30's pack: 300.00 MRP
❖ **EZETROL Tab. UniHealth/UniMed**
Ezetimibe INN 10mg/tablet.
30's pack: 300.00 MRP

Fibrates

FENOFIBRATE[26,87]

FENOFIBRATE: Capsule/Tablet
Fenofibrate is a fibric acid derivative approved for the treatment of hyperlipidemia.
Mode of action: Fenofibrate is rapidly hydrolyzed after oral ingestion to its pharmacologically active form, fenofibric acid. Fenofibric acid causes reductions in total cholesterol, LDL cholesterol, apolipoprotein B, total triglycerides and VLDL. In addition, treatment with fenofibrate results in increase in HDL and apo-proteins apoAI apoAII. Fenofibrate also reduces serum uric acid levels in hyperuricemic and normal individuals by increasing the urinary excretion of uric acid.
Ind: Fenofibrate is indicated for hyperlipidemias of type IIa, IIb, III, IV & V in patients who have not responded adequately to diet & other appropriate measures.
C/I: Fenofibrate is contraindicated in patients with known hypersensitivity to the drug, severe renal impairment, existing gall bladder disease, hepatic dysfunction including biliary cirrhosis, pregnant women and breast feeding mothers, photosensitivity to ketoprofen.
S/E: Nausea, anorexia, gastric pain; pruritus, urticaria; impotence; headache, dizziness, vertigo, fatigue, hair loss; myotoxicity.
Precautions: Special care needed in patients with renal disease, as progressive increases in serum creatinine concentration or failure to follow dosage guidelines may result in serum creatinine concentration or failure to follow dosage guidelines may result in myotoxicity; discontinue if myotoxicity suspected or creatinine kinase concentration increases significantly. Liver function tests recommended every 3 months for first year.
Pregnancy: Fenofibrate is not recommended for pregnant women.
Dosage & admin: Adult: Fenofibrate 200mg one capsule once daily or 67mg 3 capsules daily in divided doses is recommended as the dose for the treatment of primary hypercholesterolemia, hypertriglyceridemia or mixed hyperlipidemia.
Children: 67mg 1 capsule/20kg body-weight daily.
Absorption of fenofibrate is increased by approximately 35% when administered with food.
Drug inter: Fenofibrate potentiates the anticoagulant effects of warfarin. When administered with antidiabetic drug it may improve glucose tolerance and have additive effect. Fenofibrate may also increase the nephrotoxicity of cyclosporine. Due to a potential increase in the risk of rhabdomyolysis, cautions should be taken against the use of fenofibrate with HMG-CoA reductase inhibitors. However, the use of low-dose statins with fenofibrate appears to be well tolerated.

❖ **FENATROL Cap. Drug Inter.**
Fenofibrate BP 200mg/capsule (micronized).
30's pack: 210.00 MRP
❖ **FENOCAP Cap. Orion**
Fenofibrate BP 200mg/capsule (micronized).
30's pack: 210.00 MRP
❖ **FENOCOL Cap. Peoples**
Fenofibrate BP 200mg/capsule (micronized).
30's pack: 210.00 MRP
❖ **FENOLID Cap. General**
Fenofibrate BP 200mg/capsule.
40's pack: 240.00 MRP
❖ **FENORAT Cap. Pacific**
Fenofibrate BP 200mg/capsule (micronized).
30's pack: 210.00 MRP
❖ **FIBRE 200 Cap. White Horse**
Fenofibrate BP 200mg/capsule (micronized).
30's pack: 350.00 MRP
❖ **LIPIDOF Cap. Acme**
Fenofibrate BP 200mg/capsule (micronized).
20's pack: 140.00 MRP
❖ **LIPIRED Cap. Square**
Fenofibrate BP 200mg/capsule (micronized).
30's pack: 210.00 MRP
❖ **LOFAT Cap. Beximco**
Fenofibrate BP 200mg/capsule (micronized).
30's pack: 210.00 IP
❖ **NOFIATE Cap. Incepta**
Fenofibrate BP 200mg/capsule (micronized).
30's pack: 210.00 MRP
❖ **TIGICON Cap. Aristopharma**
Fenofibrate BP 200mg/capsule (micronized).
30's pack: 210.00 MRP
❖ **TIGIRATE Cap. Opsonin**
Fenofibrate BP 200mg/capsule (micronized).
30's pack: 210.00 MRP
❖ **TRIGENT Cap. UniHealth**
Fenofibrate BP 200mg/capsule (micronized).
30's pack: 210.00 MRP

GEMFIBROZIL[21,33]

GEMFIBROZIL: Capsule
Ind: Hyperlipidaemias of types IIa, IIb, III, IV and V in patients who have not responded adequately to diet and other appropriate measures; primary prevention of coronary heart disease in men aged 40-55 years with hyperlipidaemias that have not responded to diet and other appropriate measures.
C/I: Alcoholism, hepatic impairment, gallstones; pregnancy.
S/E: Gastro-intestinal disturbances; pruritus, urticaria, rash, headache, dizziness, blurred vision, painful extremities; rarely myalgia; impotence reported.
Cautions: Lipid profile, blood counts & liver-function tests before initiating long-term treatment; renal impairment; annual eye examinations.
Dose: 1.2gm daily, usually in 2 divided doses; range 0.9-1.5gm daily.

❖ **DELIPID Cap. Square**
Gemfibrozil 300mg/capsule
30's pack: 209.40 MRP
❖ **GELICON Cap. SK+F**
Gemfibrozil 300mg/capsule
24's pack: 168.00 MRP

Statins

ATORVASTATIN[42,65]

ATORVASTATIN: Tablet
Atorvastatin, a synthetic lipid-lowering agent. Available as film coated tablet.
Mode of action: It is a selective, competitive inhibitor of 3-hydroxy-3-methylglutaryl-coenzyme A (HMG-CoA) reductase. This enzyme catalyses the conversion of HMG-CoA to mevalonate, an early and rate-limiting step in cholesterol biosynthesis particularly in the liver. The drug lowers elevated total cholesterol (c), low-density lipoprotein (LDL) cholesterol, apolipoprotein B (apo B), and triglyceride (TG) in patients with primary hypercholesterolaemia and with mixed dyslipidaemia.
Ind: Atorvastatin is indicated as an adjunct to diet to reduce elevated total-C, LDL-C, apo-B, and TG levels in patients with primary hypercholesterolaemia (heterozygous familial and non-familial) and mixed hyperlipidaemia. Atorvastatin is also indicated to reduce total-C and LDL-C in patients with homozygous familial hypercholesterolaemia as an adjunct to other lipid lowering treatments (eg. LDL apheresis) or if such treatments are unavailable. C/I: The absolute contra-indications to the administration of atorvastatin include active liver disease or unexplained persistent elevations of serum transaminases and hypersensitivity to any component of this medication.
Adverse reactions: Atorvastatin is well

tolerated. Adverse reactions have usually been mild and transient. Less than 2% of patients were discontinued from clinical trials due to side-effects attributed to atorvastatin. The adverse effects that are rarely observed are constipation, flatulence, dyspepsia, abdominal pain, headacle, nausea, myalgia, asthenia, diarrhoea and insomnia. Atorvastatin can cause elevation in ALT/AST, alkaline phosphatase, GGT, bilirubin and creatine phosphokinse.

Precautions & warnings: Liver function tests should be performed before the initiation of treatment and periodically thereafter. Patients who develop increased transaminase levels should be monitored until the abnormalities resolve. An increase in ALT or AST >3 times the upper limit of normal, is recommended to reduce the dose or withdraw atorvastatin therapy.

Prior to initiating therapy with atorvastatin, secondary causes for hypercholesterol-aemia (eg. poorly controlled diabetes mellitus, hyothyroidism, nephrotic syndrome, dysproteinaemia, obstructive liver disease, other drug therapy, and alcoholism) should be identified and treated.

Atorvastatin should be used with caution in patients who consume sustained quantities of alcohol and/or have a history of liver disease. Atorvastatin therapy should be temporarily withheld or discontinued in any patient with an acute, serious condition suggestive of a myopathy or having a risk factor predisposing to the development of renal failure secondary to rhabdomyolysis, eg. severe acute infection, hypotension, major surgery, trauma, severe metabolic, endocrine and electrolyte disorders, and uncontrolled seizures.

Pregnancy & lactation: Cholesterol and other products of cholesterol biosynthesis are essential for foetal development (including synthesis of steroids and cell membranes). Since HMG-CoA reductase inhibitors decrease cholesterol synthesis and possibly the synthesis of other biologically active substances derived from cholesterol, they may cause foetal harm when administered to pregnant women. Therefore, HMG-CoA reductase inhibitors are contraindicated during pregnancy and in nursing mothers. Atorvastatin should be administered to women of child-bearing age only when such patients are highly unlikely to conceive and have been informed of the potential hazards. If the patient becomes pregnant while taking this drug, therapy should be discontinued and the patient appraised of the potential hazard to the foetus.

Dosage & Admin: Atorvastatin can be administered within the dosage range of 10-80 mg/day as a single daily dose, and can be taken at any time of the day, with or without food. Therapy should be individualized according to the target lipid levels, the recommended goal of therapy, and the patient's response. Primary hypercholesterolaemia and combined byperlipidaemia, usually 10mg once daily. Familial hypercholesterol-aemia, initially 10mg daily, increased at intervals of 4 weeks to 40mg once daily; if necessary, further increased to max, 80mg once daily (or combined with anion-exchange resin in heterozygous familial hypercholesterolaemia). Renal disease has no influence on the plasma concentrations or on the LDL-C reduction of atorvastatin; thus, no adjustment of the dose is required.

Plasma concentrations of atorvastatin are markedly increased in patients with chronic alcoholic liver disease (Childs-Pugh B). The benefits of therapy should be weighed against the risks when atorvastatin is to be given to patients with hepatic insufficiency.

Drug inter: Caution should be exercised when atorvastatin is administ-ered with inhibitors of cytochrome P450 3A4 (eg. cyclosporin, macrolide antibiotics including erythromycin and azole antifungals or niacin). Co-administration of an oral antacid suspension containing magnesium and aluminium hydroxide with atorvastatin, decreases atorvastatin plasma concentrations approximately 35%, however, LDL-C reduction usually not altered. Plasma concentration of atorvastatin lowers (approximately 25%) when cholestyramine is co-administered than when either drug is given alone.

Co-administration of multiple doses of atorvastatin and digoxin increased steady-state plasma digoxin concentrations by approximately 20%. Patients taking digoxin should be monitored appropriately.

❖ **ANZITOR Tab. Square**
Atorvastatin 10mg & 20mg/tablet (f.c)
10mg x 30's pack: 240.00 MRP
20mg x 20's pack: 300.00 MRP

❖ **ASTIN Tab. Jayson**
Atorvastatin 10mg & 20mg/tablet (f.c)
10mg x 30's pack: 240.00 IP
20mg x 10's pack: 150.00 IP

❖ **ASTIVA Tab. Supreme**
Atorvastatin 10mg & 20mg/tablet (f.c)
10mg x 10's pack: 75.00 MRP
20mg x 10's pack: 140.00 MRP

❖ **ATASIN Tab. ACI**
Atorvastatin 10mg & 20mg/tablet (f.c)
10mg x 20's pack: 160.00 MRP
10mg x 30's pack: 240.00 IP
20mg x 10's pack: 150.00 IP

❖ **ATOVA Tab. Beximco**
Atorvastatin 10mg & 20mg/tablet (f.c)
10mg x 30's pack: 300.00 IP
20mg x 20's pack: 360.00 IP

❖ **ATOVIN Tab. Alco Pharma**
Atorvastatin 10mg/tablet (f.c)
10mg x 10's pack: 70.00 MRP

❖ **AVAS Tab. Opsonin**
Atorvastatin 10mg & 20mg/tablet (f.c)
10mg x 30's pack: 300.00 MRP
20mg x 10's pack: 180.00 MRP

❖ **AVASTATIN Tab. Edruc**
Atorvastatin 10mg/tablet (f.c)
10mg x 10's pack: 80.00 IP

❖ **AVOCARD Tab. White Horse**
Atorvastatin 10mg & 20mg/tablet (f.c)
10mg x 30's pack: 210.00 MRP
20mg x 20's pack: 300.00 MRP

❖ **AZTOR Tab. Sun Pharma**
Atorvastatin 10mg & 20mg/tablet (f.c)
10mg x 30's pack: 285.00 MRP
20mg x 30's pack: 540.00 MRP

❖ **CLOLES-10 Tab. Doctor's**
Atorvastatin 10mg/tablet (f.c)
10mg x 30's pack: 240.00 MRP

❖ **COLOSTAT Tab. Ibn Sina**
Atorvastatin 10mg & 20mg/tablet (f.c)
10mg x 30's pack: 240.00 MRP
20mg x 30's pack: 450.00 MRP

❖ **DIVASTIN Tab. Drug Inter.**
Atorvastatin 10mg & 20mg/tablet (f.c)
10mg x 30's pack: 300.00 MRP
20mg x 20's pack: 300.00 MRP

❖ **LIPEX-10 Tab. Orion**
Atorvastatin 10mg/tablet (f.c)
10mg x 30's pack: 270.00 MRP

❖ **LIPICON Tab. SK+F**
Atorvastatin 10mg & 20mg/tablet (f.c)
10mg x 40's pack: 400.00 MRP
20mg x 20's pack: 360.00 MRP

❖ **LIPICUT Tab. Rangs Pharma**
Atorvastatin 10mg & 20mg/tablet (f.c)
10mg x 30's pack: 240.00 MRP
20mg x 20's pack: 300.00 MRP

❖ **LIPIGENT Tab. Pacific**
Atorvastatin 10mg & 20mg/tablet (f.c)
10mg x 30's pack: 240.00 MRP
20mg x 20's pack: 300.00 MRP

❖ **LIPINOR Tab. Rephco**
Atorvastatin 10mg/tablet (f.c)
10mg x 30's pack: 210.00 MRP

❖ **LIPITIN Tab. General**
Atorvastatin 10mg & 20mg/tablet (f.c)
10mg x 30's pack: 240.00 MRP
20mg x 10's pack: 150.00 MRP

❖ **LIPLO-10 Tab. Globe**
Atorvastatin 10mg/tablet (f.c)
10mg x 10's pack: 100.00 MRP

❖ **LIPOBI 10 Tab. Nipa**
Atorvastatin 10mg/tablet (f.c)
10mg x 10's pack: 80.00 MRP

❖ **LIPTOR Tab. Acme**
Atorvastatin 10mg & 20mg/tablet (f.c)
10mg x 20's pack: 160.00 MRP
20mg x 10's pack: 150.00 MRP

❖ **LIVAS Tab. Techno Drugs**
Atorvastatin 10mg & 20mg/tablet (f.c)
10mg x 30's pack: 300.00 MRP
20mg x 20's pack: 300.00 MRP

❖ **LOCOL Tab. Popular**
Atorvastatin 10mg & 20mg/tablet (f.c)
10mg x 30's pack: 300.00 MRP
20mg x 10's pack: 180.00 MRP

❖ **ORVA Tab. Sanofi-aventis**
Atorvastatin 10mg & 20mg/tablet (f.c)
10mg x 30's pack: 300.00 MRP
20mg x 20's pack: 360.00 MRP

❖ **ORVATIN Tab. Chemico**
Atorvastatin 10mg/tablet (f.c)
10mg x 20's pack: 160.00 MRP

❖ **STACOR-10 Tab. UniHealth**
Atorvastatin 10mg/tablet (f.c)
10mg x 30's pack: 240.00 MRP

❖ **STACOR-20 Tab. UniHealth**

Atorvastatin 20mg/tablet (f.c)
20mg x 20's pack: 300.00 MRP

❖ **TAVEN Tab. Renata**
Atorvastatin 10mg & tablet (f.c)
10mg x 30's pack: 300.00 MRP
20mg x 30's pack: 540.00 MRP

❖ **TCL-R Tab. Aristopharma**
Atorvastatin 10mg & 20mg/tablet (f.c)
10mg x 30's pack: 270.00 MRP
20mg x 10's pack: 170.00 MRP

❖ **TIGINOR Tab. Incepta**
Atorvastatin 10mg & 20mg/tablet (f.c)
10mg x 30's pack: 240.00 MRP
20mg x 20's pack: 300.00 MRP

❖ **TROVA Tab. Bio-pharma**
Atorvastatin 10mg & 20mg/tablet (f.c)
10mg x 30's pack: 240.00 MRP
20mg x 10's pack: 150.00 MRP

❖ **VASS Tab. Sandoz/Novartis**
Atorvastatin 10mg & 20mg/tablet (f.c)
10mg x 30's pack: 300.00 MRP
20mg x 10's pack: 180.00 MRP

❖ **VASTIN Tab. Pharmadesh**
Atorvastatin 10mg/tablet (f.c)
10mg x 20's pack: 160.00 MRP

❖ **XELITOR Tab. Novo Healthcare**
Atorvastatin INN 10mg & 20mg/tablet (f.c)
10mg x 30's pack: 240.00 MRP
20mg x 30's pack: 450.00 MRP

❖ **XELPID Tab. Healthcare**
Atorvastatin 10mg & 20mg/tablet (f.c)
10mg x 30's pack: 300.00 MRP
20mg x 10's pack: 180.00 MRP

❖ **XEROVA Tab. Beacon**
Atorvastatin 10mg & 20mg/tablet (f.c)
10mg x 30's pack: 300.00 MRP
20mg x 20's pack: 300.00 MRP

FLUVASTATIN[54]

FLUVASTATIN: Tablet
Ind: Primary hypercholesterolaemia & mixed dyslipidaemia (Fredrickson types lla/llb) as an adjunct to diet. To slow the progression of coronary atherosclerosis in patients with primary hypercholesterolae-mia, including mild forms, and coronary heart disease.
C/I: Hypersensitivity to the drug. Active liver disease or unexplained, persistent elevations in serum transaminases. Pregnancy, lactation, women of childbearing potential unless they are taking adequate contraceptive precautions.
A/R: Dyspepsia, nausea, abdominal pain & other minor gastrointestinal symptoms; insomnia, headache. Elevation of transaminase levels. Rare cases of hypersensitivity reactions, mainly rashes and urticaria, but very rarely also other skin reactions, thrombocytopenia, angioedema, vasculitis, and lupus erythematosus-like reactions have been reported.
Precautions & Warnings: Caution is required in patients with a history of liver disease or heavy alcohol consumption, with unexplained diffuse myalgias, muscle tenderness or weakness, and marked elevation of creatine phosphokinase values, or with severe renal insufficiency.
Dosage: Prior to initiating fluvastatin, the patient should be placed on a standard cholesterol-lowering diet; dietary therapy should be continued during treatment. The recommended starting dose is 40mg (one 40mg capsule) once daily in the evening. In mild cases 20mg may be adequate. At very high cholesterol levels, the dosage may be increased to 80mg daily (one 40mg capsule twice daily or one 80mg XL tablet once daily in the evening).
Interactions: Bile acid-sequestering agents; cimetidine, ranitidine, omeprazole; rifampicin.
Note: For further information, please see manufacturer's literature of full prescribing information.

❖ **FLUVAS 20 Cap. Silva**
Fluvastatin 20mg/capsule
20mg x 12's pack: 144.00 MRP

❖ **LESCOL Cap. Novartis**
Fluvastatin 20mg & 40mg/capsule
20mg x 28's pack: 753.75 MRP
40mg x 28's pack: 1046.25 MRP

❖ **LESCOL XL Tab. Novartis**
Fluvastatin 80mg/tablet (prolonged release)
80mg x 28's pack: 1092.00 MRP

❖ **LESTEROL 20 Cap. Opsonin**
Fluvastatin 20mg/capsule
20mg x 10's pack: 120.00 MRP

LOVASTATIN[21,33]

LOVASTATIN: Tablet
Ind: Hypercholesterolaemia (lovastatin reduces both normal & elevated LDL cholesterol concentrations). To slow the progression of coronary atherosclerosis in patients with coronary heart disease.
C/I: Active liver disease, unexplained transaminase elevations. Pregnancy & lactation.
S/E: Chest pain, acid regurgitation, dry mouth, vomiting, arthralgia, insomnia, paresthesia, alopecia, pruritus & eye irritation.
Caution: Alcoholics; past history of liver disease.
Dose: Usual recommended starting dose is 20mg once a day given with the evening meal; (dose range may be 10mg to max. 80mg/day in single or 2 divided doses). In renal insufficiency (creatinine clearance < 30ml/min) dosage increase above 20mg/day should be carefully considered & if deemed necessary, implemented cautiously.

❖ **LOVATIN Tab. Ambee**
Lovastatin 20mg/tablet
20mg x 30's pack: 303.30 MRP

ROSUVASTATIN[42]

ROSUVASTATIN: Tablet
Rosuvastatin is a synthetic lipid-lowering agent. It is available as rosuvastatin INN 10mg film-coated tablet.
Ind: Heterozygous hypercholesterolemia (familial and nonfamilial), homozygous hypercholesterolemia (familial), mixed dyslipidemia (Fredrickson type IIa and IIb).
C/I: Rosuvastatin is contraindicated in patients with a known hypersensitivity to any component of this product. Rosuvastatin is contraindicated in patients with active liver disease or with unexplained persistent elevations of serum transaminases.
S/E: Rosuvastatin is generally well tolerated. The most frequent adverse events thought to be related to rosuvastatin were myalgia, constipation asthenia, abdominal pain, and nausea.
Pregnancy & lactation: Rosuvastatin should be administered to women of childbearing age only when such patients are highly unlikely to conceive and have been informed of the potential hazards. If the patient becomes pregnant while taking this drug, therapy should be discontinued immediately and the patient apprised of the potential hazard to the fetus. It is not known whether rosuvastatin is excreted in human milk.
Dosage & admin: ***Heterozygous hypercholesterolemia (familial and nonfamilial) and mixed dyslipidemia (Fredrickson type IIa and IIb):*** **The usual recommended starting dose of rosuvastatin is 10mg once daily. Initiation of therapy with 5mg once daily may be considered for patients requiring less aggressive LDL-C reductions or who have predisposing factors for myopathy. For patients with marked hypercholesterolemia (LDL-C >190mg/dl) and aggressive lipid targets, a 20mg starting dose may be considered. A 40mg dose of rosuvastatin should be reserved for those patients who have not achieved goal LDL-C at 20mg. After initiation and/or upon titration of rosuvastatin, lipid levels should be analyzed within 2 to 4 weeks and dosage adjusted accordingly.**
Homozygous hypercholesterolemia (familial): **The recommended starting dose of rosuvastatin is 20mg once daily. The maximum recommended daily dose is 40mg. Rosuvastatin should be used in these patients as an adjunct to other lipid-lowering treatments (e.g LDL apheresis) or if such treatments are unavailable.**
Dosage in patients with renal insufficiency: **No modification of dosage is necessary for patients with mild to moderate renal insufficiency. For patients with severe renal impairment (CLcr < 30ml/min/1.73 m2) not on hemodialysis, dosing of rosuvastatin should be started at 5mg once daily and not to exceed 10mg once daily.**
Pediatric patients: **The safety and effectiveness in pediatric patients have not been established.**

❖ **ROSUVA 10 Tab. Square**
Rosuvastatin INN 10mg/tablet (f.c)
10mg x 20's pack: 400.00 MRP

❖ **ROZAVEL 10 Tab. Sun Pharma**
Rosuvastatin INN 10mg/tablet (f.c)
10mg x 30's pack: 750.00 MRP

SIMVASTATIN[21,33]

SIMVASTATIN: Tablet
Ind: Hypercholesterolaemia- patients with primary hypercholesterolaemia, in home response to diet & other non-pharmacological measures has been inadequate.
Coronary heart disease- in patients with a plasma cholesterol level 5.5mmol/l or greater.
Concomitant therapy with immunosupp-ressives.
C/I: Hypersensitivity to this product; active liver disease or persistant elevation of serum transaminase; porphyria; pregnancy, lactation. Women of child bearing potential unless adequately protected by non-hormonal methods.
S/E: Headache, fatigue, insomnia, nausea, constipation or diarrhoea, flatulence, dyspepisa, abdominal cramps, myalgia, myositis, myopathy; rhabdomyolysis (rare) with acute renal failure secondary to myoglobinuria; hepatitis, pancreatitis; rash, angioedema.
Caution: Monitor liver function before and during treament; minor asymptomatic transient rises in serum transaminase may occur soon after initiation of therapy with simvastatin which do not require the drug to be discontinued; if the transaminase levels rise to three times the upper limit of normal & are persistent, the drug should be discontinued. History of liver disease. High alcohol intake. Advise patients to report muscle pain. Discontinue treatment if markedly elevated CPK levels occur or if myopathy is diagnosed.
D/I: digoxin, coumarin derivatives.
Dosage & admin: The patient should be placed on a standard cholesterol-lowering diet before receiving simvastatin and should continue on this diet during treatment with simvastatin.
Hypercholesterolaemia- initially 10mg once daily at night; dose range 10-40mg/day. (A marked response to simvastatin is seen within two weeks and the maximum therapeutic response occurs within four to six weeks. The response is maintained during continuation of therapy. When therapy with simvastatin is stopped, total cholesterol has been shown to return to pretreatment levels.) Adjustment of dosage, if required, should be made at intervals of not less than four weeks, depending on the patient's individual response.
(If LDL-cholesterol level falls below 1.94 mmol/l or total serum cholesterol level falls below 3.6 mmol/l, consider-ation should be given to reduce the dose of simvastatin.)
CHD- initially 20mg/day once daily at night. (Adjustment of dosage, if required, should be made as specified above for 'hypercholesterolaemia').
Concomitant therapy with immunosu-ppressives- maximum 10mg/day.

❖ **AVASTIN Tab. Beximco**
Simvastatin 10mg/tablet.
30's pack: 450.00 IP
❖ **NOVASTIN Tab. Drug Inter.**
Simvastatin 10mg/tablet.
30's pack: 180.00 MRP
❖ **SIMACOR Tab. Square**
Simvastatin 10mg/tablet.
30's pack: 300.00 MRP
❖ **SIMVATIN Tab. Acme**
Simvastatin 10mg/tablet.
10mg x 20's pack: 220.00 MRP
❖ **VASTOCOR Tab. Incepta**
Simvastatin 10mg/tablet.
30's pack: 360.00 MRP
❖ **ZOSTIN Tab. Renata**
Simvastatin 10mg/tablet.
30's pack: 424.80 MRP

Nicotinic acid group

INOSITOL NICOTINATE[26]

INOSITOL NICOTINATE: Tablet
Inositol nicotinate is the hexanicotinic acid ester of meso-inositol, also called inositol hexaniacinate (IHN) or inositol hexanicotinate or inositol nicotinate. The compound consists of six molecules of nicotinic acid and one molecule of inositol. It is available as inositol nicotinate BP 500mg and 750mg tablet.
Mode of action: Pharmacokinetic studies have indicated that inositol nicotinate ester is absorbed intact and hydrolyzed in the body with release of free niacin and inositol. It has been proven effective at lowering VLDL, LDL and total cholesterol and triglyceride levels while raising HDL levels. Niacin is vital for cellular metabolism. Due to its vasodilatory effects, niacin has been prescribed for the treatment of cardiovascular disease, particularly the hyperlipidemias.
Ind: Inositol nicotinate has a fairly broad range of therapeutic applications. The most well researched conditions include the hyperlipidemias, Raynaud's disease and intermittent claudication. Promising applications, which bear further investigation, include its use for stasis ulcers, dysmenorrhea, dermatitis herpetiformis, alcoholism, diabetes, cancer prevention and hypertension.
C/I: Inositol nicotinate is contraindicated to children, early stage of stroke & people who have recently had a heart attack. It should not be used if any one is allergic to one or any of its ingredients.
S/E: The most common side effects are headache, rash, paraesthesia, dizziness, nausea and vomiting, flushing, excessive fluid retention in the body tissues, postural hypotension, fainting.
Precautions: Cautions should be exercised in patients with angina not well controlled by medical treatment and decreased blood supply through the vessels of the brain (cerebrovascular insufficiency).

Pregnancy & lactation: There is no information available about the safety of this medicine during pregnancy, therefore it is not recommended for use during pregnancy, unless considered essential by the physician.
There is no information available regarding the safety of this medicine during breast-feeding.

Dosage & admin: Recommended dosage for lipid-lowering and improving conditions related to peripheral vascular insufficiency ranges from 1500mg to 4 gms daily in 2 to 3 divided dosages.
Drug inter: There are no significant interactions reported with this medicine.

❖ **INOSIT Tab. ACI**
Inositol nicotinate BP 500mg & 750mg/tablet
500mg x 50's pack: 250.00 MRP
750mg x 50's pack: 375.00 MRP
❖ **NIAPID Tab. Drug Inter.**
Inositol nicotinate (niacin) BP 500mg/tablet
500mg x 30's pack: 330.00 MRP
❖ **NICOSIT Tab. Incepta**
Inositol nicotinate BP 500mg & 750mg/tablet
500mg x 20's pack: 100.00 MRP
750mg x 20's pack: 140.00 MRP
❖ **RIDEL ER Tab. Incepta**
Inositol nicotinate (niacin) BP 500mg/tablet (extended release).
500mg x 20's pack: 280.00 MRP

Chapter-3
DRUGS USED IN RESPIRATORY DISEASES

DRUGS USED IN RESPIRATORY DISEASES

Respiratory drugs are discussed in the following groups:[21]

1. **Bronchodilators**
2. **Prophylactics of asthma:**
   i. **Cromoglycate & related drugs**
   ii. **Leukotriene receptor antagonists**
3. **Respiratory corticosteroids**
4. **Antihistamines, antiallergics & hyposensitisation**
5. **Cough preparations; mucolytics**
6. **Respiratory stimulants & pulmonary surfactants**
7. **Aromatic inhalations**
8. **Oxygen**
9. **Systemic nasal decongestants.**

1. BRONCHODILATORS[21]

1.1 Adrenoceptor stimulants
   i. Selective beta2-adrenoceptor stimulants
   ii. Other adrenoceptor stimulants
1.2 Antimuscarinic bronchodilators
1.3 Theophylline & related drugs
1.4 Compound bronchodilator prepns.

Adrenoceptor stimulants (Sympathomimetics)

Selective beta2-adrenoceptor stimulants
The selective beta2-adrenoceptor stimulants include:

1. **Short-acting-** such as Salbutamol, Terbutaline (widely available formulations), Bambuterol (a pro-drug of terbutaline), Tulobuterol.
2. **Longer-acting-** such as **Salmeterol & Eformoterol, Fenoterol, Reproterol** (these are administered by inhalation & not indicated for the relief of an acute attack; they are usually added to existing corticosteroid therapy and not replace it).

Short-acting selective beta$_2$-adrenoceptor stimulants

SALBUTAMOL[21,42,63]

SALBUTAMOL: Tablet/Syrup/Injection
SALBUTAMOL: Inhaler (DPI/MDI)
SALBUTAMOL HFA: Inhaler (MDI)
SALBUTAMOL HFA: Evohaler (MDI)
Salbutamol is a short-acting, selective 2-adrenoceptor stimulant (agonist), used in the treatment of asthma and other forms of diffuse reversible ainways obstructive diseases. It is available as tablet, syrup, injection & inhaler/ HFA inhaler.
Tablet - 2mg & 4mg tablet.
Syrup - 2mg/5ml; 60ml & 100ml bottle.
Injection - 50mcg/ml; 20ml vial.
Inhaler (DPI) - Dry powder inhaler (DPI).
Inhaler (MDI) - Metered dose inhaler (MDI), using CFC (chlorofluorocarbon) propellant.
Inhaler HFA (MDI) - Metered dose inhaler (MDI), using HFA (hydrofluoroalkane) propellant.
Evohaler HFA (MDI)- Evohaler HFA is a metered dose inhalation device and is used by aerosol inhalation only, using HFA (hydrofluoroalkane) as propellant.
CFC (Chlorofluorocarbon): CFC- using as MDI propellant is safe for human, but, as it emits CFC to the environment, it harms the planet by depleting ozone layer.
HFA (Hydrofluoroalkane): Recently an advanced HFA (Hydrofluoroalkane) technology has developed as MDI propellant replacing CFC propellant. HFA is an ozone-benign, environment friendly, CFC-free MDI propellant.
Mode of action: The primary pharmacological action of -adrenoceptor stimulant drug is to stimulate adenyl cyclase, the enzyme which catalyzes the formation of cyclic AMP (cyclic 3, 4 adenosine-mono-phosphate) from adenosine-tri-phosphate (ATP). The cyclic AMP thus formed mediates the cellular response that results in bronchodilation.
Ind: Salbutamol is indicated for the treatment and prophylaxis of bronchial asthma and for the treatment of reversible airways obstruction associated with bronchitis and emphysema; status asthmaticus; prophylactic therapy before exertion or to prevent exercise-induced asthma.
C/I: Although intravenous salbutamol, and occasionally oral preparations are used in the management of premature labour (not complicated by any conditions such as placenta praevia, ante-partum haemorrhage or toxaemia of pregnancy), salbutamol inhaler preparations are not appropriate for managing premature labour. Salbutamol preparation should not be used for threatened abortion during the first or second trimester of pregnancy. Salbuatmol is contraindicated in patients with a history of hypersensitivity to any of its components.
S/E: Salbutamol is generally well tolerated and serious toxic effects are a few.
Salbutamol may cause fine tremor of skeletal muscles (particularly of the hands), palpitations, and muscle cramps. Tachycardia, tenseness, headache, peripheral vasodilatation and hypokalaemia have been reported after large dose. They usually disappear with continued treatment. Hypersensitive reactions including angioedema, urticaria, reflex bronchospasm, hypotension and collapse have been reported very rarely. In case of inhalation therapy, the potential for paradoxical bronchospasm should be kept in mind, if it occurs, therapy should be discontinued immediately and alternative medication should be instituted.
Precautions: Salbutamol and other 2 agonists should be given with caution in hyperthyroidism, myocardial insufficiency, arrhythmias, susceptibility to QT-interval prolongation, hypertension, and diabetes mellitus. In severe asthma, particular cautionis also required to avoid inducing hypokalaemia as this effect may be potentiated by hypoxia or by concomitant administration of other anti-asthmatic drugs; 2 agonists such as salbutamol are not appropriate for use alone in the treatment of severe asthma. Salbutamol and non-selective blockers such as propranolol should not be prescribed together. In the event of a previously effective dose of salbutamol inhaler, failing to give relief for at least 3 hours, the patients should be advised to seek medical advice in order that any necessary additional steps may be taken.
Inhaled salbutamol preparations are not appropriate for managing premature labor and also should not be used for threatened abortion during the first or second trimester of pregnancy.
Pregnancy & lactation: Although there is no evidence that salbutamol is teratogenic, it should be used in the first trimester only if absolutely essential. Inhalation has particular advantage as a mean of administration of 2 agonists during pregnancy as the therapeutic action can be achieved without the requirement for such plasma concentration liable to have a pharmacological effect on the fetus.
Salbutamol probably enters breast milk, hut the concentration is unknown. However, no adverse effect have been reported in the breast-fed babies of mothers taking the drug by inhalation.
Dosage & admin: By mouth: Adult- 2 to 4mg 3 or 4 times daily. Child- under 2 yrs. not recommended; 2-6 yrs. 1-2mg. 6-12 yrs. 2mg. Both 3 or 4 times daily. Or, 0.1 mg/kg/dose, 3 or 4 times daily.
By injection: **500mcg i.m or s.c injection, may be repeated every 4 hours if necessary. Or,**
By slow i.v injection: **250mcg, repeated if necessary.**
By i.v infusion: **Initially 5mcg/min, adjusted according to response & heart-rate usually in range 3-20mcg/min, or more if necessary. Child: Not recommended.**
By metered dose aerosol inhalation (MDI): **Adults: For the relief of acute bronchospasm and for managing intermittent episodes of asthma, 1 or 2 puffs (100 or 200mcg) as a single dose; for chronic maintenance therapy, 2 puffs 3 or 4 times daily; for prevention of exercise-induced bronchospasm, 2 puffs before exertion.**
Prophylaxis, 2 puffs 3 or 4 times daily.
Children: For relief of acute bronchospasm, management of episodic asthma and for prevention of exercise induced bronchospasm, 1 puff; for routine maintenance & prophylaxis, 1 puff 3 or 4 times daily, increasing if necessary to 2 puffs 3 or 4 times daily.
Elderly- the dosage is the same as that for adults.
By dry powder inhalation (DPI): **Adult: 200-400mcg for persistent symptoms up to 3-4 times daily; Child 200mcg.**
Prophylaxis in exercise-induced bronchospasm 400mcg; Child, 200mcg.
DPI or Dry powder inhalation is for oral inhalation only. An inhalation device (such as, Cozyhaler, Cyclohaler, Rotahaler) is used for dry powder inhalation.
Rinsing the mouth after dry powder inhalation is advised.
By inhalation of nebulised solution: **Chronic bronchospasm unresponsive to conventional therapy and severe acute asthma, adult and child over 18 months 2.5mg, repeated up to 4 times daily; may be increased to 5mg if necessary, but medical assessment should be considered since alternative therapy may be indicated; child under 18 months, clinical efficacy uncertain (transient hypoxaemia may occur- consider supplemental oxygen).**

❖ **ACTOLIN Tab. Globe**
Salbutamol 4mg/tablet.
100's pack: 34.00 MRP
❖ **ACTOLIN Syp. Globe**
Salbutamol 2mg/5ml: syrup.
100ml bot: 15.00 MRP
❖ **ALVOLEX Syp. Silva**
Salbutamol 2mg/5ml: syrup.
100ml bot: 16.00 MRP
❖ **ASMATOL Syp. Rephco**
Salbutamol 2mg/5ml: syrup.
60ml bot: 10.80 MRP
❖ **ASMOLEX Syp. Aristopharma**
Salbutamol 2mg/5ml: syrup.
100ml bot: 15.00 MRP
❖ **ASNIL Syp. Ziska**
Salbutamol 2mg/5ml: syrup
100ml bot: 16.00 MRP
❖ **ASTHMOLIN Tab. Pharmadesh**
Salbutamol 2mg/tablet.
2mg x 100's pack: 28.00 MRP
❖ **ASTHMOLIN Syp. Pharmadesh**
Salbutamol 2mg/5ml: syrup
60ml bot: 10.80 MRP
100ml bot: 15.57 MRP

❖ **ASUL Tab. Asiatic**
Salbutamol 4mg/tablet.
100's pack: 30.00 MRP

❖ **ASUL Syp. Asiatic**
Salbutamol 2mg/5ml: syrup.
100ml bot: 15.00 MRP

❖ **AZMASOL Inhaler (MDI) Beximco**
Salbutamol 100mcg/puff or actuation: metered dose inhalation (MDI).
Dosage & admin: See above under the text.
200 doses unit: 140.00 IP

❖ **AZMASOL Inhaler (Refill Can) Beximco**
Salbutamol 100mcg/puff or actuation; each canister contains 200 metered doses: inhalation aerosol. (MDI)
Dosage & admin: See above under the text.
200 doses canister: 100.00 IP

❖ **AZMASOL HFA Inhaler (MDI) Beximco**
Salbutamol 100mcg/puff or actuation: metered dose inhaler (MDI), using HFA (hydrofluoroalkane) as propellant.
Dosage & admin: See above under the text.
200 doses unit: 175.00 MRP
300 doses unit: 240.00 MRP

❖ **AZMASOL HFA Inhaler (Refill Can) Beximco**
Salbutamol 100mcg/puff or actuation; each canister contains 200 metered doses: inhalation aerosol. (MDI), using HFA (hydrofluoroalkane) as propellant.
Dosage & admin: See above under the text.
200 doses canister: 150.00 MRP

❖ **AZMET Syp. Medicon**
Salbutamol 2mg/5ml: syrup.
100ml bot: 16.00 MRP

❖ **BROAD Syp. Nipa**
Salbutamol 2mg/5ml: syrup
100ml bot: 15.00 MRP

❖ **BRODIL Tab. ACI**
Salbutamol 2mg & 4mg/tablet.
2mg x 500's pack: 130.00 MRP
4mg x 500's pack: 170.00 MRP

❖ **BRODIL SR Cap. ACI**
Salbutamol 8mg/capsule (sustained release).
8mg x 200's pack: 480.00 MRP

❖ **BRODIL Syp. ACI**
Salbutamol 2mg/5ml: syrup.
100ml bot: 16.11 MRP

❖ **BROLAX Syp. Somatec**
Salbutamol 2mg/5ml: syrup.
100ml bot: 15.00 MRP

❖ **BRONCOTROL 4 Tab. Pacific**
Salbutamol 4mg/tablet
200's pack: 68.00 MRP

❖ **BRONCOTROL Syp. Pacific**
Salbutamol 2mg/5ml: syrup.
100ml bot: 16.11 MRP

❖ **BRONDYL Syp. Millat**
Salbutamol 2mg/5ml: syrup.
100ml bot: 16.11 MRP

❖ **BRONIL-S Syp. Seema**
Salbutamol 2mg/5ml: syrup.
100ml bot: 16.00 MRP

❖ **BRONKOLAX-2 Tab. Beximco**
Salbutamol 2mg/tablet
100's pack: 26.00 MRP

❖ **BRONKOLAX-4 Tab. Beximco**
Salbutamol 4mg/tablet
100's pack: 34.00 MRP

❖ **BRONKOLAX Syp. Beximco**
Salbutamol 2mg/5ml: syrup
100ml bot: 16.08 MRP

❖ **BTLIN Syp. Bikalpa**
Salbutamol 2mg/5ml: syrup.
100ml bot: 15.00 MRP

❖ **D-BUTAMOL Syp. Doctor's**
Salbutamol 2mg/5ml: syrup
100ml bot: 16.00 MRP

❖ **DECABUTAMOL Syp. Decent Pharma**
Salbutamol 2mg/5ml: syrup
100ml bot: 16.11 MRP

❖ **DILATOL Syp. Chemico**
Salbutamol 2mg/5ml: syrup
100ml bot: 15.90 MRP

❖ **E-SALBUTAMOL Tab. Elixir**
Salbutamol 4mg/tablet.
100's pack:

❖ **ETOL Syp. Edruc**
Salbutamol 2mg/5ml: syrup
100ml bot: 15.50 MRP

❖ **G-SALBUTAMOL Tab. Gonoshastha**
Salbutamol 4mg/tablet.
100's pack: 34.00 MRP.

❖ **G-SALBUTAMOL Syp. Gonoshastha**
Salbutamol 2mg/5ml.: Syrup
100ml bot: 14.16 MRP

❖ **G-SALBUTAMOL Inj. Gonoshastha.**
Salbutamol 50mcg/ml; 20ml vial: injection
Dosage & Admin: See above under the text.
20ml vial x 1's pack: 101.15 MRP

❖ **H-SELAX Tab. Hudson**
Salbutamol 4mg/tablet
100's pack: 34.00 MRP

❖ **H-SELAX Syp. Hudson**
Salbutamol 2mg/5ml: syrup
60ml bot: 10.80 MRP
100ml bot: 15.00 MRP

❖ **KOPTOLIN Tab. Skylab**
Salbutamol 2mg & 4mg/tablet
2mg x 500's pack: 125.00 MRP
4mg x 200's pack: 66.00 MRP

❖ **KOPTOLIN Syp. Skylab**
Sulbutamol 2mg/5ml: syrup
100ml bot: 15.00 MRP
60ml bot: 8.60 MRP

❖ **ORSAL Syp. Orion**
Sulbutamol 2mg/5ml: syrup
100ml bot: 15.00 MRP

❖ **PULMOLIN Tab. Opsonin**
Salbutamol 4mg/tablet
4mg x 100's pack: 33.00 MRP

❖ **PULMOLIN Syp. Opsonin**
Sulbutamol 2mg/5ml: syrup
60ml bot: 10.45 MRP

❖ **RESDIL Tab. Cosmo Pharma**
Salbutamol 4mg/tablet
200's pack: 66.00 MRP

❖ **RESPOLIN Tab. Jayson**
Salbutamol 4mg/tablet
100's pack: 33.00 MRP

❖ **RESPOLIN Syp. Jayson**
Salbutamol 2mg/5ml: syrup
100ml bot: 16.00 MRP

❖ **SALBU Tab. Bio-pharma**
Salbutamol 2mg & 4mg/tablet
2mg x 100's pack: 26.00 MRP
4mg x 100's pack: 30.00 MRP

❖ **SALBU Syp. Bio-pharma**
Salbutamol 2mg/5ml: syrup
60ml bot: 11.00 MRP
100ml bot: 15.00 MRP

❖ **SALBUT Syp. General**
Salbutamol 2mg/5ml: syrup
100ml bot: 16.10 MRP

❖ **SALBUTAL Tab. Sanofi-aventis**
Salbutamol 2mg, 4mg/tablet
2mg x 500's pack: 130.00 MRP
4mg x 500's pack: 170.00 MRP

❖ **SALBUTAMOL Syp. Amico**
Salbutamol 2mg/5ml: syrup
100ml bot: 15.00 MRP

❖ **SALIX Tab. Modern**
Salbutamol 4mg/tablet
100's pack: 34.00 MRP

❖ **SALIX-4 Syp. Modern**
Salbutamol 2mg/5ml: syrup
60ml bot: 10.80 MRP
100ml bot: 16.12 MRP

❖ **SALMOL Tab. Medimet**
Salbutamol 4mg/tablet
100's pack: 34.00 MRP

❖ **SALMOL Syp. Medimet**
Salbutamol 2mg/5ml: syrup
60ml bot: 10.70 MRP
100ml bot: 15.98 MRP

❖ **SALMOLIN Tab. Acme**
Salbutamol 4mg/tablet
100's pack: 34.00 MRP

❖ **SALMOLIN Syp. Acme**
Salbutamol 2mg/5ml: syrup
60ml bot: 10.83 MRP
100ml bot: 15.50 MRP

❖ **SALMOLIN-200 Inhaler (DPI) Acme**
Salbutamol 200mcg/rotacap, dry powder inhalation (DPI).
Salmolin inhaler (DPI) is administered by 'rotahaler' device through oral inhalation route.
Dose: See above under the text.
30 caps pack: 37.50 MRP

❖ **SALMOLIN Inhaler (MDI) Acme**
Salbutamol 100mcg/puff or actuation; metered dose inhalation (MDI).
Dose: See above under the text.
200 doses unit: 140.00 MRP

❖ **SALOL Syp. Cosmic**
Salbutamol sulph. 2mg/5ml: syrup
100ml bot: 16.00 MRP

❖ **SALOMAX 100 Inhaler (MDI) SK+F**
Salbutamol 100mcg/puff or actuation; metered dose inhalation (MDI).
Dose: See above under the text.
200 dose unit: 130.00 MRP

❖ **SULBION Syp. Kumudini**
Salbutamol sulph. 2mg/5ml: syrup
100ml bot: 15.00 MRP

❖ **SULTOLIN Tab. Square**
Salbutamol 4mg/tablet
200's x 4mg: 68.00 MRP

❖ **SULTOLIN-SR Tab. Square**
Salbutamol 8mg/tablet (sustained release)
200's pack: 156.00 MRP

❖ **SULTOLIN Syp. Square**
Salbutamol sulph. 2mg/5ml: syrup
100ml bot: 15.68 MRP

❖ **SULTOLIN 100 Inhaler (MDI) Square**
Salbutamol 100mcg/puff or actuation; metered dose inhalation (MDI).
Dose: See above under the text.
200 dose unit: 180.00 MRP

❖ **SULTOLIN Refill Square**
Salbutamol 100mcg/puff or actuation; refill for metered dose inhalation (MDI).
200 doses refill: 135.00 MRP

❖ **SULTOLIN Cozycap Inhaler (DPI) Square**
Salbutamol 200mcg/cozycap; dry powder inhalation (DPI).
Sultolin cozycap inhaler (DPI) is administered by cozyhaler device through oral inhalation route.
Dosage: See above under the text.
200mcg x 30 caps pack: 39.90 MRP

❖ **SULTOLIN Respirator Soln. Square**
Salbutamol sulphate 5mg/ml (i.e 0.5%) for use with a nebuliser or ventilator.
Dose: See above under the text.
20ml pack: 120.00 MRP

❖ **TOLIN Tab. Mystic**
Salbutamol 4mg/tablet
100's pack: 34.00 MRP

❖ **TOLIN Syp. Mystic**
Salbutamol 2mg/5ml: syrup
100ml bot: 15.00 MRP

❖ **VENLET Syp. Apollo**
Salbutamol 2mg/5ml: syrup
100ml bot: 15.00 MRP

❖ **VENOL Tab. Gaco**
Salbutamol 2mg/tablet
100's pack: 26.50 MRP

❖ **VENOL SR Tab. Gaco**
Salbutamol 8mg/tablet (sustained release)
100's pack: 75.53 MRP

❖ **VENOL Syp. Gaco**
Salbutamol 2mg/5ml: syrup
60ml bot: 10.75 MRP

❖ **VENTISAL Tab. Ibn Sina**
Salbutamol 4mg/tablet
100's pack: 34.00 MRP

❖ **VENTISAL Syp. Ibn Sina**
Salbutamol 2mg/5ml: syrup
100ml bot: 15.17 MRP

❖ **VENTOL Syp. CPL**
Salbutamol 2mg/5ml: syrup
100ml bot: 16.00 MRP

❖ **VENTOLEX-4 Tab. Desh**
Salbutamol 4mg/tablet
500's pack: 170.00 MRP

❖ **VENTOLEX Syp. Desh**
Salbutamol 2mg/5ml: syrup
100ml bot: 16.00 MRP

❖ **VENTOLIN Tab. GlaxoSmithKline**
Salbutamol 2mg & 4mg/tablet.
2mg x 500's pack: 131.18 MRP
4mg x 500's pack: 171.59 MRP

❖ **VENTOLIN Syp. GlaxoSmithKline**
Salbutamol sulph. 2mg/5ml: syrup
100ml bot: 16.11 MRP

❖ **VENTOLIN-SR Tab. GlaxoSmithKline**
Salbutamol 8mg/tablet (sustained release)
250's pack: 194.11 MRP

❖ **VENTOLIN Inhaler (MDI) GlaxoSmithKline**
Salbutamol 100mcg. per dose or puff; metered dose aerosol, 200 dose unit.
Dose: see above
200 dose unit: 180.00 MRP

❖ **VENTOLIN HFA Evohaler (MDI) GlaxoSmithKline**
Salbutamol 100mcg/puff or actuation: metered dose inhaler (MDI), using HFA (hydrofluoroalkane) as propellant.
Dosage & admin: See above under the text.
200 doses unit: 250.00 MRP

❖ **VENTOLIN Nebules GlaxoSmithKline**
Salbutamol sulphate 2.5mg/2.5ml (i.e 0.1%) for use with a nebuliser.
Ind. & Dose: See above; (content of each nebule may be diluted with sterile sodium chloride solution 0.9% if administration time in excess of 10 minutes is required).
2.5mg (2.5ml) x 30's pack: 803.40 MRP

❖ **VENTOLIN Respirator Soln.**
GlaxoSmithKline
Salbutamol sulphate 5mg/ml (i.e 0.5%) for use with a nebuliser or ventilator.
Dose: See above
20ml pack: 172.25 MRP

❖ **VENTOSOL Syp. Ad-din**
Salbutamol sulph. 2mg/5ml: syrup
100ml bot: 16.00 MRP

❖ **WINDEL Tab. Incepta**
Salbutamol 2mg & 4mg/tablet.
2mg x 200's pack: 52.00 MRP
4mg x 200's pack: 68.00 MRP

❖ **WINDEL Syp. Incepta**
Salbutamol sulph. 2mg/5ml: syrup
100ml bot: 16.00 MRP

❖ **WINDEL Respiratory Soln. Incepta**
Salbutamol sulphate 5mg/ml (i.e 0.5%) for use with a nebuliser or ventilator.
Dose: See above under the text.
20ml pack: 120.00 MRP

❖ **ZENTOLIN Syp. Zenith**
Salbutamol sulph. 2mg/5ml: syrup
60ml bot: 10.00 MRP
100ml bot: 15.60 MRP

LEVOSULBUTAMOL[26,48]

LEVOSULBUTAMOL: Tablet/Syrup/Inhaler
Levosulbutamol is a single isomer beta-2 agonist that differs from racemic sulbutamol by elimination of (S)-salbutamol. It is available as levosulbutamol sulphate INN equivalent to levosulbutamol 1mg & 2mg/tablet, 1mg/5ml of syrup & 50mcg/puff (inhalation).
Mode of action: Levosulbutamol is an effective bronchodilator whose primary mechanism of action is unimpeded by (S)-salbutamol. Thus, when compared with racemic salbutamol, clinically comparable bronchodilatation can be achieved with doses that substantially lessen beta-mediated side effects. Levosulbutamol produces bronchodilatation through stimulation of beta-2-adrenergic receptors in bronchial smooth muscle, thereby causing relaxation of bronchial muscle fibres.
Ind: Levosulbutamol is indicated for the treatment & prevention of bronchospasm in adults, adolescents, & children 6 yrs of age & older with reversible obstructive airway disease.
C/I: History of hypersensitivity to levosulbutamol or any of its components.
S/E: Hypocalcaemia, palpitation, fine tremors of the skeletal muscle & muscle cramps may occur. The other likely side effects are nausea, vomiting, burning substernal or epigastric pain & diarrhea.
Precaution: Particular caution is advised in acute severe asthma as this effect may be potentiated by hypoxia & by concomitant treatment with xanthine derivatives, steroids & diuretics. Serum potassium levels should be monitored in such situations.
Pregnancy & lactation: The drug should be used during pregnancy only if the potential benefit justifies the potential risk of the fetus. It is not known whether levosulbutamol is excreted in human milk. So, caution should be exercised when oral levosulbutamol is administered to a nursing woman.
Dosage & admin: Oral therapy: Adults & adolescents above 12 years: 1mg to 2mg, 3 times daily.
Children (6-11yrs)- 1mg (5ml) 3 times daily.
By inhalation: Adults & children above the age of 4 years: For the relief of acute episodes of bronchospasm- 1 or 2 puffs as necessary; to prevent allergen or exercise induced bronchospasm- 2 puffs 15 minutes prior to exercise or exposure to allergen. The maximum dose is 8 puffs in 24 hours.
Drug inter: Other short-acting sympathomimetic bronchodilators or epinephrine should be used with caution with levosulbutamol. If additional adrenergic drug are to be administered by any route, they should be used with cautoin to avoid deleterious cardiovascular effects.

❖ **ACTISAL Tab. Silva**
Levosalbutamol sulphate INN equivalent to 1mg & 2mg/tablet
1mg x 100's pack: 90.00 MRP
2mg x 100's pack: 170.00 MRP

❖ **ACTISAL Syp. Silva**
Levosalbutamol sulphate INN equivalent to 1mg/5ml: syrup.
50ml bot: 25.00 MRP
100ml bot: 35.00 MRP

❖ **AIRE Tab. Delta**
Levosalbutamol sulphate INN equivalent to 1mg & 2mg/tablet
1mg x 50's pack: 45.00 MRP
2mg x 50's pack: 85.00 MRP

❖ **AIRE Syp. Delta**
Levosalbutamol sulphate INN equivalent to 1mg/5ml: syrup.
50ml bot: 25.00 MRP

❖ **AROLAX Tab. Navana**
Levosalbutamol sulphate INN equivalent to 1mg & 2mg/tablet
1mg x 100's pack: 90.00 MRP
2mg x 100's pack: 170.00 MRP

❖ **AROLAX Syp. Navana**
Levosalbutamol sulphate INN equivalent to 1mg/5ml: syrup.
100ml bot: 35.00 MRP

❖ **ASMOLEX-L Tab. Aristopharma**
Levosalbutamol sulphate INN equivalent to 1mg & 2mg/tablet
1mg x 100's pack: 80.00 MRP
2mg x 50's pack: 75.00 MRP
❖ **ASMOLEX-L Syp. Aristopharma**
Levosalbutamol sulphate INN equivalent to 1mg/5ml: syrup.
100ml bot: 35.00 MRP
❖ **BRIZY Tab. SK+F**
Levosalbutamol sulphate INN equivalent to 1mg & 2mg/tablet
1mg x 50's pack: 42.50 MRP
2mg x 50's pack: 85.00 MRP
❖ **BRIZY Syp. SK+F**
Levosalbutamol sulphate INN equivalent to 1mg/5ml: syrup.
60ml bot: 28.00 MRP
❖ **BRODIL LEVO Tab. ACI**
Levosalbutamol sulphate INN equivalent to 1mg & 2mg/tablet
1mg x 100's pack: 90.00 IP
2mg x 100's pack: 170.00 IP
❖ **BRODIL LEVO Syp. ACI**
Levosalbutamol sulphate INN equivalent to 1mg/5ml: syrup.
100ml bot: 35.00 IP
❖ **LEBROD Tab. Alco Pharma**
Levosalbutamol sulphate INN equivalent to 1mg & 2mg/tablet
1mg x 100's pack: 75.00 MRP
2mg x 100's pack: 140.00 MRP
❖ **LEBROD Syp. Alco Pharma**
Levosalbutamol sulphate INN equivalent to 1mg/5ml: syrup.
100ml bot: 35.00 MRP
❖ **LESAL Tab. Apex**
Levosalbutamol sulphate INN equivalent to 1mg & 2mg/tablet
1mg x 50's pack: 45.00 MRP
2mg x 50's pack: 75.00 MRP
❖ **LESAL Syp. Apex**
Levosalbutamol sulphate INN equivalent to 1mg/5ml: syrup.
60ml bot: 25.00 MRP
❖ **LEVAIR Tab. General**
Levosalbutamol sulphate INN equivalent to 1mg & 2mg/tablet
1mg x 100's pack: 90.00 MRP
2mg x 50's pack: 85.00 MRP
❖ **LEVAIR Syp. General**
Levosalbutamol sulphate INN equivalent to 1mg/5ml: syrup.
100ml bot: 35.00 MRP
❖ **LEVENTA Syp. Novo Healthcare**
Levosalbutamol sulphate INN equivalent to 1mg/5ml: syrup.
100ml bot: 35.00 MRP
❖ **LEVOSTAR Tab. Square**
Levosalbutamol sulphate INN equivalent to 1mg & 2mg/tablet
1mg x 100's pack: 90.00 MRP
2mg x 50's pack: 85.00 MRP
❖ **LEVOSTAR Syp. Square**
Levosalbutamol sulphate INN equivalent to 1mg/5ml: syrup.
50ml bot: 25.00 MRP
100ml bot: 38.00 MRP
❖ **LEVOSTAR Inhaler Square**
Levosalbutamol sulphate INN equivalent to 50mcg/puff or dose: metered dose inhalation (MDI).
Dosage & admin: See above under the text.
200 doses unit: 200.00 MRP
❖ **LIVODEL Tab. Popular**
Levosalbutamol sulphate INN equivalent to 1mg & 2mg/tablet
1mg x 100's pack: 90.00 IP
2mg x 100's pack: 170.00 IP
❖ **LIVODEL Syp. Popular**
Levosalbutamol sulphate INN equivalent to 1mg/5ml: syrup.
100ml bot: 35.00 IP
❖ **PULMOLIN L Tab. Opsonin**
Levosalbutamol sulphate INN equivalent to 1mg & 2mg/tablet
1mg x 100's pack: 90.00 MRP
2mg x 100's pack: 170.00 MRP
❖ **PULMOLIN L Syp. Opsonin**
Levosalbutamol sulphate INN equivalent to 1mg/5ml: syrup.
50ml bot: 25.00 MRP
100ml bot: 35.00 MRP
❖ **PURISAL Tab. Incepta**
Levosalbutamol sulphate INN equivalent to 1mg & 2mg/tablet
1mg x 100's pack: 90.00 MRP
2mg x 100's pack: 170.00 MRP
❖ **PURISAL Syp. Incepta**
Levosalbutamol sulphate INN equivalent to 1mg/5ml: syrup.
50ml bot: 25.00 MRP
100ml bot: 35.00 MRP
❖ **PURISAL Nebuliser Soln. Incepta**
Levosalbutamol sulphate 0.31mg/3ml ampoule, 0.63mg/3ml ampoule, & 1.25mg/3ml ampoule; for use with a nebuliser or ventilator.
Dosage & admin: See above under the text.
0.31mg (3ml amp) x 10's pack: 100.00 MRP
0.63mg (3ml amp) x 10's pack: 150.00 MRP
1.25mg (3ml amp) x 10's pack: 200.00 MRP
❖ **RESPIRA Tab. Beximco**
Levosalbutamol sulphate INN equivalent to 1mg & 2mg/tablet
1mg x 100's pack: 90.00 MRP
2mg x 100's pack: 170.00 MRP
❖ **RESPIRA Syp. Beximco**
Levosalbutamol sulphate INN equivalent to 1mg/5ml: syrup.
100ml bot: 35.00 MRP
❖ **RESPIRA Inhaler Beximco**
Levosalbutamol sulphate INN equivalent to 50mcg/puff or dose: metered dose inhalation (MDI).
Dosage & admin: See above under the text.
200 doses unit: 200.00 IP
❖ **TRULAX Syp. Renata**
Levosalbutamol sulphate INN equivalent to 1mg/5ml: syrup.
100ml bot: 35.00 MRP

TERBUTALINE[21,63]

TERBUTALINE: Tablet/Syrup
Introduction & mode of action: Terbutaline is a direct-acting sympathomimetic with predominantly beta-adrenergic activity and is a selective beta2-adrenergic receptor agonist used as bronchodilator.
Ind: Bronchospasm in br. asthma, chronic bronchitis, status asthmaticus, emphysema.
S/E & Cautions: See above under sulbutamol; premature labour.
Dosage & admin: Use in bronchospasm: Adults- during the first 1-2 weeks 2.5mg 3 times daily is recommended. The dose may then be increased to 5mg 3 times daily to achieve adequate bronchodi-latation. Elderly- dosage as for adults. Children 7 to 15 years- the usual starting dose is 2.5mg 2 times daily; in some patients, the dose may need to be increased to 2.5mg 3 times daily.

❖ **TERVENT Tab. UniHealth**
Terbutaline sulphate BP 2.5mg/tablet
100's pack: 50.00 MRP
❖ **TERVENT Syp. UniHealth**
Terbutaline sulphate BP 1.5mg/5ml: syrup
100ml bot: 25.00 MRP

BAMBUTEROL[65]

BAMBUTEROL HCl: Tablet/Syrup
Bambuterol is an oral long-acting b2-agonist, used to treat symptoms of chronic bronchial asthma, particularly in patients who are unable to use inhaled products such as children and the elderly.
Bambuterol is available as tablet and syrup.
Mode of action: Bambuterol is a long-acting β_2-agonist. It is a pro-drug of terbutaline that is slowly converted in the body to the active form, thus providing a prolonged action.
Ind: Chronic bronchial asthma, specially for prevention of nocturnal symptoms; bronchospasn (breathing difficulties due to a narrowing of the airways); chronic obstructive airway disease. Bambuterol is not intended to treat acute asthma attacks.
C/I: Cirrhosis and severe hepatic impairment. Hypersensitivity to bambuterol or any of its. component. Avoid in children due to limited clinical data in this age group.
S/E: Fine tremor, nervous tension, headache, peripheral vasodilatation, palpitations, tachycardia, rarely muscle cramps; hypersensitivity reactions including paradoxical bronchospasm, urticaria, angioedema reported.
Precautions & warnings: Reduce the dose in renal impairment. Care should be taken with patients suffering from myocardial insufficiency or thyrotoxicosis. Due to the hyperglycaemic effects of b2-stimulants, additional blood glucose measurements are recommended initially when bambuterol therapy is commenced in diabetic patients. Due to positive inotropic effects of b2-agonists, these drugs should not be used in patients with hypotrophic cardiomyopathy.
Pregnancy & lactation: There is no definite evidence of ill consequence during pregnancy. Nevertheless, the drug should not be used during the first trimester of pregnancy, unless the expected benefit is thought to outweigh any possible risk to the foetus. It is excreted in the breast milk, so patients taking this drug should not breast-feed.
Dosage & admin: Adult- 20mg once daily at bedtime is effective if the patient has been previously tolerated with b2- agonists stimulants; other patients, initially 10mg once

daily at bedtime, increased if necessary after 1-2 weeks to 20mg once daily.
In elderly, dose adjustment is not required.
In significant hepatic dysfunction, not recommended because of unpredictable conversion to terbutaline.
Drug inter: Bambuterol inhibits plasma cholinesterases and can prolong the action of drugs such as suxamethonium that is inactivated by these enzymes. Bambuterol may partly or totally inhibit the effect of b-blockers.

❖ **AERODYL Tab. Silva**
Bambuterol hydrochloride 10mg & 20mg/tablet
10mg x 100's pack: 150.00 MRP
20mg x 100's pack: 300.00 MRP
❖ **AERODYL Syp. Silva**
Bambuterol hydrochloride 5mg/5ml: syrup.
60ml bot: 20.00 MRP
❖ **AMBUTEROL Tab. A.P.C Pharma**
Bambuterol hydrochloride 10mg/tablet
10mg x 100's pack: 150.00 IP
❖ **AMBUTEROL Syp. A.P.C Pharma**
Bambuterol hydrochloride 5mg/5ml: syrup.
60ml bot: 20.00 IP
❖ **BAMBELOR Tab. Inecpta**
Bambuterol hydrochloride 10mg & 20mg/tablet
10mg x 100's pack: 150.00 MRP
20mg x 100's pack: 300.00 MRP
❖ **BAMBELOR Syp. Inecpta**
Bambuterol hydrochloride 5mg/5ml: syrup.
60ml bot: 25.00 MRP
❖ **BUTEROL Tab. ACI**
Bambuterol hydrochloride 10mg/tablet
10mg x 100's pack: 150.00 MRP
❖ **BUTEROL Syp. ACI**
Bambuterol hydrochloride 5mg/5ml: syrup.
100ml bot: 35.00 MRP
❖ **DILATOR Tab. SK+F**
Bambuterol hydrochloride 10mg & 20mg/tablet
10mg x 100's pack: 200.00 MRP
20mg x 100's pack: 350.00 MRP
❖ **DILATOR Syp. SK+F**
Bambuterol hydrochloride 5mg/5ml: syrup.
60ml bot: 25.00 MRP
❖ **MUTEROL Tab. Acme**
Bambuterol hydrochloride 10mg/tablet
10mg x 100's pack: 150.00 MRP
❖ **MUTEROL Syp. Acme**
Bambuterol hydrochloride 5mg/5ml: syrup.
60ml bot: 20.00 MRP
❖ **OPTIVEN Tab. Square**
Bambuterol hydrochloride 10mg & 20mg/tablet
10mg x 100's pack: 200.00 MRP
20mg x 100's pack: 350.00 MRP
❖ **OPTIVEN Syp. Square**
Bambuterol hydrochloride 5mg/5ml: syrup.
60ml bot: 30.00 MRP

TULOBUTEROL[21,63]

TULOBUTEROL HCl: Tablet/Syrup
Tulobuterol, due to its highly selective action on the B2 adrenoceptors, relaxes the bronchial smooth muscles and has been shown to be clinically effective in the symptomatic treatment of reversible obstructive airway disease (ROAD), such as bronchial asthma and also in bronchitis and emphysema.
Ind: Indicated in reversible airways obstruction & used in prophylaxis and control of bronchospasm in bronchial asthma, chronic bronchitis, asthmatic bronchitis, pulmonary emphysema, bronchiectasis, tracheo-bronchitis with bronchoconstriction, other bronchospastic disorders and conditions characterized by bronchoconstriction.
Routine maintenance therapy in chronic asthma and bronchitis
S/E: Like other sympathomimetic agents tulobuterol can cause less frequent adverse reactions, such as hypertension, palpitation, angina, vomiting, vertigo, central nervous system stimulation, insomnia and headache.
Cautions: Tulobuterol should be used with caution in patients with diabetes mellitus, hypertension and hyperthyroi-dism. Caution should be taken in cardiac patients, especially those with arrythmia and coronary insufficiency.
Pregnancy & Lactation: Safety of tulobuterol during pregnancy and lactation has not been established yet . It is not known whether tulobuterol is excreted in breast milk and or has a harmful effect to the new born. Therefore, prescription in such cases should be done considering the risk benefit ratio.
Dosage & Admin: Adult, a convenient starting dose for adults and children of 12 years and over, is 1 mg twice daily. After 7-10 days of treatment, the dose should be increased to 2mg twice daily to achieve greater effect. Some patients however may require dosage adjustment and the adult dose may be increased upto 6mg daily when needed. Children, 6-10 years 0.5-1mg twice daily; over 10 years 1-2mg twice daily. (Who are supposed to take syrup- 1-6years, $^1/_4$- $^1/_2$ tsf twice daily; 6-12 years, $^1/_2$-1 tsf twice daily). The above recommended dosage may have to be modified depending upon the patient response.

❖ **BRETON Tab. Drug Inter.**
Tulobuterol hydrochloride 2mg/tablet
100's pack: 250.00 MRP
❖ **BRETON Syp. Drug Inter.**
Tulobuterol hydrochloride 1mg/5ml: syrup
60ml bot: 35.00 MRP

Long-acting selective beta$_2$-adrenoceptor stimulants

SALMETEROL[21,33,48]

SALMETEROL XINAFOATE: Metered dose inhalation (MDI)/Dry powder inhalation (DPI)
It is a long-acting adrenoceptor stimulant. It is usually not used for the relief of an acute attack, but added to existing corticosteroid and/or sodium cromoglycate therapy and not replace it.
Ind: Reversible airways obstruction (including nocturnal asthma and prevention of exercise-induced bronchospasm) in patients requiring long-term regular bronchodilator therapy, who should normally also be receiving regular and adequate doses of inhaled anti-inflammatory drugs (e.g corticosteroids and/or in children, sodium cromoglycate) or oral corticosteroids.
S/E: Cautions: See under salbutamol; important: significant incidence of paradoxical bronchospasm, which may be clinically important in severe or deteriorating asthma.
Dosage & admin: Metered dose inhalation (25mcg/puff or dose): By inhalation, 50mcg (2 puffs) twice daily; up to 100 mcg (4 puffs) twice daily in more severe airways obstruction. Children: Under 4 years, not recommended, over 4 years, 50mcg (2 puffs) twice daily.
Dry powder inhalation (50mcg/puff or dose): By inhalation, 50mcg (1 puff) twice daily; up to 100mcg (2 puffs) twice daily in more severe airways obstruction. Children: Under 4 years, not recommended, over 4 years, 50mcg (1 puff) twice daily.

❖ **AXINAT Inhaler (MDI) Acme**
Salmeterol xinafoate 25mcg/puff or dose: metered dose inhalation (MDI).
200 doses unit: 190.00 MRP
❖ **BEXITROL Inhaler (MDI) Beximco**
Salmeterol xinafoate 25mcg/puff or dose: metered dose inhalation (MDI).
120 inhalations unit: 190.00 IP
❖ **SALMATE Inhaler (MDI) Square**
Salmeterol xinafoate 25mcg/puff or dose: metered dose inhalation (MDI).
200 doses unit: 190.00 MRP

Other adrenoceptor stimulants

The drugs discussed under this group are- Adrenaline, Ephedrine, Orciprenaline etc.

ADRENALINE[21,33]

ADRENALINE: Injection/Inhaler
Ind: Bronchospasm, chronic bronchitis; emergency treatment of acute anaphylaxis.
C/I: Hyperthyroidism, hypertension, coronary disease
S/E: Anxiety, tremor, tachycardia, cardiac arrhythmias.
Cardiac disease; diabetes; should not be used within 2 wks. of MAO inhiitors. Not to be given intravenously because of increased risk of cardiac irregularities.
Dose: Bronchospasm, as a single dose by s.c. or i.m or by oral inhalation of nebu-lised solution, 200-500 mcg. by aerosol inhalation, 280-560 mcg. (1-2 puffs) upto 3-4 times daily. Acute anaphylaxis, by s.c. or i.m injection, 0.5-1mg.

❖ **ADRENALINE Inj. Waldamar**
Adrenaline1mg in 1ml (1: 1000) ampoule: injection
100's pack: 236.15 MRP
N.B: Price could not be revised.

❖ **ADRENALINE Inj. Pharmachim**
Adrenaline1mg in 1ml (1: 1000) ampoule: injection
100's pack: 266.20 MRP
Preparation: May not be available
❖ **ADRINE Inj. Gaco**
Adrenaline 1mg in 1ml (1: 1000) ampoule: injection
1 ampoule: 5.00 MRP

EPHEDRINE[21,33]

EPHEDRINE HCI: Tablet/Syrup/ Drop/Injection.
Ind: Bronchospasm, nasal congestion.
C/I: Hyperthyroidism, hypertension, coronary disease, renal impairulent.
S/E: Tremor, tachycardia, insomnia, urinary retention, dry moulh cold extremities.
Caution: Cardiac diseases, diabetes. Should not be given within 2 wks. of MAO inhibitors.
Adult: By mouth, 15-60mg 3 times daily
Child: upto 1 yr. 7.5 mg; 1-5yrs, 15mg; 6-12yrs. 30 mg; all 3 times daily.

❖ **ASMAPHEN Syp. Seema**
Ephedrine hydrochloride 15mg/5ml: syrup
100ml bot: 28.00 MRP
❖ **EPHEDRINE Tab. Seema**
Ephedrine hydrochloride 30mg/tablet
500' pack: 149.00 MRP
❖ **EPHIDIN Inj. Popular**
Ephedrine hydrochloride 25mg/5ml ampoule: injection
10 amps pack: 120.00 MRP
❖ **FEDRIN Tab. Jayson**
Ephedrine hydrochloride 30mg/tablet
1000' pack: 250.00 IP
❖ **FEDRIN Inj. Jayson**
Ephedrine hydrochloride 25mg/5ml ampoule: injection
10 amps pack: 120.00 IP
❖ **G-EPHEDRINE Inj. Gonoshasthaya**
Ephedrine hydrochloride 25mg/5ml ampoule: injection
5 amps pack: 60.00 MRP
❖ **NORDRINE Inj. Incepta**
Ephedrine hydrochloride 25mg/5ml ampoule: injection
10 amps pack: 120.00 MRP

Antimuscarinic bronchodilators[21]

Antimuscarinic bronchodilators are more effective in chronic obstructive pulmonary disease rather than in relieving asthma.
Ipratropium & oxitropium may be used by inhalation in the management of chronic asthma in patients who already require high-dose inhaled corticosterodis. Ipratropium by nebulisation may be added to other standard treatment in life threatening asthma or where acute asthma fails to improve with standard therapy.
Tiotropium is a long-acting, antimuscarinic agent, which is often referred to as an anticholinergic. It has similar affinity to the subtypes of muscarinic receptors. It is indicated for the long-term, once-daily approach to manage and maintenance treatment of bronchospasm associated with chronic obstructive pulmonary disease (COPD), including chronic bronchitis and emphysema.

IPRATROPIUM[26,42]

IPRATROPIUM BROMIDE: Oral inhalation
Mode of action: Ipratropium bromide is a synthetic quaternary anti-cholinergic parasympatholytic ammonium compound, chemically related to atropine which appears to inhibit vagally mediated reflexes by antagonizing the action of acetylcholine- the neurotransmitter released by the vagus nerve. It is a competitive antagonist at the muscarinic acetylcholine receptors. Anti-cholinergics prevent the increases in intracellular concentration of cyclic GMP which are caused by interaction of acetylcholine with the muscarinic receptors on bronchial smooth muscle. The bronchodilation following oral inhalation or nasal spray of ipratropium bromide is primarily a local, site-specific effect, not a systemic one.
Ind: As bronchodilator in treatment of chronic reversible airway obstruction as in asthma and chronic obstructive pulmonary disease (COPD) including chronic bronchitis and emphysema.
Treatment of acute reversible airways obstruction.
Ipratropium bromide inhalation aerosol or nasal spray is not indicated for the initial treatment of acute episodes of bronchospasm where rapid response is required.
C/I: Konwn hypersensitivity to ipratropium bromide, atropine or its derivative. Also contraindicated in patients with a history of hypersensitivity to soya lecithin or related food products such as soybean, lecithin and peanut.
S/E: Idiosyncratic reactions to ipratropium bromide are rare. Severe adverse effects due to inhibition of muscarinic receptors and ganglion blockade are theoretically possible but unlikely with the metered-dose aerosol.
Regular use of ipratropium can lead to a dry mouth through inhibition of salivary flow.
Other common adverse reactions reported are-dryness of the mouth & oropharynx, nausea, dizziness, blurred vision/difficulty in accommodation & drying of secretions.
Less frequently reported adverse reac-tions include tachycardia, nervousness, paresthesia, drowsiness, co-ordination difficulty, itching, hives, flushing, alopecia, constipation, tremor & mucosal ulceration.
Case of precipitation or worsening of narrow-angle glaucoma, acute eye pain & hypotension also have been reported.
Allergic-type reactions such as skin rash, angio-oedema of tongue, lips & face, urticaria (including giant urticaria), laryngospasm and anaphylactic reaction have also been reported; with positive rechallenge in some cases.
Ipratropium bromide does not produce adverse effects on mucocilliary clearance, in contrast to atropine and other muscarinic antagonists.
There is no evidence that in the therapeutic dose range ipratropium bromide has any adverse effect on bronchial secretion.
Precaution: Patients should be advised that temporary blurring of vision, precipitation or worsening of narrow angle glaucoma or eye pain may result if the aerosol is sprayed into the eyes.
If recommended dosage does not provide relief or symptoms become worse, patients should seek immediate medical attention. While taking ipratropium bormide inhalation aerosol, other inhaled drugs should not be used unless prescribed.
Immediate hypersensitivity reactions may occur after administration of ipratropium bromide, as demonstrated by rare cases of urticaria, angiooedema, rash, bronchospasm and oropharyngeal oedema.
Dosage & admin: For oral inhalation/nasal spray only. Adults- the usual dose is 1-2 puffs/spray 3 or 4 times daily. Single dose up to 80mcg (4 puffs or spray of 20mcg/puff or 2 puffs of 40mcg/puff) may be required to obtain maximum benefit during early treatment. Patients may take additional inhalations as required; however, the total number of oral inhalations or nasal spray should not exceed 12 puffs (20mcg/puff) or 6 puffs (40mcg/puff) in 24 hours.
Children- 6 to 12 years- usually 1-2 puffs or spray (20mcg/puff) 2 to 3 times daily. Below 6 years- the usual dose is 1 puff or spray (20mcg) 3 times daily. In order to ensure that the inhaler is used correctly, administration should be supervised by an adult.
On clinical trials, no specific information & adverse reactions on the use of the product in the elderly is available.
Drug inter: Ipratropium bromide has been used concomitantly with other drugs, including sympathomimetic bronchodilators, methylxanthines, steroids and cromolyn sodium, commonoy used in treatment of COPD, without any adverse drug reactions.

❖ **G-IPRA Respirator Soln. Gonoshasthaya**
Ipratropium bromide 250mcg/ml: Respirator solution for inhalation.
20ml vial: 60.00 MRP
❖ **IPRAMID Inhalar Beximco**
Ipratropium bromide 20mcg/puff (spray): oral inhalar.
Each canister of Ipramid inhaler contains 4mg of ipratropium bromide BP.
200 puffs inhalar: 200.00 IP
❖ **IPREX Inhalar Square**
Ipratropium bromide 20mcg/puff (spray): oral inhalar.
Each canister of Iprex inhaler contains 4mg of ipratropium bromide BP.
200 puffs inhalar: 200.00 MRP
❖ **IPREX Respirator Soln. Square**
Ipratropium bromide 250mcg/ml: Respirator solution for inhalation.
20ml pack: 130.00 MRP

TIOTROPIUM[42]

TIOTROPIUM BROMIDE: DPI/MDI
Tiotropium is a long-acting antimuscarinic bronchodilator. It is available as dry powder inhalation (DPI) & metered dose aerosol inhalation (MDI).
DPI: Tiotropium bromide monohydrate INN 18mcg/Rotacap. Dry powder inhalation is for oral inhalation only.

MDI: Tiotropium bromide monohydrate INN 9mcg/puff; Metered dose aerosol inhalation (MDI).

Mode of action: Tiotropium is a long-acting, antimuscarinic agent, which is often referred to as an anticholinergic. It has similar affinity to the subtypes of muscarinic receptors, M1 to M5. In the airways, it exhibits it's effects through inhibition of M3-receptors at the smooth muscle leading to bronchodilation. The bronchodilation following inhalation of tiotropium is predominantly a site-specific effect.

Ind: Tiotropium bromide is indicated for the long-term, maintenance treatment of bronchospasm associated with chronic obstructive pulmonary disease (COPD), including chronic bronchitis and emphysema.

C/I: Tiotropium is contraindicated in patients with a history of hypersensitivity to atropine or its derivatives, including ipratropium, or to any component of the product.

S/E: The most commonly reported adverse reaction was dry mouth; it was usually mild and often resolved during continued treatment. Other reactions reported include constipation, increased heart rate, blurred vision, glaucoma, urinary difficulty, and urinary retention.

Precaution: As an anticholinergic drug, tiotropium may potentially worsen symptoms and signs associated with narrow-angle glaucoma, prostatic hyperplasia or bladder neck obstruction and should be used with caution in patients with any of these conditions. As a predominantly renally excreted drug, patients with moderate to severe renal impairment treated with tiotropium should be monitored closely. Eye pain or discomfort, blurred vision, visual halos or colored images in congestion and corneal edema may be signs of acute narrow angle glaucoma. Should any of these signs and symptoms develop, consult a physician immediately. Miotic eye drops alone are not considered to be effective treatment.

Pregnancy & lactation: Tiotropium should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. The safety and effectiveness of tiotropium has not been studied during labor and delivery. Clinical data from nursing women exposed to tiotropium are not also available, so, caution should be exercised if tiotropium is administered to a nursing mother.

Dosage & admin: ***Metered dose inhalation (MDI):***

Adults and adolescents 12 years & older: The recommended dosage of tiotropium bromide is the inhalation of 2 puffs (9mcg/puff) once daily for the maintenance treatment of bronchospasm associated with COPD. No adjustment of tiotropium dosage in geriatric patients is warranted.

Children below 12 years: Not recommended.

MDI or Metered dose inhaler is to be used by aerosol inhalation only.

Dry powder inhalation (DPI):

Adults and adolescents 12 years & older: The recommended dosage of tiotropium bromide is the inhalation of 1 Rotacap (18mcg/Rotacap) once daily for the maintenance treatment of bronchospasm associated with COPD. No adjustment of tiotropium dosage in geriatric patients is warranted.

Children below 12 years: Not recommended.

DPI or Dry powder inhalation is for oral inhalation only. Rotahaler device is used for dry powder inhalation.

Rinsing the mouth after dry powder inhalation is advised.

Drug inter: Tiotropium has been used concomitantly with other drugs commonly used in COPD without increases in adverse drug reactions. These include sympathomimetic bronchodilators, methylxanthines, and oral and inhaled steroids. However, the co-administration of tiotropium with other anticholinergic-containing drugs (e.g ipratropium) has not been studied and is therefore not recommended.

❖ **NORVENT Inhaler (MDI) Square**
Tiotropium bromide monohydrate INN
9mcg/puff: Metered dose inhalation (MDI).
120 puffs unit: 350.00 MRP

❖ **TOPIUM Inhaler (DPI) Acme**
Tiotropium bromide monohydrate INN
18mcg/Rotacap: Dry powder inhalation (DPI).
30 Rotacaps pack: 150.00 MRP

❖ **TRIOMID Inhaler (MDI) Beximco**
Tiotropium bromide monohydrate INN
9mcg/puff: Metered dose inhalation (MDI).
120 puffs unit: 350.00 MRP

Theophylline & related drugs[21]

Theophylline is a methylxanthine derivative, used as bronchodilator to treat moderate to severe reversible broncho-spasm that occurs in asthma or chronic obstructive pulmonary disease (COPD).

Theophylline is given by injection in its salt form as aminophylline, a mixture of theophylline with ethylenediamine, which is about 20 times more soluble than theophylline alone, but have no major therapeutic advantage. Aminophylline thus contains about 85% theophylline.

AMINOPHYLLINE[21,48]

AMINOPHYLLINE: Tablet/Injection/ Suppos.

Aminophylline BP is a stable mixture or combination of theophylline and ethylenediamine. Ethylenediamine confers greater solubility in water.

Ind: It is indicated for the treatment and prophylaxis of bronchospasm associated with asthma, emphysema and chronic bronchitis. Also indicated in adults for the treatment of cardiac asthma and left ventricular or congestive cardiac failure.

C/I: Aminophylline should not be administered to patients with hypersensitivity to xanthines or ethylenediamine. It should not be administered to patients with active peptic ulcer, since it may increase the volume and acidity of gastric secretions.

S/E: The most common adverse effects are gastric irritation, nausea, vomiting, epigastric pain and tremor. These are usually early signs of toxicity; however, with high doses, ventricular arrhythmias or seizures may be the first signs to appear. Adverse reactions include:

Gastrointestinal symptoms- such as nausea, vomiting, epigastric pain, hematemesis, diarrhoea, anorexia, intestinal bleeding and reactivation of peptic ulcer; *CNS symptoms-* headache, irritability, restlessness, insomnia, twitching, convulsion & reflex hyperexcitability; *Cardiovascular symptoms-* palpitation, tachycardia, hypotension, circulatory failure, ventricular arrhythmias, and flushing; *Renal symptoms-* albuminuria, diuresis and hematuria; *Others-* hyperglycemia, tachypnea and inappropriate ADH syndrome.

Precautions: Aminophylline should be given with caution to patients with peptic ulceration, hyperthyroidism, hypertension, cardiac arrhythmias or other cardiovascular diseases, or epilepsy, as these conditions may be exacerbated. It should also be given with caution to patients with heart failure, hepatic dysfunction, chronic alcoholism, acute febrile illness, and to neonates and the elderly, since in all of these circumstances theophylline clearance may be decreased, resulting in increases in serumtheophylline concentrations and serum half-life.

Pregnancy & lactation: Theophylline crosses the placental barrier and also passes freely into breast milk, where concentrations are similar to plasma levels. Safe use in pregnancy has not been established relative to possible adverse effects on fetal development. Therefore, use of aminophylline in pregnant women should be weighed against the risk of uncontrolled disease.

Dosage: ***By mouth:*** **Adult, initially 100-200mg 2-3 times daily for one week, then maintenance 200-600mg twice daily. Child, under 1 year not recommended; over 1 year 12mg/kg body-wt. twice daily.**

Special tablet preparations (LA/Rtd tablet): **See below under individul product.**

Note: **Tablets should be swallowed whole and not chewed because of the structure of the tablet.**

By injections: **Adult, 125-250mg by slow (over 10-15 mins) i.v injection, usually given in 5% dextrose in aqua or normal saline. (rapid injection may result in cardiac arrest). Children, 2-3mg/kg 2-3 times daily by very slow i.v injection.**

By rectum in suppositories: **Adult, 360mg once or twice daily. Child, once or twice daily, upto 1 yr. 12.5-25mg; 1-5 yrs. 50-100mg; 6-12 yrs. 100-200mg.**

Drug inter: Beta-blockers (e.g propranolol) may oppose the effects of aminophylline. Barbiturates, phenytoin and smoking may decrease theophylline levels in blood or circulation.

❖ **AMINOPHYLLINE Tab. Ambee**
Aminophylline 100mg/tablet
500's pack: 190.00 MRP

❖ **AMINOPHYLLINE Inj. Ambee**
Aminophylline 125mg/5ml ampoule: injection
5 amps pack: 27.25 MRP

❖ **AMINOPHYLLINE Tab. Bristol**
Aminophylline 100mg/tablet
200's pack: 190.00 MRP

❖ **AMINOPHYLLINE Tab. Chemist**

Aminophylline 100mg/tablet
500's pack: 190.00 MRP

❖ **AMINOPHYLLINUM Rtd. Tab. Sandoz/ Novartis**
Aminophylline 350mg/tablet (retard)
Dosage & admin: The recommended initial dose is 1 tablet (350mg) every 12 hours. The dosage may be gradually increased to a maximum of 2 tablets (700mg) twice a day depending on the patients response.
50's pack: 111.00 MRP

❖ **BROLIN Rtd. Tab. Delta**
Aminophylline 350mg/tablet (retard)
Dosage & admin: The recommended initial dose is 1 tablet (350mg) every 12 bours. The dosage may be gradually increased to a maximum of 2 tablets (700mg) twice a day depending on tbe patient?s response.
50's pack: 109.98 MRP

❖ **FILIN Tab. Opsonin**
Aminophylline 100mg/tablet
100's pack: 38.00 MRP

❖ **FILIN Inj. Opsonin**
Aminophylline 125mg/5ml ampoule:injection
10 amps pack: 44.00 MRP

❖ **LARNOX-LA Tab. Beximco**
Aminophylline BP 350mg/tablet (sustained release-long acting).
Dosage & admin: The recommended initial dose is 1 tablet (350mg) every 12 hours. The dosage may be gradually increased to a maximum of 2 tablets (700mg) twice a day depending on the patient?s response.
350mg x 50's pack: 110.00 IP

❖ **MINOMAL R Tab. Pacific**
Aminophylline 175 & 350mg/tablet (retard)
Dosage & admin: The recommended initial dose is 1 tablet (350mg) every 12 horus. The dosage may be gradually increased to a maximum of 2 tablets (700mg) twice a day depending on the patients response.
175mg x 100's pack: 123.00 MRP
350mg x 50's pack: 110.00 MRP

❖ **MINOMAL-R SR Tab. Pacific**
Aminophylline dihydrate 600mg/tablet (sustained release).
Dosage: 1/2 -1 tablet every 12 hours, unless otherwise directed by the doctor. Administration on a full stomach is advised.
20's pack: 72.00 MRP

❖ **RESTOPHYLLINE Tab. Gaco**
Aminophylline 100mg/tablet
100's pack: 38.43 MRP

THEOPHYLLINE Sodium Glycinate[21,36]

THEOPHYLLINE Sodium Glycinate: Tablet/Capsule/Syrup
Structurally theophylline is a xanthine derivative. It is available in tablet, capsule & syrup form.
Mode of action: Theophylline is a bronchodilator. It directly relaxes the smooth muscle of the bronchial airways, pulmonary airways and pulmonary blood vessels.
Ind: Theophylline is indicated for relief and/or prevention of symptoms from asthma and reversible bronchospasm associated with chronic bronchitis and emphysema.
C/I: Known hypersensitivity to its components; patients with active peptic ulcer disease.
S/E: The following side effects have been observed: Nausea, vomiting, epigastric pain and diarrhoea; Headache, irritability, restlessness, insomnia, muscles twitching; Palpitation, tachycardia, hypotension, circulatory failure; Tachypnoea; Potentiation of diuresis. Others: Alopecia, hyperglycemia, rash etc.
Precautions: Theophylline should not be administered concurrently with other xanthine. Use with caution in patients with hypoxemia, hypertension, or those with history of peptic ulcer. Do not attempt to maintain any dose that is not tolerated.
Pregnancy & lactation: It is also not known whether theophylline can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Xanthine should be given to a pregnant woman only if clearly needed. Theophylline is excreted into breast milk and may cause irritability or other signs of toxicity in nursing infants. So, it should be given to nursing mother only if clearly needed.
Dosage & admin: Dosages are adjusted to maintain serum theophylline concentrations tbat provide optimal relief of symptoms with minimal side effects. The recommended dosages for achieving serum theophylline concentrations within the accepted therapeutic range are as following:
Adult: 125-250mg 3-4 times daily.
Children: 1-6 months, 10mg/kg/day; 6 months-1 year 15mg/kg/day; 1-9 years, 24mg/kg/day; 10-16 years, 18mg/kg/day, in 3-4 divided doses.
Drug inter: Allopurinol, cimetidine, ciprofloxacin, erythromycin, lithium carbonate, oral contraceptive, propranolol increases serum theophylline level when administered concomitantly and rifampicin decreases serum theophylline level.
N.B: 2 gm of theophylline sodium glycinate is approximately equivalent to 1.1 gm theophylline anhydrous.

❖ **AROFIL 300 SR Tab. Incepta**
Theophylline sodium glycinate 300mg/tablet. (sustained release).
50's pack: 100.00 IP

❖ **AROFIL 400 SR Tab. Incepta**
Theophylline sodium glycinate 400mg/tablet. (sustained release).
50's pack: 133.50 IP

❖ **ASMAIN Syp. Edruc**
Theophylline sodium glycinate 120mg/5ml: syrup 100ml bot: 25.00 MRP

❖ **ASMANYL 300 SR Tab. Square**
Theophylline sodium glycinate 300mg/tablet. (sustained release).
100's pack: 196.00 MRP

❖ **ASMANYL 400 SR Tab. Square**
Theophylline sodium glycinate 400mg/tablet. (sustained release).
30's pack: 80.10 MRP

❖ **CONTINE Syp. Aristopharma**
Theophylline sodium glycinate 120mg/5ml: syrup 100ml bot: 23.77 MRP

❖ **EOFYLIN SR Cap. Salton**
Theophylline sodium glycinate USP 300mg/capsule. (sustained release).
100's pack: 293.00 MRP

❖ **EOFYLIN Syp. Salton**
Theophylline sodium glycinate 120mg/5ml: syrup 100ml bot: 25.00 MRP

❖ **G-THEOPHYLLINE Tab. Gonoshastha**
Theophylline sodium glycinate 300mg/tablet
100's pack: 81.00 MRP

❖ **G-THEOPHYLLINE Syp. Gonoshastha**
Theophylline sodium glycinate 120mg/5ml: syrup 100ml bot: 13.70 MRP

❖ **JASOPHYLIN Tab. Jayson**
Theophylline sodium glycinate 300mg/tablet
100's pack: 130.00 MRP

❖ **JASOPHYLIN Syp. Jayson**
Theophylline sodium glycinate 120mg/5ml: syrup 100ml bot: 25.00 MRP

❖ **NEONATE Syp. Skylab**
Theophylline sodium glycinate 120mg/5ml: syrup 50ml bot: 13.70 MRP

❖ **TEOLEX CR 300 Cap. ACI**
Theophylline sodium glycinate 300mg/capsule. (controlled release).
50's pack: 175.00 IP

❖ **TEOLEX CR 400 Cap. ACI**
Theophylline sodium glycinate 400mg/capsule. (controlled release).
50's pack: 211.50 IP

❖ **THENGLATE SR Tab. Acme**
Theophylline sodium glycinate 250mg & 400mg/tablet. (sustained release).
250mg x 50's pack: 87.50 MRP
400mg x 50's pack: 133.50 MRP

❖ **THENGLATE Syp. Acme**
Theophylline sodium glycinate 120mg/5ml: syrup 100ml bot: 23.77 MRP

❖ **THEOGLATE Syrup CPL**
Theophylline sodium glycinate 120mg/5ml: syrup 50ml bot: 12.00 MRP

❖ **THEONATE Tab. Doctors.**
Theophylline sodium glycinate 300mg/tablet.
100's pack: 131.00 MRP

❖ **THEONATE Syp. Doctors**
Theophylline sodium glycinate 120mg/5ml: syrup 50ml bot: 15.20 MRP
100ml bot: 25.00 MRP

❖ **THEOVENT Cap. Drug Inter.**
Theophylline sodiun glycinate 300mg/capsule (sustained release).
100's pack: 292.00 MRP

❖ **THEOVENT SR Tab. Drug Inter.**
Theophylline sodium glycinate 400mg/tablet. (sustained release).
50's pack: 133.50 MRP

❖ **UNIKON Syp. Ibn Sina**
Theophylline sodium glycinate 120mg/5ml: syrup 100ml bot: 25.00 MRP

THEOPHYLLINE Anhydrous[21,36]

THEOPHYLLINE ANHYDROUS: Tablet/Capsule
Ind: Bronchospasm associated with asthma, ch.

bronchitis, emphysema.
C/I; S/E; Cautions: See above under the text of 'theophylline sodium glycinate'.
Pregnancy & lactation: See above under the text of 'theophylline sodium glycinate'.
Dosage: Adult, over 50kg 250-300mg (ltab.) twice daily in the morning & evening. Adults with low body weight & adolescents, half the adult dose (1/2 tab.) 2-3 times daily.
Children: 10-15mg/kg given in 2 divided doses at 12 hours intervals. It is better taken after meals with a little water. It is suitable for longterm administration.
Drug inter: See above under the text of 'theophylline sodium glycinate'.

❖ **ASMACON SR Tab. Pacific**
Theophylline anhydrous 400mg/tablet (sustained release).
50's pack: 133.50 MRP
❖ **CONTINE-400 Tab. Aristopharma**
Theophylline anhydrous 400mg/tablet (in continuous controlled release system).
Dose: See above under the text; but instead of two times, give once daily.
100's pack: 267.00 MRP
❖ **QUIBORN-T/SR Tab. Squibb/ Kapricorn**
Theophylline anhydrous 300mg/tablet (timed/sustained release).
100's pack: 546.00 MRP

Compound bronchodilator prepns.

SALBUTAMOL + IPRATROPIUM[42,48]

SALBUTAMOL + IPRATROPIUM BROMIDE: Metered dose inhalation (MDI)
This is a combined metered dose inhalation formulation of two components- salbutamol, a 2 adrenergic bronchodilator and ipratropium bromide, an anti-cholinergic bronchodilator. Each single actuation of this inhalation aerosol delivers 20 g of ipratropium bromide BP and 100 g of salbutamol BP.
Ind: This combined inhalation aerosol is indicated for use in patients with chronic obstructive pulmonary disease (COPD) on a regular aerosol bronchodilator who continue to have evidence of bronchospasm and who require a second bronchodilator.
C/I: See above under the text of 'salbutamol' & 'ipratropium bromide' separately.
S/E; Precautions: See above under the text of 'salbutamol' & 'ipratropium bromide' separately.
Pregnancy & lactation: There are no adequate and well-controlled studies of salbutamol & ipratropium bromide combination inhalation aerosol in pregnant women. So, the use of this combination aerosol product for the treatmnt of COPD during pregnancy and labor should be restricted to those patients in whom the benefits clearly outweigh the risk to the fetus.
It is not known whether the components of salbutamol & ipratropium bromide combination inhalation aerosol are excreted in human milk. However, because many drugs are excreted in human milk, caution should be exercised when salbutamol & ipratropium bromide combination inhalation aerosol is administered to a nursing mother.
Dosage & admin: Adults (including the elderly and adolescents over 12 years of age): The dose of this combined inhalation aerosol is 2 puffs 4 times a day. Patients may take additional inhalations as required; however, the total number of inhalations should not exceed 12 in 24 hours.
Children (below 12 years): Not recommended.

❖ **IPRASOL Inhaler (MDI) Beximco**
Each single actuation or puff of this inhalation aerosol delivers 100mcg of salbutamol BP & 20mcg of ipratropium bromide BP .
200 puffs unit: 230.00 IP
❖ **SALPIUM Inhaler (MDI) Acme**
Each single actuation or puff of this inhalation aerosol delivers 100mcg of salbutamol BP & 20mcg of ipratropium bromide BP .
200 puffs unit: 230.00 MRP
❖ **SULPREX Inhaler (MDI) Square**
Each single actuation or puff of this inhalation aerosol delivers 100mcg of salbutamol BP & 20mcg of ipratropium bromide BP .
200 puffs unit: 225.00 MRP
❖ **SULPREX Refill Square**
Each single actuation or puff of this refill aerosol delivers 100mcg of salbutamol BP & 20mcg of ipratropium bromide BP .
200 puffs refill: 200.00 MRP

2. PROPHYLACTICS OF ASTHMA[21]

2.1 Cromoglycate & related drugs: such as, Sodium cromoglycate, Nedocromil sodium & related drug such as, ketotifen.
2.2 Leukotriene receptor antagonists: such as, Montelukast, Zafirlukast.

Cromoglycate & Related drugs

SODIUM CROMOGLYCATE[21,33,42]

SODIUM CROMOGLYCATE: Aerosol Spray
Introduction & mode of action: Sodium cromoglycate is an antiasthmatic, antiallergic and mast cell stabilizer. It has no intrinsic bronchodilator, antihistaminic, vasoconstrictor or anti-inflammatory activity. It prevents release of the mediators of type-1 allergic reactions, including histamine and slow reacting substance of anaphylaxis (SRS-A) from sensitized mast cells after the antigen-antibody reaction has taken place. The drug does not inhibit the binding of IgE to mast cells, nor the interaction between cell bound IgE and the specific antigen; instead, sodium cromoglycate suppresses the release of substances (e.g histamine, SRS-A) in response to this reaction. The drug also inhibits type-III (late allergic, arthus) reactions to a lesser extent. The action of sodium cromoglycate on the mast cell is not restricted to antigen-evoked secretion, since the drug has also
been shown to inhibit secretion induced by other mast cell secretagogues (e.g the polyamine 48/80). Bronchial asthma induced by the inhalation of antigens can be inhibited to varying degrees by sodium cromoglycate pre-treatment.Sodium cromoglycate acts locally on the lungs to which it is directly applied by inhalation.
Ind: Prophylaxis of bronchial asthma; prevention of exercise-induced asthma. Children seem to response better than adults.
It has no value in the treatment of acute attack of asthma.
C/I: Patients who have shown hypersensitivity to sodium cromoglycate or to any of its components. It is not indicated as the primary treatment of status asthmaticus or other acute episodes of asthma where intensive measures are required.
S/E: Coughing, transient bronchospasm & throat irritation due to inhalation of powder.
Precautions: The recommended dosage should be decreased in patients with renal or hepatic dysfunction.
Where a concomitant bronchodilator is prescribed, it is recommended that this be administered prior to the sodium cromoglycate inhalation.
In patients currently treated with steroids, the addition of sodium cromoglycate inhalation to the regimen may make it possible to reduce the maintenance dose or to discontinue steroid completely. The patient must be carefully supervised while the steroid dose is reduced; a rate of reduction of 10% weekly is suggested. If reduction of steroid dosage is possible, sodium cromoglycate inhalation should not be withdrawn until steroid cover has heen re-instituted.
Since the therapy is prophylactic, it is important to continue therapy in those patients who get benefit. If it is necessary to withdraw this treatment, it should be done gradually over a period of one week.
Pregnancy & lactation: As with all medication, caution should be exercised specially during the first trimester of pregnancy. Cumulative experience with sodium cromoglycate suggests that it has no adverse effects on foetal development. However, it should only be used in pregnancy where there is a clear need.
It is not known whether sodium cromoglycate is excreted in the breast milk, there is also no evidence that the use of sodium cromoglycate has any undesirable effects on the breast-fed baby.

Dose: By aerosol inhalation, adults & children- 10mg (or 2 puffs) 4 times daily initially at regular intervals in spinhaler, increasing in severe cases or duringperiods of risk to 6-8 times daily. Before exercise, additional doses may be taken. Maintenance, 5mg(1 puff) 4 times daily. Therapy should be continuous.
By inhalation of powder, adults & children- 20mg 4 times daily, increased in severe cases to 8 times daily.
By inhalation of nebulised solution, adults & children- 20mg 4 times daily, increased in severe cases to 6 times daily.

❖ **INTAL 5 Inhaler Sanofi-aventis**
Sodium cromoglycate 5mg/inhalation; 112 inhalations unit: spin inhaler.
112 inhalations unit: 515.00 MRP

KETOTIFEN[21,33]

KETOTIFEN: Tablet
Ind: Prophylaxis of bronchial asthma; symptomatic relief of allergy such as hay fever, urticaria.
C/I: Concurrent adin. of oral hypoglycaemics.
S/E: Dry mouth, sedation.
Cautions: Alertness may be impaired; avoid alcohol; previous anti-asthmatic treatment should be continued for a minimum of 2 weeks after initiation of ketotifen treatment.
Adult: 1-2 mg twice daily with food.
Child: Under 2 years, not recommended; over 2yrs. 1mg twice daily with food.

❖ **AEROFEN Tab. Silva**
Ketotifen fumerate 1mg/tablet.
50's pack: 75.00 MRP
❖ **AEROFEN Syp. Silva**
Ketotifen fumerate 1mg/5ml: syrup.
100ml bot: 35.00 MRP
❖ **ALARID Tab. Square**
Ketotifen fumerate 1mg/tablet.
100's pack: 150.00 MRP
❖ **ALARID Syp. Square**
Ketotifen fumerate 1mg/5ml: syrup.
100ml bot: 40.00 MRP
❖ **BROKET Tab. Orion**
Ketotifen fumerate 1mg/tablet.
100's pack: 150.00 MRP
❖ **BROKET Syp. Orion**
Ketotifen fumerate 1mg/5ml: syrup.
100ml bot: 40.00 MRP
❖ **FENAT Tab. Drug Inter.**
Ketotifen fumerate 1mg/tablet.
100's pack: 150.00 MRP
❖ **FENAT Syp. Drug Inter.**
Ketotifen fumerate 1mg/5ml: syrup.
100ml bot: 36.00 MRP
❖ **KETIFEN Tab. Acme**
Ketotifen fumerate 1mg/tablet.
100's pack: 150.00 MRP
❖ **KETIFEN Syp. Acme**
Ketotifen fumerate 1mg/5ml: syrup.
100ml bot: 40.00 MRP
❖ **KETODIL Cap. Techno Drugs**
Ketotifen fumerate 1mg/capsule.
50's pack: 75.00 MRP
❖ **KETOF Tab. Ibn Sina**
Ketotifen fumerate 1mg/tablet.
100's pack: 152.00 IP
❖ **KETOF Syp. Ibn Sina**
Ketotifen fumerate 1mg/5ml: syrup.
100ml bot: 40.00 IP
❖ **KETOMAR Tab. Incepta**
Ketotifen fumerate 1mg/tablet.
100's pack: 150.00 MRP
❖ **KETOMAR Syp. Incepta**
Ketotifen fumerate 1mg/5ml: syrup.
100ml bot: 40.00 MRP
❖ **KETOTIF Tab. Delta**
Ketotifen fumerate 1mg/tablet.
100's pack: 149.99 MRP
❖ **KETOTIF Syp. Delta**
Ketotifen fumerate 1mg/5ml: syrup.
100ml bot: 35.01 MRP
❖ **KOFEN Tab. Opsonin**
Ketotifen fumerate 1mg/tablet.
100's pack: 150.00 MRP
❖ **KOFEN Syp. Opsonin**
Ketotifen fumerate 1mg/5ml: syrup.
100ml bot: 35.00 MRP
❖ **MINIA Syp. Novo Healthcare**
Ketotifen fumerate 1mg/5ml: syrup.
100ml bot: 40.00 MRP
❖ **PROSMA Tab. ACI**
Ketotifen fumerate 1mg/tablet.
100's pack: 150.00 MRP
❖ **PROSMA Syp. ACI**
Ketotifen fumerate 1mg/5ml: syrup.
100ml bot: 40.00 MRP
❖ **STAFEN Tab. Aristopharma**
Ketotifen fumerate 1mg/tablet.
100's pack: 150.00 MRP
❖ **STAFEN Syp. Aristopharma**
Ketotifen fumerate 1mg/5ml: syrup.
100ml bot: 40.00 MRP
❖ **TIFEN Tab. Somatec**
Ketotifen fumerate 1mg/tablet.
100's pack: 150.00 IP
❖ **TIFEN Syp. Somatec**
Ketotifen fumerate 1mg/5ml: syrup.
100ml bot: 37.00 IP
❖ **TOFEN Tab. Beximco**
Ketotifen fumerate 1mg/tablet.
200's pack: 300.00 IP
❖ **TOFEN Syp. Beximco**
Ketotifen fumerate 1mg/5ml: syrup.
100ml bot: 40.00 IP
❖ **TOMA Tab. Navana**
Ketotifen fumerate 1mg/tablet.
100's pack: 150.00 IP
❖ **TOMA Syp. Navana**
Ketotifen fumerate 1mg/5ml: syrup.
100ml bot: 35.00 IP
❖ **TOTI Tab. SK+F**
Ketotifen fumerate 1mg/tablet.
100's pack: 150.00 MRP
❖ **TOTI Syp. SK+F**
Ketotifen fumerate 1mg/5ml: syrup.
100ml bot: 38.00 MRP
❖ **ZADIFEN Tab. UniMed/UniHealth**
Ketotifen fumerate 1mg/tablet.
50's pack: 75.00 MRP

❖ **ZADIFEN Syp. UniMed/UniHealth**
Ketotifen fumerate 1mg/5ml: syrup.
100ml bot: 35.00 MRP
❖ **ZADIT Tab. Popular**
Ketotifen fumerate 1mg/tablet.
100's pack: 150.00 IP

❖ **ZADIT Syp. Popular**
Ketotifen fumerate 1mg/5ml: syrup.
100ml bot: 40.00 IP

Leukotriene receptor antagonists

MONTELUKAST[26,46]

MONTELUKAST : Tablet/Chewable tablet/ Oral granules
Montelukast is a selective and orally active leukotriene receptor antagonist, synthesized chemically. It is used as prophylactic and also in the management of chronic asthma. It is available as- Montelukast sodium INN 4mg, 5mg & 10mg oral, orodispersible & chewable tablet.
Mode of action: Montelukast is a selective & competitive leukotriene receptor antagonist, that inhibits the cysteinyl leukotriene CysLTl to occupy the receptors. The occupation of leukotriene receptors by the cysteinyl leukotriene (CysLT1) has been correlated with the pathophysiology of asthma. Montelukast demonstrates virtually no affinity for adrenergic, histamine, serotonin, muscarinic or prostanoid receptors.
Ind: Montelukast is indicated for the prophylaxis and treatment of chronic asthma in adults and paediatric patients 2 years of age and older.
C/I: History of hypersensitivity to any component of the product.
S/E: Montelukast is usually well-tolerated. However, there may be some side- effects, which include dizziness, headache, diarrhoea, restlessness, abdominal pain, cough, fever, asthenia, rash and upper respiratory tract infection.
Precautions: Montelukast is not indicated for use in the reversal of bronchospasm in acute asthma attacks (in case of status asthmaticus).
In rare cases, patients on therapy with Montelukast may present with systemic eosinophilia, sometimes presenting with clinical features of vasculitis consistent with churg-strauss syndrome- a condition which is often treated with systemic
corticosteroid therapy . Physician should be alert to eosinophilia, vasculitic rash, worsening pulmonary symptoms, cardiac complications, and/or neuropathy presenting in their patients. A causal association between Montelukast and these underlying conditions has not been established.
Pregnancy & lactation: There are no adequate and well-controlled studies of Montelukast in pregnant women, so it should be used during pregnancy only if clearly needed.
It is also not known whether Montelukast is excreted in human milk, so caution should be exercised when Montelukast is given to a nursing mother.
Dosage & admin: Adults (15 years & over)- 10mg daily to be taken in the evening. Children, 6-14 years- 5mg daily to be taken in the evening; 2-5 years- 4mg daily to be taken in the evening. Paediatric patients younger than 2 years of age- not recommended.
Drug Inter: Montelukast has been

administered with other therapies routinely used in the prophylaxis and treatment of chronic asthma with no appropriate increase in adverse reactions.
Cytochrome P-450 inducers: Although phenobarbital induces hepatic metabolism, no dosage adjustment for montelukast is recommended. It is reasonable to employ appropriate clinical monitoring when potent cytochrome P-450 enzyme inducers, such as phenobarbital or rifampin, are co- administered with montelukast.

❖ **AERON Tab. Healthcare**
Montelukast sodium INN 10mg/tablet
10mg x 12's pack: 240.00 IP
❖ **ASMONT Tab. Somatec**
Montelukast sodium INN 5mg & 10mg/tablet
5mg x 10's pack: 85.00 MRP
10mg x 10's pack: 150.00 MRP
❖ **LUMONA 4 Oral Gran. SK+F**
Montelukast sodium INN 4mg oral granules.
4mg x 10's pack: 100.00 MRP
❖ **LUMONA 5 Chew. Tab. SK+F**
Montelukast sodium INN 5mg/tablet (chewable)
5mg x 10's pack: 100.00 MRP
❖ **LUMONA 10 Tab. SK+F**
Montelukast sodium INN 10mg/tablet
10mg x 10's pack: 200.00 MRP
❖ **M-KAST-5 Tab. Drug Inter.**
Montelukast sodium INN 5mg/tablet
5mg x 30's pack: 300.00 MRP
❖ **M-KAST-10 Tab. Drug Inter.**
Montelukast sodium INN 10mg/tablet
10mg x 10's pack: 200.00 MRP
❖ **MOKAST Tab. Alco Pharma**
Montelukast sodium INN 4mg & 10mg/tablet
4mg x 20's pack: 200.00 MRP
10mg x 10's pack: 200.00 MRP
❖ **MOLUKAT 10 Tab. Chemico**
Montelukast sodium INN 10mg/tablet
10mg x 10's pack: 200.00 MRP
❖ **MOLUS Tab. Apex**
Montelukast sodium INN 4mg & 10mg/tablet
4mg x 10's pack: 70.00 MRP
10mg x 10's pack: 150.00 MRP
❖ **MONAS Tab. Acme**
Montelukast sodium INN 4mg, 5mg & 10mg/tablet
4mg x 5's pack: 35.00 MRP
5mg x 5's pack: 50.00 MRP
10mg x 5's pack: 100.00 MRP
❖ **MONOCAST Tab. Beximco**
Montelukast sodium INN 4mg, 5mg & 10mg/tablet
4mg x 20's pack: 140.00 MRP
5mg x 20's pack: 200.00 MRP
10mg x 10's pack: 200.00 MRP
❖ **MONPROX Tab. Rangs Pharma**
Montelukast sodium INN 10mg/tablet
10mg x 10's pack: 200.00 MRP
❖ **MONTAIR Tab. Incepta**
Montelukast sodium INN 4mg, 5mg & 10mg/tablet
4mg x 30's pack: 210.00 MRP
5mg x 30's pack: 300.00 MRP
10mg x 20's pack: 400.00 MRP
❖ **MONTENE Chew. Tab. Square**
Montelukast sodium INN 4mg & 5mg/tablet (chewable)
4mg x 10's pack: 70.00 MRP
5mg x 10's pack: 100.00 MRP
❖ **MONTENE 10 Tab. Square**
Montelukast sodium INN 10mg/tablet
10mg x 10's pack: 200.00 MRP
❖ **ODMON Tab. Renata**
Montelukast sodium INN 5mg & 10mg/tablet
5mg x 10's pack: 150.00 MRP
10mg x 10's pack: 300.00 MRP
❖ **PROVAIR Chew. Tab. UniHealth**
Montelukast sodium INN 4mg & 5mg/tablet
4mg x 20's pack: 160.00 MRP
5mg x 20's pack: 200.00 MRP
❖ **PROVAIR 10 Tab. UniHealth**
Montelukast sodium INN 10mg/tablet
10mg x 10's pack: 200.00 MRP
❖ **REVERSAIR Orodispersible Tab. ACI**
Montelukast sodium INN 4mg & 5mg/tablet (orodispersible)
4mg x 20's pack: 140.00 IP
5mg x 20's pack: 200.00 IP
❖ **REVERSAIR Tab. ACI**
Montelukast sodium INN 10mg/tablet
10mg x 20's pack: 400.00 IP
❖ **TRILOCK Tab. Opsonin**
Montelukast sodium INN 4mg, 5mg & 10mg/tablet
4mg x 20's pack: 140.00 MRP
5mg x 20's pack: 200.00 MRP
10mg x 20's pack: 400.00 MRP

ZAFIRLUKAST[46,95]

ZAFIRLUKAST: Tablet
Zafirlukast is a leukotriene receptor antagonist, synthesized chemically. It is used as prophylactic and in the management of chronic asthma.
Mode of action: Zafirlukast is a selective, competitive antagonist of cysteinyl leukotrienes (LTC4, LTD4 & LTE4) at the cysteinyl leukotriene receptor (currently designated as CysLT1). Zafirlukast demonstrates virtually no affinity for adrenergic, histamine, serotonin, muscarinic or prostanoid receptors.
Ind: Zafirlukast is indicated for the prophylaxis and the management of chronic asthma in adults and children aged 12 years and over.
C/I: History of hypersensitivity to the product or any of its ingredients; history of moderate or severe renal impairment; hepatic impairment or cirhosis. Zafirlukast is also contraindicated in children under 12 years of age until safety information is available.
Adverse effects: Zafirlukast may be associated with headache or gastrointes-tinal disturbance, these symptoms are usually mild and do not necessitate withdrawal from therapy. Hypersensitivity reactions, including urticaria and angioedema have been reported; rashes, including blistering, have also been reported. Infrequently, elevated serum transaminase levels have been observed, but rarely this transaminase profile has been consistent with drug-induced hepatitis which resolved following cessation of zafirlukast therapy.
Warnings & Precautions: Zafirlukast should be taken regularly to achieve benefit, even during symptom free periods; zafirlukast therapy should normally be continued during acute exacerbations of asthma. Zafirlukast does not allow a reduction in existing steroid treatment. As with inhaled steroids and cromones (disodium cromoglycate. nedocromil sodium). zafirlukast is not indicated for use in the reversal of bronchospasm in acute asthma attacks.
Elderly- clinical experience with zafirlukast in the elderly (over 65 years) is limited and caution is recommended until furher information is available.
Renal impaiment- no dosage adjustment is necessary in patients with mild renal impairment. Zafirlukast has not been evaluated in the treatment of labile (brittle) or unstable asthma. Elevations in serum transaminases can occur during treatment with zafirlukast. These are usually asymp-tomatic and transient but could represent early evidence of hepatotoxicity. If clinical symptoms or signs suggestive of liver dysfunction occur (e.g nausea, vomiting, right upper quadrant pain, fatigue, lethargy, flu-like symptoms, enlarged liver, pruritus and jaundice), the serum transaminases, in particular serum ALT, should be measured and the patient managed accordingly. A decision to discontinue zafirlukast should be individuailsed to the patient's conditon, weighing the risk of hepatic dysfunction against the clinical benefit of zafirlukast to the patient.
Pregnancy & Latation: The safety of zafirlukast in human pregnancy has not been established, therefore, zafirlukast should be used during pregnancy only if clearly needed. Zafirlukast is excreted in human breast milk, so, zafirlukast should not be administered to mothers who are breast-feeding.
Dosage & Admin: Adults & children over 12 years of age- 20mg twice daily; it should be taken at least 1 hour before or 2 hours after meals, or as directed by the physician.
Drug inter: Please see the manufacturer's literature.

❖ **ZAFNIL Tab. General**
Zafirlukast INN 20mg/tablet
10's pack: 120.00 MRP
❖ **ZAFT Tab. Renata**
Zafirlukast INN 20mg/tablet
10's pack: 260.00 MRP

3. RESPIRATORY GLUCOCORTICOIDS: CORTICOSTEROIDS[21]

Glucocorticoid steroid preparations are found effective in asthma; they reduce bronchial mucosal inflammation by reducing oedema & secretion of mucus into the airway. Chronic obstructive pulmonary diseases usually show little or no response to corticosteroids. Whether inhaled corticosteroids improve the lung function in COPD yet not been established; but, corticosteroid inhalations are recommended for prophylactic treatment of asthma when patients are using a beta2-stimulant (agonist) 3 times a week or more or if symptoms disturb sleep more than once a week or if the patient has suffered exacerbations in the last 2 years requiring a systemic corticosteroid or a nebulised bronchodilator.21 Commonly used respiratory corticosteroids are- *Beclomethasone*

dipropionate, Budesonide, Ciclesonide, Fluticasone propionate, Mometasone furoate, Triamcinolone etc.
Mode of action: The precise mechanism of glucocorticoid action in asthma is unknown. Glucocorticoids have been shown to inhibit multiple cell types (e.g mast cells, eosinophils, basophils, lymphocytes, macrophages, and neutrophils) and mediator production and secretion (e.g histamine, eicosanoids, leukotrienes, and cytokines) involved in the asthmatic response. These anti-inflammatory actions of glucocorticoids may contribute to their efficacy in asthma.
Ind; C/I: See below under the individual preparation.
S/E: Inhaled corticosteroids have considerably fewer systemic side-effects than oral corticosteroids, but high-dose inhalations are sometimes associated with some adrenal suppression and effects on bone metabolism; also hoarseness of voice and candidiasis of mouth or throat (usually only with large doses); rearly rash.
Precautions: Active or quiescent tuberculosis; may need to reinstate systemic therapy during periods of stress or when airways obstruction or mucus prevent drug access to smaller airways. During withdrawal from oral corticosteroids, some patients may experience symptoms of systemically active corticosteroid withdrawal, e.g joint and/or muscular pain, lassitude and depression, despite maintenance or even improvement of respiratory functions. If there is paradoxical bronchospasm, steroid inhalation should be discontinued and alternative therapy should be given; or, transfer from an aerosol inhalation to a dry powder inhalation.
Because of the possibility of systemic absorption of inhaled corticosteroids, patients treated with these drugs should be observed carefully for any evidence of systemic corticosteroid effets. Particular care should be taken in observing patients post operatively or during periods of stress for evidence of inadequate adrenal respone.
Dosage & admin: See below under the individul preparation.

BECLOMETHASONE[46,47,48]

BECLOMETHASONE DIPROPIONATE: Inhaler (DPI/MDI)

Beclomethasone dipropionate is a commonly used synthetic halogenated respiratory corticosteroid with potent anti-inflammatory activity. It is available as dry powder inhaler (DPI) & metered dose aerosol inhaler (MDI).
Inhaler (DPI): Beclomethasone dipropionate, available as 100mcg, 200mcg, & 400mcg/capsule (cyclocap): Dry powder inhaler (DPI), for oral inhalation only.
Inhaler (MDI): Beclomethasone dipropionate, available as 50mcg, 100mcg, & 250mcg/puff or actuation: Metered dose inhaler (MDI), using CFC (chlorofluorocarbon) as propellant.
Inhaler HFA (MDI): Beclomethasone dipropionate, available as 50mcg & 100mcg/puff or actuation: Metered dose inhaler (MDI), using HFA (hydrofluoroalkane) as propellant.
CFC (Chlorofluorocarbon): CFC- using as MDI propellant is safe for human, but, as it emits CFC to the environment, it harms the planet by depleting ozone layer.
HFA (Hydrofluoroalkane): Recently an advanced HFA (Hydrofluoroalkane) technology has developed as MDI propellant replacing CFC propellant. HFA is an ozone-benign, environment friendly, CFC-free MDI propellant.
Mode of action: See above under the text of respiratory corticosteroids.
Ind: Prophylaxis and maintenance treatment of asthma specially if not fully controlled by bronchodilators or cromoglycate.
S/E; Cautions: See above under the text of respiratory corticosteroids.
Dosage & admin:
By inhalation (DPI): **Adults & adolescents: Recommended starting dose is 200mcg twice daily or 100mcg 3-4 times daily; in more severe cases initially 600-800mcg may be given daily.**
Children (5-11 yrs): **50-100mcg 2-4 times daily. Dry powder inhaler (DPI) is administered by a device (such as Cozyhaler, Cyclohaler, Rotahaler) through oral inhalation route only. Rinsing the mouth after inhalation is advised.**
By inhalation (MDI): **Adults & adolescents: Recommended starting dose- 500mcg (250mcg/puff) twice daily or 250mcg (250mcg/puff) four times daily; if necessary may be increased to 500mcg (250mcg/puff) 3-4 times daily in severe condition. High doses upto 2000mcg in a day may control asthmatics not adequately controlled with more conventional doses. The usual recommended maintenance dose is 100-250mcg given 3 or 4 times a day. Or, alternatively 200-500mcg given twice daily has been found effective in some patients.**
Children (5-11 yrs): **The usual starting dose is 100mcg twice daily. Some patients may require 100mcg 3 to 4 times daily or 200mcg twice daily. Total dose for children should not exceed 500mcg daily.**
By inhalation HFA (MDI): **The recommended dosage of HFA based inhalation aerosol relative to traditional CFC based inhalation is lower due to differences in delivery characteristics between the products.**
Adults & adolescents: **Recommended starting dosage- in patients previously treated with bronchodilators alone, is 50-100mcg twice daily, may be increased upto 400mcg twice daily; dosage in patients previously treated with inhaled corticosteroid, is 50-200mcg twice daily, may be increased upto 400mcg twice daily.**
Children (5-11 yrs): **Recommended starting dosage- in patients previously treated with bronchodilators alone, is 50-100mcg twice daily, may be increased and maintained upto 100mcg twice daily; dosage in patients previously treated with inhaled corticosteroid, is 50-200mcg twice daily, may be maintained upto 100mcg twice daily.**[48]

❖ **ASCON Inhaler (MDI) Acme**
Ascon 100: Beclomethasone dipropionate 100mcg/ puff or actuation: metered dose inhaler (MDI).
Ascon 250: Beclomethasone dipropionate 250mcg/puff or actuation: metered dose inhaler (MDI).
Ind: Bronchial asthma
Dosage & admin: See above under the text (Dosage of inhaler MDI).
Ascon 100 x 200 doses unit: 200.00 MRP
Ascon 250 x 200 doses unit: 250.00 MRP

❖ **BECLOD Inhaler (DPI) Acme**
Beclod-100: Beclomethasone dipropionate 100mcg/capsule (Rotacap): dry powder inhalation (DPI).
Beclod-200: Beclomethasone dipropionate 200mcg/capsule (Rotacap): dry powder inhalation (DPI).
Rotacap contains single dose dry powder for oral inhalation, specially to be used with 'Rotahaler'.
Ind: Bronchial asthma
Dosage & admin: See above under the text (Dosage of inhaler DPI).
Beclod 100 x 30 doses (rotacap): 45.00 MRP
Beclod 200 x 30 doses (rotacap): 63.60 MRP

❖ **BECLOMIN Inhaler (MDI) Square**
Beclomin 100: Beclomethasone dipropionate 100mcg/ puff or actuation: metered dose inhaler (MDI).
Beclomin 250: Beclomethasone dipropionate 250mcg/puff or actuation: metered dose inhaler (MDI).
Ind: Bronchial asthma
Dosage & admin: See above under the text (Dosage of inhaler MDI).
100mcg x 200 doses unit: 200.00 MRP
250mcg x 200 doses unit: 250.00 MRP

❖ **DECOMIT Inhaler (MDI) Beximco**
Decomit 100: Beclomethasone dipropionate 100mcg/ puff or actuation: metered dose inhaler.
Decomit 250: Beclomethasone dipropionate 250mcg/puff or actuation: metered dose inhaler.
Ind: Bronchial asthma.
Dosage & admin: See above under the text (Dosage of inhaler MDI).
Decomit 100 x 200 doses unit: 200.00 IP
Decomit 250 x 200 doses unit: 250.00 IP

❖ **DECOMIT HFA Inhaler (MDI) Beximco**
Decomit 50 HFA: Beclomethasone dipropionate 50mcg/puff or actuation: metered dose inhaler (MDI), using HFA (hydrofluoroalkane) as propellant.
Decomit 100 HFA: Beclomethasone dipropionate 100mcg/puff or actuation: metered dose inhaler (MDI), using HFA (hydrofluoroalkane) as propellant.
Ind: Bronchial asthma.
Dosage & admin: See above under the text (Dosage of inhaler HFA (MDI)).
Decomit 50 HFA x 200 doses unit: 220.00 IP
Decomit 100 HFA x 200 doses unit: 270.00 IP

BUDESONIDE[42]

BUDESONIDE: Inhaler

Budesonide is a synthetic corticosteroid having potent glucocorticoid activity and weak mineralocorticoid activity. It has approximately a 200-fold higher affinity for the glucocorticoid receptors. Budesonide is used as inhaler, or used with a nebuliser or ventilator, recommended mainly for prophylactic treatment of asthma.
Mode of action: See above under the text of

respiratory corticosteroids.
Ind: Budesonide inhaler or nebuliser suspension is indicated for the maintenance treatment of asthma as prophylactic therapy in adult and pediatric patients 6 years of age and older. It is also indicated for patients requiring oral corticosteroid therapy for asthma. It is not indicated for the relief of acute bronchospasm.
C/I: Budesonide is contraindicated in the primary treatment of status asthmaticus or other acute episodes of asthma where intensive measures are required.
Hypersensitivity to any of the ingredients of this preparation contraindicates its use.
S/E: Sneezing, headache, sore throat, dry mouth, nausea etc. have been reported as the common side effects.
Precautions: Budesonide inhaler or nebuliser suspension should be used with caution in patients with active or quiescent tuberculous infection, untreated fungal, bacterial, or systemic viral infections, or ocular herpes simplex infection.
Pregnancy & lactation: There are no adequate and well-controlled studies in pregnant women. Budesonide inhaler or nebuliser suspension, like other corticosteroids, should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.
It is not known whether budesonide is excreted in human milk. Because other corticosteroids are excreted in human milk, caution should be exercised when budesonide inhaler or nebuliser suspension is administered to nursing women.
Dosage & admin: The recommended starting dose and the highest recommended dose of this drug, based on prior asthma therapy, are given as below:
***Adults & Adolescents:* Patient treated previously with bronchodilators alone: Recommended starting dose is 200-400mcg twice daily; highest recommended dose is 400mcg twice daily.**
Patient treated previously with inhaled corticosteroids: Recommended starting dose is 200-400mcg twice daily; highest recommended dose is 800mcg twice daily.
Patient treated previously with oral corticosteroids: Recommended starting dose is 400-800mcg twice daily; highest recommended dose is 800mcg twice daily.
***Children 6 to 11 Years:* Patient treated previously with bronchodilators alone: Recommended starting dose is 200mcg twice daily; highest recommended dose is 400mcg twice daily.**
Patient treated previously with inhaled corticosteroids: Recommended starting dose is 200mcg twice daily; highest recommended dose is 400mcg twice daily.
In patients with mild to moderate asthma who are well-controlled on inhaled corticosteroids, dosing with the drug 200mcg or 400mcg may be considered. This can be administered once daily either in the morning or in the evening. Rinsing the mouth after each inhalation is advised.

Drug inter: In clinical studies, concurrent administration of budesonide and other drugs commonly used in the treatment of asthma has not resulted in an increased frequency of adverse effects. Ketoconazole, a potent inhibitor of cytochrome p450 3A, may increase plasma levels of budesonide during concomitant dosing. The clinical signifcance of concomitant administration of ketoconazole with this drug is not known, but caution may be warranted.

❖ **AERONID Inhaler (MDI) Beximco**
Budesonide BP 200mcg per metered dose or actuation (puff): metered-dose aerosol inhalation (MDI).
Dosage & admin: See above under the text of Budesonide.
Aeronid inhaler is administered by a metered-dose aerosol inhalation (MDI) device.
200mcg x 120 doses (puffs): 400.00 IP

❖ **BUDESON-200 Inhaler Acme**
Budesonide BP 200mcg/Rotacap: dry powder inhalation (DPI).
Budeson inhaler is a DPI (dry powder inhalation) system and administered by Rotahaler device through oral inhalation route.
Rotahaler, a dry powder inhalation (DPI) device.
Dosage & admin: See above under the text of Budesonide.
Budeson inhaler is administered by Rotahaler through oral inhalation route.
Rinsing the mouth after inhalation is advised.
200mcg x 30 doses (puffs): 75.00 MRP

❖ **BUDICORT Nebuliser Soln. Incepta**
Budesonide BP 0.5mg/2ml ampoule for use with a nebuliser or ventilator.
Dosage guideline: ***Starting dose (in case of severe asthma & while reducing or discontinuing oral corticosteroids):* Children 3 months to 12 years of age, 0.5-1mg twice daily; Adults and elderly, 1-2mg twice daily.**
***Maintenance dose:* Usually half of the above doses.**
2ml amp (0.5mg) x 5's pack: 200.00 MRP

CICLESONIDE[48]

CICLESONIDE: Inhaler (MDI)
Ciclesonide is a new generation inhaled corticosteroid for asthma control. It is available as metered dose inhalation (MDI) aerosol, in two strengths- 80mcg/actuation or dose & 160mcg/actuation or dose. Each canister contains 120 metered doses for both concentrations.
Mode of action: Ciclesonide is an ester prodrug, which is hydrolysed by endogenous esterases in the lung to form its active metabolite. The activated ciclesonide has an approximately 100-fold greater affinity for glucocorticoid receptors compared with the parent compound.
Ind: For the treatment to control persistent asthma in adults (18 years and older).
C/I: Patients with known hypersensitivity to any of the ingredients of the product.
S/E; Cautions: See above under the text of respiratory corticosteroids.
Pregnancy & lactation: If the potential benefit to the mother justifies the potential risk to the mother, foetus or child, the lowest effective dose of ciclesonide needed to maintain adequate asthma control should be used.
Dosage & admin: Starting dose of ciclesonide is 160mcg once daily, which is usual and also the maximum dose. Dose reduction to 80mcg once daily may be an effective maintenance dose for some patients. Ciclesonide should preferably be administered in the evening. Although morning dosing of ciclesonide has also been shown to be effective.
Drug inter: Co-administration with a potent inhibitor of the cytochrome P450 3A4 system (e.g ketoconazole, itraconazole and ritonavir or nelfinavir) should be considered with caution. The risk of clinical adverse effect (e.g cushingoid syndrome) cannot be excluded.
Storage: The inhaler should be stored below 30°C, protected from direct sunlight and heat. The canister should not be broken, punctured or burnt, even when apparently empty. Keep away from eyes.

❖ **CESONIDE 80 Inhaler (MDI) Beximco**
Ciclesonide 80mcg/actuation or metered dose (or puff): metered dose aerosol inhalation (MDI).
Dosage & admin: See above under the text of ciclesonide.
80mcg x 120 doses unit: 250.00 IP

❖ **CESONIDE 160 Inhaler (MDI) Beximco**
Ciclesonide 160mcg/actuation or metered dose (or puff): metered dose aerosol inhalation (MDI).
Dosage & admin: See above under the text of ciclesonide.
160mcg x 120 doses unit: 350.00 IP

❖ **EZONIDE 80 Inhaler Square**
Ciclesonide 80mcg/actuation or metered dose (or puff): metered dose aerosol inhalation (MDI).
Dosage & admin: See above under the text of ciclesonide.
80mcg x 120 doses unit: 250.00 MRP

❖ **EZONIDE 160 Inhaler Square**
Ciclesonide 160mcg/actuation or metered dose (or puff): metered dose aerosol inhalation (MDI).
Dosage & admin: See above under the text of ciclesonide.
160mcg x 120 doses unit: 350.00 MRP

SALMETEROL + FLUTICASONE[21,42,47,48]

SALMETEROL + FLUTICASONE: Accuhaler/Cozyhaler/Evohaler/Rotahaler
These combined inhalation preparations of salmeterol xinafoate INN and fluticasone propionate BP are available as Accuhaler (dry powder inhalation), Cozyhaler (dry powder inhalation), Evohaler (aerosol inhalation) and Metered dose inhaler (MDI- aerosol inhalation), and Rotahaler (dry powder inhalation), Accuhaler, Cozyhaler & Rotahalar, all are DPI (dry powder inhalation) device and are used by oral inhalation only.
Evohaler is a MDI (metered dose inhalation) device and is used by aerosol inhalation only.
Mode of action: Salmeterol xinafoate is a selective, long acting beta-2 agonist used in the treatment of asthma and other forms of diffuse airways obstruction. Fluticasone propionate is a corticosteroid with mainly glucocorticoid activity. Fluticasone propionate is stated to exert a topical effect on the lungs without systemic effects at usual dose.
Ind: Regular treatment of asthma in children and adults, where use of a combination

(bronchodilator and inhaled corticosteroid) is appropriate, including patients on effective maintenance doses of long acting beta agonists and inhaled corticosteroids, patients who are symptomatic on current inhaled corticosteroid therapy and patients on regular bronchodilator therapy who require inhaled corticosteroids.
C/I: History of hypersensitivity to any of the ingredients.
A/E: The type and severity of adverse reactions associated with each of the compounds may be expected. There is no incidence of additional adverse events following concurrent administration of the two compounds. Therefore, adverse events which have been associated with salmeterol or fluticasone propionate (steroid) are almost same as with the individual preparation. (Please see above. under the preparations of salmeterol & for fluticasone, under any steroid preparation such as beclomethasone inhaler).

Precautions & Warnings: This combined preparation is not for relief of acute symptoms, for which a fast and short-acting bronchodilator (e.g salbutamol) is required. Patients should be advised to have their relief medication available at all times. Increasing use of short-acting bronchodilators to relieve asthma symptoms indicates deterioration of asthma control. Sudden and progressive deterioration in control of asthma is potentially life threatening and the patient should be reviewed by a physician. Consideration should be given to increasing corticosteroid therapy. Also, where the current dosage has failed to give adequate cotrol of reversible obstructive airway disease, the patient should be reviewed by a physician. Consideration should be given to additional corticosteroid therapies, and include administration of antibiotics if an infection is present. Treatment with this preparation should not be stopped abruptly. As with all inhaled medication containing corticosteroids, it should be administered with caution in patients with active or quiescent pulmonary tuberculosis. These drugs should be administered with caution in patients with thyrotoxicosis. Rare instances of glaucoma and increased intra-ocular pressure have been reported following administration of inhaled corticosteroids. Care should be taken when transferring patients to this combined therapy, particularly if there is any reason to suppose that adrenal function is impaired from previous systemic steroid therapy.
Pregnancy & Lactation: Administration of drugs during pregnancy and lactation should only be considered if the expected benefit to the mother is greater than any possible risk to the foetus or child.

Dosage & admin: The combined inhaler preparations of salmeterol and fluticasone are available as Accuhaler (dry powder for inhalation), Cozyhaler (dry powder for inhalation), Evohaler (aerosol inhalation), Metered dose inhaler (MDI- aerosol inhalation) and Rotahaler (dry powder inhalation).
Accuhaler, Cozyhaler and Rotahaler, all are DPI (dry powder inhalation) device and are used by oral inhalation only.
Evohaler is a MDI (metered dose inhalation) device and is used by aerosol inhalation only.
Individual patients will experience a variable time of onset and degree of symptom relief. Generally, preparation containing fluticasone propionate inhalation has a relatively rapid onset of action for an inhaled corticosteroid. Improvement in asthma control following inhaled administration of fluticasone propionate can occur within 24 hours of beginning the treatment, although maximum benefit may not be achieved for 1 to 2 weeks or longer after starting the treatment.
Patients should be made aware that the inhaler must be used regularly for optimum benefit. Patients should be regularly reassessed by a physician, so that the strength of inhaler they are receiving remains optimal and is only changed on medical advice. The dose should be adjusted to the lowest dose at which effective control of symptoms is maintained. Patients should be given the strength of inhaler containing the appropriate fluticasone propionate dosage for the severity of their disease.
Recommended dosage regimens: See below under the individual preparation.

❖ **AROTIDE Inhaler (MDI) SK+F**
Arotide 25/125 Inhaler- metered dose inhaler containing 25mcg of salmeterol xinafoate INN and 125mcg of fluticasone propionate BP (delivered from the inhaler) per actuation.
Arotide 25/250 Inhaler- metered dose inhaler containing 25mcg of salmeterol xinafoate INN and 250mcg of fluticasone propionate BP (delivered from the inhaler) per actuation.
Ind: See above under the text of salmeterol & fluticasone combined preparation.
C/I; S/E; Warnings & precautions: See above under the text of salmeterol & fluticasone combined preparation.

Dosage & admin: General consideration: See above under the text.
Recommended dosage regimens:
Arotide inhaler is to be used by aerosol inhalation only.
Adults & adolescents over 12 years: 2 inhalations of Arotide inhaler containing fluticasone 125mcg in moderate to severe and 250mcg in severe asthma twice daily.
Children 4-12 years: Arotide 25/125 and Arotide 25/250 is not applicable in cases of children.
Special patients groups: There is no need to adjust the dose in elderly patients or in those with renal impairment. There are no data available for use of inhaler in patients with hepatic impairment.
Note: For further information, please consult manufacturer's literature.
Arotide 25/125 Inhaler (120 doses unit) x 1's: 575.00 MRP
Arotide 25/250 Inhaler (120 doses unit) x 1's: 750.00 MRP

❖ **AXINAT-F Inhaler (MDI) Acme**
Axinat-F Inhaler 125- metered dose inhaler containing 25mcg of salmeterol xinafoate INN and 125mcg of fluticasone propionate BP (delivered from the inhaler) per actuation.
Axinat-F Inhaler 250- metered dose inhaler containing 25mcg of salmeterol xinafoate INN and 250mcg of fluticasone propionate BP (delivered from the inhaler) per actuation.
Ind: See above under the text of salmeterol & fluticasone combined preparation.
C/I; S/E; Warnings & precautions: See above under the text of salmeterol & fluticasone combined preparation.
Dosage & admin: General consideration: See above under the text.
Recommended dosage regimens:
Axinat-F inhaler is to be used by aerosol inhalation only.
Adults & adolescents over 12 years: 2 inhalations of Axinat-F containing fluticasone 125mcg in moderate to severe and 250mcg in severe asthma twice daily.
Children 4-12 years: Axinat-F 125 and Axinat-F 250 is not applicable in cases of children.
Special patients groups: There is no need to adjust the dose in elderly patients or in those with renal impairment. There are no data available for use of inhaler in patients with hepatic impairment.
Note: For further information, please consult manufacturer's literature.
Axinat-F 125 (120 doses unit) x 1's: 575.00 MRP
Axinat-F 250 (120 doses unit) x 1's: 750.00 MRP

❖ **BEXITROL-F Inhaler (MDI) Beximco**
Bexitrol-F Inhaler 25/50- metered dose inhaler containing 25mcg of salmeterol xinafoate INN and 50mcg of fluticasone propionate BP (delivered from the inhaler) per actuation.
Bexitrol-F Inhaler 25/125- metered dose inhaler containing 25mcg of salmeterol xinafoate INN and 125mcg of fluticasone propionate BP (delivered from the inhaler) per actuation.
Bexitrol-F Inhaler 25/250- metered dose inhaler containing 25mcg of salmeterol xinafoate INN and 250mcg of fluticasone propionate BP (delivered from the inhaler) per actuation.
Ind: See above under the text of salmeterol & fluticasone combined preparation.
C/I; S/E; Warnings & precautions: See above under the text of salmeterol & fluticasone combined preparation.
Dosage & admin: General consideration: See above under the text.
Recommended dosage regimens:
Bexitrol-F inhaler is to be used by aerosol inhalation only.
Adults & adolescents over 12 years: 2 inhalations of Bexitrol-F containing fluticasone 50mcg in mild to moderate, 125mcg in moderate to severe and 250mcg in severe asthma twice daily.
Children 4-12 years: 2 inhalations of Bexitrol-F containing fluticasone 50mcg twice daily. The dose can be reduced to 2 inhalations once daily if control maintained.
Special patients groups: There is no need to adjust the dose in elderly patients or in those with renal impairment. There are no data available for use of inhaler in patients with hepatic impairment.
Note: For further information, please consult manufacturer's literature.
Bexitrol-F 25/50 (120 doses unit) x1's: 500.00 IP
Bexitrol-F 25/125 (120 doses unit) x1's: 575.00 IP
Bexitrol-F 25/250 (120 doses unit) x1's: 750.00 IP

❖ **SERETIDE Accuhaler/Evohaler GlaxoSmithKline**

Seretide 100 Accuhaler (DPI)- moulded plastic device containing a foil strip with 60 blisters, each containing 50mcg of salmeterol xinafoate and 100mcg of fluticasone propionate.

Seretide 250 Accuhaler (DPI)- moulded plastic device containing a foil strip with 60 blisters, each containing 50mcg of salmeterol xinafoate and 250mcg of fluticasone propionate.

Seretide 500 Accuhaler (DPI)- moulded plastic device containing a foil strip with 60 blisters, each containing 50mcg of salmeterol xinafoate and 500mcg of fluticasone propionate.

Seretide 50 Evohaler (MDI)- CFC free metered dose inhaler containing 25mcg of salmeterol xinafoate and 50mcg of fluticasone propionate (delivered from the valve) per actuation.

Seretide 125 Evohaler (MDI)- CFC free metered dose inhaler containing 25mcg of salmeterol xinafoate and 125mcg of fluticasone propionate (delivered from the valve) per actuation.

Seretide 250 Evohaler (MDI)- CFC free metered dose inhaler containing 25mcg of salmeterol xinafoate and 250mcg of fluticasone propionate (delivered from the valve) per actuation.

Ind: See above under the text of salmeterol & fluticasone combined preparation.

C/I; S/E; Warnings & precautions: See above under the text of salmeterol & fluticasone combined preparation.

Dosage & admin: General consideration: See above under the text.

Recommended dosage regimens of Seretide accuhaler:

Seretide accuhaler (dry powder inhalation) is for oral inhalation only.

Adults & adolescents over 12 years:

1 inhalation of Seretide accuhaler containing fluticasone 100mcg in mild to moderate, 250mcg in moderate to severe and 500mcg in severe asthma twice daily.

Children 4-12 years: 1 inhalation of Seretide accuhaler containing fluticasone 100mcg twice daily. The dose can be reduced to 1 inhalation once daily if control maintained.

Recommended dosage regimens of Seretide evohaler:

Seretide evohaler is to be used by aerosol inhalation only.

Adults & adolescents over 12 years:

2 inhalations of Seretide evohaler containing fluticasone 50mcg in mild to moderate, 125mcg in moderate to severe and 250mcg in severe asthma twice daily.

Children 4-12 years: 2 inhalations of Seretide evohaler containing fluticasone 50mcg twice daily. The dose can be reduced to 2 inhalations once daily if control maintained.

Special patients groups: There is no need to adjust the dose in elderly patients or in those with renal impairment. There are no data available for use of inhaler in patients with hepatic impairment.

Note: For further information, please consult manufacturer's literature.

Prices:

Seretide 100 Accuhaler x 60 doses (inhalations) unit: 1400.00 MRP

Seretide 250 Accuhaler x 60 doses (inhalations) unit: 1600.00 MRP

Seretide 500 Accuhaler x 60 doses (inhalations) unit: 2000.00 MRP

Seretide 50 Evohaler x 120 doses (inhalations) unit: 750.00 MRP

Seretide 125 Evohaler x 120 doses (inhalations) unit: 1000.00 MRP

Seretide 250 Evohaler x 120 doses (inhalations) unit: 1250.00 MRP

❖ **SALFLU Inhaler (DPI) Acme**

Salflu 100 inhaler- Salmeterol xinafoate INN 50mcg & fluticasone propionate BP 100mcg.

Salflu 250 inhaler- Salmeterol xinafoate INN 50mcg & fluticasone propionate BP 250mcg.

Salflu 500 inhaler- Salmeterol xinafoate INN 50mcg & fluticasone propionate BP 500mcg.

Salflu inhaler is a DPI (dry powder inhalation) system and administered by Rotahaler device through oral inhalation route.

Rotahaler, a dry powder inhalation (DPI) device.

Ind: See above under the text of salmeterol & fluticasone combined preparation.

C/I; S/E; Warnings & precautions: See above under the text of salmeterol & fluticasone combined preparation.

Dosage & admin: General consideration: See above under the text.

Recommended dosage regimens of Salflu inhaler:

Salflu inhaler (dry powder inhalation) is for oral inhalation only. Rinsing the mouth after inhalation is advised.

Adults & adolescents over 12 years:

1 inhalation of Salflu inhaler containing fluticasone 100mcg in mild to moderate and 250mcg in moderate to severe and 500mcg in severe asthma twice daily.

Children 4-12 years: 1 inhalation of Salflu inhaler containing fluticasone 100mcg twice daily. The dose can be reduced to 1 inhalation once daily if control maintained.

Special patients groups: There is no need to adjust the dose in elderly patients or in those with renal impairment. There are no data available for use of inhaler in patients with hepatic impairment.

Note: For further information, please consult manufacturer's literature.

Salflu 100 x 30's pack: 142.50 MRP

Salflu 250 x 30's pack: 270.00 MRP

Salflu 500 x 30's pack: 450.00 MRP

❖ **TICAMET Cozycap (DPI) Square**

Ticamet 100 cozycap (DPI)- each cozycap contains salmeterol zinafoate INN 50mcg & fluticasone propionate BP 100mcg: dry powder inhalation.

Ticamet 250 cozycap (DPI)- each cozycap contains salmeterol zinafoate INN 50mcg & fluticasone propionate BP 250mcg: dry powder inhalation.

'Cozycap' is a pre-metered single dose medication for inhalation, specially to be used with 'cozyhaler'.

Cozycap contains an admixture of micronised drug (5%) with a carrier, lactose.

'Cozyhaler'- the dry powder inhalation (DPI) device, using cozycap, which is an effective and well accepted device for patients with asthma.

Cozyhalers are commercially available from Square Pharmaceuticals Ltd.

Ind: See above under the text of salmeterol & fluticasone combined preparation.

C/I; S/E; Warnings & precautions: See above under the text of salmeterol & fluticasone combined preparation.

Dosage & admin: General consideration: See above under the text.

Recommended dosage regimens of Ticamet cozyhaler:

Ticamet cozyhaler (dry powder inhalation) is for oral inhalation only. Rinsing the mouth after inhalation is asvised.

Adults & adolescents over 12 years:

1 inhalation of Ticamet cozyhaler containing fluticasone 100mcg in mild to moderate and 250mcg in moderate to severe asthma twice daily.

Children 4-12 years: 1 inhalation of Ticamet cozyhaler containing fluticasone 100mcg twice daily. The dose can be reduced to 1 inhalation once daily if control maintained.

Special patients groups: There is no need to adjust the dose in elderly patients or in those with renal impairment. There are no data available for use of inhaler in patients with hepatic impairment.

Note: For further information, please consult manufacturer's literature.

Ticamet 100 x 30's pack: 144.90 MRP

Ticamet 250 x 30's pack: 275.10 MRP

❖ **TICAMET Inhaler (MDI) Square**

Ticamet 50 Inhaler (MDI)- each actuation or dose contains salmeterol xinafoate INN 25mcg and fluticasone propionate BP 50mcg: metered dose inhalation.

Ticamet 125 Inhaler (MDI)- each actuation or dose contains salmeterol xinafoate INN 25mcg and fluticasone propionate BP 125mcg: metered dose inhalation.

Ticamet 250 Inhaler (MDI)- each actuation or dose contains salmeterol xinafoate INN 25mcg and fluticasone propionate BP 250mcg: metered dose inhalation.

Ind: See above under the text of salmeterol & fluticasone combined preparation.

C/I; S/E; Warnings & precautions: See above under the text of salmeterol & fluticasone combined preparation.

Dosage & admin: General consideration: See above under the text.

Recommended dosage regimens:

Ticamet inhaler is to be used by aerosol inhalation only.
Adults & adolescents over 12 years:
2 inhalations of Ticamet 125 (containing fluticasone 125mcg) in moderate to severe and Ticamet 250 (containing fluticasone 250mcg) in severe asthma twice daily.
Special patients groups: There is no need to adjust the dose in elderly patients or in those with renal impairment. There are no data available for use of inhaler in patients with hepatic impairment.
Children 4-12 years: Ticamet inhaler not available for this group of patients.
Note: For further information, please consult manufacturer's literature.
Ticamet 50 Inhaler (120 doses unit) x 1's: 525.00 MRP
Ticamet 125 Inhaler (120 doses unit) x 1's: 575.00 MRP
Ticamet 250 Inhaler (120 doses unit) x 1's: 750.00 MRP

4. ANTIHISTAMINES, ANTIALLERGICS & HYPOSENSITISATION

OMALIZUMAB[54]

❖ XOLAIR Inj. Novartis
Omalizumab 150mg powder in vial and solvent for solution. Reconstituted xolair contains 125mg/ml of omalizumab (150mg in 1.2ml): injection.
Omalizumab is a humanized monoclonal antibody manufactured from a mammalian cell line.
Ind: Adults & children (6 years & above) with moderate to severe persistent allergic asthma whose symptoms are inadequately controlled with inhaled corticosteroids.
C/I: Hypersensitivity to omalizumab or to any of the excipients.
A/R: Serious/rare adverse reactions include: Angioedema, anaphylactic reactions and other allergic conditions, allergic bronchospasm. Serious additional undesirable effects reported during post marketing observations are: Allergic granulomatous angiitis, idiopatic severe thrombocytopenia. Very common undesirable effect is: Pyrexia (in children). Most common undesirable effects are: Headache (very common in children), injection site pain, swelling, erythema, pruritus, upper abdominal pain (in children). Uncommon undesirable effects are: Dizziness, somnolence, parasthesia, syncope, postural hypotension, flushing, pharyngitis, coughing, nausea, diarrhea, dyspeptic signs and symptoms, urticaria, rash, photosensitivity, weight increase, fatigue, swelling arms, influenza-like illness. Rare undesirable effects are: Parasitic infections, laryngoedema. Other additional undesirable effects reported during post marketing observations are: Alopecia, arthralgia, myalgia, joint swelling.
Precautions & warnings: Not indicated for the treatment of acute asthma exacerbations, acute bronchospasm or status asthmaticus; no abrupt discontinuation of corticosteroids; caution in use with renal or hepatic impaired patients; patients with autoimmune diseases and immune complex-mediated conditions; patients with high risk of parasitic infections; occurrence of local or systemic allergic reactions, including anaphylaxis; pregnancy; lactation; patients with diabetes mellitus, the glucose-galactose malabsorption syndrome, fructose intolerance or sucrose-isomaltase deficiency should be warned that one 150mg xolair powder and solvent dose contains 108mg of sucrose. Among the different xolair presentations, only xolair powder vial contains sucrose.
Dosage & admin: One to three injections (i.e 150-450mg) s.c. every two to four weeks according to body weight and baseline serum total IgE level.
Drug inter: None known.
Note: Before prescribing, please read full prescribing information.
150mg vial x 1's pack: 29000.00 MRP

5. COUGH PREPARATIONS[21]

5.1 Cough suppressants
5.2 Combined cough suppressants
5.3 Cough expectorants & mucolytics
5.4 Combined cough expectorants

Cough suppressants

DEXTROMETHORPHAN[21,33]

DEXTROMETHORPHN HYDROBROMIDE: Syrup
Ind: Non-narcotic antitussive agent, used in dry or painful cough. Benefits of treatment is only occasionally, such as if sleep is disturbed by a dry cough.
C/I: Contra-indication or special precaution in hepatic dysfunction
S/E: Constipation; may occasionally cause drowsiness, excitation, dizziness, mental confusion & g.i. disturbances. Large doses may cause respiratory depression.
Cautions: Asthma; as cough suppressant may cause sputum retention, this may be harmful in patients with ch. bronchitis & bronchiectasis. Though commonly used in acute bronchitis & pneumonia, they are usually unnecessary & such conditions are best treated by prompt administration of antibacterial drugs.
Adult: 5ml (1tsf) 3 or 4 times daily
Child: Under 1 year, not recommended; 1-5 yrs, 1/4 th adult dose; 6-12 yrs, 1/2 adult dose.

❖ BROFEX Syp. Square
Dextromethorphan 10mg/5ml: syrup.
100ml bot: 25.00 MRP
❖ COLDFLU Syp. Amico
Dextromethorphan 10mg/5ml: syrup.
100ml bot: 23.00 MRP
❖ D-COUGH Syp. Opsonin
Dextromethorphan 10mg/5ml: syrup.
100ml bot: 25.00 MRP
❖ DEPHAN Syp. Orion
Dextromethorphan 10mg/5ml: syrup.
100ml bot: 20.00 MRP
❖ DEXSOL Syp. Gaco
Dextromethorphan 10mg/5ml: syrup.
100ml bot: 25.00 MRP
❖ DEXTROMETHORPHAN Syp. Beximco
Dextromethorphan 10mg/5ml: syrup.
100ml bot: 25.00 MRP
❖ DEXTROMETHORPHAN Syp. Ambee
Dextromethorphan 10mg/5ml: syrup
100ml bot: 24.27 MRP
❖ EXOPHAN Syp. Apollo
Dextromethorphan 10mg/5ml: syrup.
100ml bot: 24.00 IP
❖ TOMEPHEN Syp. Incepta
Dextromethorphan 10mg/5ml: syrup.
100ml bot: 25.00 MRP
❖ TUSSIDEX Syp. UniHealth
Dextromethorphan 10mg/5ml: syrup.
100ml bot: 23.00 MRP

Combined cough suppressants[45,65,66]

DEXTROMETHORPHAN + PSEUDOEPHEDRINE + TRIPROLIDINE:
Or,
DEXTROMETHORPHAN + PSEUDOEPHEDRINE + GUAIPHENESIN: Syrup
This is a combination of dextromethorphan, an antitussive, pseudoephedrine, a decongestant and triprolidine, an antihistamine preparation.
Comp: Each 5ml syrup contains dextromethorphan hydrobromide BP 10mg, pseudoephedrine hydrochloride BP 30mg and triprolidine hydrochloride BP 1.25mg or guaiphenesin BP 100mg
Mode of action: Dextromethorphan is a cough suppressant, which has a central action on the cough centre in the medulla. Pseudoephedrine is an effective decongestant, which produces its decongestant effect in the upper respiratory tract. Triprolidine binds competitively with histamine H1 receptor and provides symptomatic relief of allergic rhinitis and common cold.
Ind: Symptomatic relief of allergic rhinitis & upper resp. tract disorders accompanied by unproductive cough.
C/I: Severe hypertension of severe coronary artery disease, MAOIs therapy within the preceeding 2 wks.
S/E: Dizziness, gastro-intestinal disturbances, fear, anxiety, restlessness, tremor, insomnia, confusion, irritability, sedation.
Caution: Severe renal & hepatic impairment, persistent cough.
Dosage & admin: Adults & children over 12 years - 2 tsf 3 times daily.
Children 2-5 years - 1/2 tsf 3 times daily; 6-12 years 1 tsf 3 times daily.

❖ **A-COF Syp. Acme**
Dextromethorphan hydrobromide 10mg, pseudoephedrine hydrochloride 30mg & triprolidine hydrochloride 1.25mg/5ml: syrup.
100ml bot: 50.00 MRP

❖ **ANKOF Syp. General**
Dextromethorphan hydrobromide 10mg, pseudoephedrine hydrochloride 30mg & triprolidine hydrochloride 1.25mg/5ml: syrup.
100ml bot: 50.00 MRP

❖ **COFNO Syp. Alco Pharma**
Dextromethorphan hydrobromide 10mg, pseudoephedrine hydrochloride 30mg & triprolidine hydrochloride 1.25mg/5ml: syrup.
100ml bot: 50.00 MRP

❖ **DECOFF Syp. Hudson**
Dextromethorphan hydrobromide 10mg, pseudoephedrine hydrochloride 30mg & triprolidine hydrochloride 1.25mg/5ml: syrup.
50ml bot: 27.00 MRP
100ml bot: 50.00 MRP

❖ **DEXITRA Syp. Novo Healthcare**
Dextromethorphan hydrobromide 10mg, pseudoephedrine hydrochloride 30mg & triprolidine hydrochloride 1.25mg/5ml: syrup.
100ml bot: 50.00 MRP

❖ **DEXODEL Syp. Delta**
Dextromethorphan hydrobromide 10mg, pseudoephedrine hydrochloride 30mg & triprolidine hydrochloride 1.25mg/5ml: syrup.
60ml bot: 35.01 MRP
100ml bot: 50.01 MRP

❖ **DEXPOTEN Syp. SK+F**
Dextromethorphan hydrobromide 10mg, pseudoephedrine hydrochloride 30mg & triprolidine hydrochloride 1.25mg/5ml: syrup.
100ml bot: 50.00 MRP

❖ **DIXXAR Syp. ACI**
Dextromethorphan hydrobromide 10mg, pseudoephedrine hydrochloride 30mg & triprolidine hydrochloride 1.25mg/5ml: syrup.
100ml bot: 50.00 IP

❖ **FREECOF Syp. Aristopharma**
Dextromethorphan hydrobromide 10mg, pseudoephedrine hydrochloride 30mg & triprolidine hydrochloride 1.25mg/5ml: syrup.
100ml bot: 50.00 MRP

❖ **KOFTEX-D Syp. Amico**
Dextromethorphan hydrobromide 10mg, guaiphenesin BP 100mg & pseudoephedrine hydrochloride 30mg/ 5ml: syrup.
100ml bot: 40.00 MRP

❖ **NILKOF Syp. Ambee**
Dextromethorphan hydrobromide 10mg, pseudoephedrine hydrochloride 30mg & triprolidine hydrochloride 1.25mg/5ml: syrup.
100ml bot: 50.00 MRP

❖ **OFKOF Syp. Square**
Dextromethorphan hydrobromide 10mg, pseudoephedrine hydrochloride 30mg & triprolidine hydrochloride 1.25mg/5ml: syrup.
100ml bot: 50.00 MRP

❖ **PRUDEX Syp. Beximco**
Dextromethorphan hydrobromide 10mg, pseudoephedrine hydrochloride 30mg & triprolidine hydrochloride 1.25mg/5ml: syrup.
100ml bot: 38.00 IP

❖ **SUDOCOF Syp. Incepta**
Dextromethorphan hydrobromide 10mg, pseudoephedrine hydrochloride 30mg & triprolidine hydrochloride 1.25mg/5ml: syrup.
100ml bot: 50.00 IP

❖ **TEXCO Syp. Globe**
Dextromethorphan hydrobromide 10mg, pseudoephedrine hydrochloride 30mg & triprolidine hydrochloride 1.25mg/5ml: syrup.
100ml bot: 50.00 MRP

❖ **TUSIVA Syp. Opsonin**
Dextromethorphan hydrobromide 10mg, pseudoephedrine hydrochloride 30mg & triprolidine hydrochloride 1.25mg/5ml: syrup.
100ml bot: 50.00 MRP

Cough expectorants & Mucolytics

AMBROXOL[42]

AMBROXOL HCl: Drop/Syrup/Capsule
Ambroxol is the active metabolite of bromhexine and it has been proven that this metabolite possesses a greater bronchosecretolytic effect than bromhexine. It is available as ambroxol hydrochloride BP 6mg/1ml drop, 15mg/5ml syrup and 75mg/capsule (sustained release).
Mode of action: Ambroxol hydrochloride improves sputum rheology by hydrating mechanism leading to liquefaction of mucus in the lumen of respiratory tract, thus facilitating expectoration of mucus and reducing dyspnea. It stimulates production of phospholipids of surfactant by alveolar cells, thus contributing to the lowering of superficial tension in the alveoli. It also reduces bronchial hyper-reactivity. Ambroxol has anti-inflammatory properties owing to the inhibitory effect on the production of cellular cytokines and arachidonic acid metabolites. In patients with COPD it traditionally improves airway patency.
Ind: i. Productive cough. ii. Acute and chronic inflammatory disorders of upper and lower respiratory tracts associated with viscid mucus including acute and chronic bronchitis. iii. Laryngitis, pharyngitis, sinusitis and rhinitis associated with viscid mucus. iv. Asthmatic bronchitis, bronchial asthma with thick expectoration. v. Bronchiectasis. vi. Chronic pneumonia.
C/I: Known hypersensitivity to ambroxol or bromhexine.
S/E: Epigastric pain, stomach overfill feeling may occur occasionally. Rarely allergic responses such as eruption, urticaria or angioneurotic edema has been reported.
Precautions: Ambroxol should be given cautiously to patients with peptic ulceration or convulsive disorders. Caution should be taken in patients with hepatic and renal insufficiency.
Pregnancy & lactation: Teratogenic and fetal toxicity studies have shown no harmful effect of ambroxol. However, it is advised not to use it in pregnancy, specially during the 1st trimester. Safety during lactation has not been established yet.
Dosage & admin: Average daily dose (preferably after meal).
Pediatric drops: 0-6 months old- 0.5ml 2 times a day; 6-12 months old- 1ml 2 times a day; 1-2 years old- 1.25ml 2 times a day.
Syrup preparation: 2-5 years old- 2.5 ml (1/2 tsf) 2-3 times a day; 5-10 years old- 5ml (1 tsf) 2-3 times a day; 10 years old & adults- 10ml (2 tsf) 3 times a day.
Tablet preparation (30mg): Adults & children over 10 years- 1 tablet (30mg) 3 times a day.
Capsule preparation (75mg SR): Adults and children over 12 years- 1 capsule once daily.
Drug inter: Ambroxol should not be taken simultaneously with antitussives (e.g codeine) because phlegm, which has been liquefied by ambroxol might not be expectorated.

❖ **ACOREX Tab. Apex**
Ambroxol hydrochloride BP 30mg/tablet
100's pack: 200.00 MRP

❖ **ACOREX Syp. Apex**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **AMBOLYT Syp. Incepta**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **AMBOLYT Drop Incepta**
Ambroxol hydrochloride BP 6mg/ml: drop
15ml bot: 20.00 MRP

❖ **AMBOSIL Syp. Silva**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **AMBOSIL Drop Silva**
Ambroxol hydrochloride BP 6mg/ml: drop
15ml bot: 20.00 MRP

❖ **AMBOTEN Syp. SK+F**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **AMBOTEN Drop SK+F**
Ambroxol hydrochloride BP 6mg/ml: drop
15ml bot: 20.00 MRP

❖ **AMBOXOL Syp. Kumudini**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **AMBOXOL Drop Kumudini**
Ambroxol hydrochloride BP 6mg/ml: drop
15ml bot: 20.00 MRP

❖ **AMBROSOL SR Cap. Popular**
Ambroxol hydrochloride BP 75mg/capsule (sustained release)
30's pack: 150.00 IP

❖ **AMBROSOL Syp. Popular**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 30.00 IP

❖ **AMBROX 75 SR Cap. Square**
Ambroxol hydrochloride BP 75mg/capsule (sustained release)
30's pack: 150.00 MRP

❖ **AMBROX Syp. Square**

Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **AMBROX Drop Square**
Ambroxol hydrochloride BP 6mg/ml: drop
15ml bot: 20.00 MRP

❖ **AMBRYL 75 SR Cap. RAK Pharma**
Ambroxol hydrochloride BP 75mg/capsule (sustained release)
30's pack: 150.00 MRP

❖ **AMSIV Syp. Delta**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **BILCO Syp. Doctor's**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **BILCO Drop Doctor's**
Ambroxol hydrochloride BP 6mg/ml: drop
15ml bot: 20.00 MRP

❖ **BOXOL Syp. Opsonin**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **BROX Tab. Alco Pharma**
Ambroxol hydrochloride BP 30mg/tablet
100's pack: 175.00 MRP

❖ **BROX Syp. Alco Pharma**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 28.00 MRP

❖ **BROX Syp. Navana**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **BROXIDIL Syp. Ziska**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **BROXOLIN Syp. Jayson**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **BROXOLIT Syp. Pacific**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 28.00 MRP

❖ **BROXOLIT Drop Pacific**
Ambroxol hydrochloride BP 6mg/ml: drop
15ml bot: 19.00 MRP

❖ **DILYT Syp. Novo Healthcare**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **FEMEX Syp. Globe**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **KUFFLIN Syp. Desh**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **LYTEX-SR Cap. Ibn Sina**
Ambroxol hydrochloride BP 75mg/capsule (sustained release)
30's pack: 150.00 MRP

❖ **LYTEX Syp. Ibn Sina**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **LYTEX Drop Ibn Sina**
Ambroxol hydrochloride BP 6mg/ml: drop
15ml bot: 20.00 MRP

❖ **MBROXOL Syp. Benham**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **MUBROX Syp. Hallmark**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **MUBROX Drop Hallmark**
Ambroxol hydrochloride BP 6mg/ml: drop
15ml bot: 20.00 MRP

❖ **MUCOBROX Syp. Somatec**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **MUCOBROX Drop Somatec**
Ambroxol hydrochloride BP 6mg/ml: drop
15ml bot: 20.00 MRP

❖ **MUCOSOL Syp. Beximco**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **MUCOSOL Drop Beximco**
Ambroxol hydrochloride BP 6mg/ml: drop
15ml bot: 20.00 MRP

❖ **MYROX SR Cap. ACI**
Ambroxol hydrochloride BP 75mg/capsule (sustained release)
30's pack: 150.00 IP

❖ **MYROX Syp. ACI**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **MYROX Drop ACI**
Ambroxol hydrochloride BP 6mg/ml: drop
15ml bot: 20.00 MRP

❖ **RIXOL Syp. Medicon**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **ROXAL Syp. Edruc**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **X-COLD Syp. Acme**
Ambroxol hydrochloride BP 15mg/5ml: syrup
100ml bot: 30.00 IP

BROMHEXINE[26.63]

BROMHEXINE: Tablet/Syrup
Bromhexine hydrochloride is a highly effective mucolytic expectorant syrup. It is used in the treatment of respiratory disorders associated with productive cough.
Mode of action: Bromhexine alters the structure of mucus to decrease its visco-sity and therefore facilitate its removal by ciliary action or expectoration.
Ind: Respiratory diseases associated with productive cough.
C/I: Patients sensitive to bromhexine hydrochloride.
S/E: Gastrointestinal side-effects may occur occasionally with bromhexine and a transient rise in serum aminotransferase values has been reported. Other adverse effects may include- headache, dizziness, sweating and skin rash.
Cautions: Since mucolytics may disrupt the gastric mucosa, so bromhexine should be used with care in patients with a history of peptic ulceration. Care is also advisable in asthmatic patients.
Dosage & Admin: Adult: The recommended daily dose is 8-16mg (10-20ml) 3-4 times daily. Children: Suggested dosage for children aged 5-10 years, 4mg (5ml) 4 times daily; under 5 years, 4mg (5ml) twice daily.

❖ **A-COLD Syp. Acme**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **BROLYT Tab. Alco Pharma**
Bromhexine hydrochloride BP 4mg & 8mg/tablet.
4mg x 50's pack: 35.00 MRP
8mg x 50's pack: 50.00 MRP

❖ **BROLYT Syp. Alco Pharma**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 27.00 MRP

❖ **BROMEX-8 Tab. Somatec**
Bromhexine hydrochloride BP 8mg/tablet.
100's pack: 100.00 IP

❖ **BROMEX Syp. Somatec**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 27.00 IP

❖ **BROMOLIT Syp. Peoples**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **BRONCOMET Syp. Drug Inter.**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **BROXINE Syp. General**
Bromhexine hydrochloride BP 4mg/5ml:syrup
100ml bot: 30.00 MRP

❖ **COFLYT Syp. Asiatic**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **CLOD-B Tab. Medimet**
Bromhexine hydrochloride BP 4mg/tablet.
100's pack: 70.00 MRP

❖ **DE-COLD Syp. Aexim**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **EXPECTO Syp. Aristopharma**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **MEXILYT Syp. Pharmadesh**
Bromhexine hydrochloride BP 4mg/5ml: syrup
60ml bot: 18.00 MRP
100ml bot: 25.00 MRP

❖ **MUCARYL Syp. Marksman**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 28.00 MRP

❖ **MUCOF Tab. Salton**
Bromhexine hydrochloride BP 8mg/tablet.
100's pack: 180.00 MRP

❖ **MUCOF Susp. Salton**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **MUCOLA Syp. Amico**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 25.00 MRP

❖ **MUCOLYT 8 Tab. Incepta**
Bromhexine hydrochloride BP 8mg/tablet.
100's pack: 200.00 MRP

❖ **MUCOLYT Syp. Incepta**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 30.00 MRP

❖ **MUCONIL Syp. Ziska**
Bromhexine hydrochloride BP 4mg/5ml: syrup

100ml bot: 30.00 MRP
❖ **MUCOPRONT Syp. Cosmic**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 30.00 MRP
❖ **MUCOSPEL 8 Tab. Square**
Bromhexine hydrochloride BP 8mg/tablet.
100's pack: 200.00 MRP
❖ **MUCOSPEL Syp. Square**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 30.00 MRP
❖ **MUCUT Syp. Bio-pharma**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 27.00 MRP
❖ **MULYT-8 Tab. Gaco**
Bromhexine hydrochloride BP 8mg/tablet.
100's pack: 149.73 MRP
❖ **MULYT Syp. Gaco**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 30.00 MRP
❖ **MUNIL Tab. Opsonin**
Bromhexine hydrochloride BP 4mg & 8mg/tablet.
4mg x 100's pack: 100.00 MRP
8mg x 100's pack: 200.00 MRP
❖ **MUNIL Syp. Opsonin**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 30.00 MRP
❖ **MUSIS Syp. Delta**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 30.00 MRP
❖ **MUSOL Syp. UniHealth**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 27.00 MRP
❖ **MUTE Syp. Proteety**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 30.00 MRP
❖ **NAXCEL Syp. Kumudini**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 30.00 MRP
❖ **N-HEXIN Syp. Nipa**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 30.00 MRP
❖ **SPULYT Syp. Beximco**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 30.00 IP
❖ **SPUTEN Syp. Silva**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 30.00 MRP
❖ **TOPSIL 4 Tab. Zenith**
Bromhexine hydrochloride BP 4mg/tablet.
4mg x 100's pack: 70.00 MRP
❖ **TOPSIL Syp. Zenith**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 30.00 MRP
❖ **X-PECTORAN Tab. Rangs**
Bromhexine hydrochloride BP 8mg/tablet.
50's pack: 100.00 MRP
❖ **X-PECTORAN Syp. Rangs**
Bromhexine hydrochloride BP 4mg/5ml: syrup
100ml bot: 30.00 MRP

CARBOCISTEINE[34,65]

CARBOCISTEINE: Capsule/Syrup
Carbocisteine is a mucolytic expectorant preparation.
Mode of action: It reduces the viscosity of non-infected secretions from mucus cells in the respiratory tract. The mucolytic action is due to two mechanisms. It breaks the disulphide bonds which cross-link certain glycoprotein molecules present in the mucus and also alters local ionic charges, both of which factors affect the viscosity of mucus. There is also evidence that it alters the composition of mucin secreted by the respiratory mucosa, decreasing the proportion of neutral glycopeptides and increasing the sialoglycopeptides.
Ind: 1. Expectoration in the following diseases: upper respiratory tract inflammation (pharyngitis, laryngitis), acute bronchitis, bronchial asthma, chronic bronchitis, bronchiectasis, pulmonary tuberculosis. 2. Drainage in chronic sinusitis. 3. Drainage in otitis media (glue-ear) with effusion specially in children.
C/I: Contraindicated in active peptic ulceration and in patients with hypersensitivity to the drug.
S/E: Gastrointestinal discomfort, nausea, diarrhoea, gastrointestinal bleeding, headache and skin rash may occur.
Precautions: No specific precaution is recommended, but carbocisteine should be used with a caution in patients with a recent history of peptic ulcer & recurrent gastrointestinal bleeding.
Pregnancy & lactation: Although there are no reports of teratogenic effects with carbocisteine, the drug is not recommen-ded in the first trimester of pregnancy. No information available on the use of carbocisteine during lactation.
Dosage & admin: Adults (includintg elderly): Dosage is based upon an initial dose of 2250mg daily in divided doses (750mg 3 times daily), reduced to 1500mg daily in divided doses (375mg 4 times daily), when a satisfactory response has been obtained. Children: Normal daily dose is 20mg/kg body weight in divided doses. The following dosage schedule is recommen-ded: 2-5 years, 62.5-125mg 4 times daily; 6-12 years, 250mg 3 times daily.
Infants : Not recommended.
Drug inter: Neither hazardous nor therapeutically significant interactions have been reported.

❖ **CARBOLIN Cap. SK+F**
Carbocisteine BP 375mg/capsule
30's pack: 75.00 MRP
❖ **CARBOLIN Syp. SK+F**
Carbocisteine BP 125mg/5ml: syrup
100ml bot: 30.00 MRP
❖ **CARBOLIN DS Syp. SK+F**
Carbocisteine BP 250mg/5ml: syrup (double strength)
100ml bot: 40.00 MRP
❖ **CARBOTEN DS Syp. Amico**
Carbocisteine BP 250mg/5ml: syrup (double strength)
100ml bot: 40.00 MRP
❖ **FLEGNIL Syp. Orion**
Carbocisteine BP 125mg/5ml: syrup
100ml bot: 30.00 MRP
❖ **FLEGNIL DS Syp. Orion**
Carbocisteine BP 250mg/5ml: syrup (double strength)
100ml bot: 40.00 MRP
❖ **MUCOLEX Cap. General**
Carbocisteine BP 375mg/capsule
30's pack: 75.00 MRP
❖ **MUCOLEX Susp. General**
Carbocisteine BP 125mg/5ml: suspension
100ml bot: 30.00 MRP
❖ **MUCOLEX DS Susp. General**
Carbocisteine BP 250mg/5ml: syrup (double strength)
100ml bot: 40.00 MRP
❖ **NOKOF Syp. Beximco**
Carbocisteine BP 125mg/5ml: syrup
100ml bot: 30.00 IP
❖ **NOKOF DS Syp. Beximco**
Carbocisteine BP 250mg/5ml: syrup (double strength)
100ml bot: 40.00 IP

GLYCEROL PREPN.[65]

GLYCEROL + LIQUID SUCROSE: Oral Soln.
This combined oral product of glycerol and liquid sucrose is prepared & used for relieving dry coughs and sore throats.
Mode of action: Glycerol acts by blocking sensory cough receptors within the respiratory tract. Glycerol also has demulcent properties (soothing effect).
Ind: This combined product is indicated for relief of irritating, tickling dry coughs and sore throats.
S/E: No side effect would be anticipated.
Precaution: Diabetic patients should take note of the carbohydrate content of this product.
Pregnancy & lactation: There is no sufficient data to establish the safety of the glycerol preparation in pregnancy and lactation. Nevertheless, glycerol or any other medication should be used during pregnancy or lactation only if clearly needed.
Dosage & admin: Oral administration only. Adults & children over 5 years: 10ml or 2 tsf; Children 1 to 5 years: 5ml or 1 tsf; Children 3 months to 1 year: 5ml or 1 tsf. The dose may be repeated 3-4 times a day.
Elderly: No need for dosage reduction in the elderly.
Overdose: Over dosage would not be expected to cause any problems and treatment would be merely symptomatic and supportive.
Drug inter: No significant interaction is known.

❖ **HONYCOL Lictus Renata**
Each 5ml liquid contains glycerol 0.75ml and liquid sucrose 1.93ml: oral solution.
100ml bot: 30.00 MRP
❖ **HUNNY Oral Soln. SK+F**
Each 5ml liquid contains glycerol 0.75ml and liquid sucrose 1.93ml: oral solution.
100ml bot: 30.00 MRP
❖ **NECTAR Oral Soln. Square**

Each 5ml liquid contains glycerol 0.75ml and liquid sucrose 1.93ml: oral solution.
100ml bot: 40.00 MRP

POTASSIUM GUAIACOL[21,33]

POTASSIUM GUAIACOL: Syrup
Ind: Potassium guaiacol sulphonate is a stimulant cough expectorant. It liquifies thick viscid bronchial secretion & thereby facilitates its expulsion from the chest. It also helps in repair in chronic inflamma-tory conditions of the respiratory tract.
S/E: It produces mild irritation of the bronchial mucous membrane during their excretion.
Use & Dose: 1-2 tsf 2-4 times daily is the usual dosage.

❖ **NPG Syp. Nipa**
Potassium guaiacol sulphonate 125mg USP/5ml: syrup.
100ml bot: 20.23 MRP

❖ **POTASSIUM GUAIACOL Syp. Drug Inter.**
Potassium guaiacol sulphonate 125mg USP/5ml: syrup.
100ml bot: 18.40 MRP

❖ **POTASSIUM GUAIACOL Syp. Seema**
Potassium guaiacol sulphonate 125mg USP/5ml: syrup.
100ml bot: 20.00 MRP

Combind cough expectorants[21,33]

PSEUDOEPHEDRINE + GUAIPHENESIN + TRIPROLIDINE: Syrup
Ind: Cough expectorant & decongestant.
Dose: 2 tsf 3 to 4 times daily.

❖ **ABEX Syp. Ibn Sina**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 35.00 MRP

❖ **ACTIFED Syp. GlaxoSmithKline**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 35.00 MRP

❖ **ACTIFEX Syp. Rasa**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 30.00 MRP

❖ **ANTUSS Syp. Gaco**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 35.40 MRP

❖ **AQUAPHEN Syp. Incepta**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 32.00 MRP

❖ **BRUNEX Syp. Rephco**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 35.00 MRP

❖ **CODEX Syp. Ambee**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 30.34 MRP

❖ **CODYL Syp. Medimet**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 40.00 MRP

❖ **COFDIL Syp. CPL**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 32.00 MRP

❖ **COFEX Syp. Skylab**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
60ml bot: 21.00 MRP
100ml bot: 30.00 MRP

❖ **COFNIL Syp. General**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 35.00 MRP

❖ **COFRID Syp. Acme**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 35.00 MRP

❖ **COFSON Syp. Hudson**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 30.00 IP

❖ **COLDEX Syp. Millat**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 35.00 MRP

❖ **COPEX Syp. Globe**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 30.00 MRP

❖ **COPHILEX Syp. Opsonin**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5 ml: syrup.
100ml bot: 30.00 MRP

❖ **COPHYL Syp. Pharmadesh**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5 ml: syrup.
100ml bot: 35.00 MRP

❖ **DECOREX Syp. Reman**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 30.00 MRP

❖ **E-COF Syp. Edruc**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 30.00 IP

❖ **EFIN Syp. Syntho**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 35.00 MRP

❖ **ELIPORENT Syp. Elixir**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot:

❖ **EXITRA Syp. Novo Healthcare**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5 ml: syrup.
100ml bot: 35.00 MRP

❖ **EXODEL Syp. Delta**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5 ml: syrup.
60ml bot: 22.00 MRP
100ml bot: 30.00 MRP

❖ **EXPOTEN Syp. SK+F**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5 ml: syrup.
100ml bot: 35.00 MRP

❖ **GPT Syp. Kumudini**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5 ml: syrup.
100ml bot: 33.00 MRP

❖ **JEFRIL Syp. Jayson**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 28.32 IP

❖ **KEFOSED Syp. Cosmic**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 30.00 MRP

❖ **KOFED Syp. Biopharma**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 30.00 MRP

❖ **KOFTEX Syp. Amico**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 35.00 MRP

❖ **LUREX Syp. Chemico**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 30.00 MRP

❖ **SMILE Syp. Nipa**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 35.00 MRP

❖ **TOPEX Syp. Renata**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 30.34 MRP

❖ **TRICOF Syp. Alco Pharma**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 29.00 MRP

❖ **TRIDEX Syp. Navana**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 35.00 MRP

❖ **TRIEX Syp. Supreme**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 32.00 MRP

❖ **TRINIL Syp. Medicon**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 35.00 MRP

❖ **TRIPEC Syp. Beximco**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 32.00 IP

❖ **TRIPHEN Syp. Doctor's**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup.
100ml bot: 35.00 MRP

❖ **TUSCA Syp. Square**
Pseudoephedrine BP 30mg, guaiphenesin BP

100mg & triprolidine BP 1.25mg/5ml: syrup. 100ml bot: 35.00 MRP

❖ **TUSCOFF Syp. Zenith**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup. 100ml bot: 30.00 MRP

❖ **TUSSIN Syp. Orion**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syp. 100ml bot: 30.00 MRP

❖ **TUSSY Syp. Somatec**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup. 100ml bot: 35.00 MRP

❖ **TYREX Syp. ACI**
Pseudoephedrine BP 30mg, guaiphenesin BP 100mg & triprolidine BP 1.25mg/5ml: syrup. 100ml bot: 35.00 MRP

6. ANTIHISTAMINICS

Uses of Antihistaminics as Respiratory anti-allergens and decongestants: See in the section of Allergic disorders.

7. RESPIRATORY STIMULANTS & PULMONARY SURFACTANTS[21]

7.1 Respiratory stimulants: analeptics
7.2 Pulmonary surfactants
7.3 Morphine & other narcotic analgesic antagonists

Respiratory Stimulants: Analeptics[21,33]

❖ **ADRENALINE: Injection.**
Adrenaline 1mg in 1ml ampoule: injection
Ind: Bronchospasm, chronic bronchitis; emergency treatment of acute anaphylaxis.
C/I; S/E; Cautions: See under bronchodilators
Dose: 1 amp. (1ml) to be injected s.c, i.m, i.v or direct intracardiac injection. May be repeated, if necessary.
Prepns: See under bronchodilators

AMINOPHYLLINE

❖ **AMINOPHYLLINE: Injection.**
Aminophylline 250mg in 10ml ampoule for slow i.v injection.
Ind: It is indicated in the treatment and prophylaxis of bronchospasm associated with asthma, emphysema and chronic bronchitis. Also indicated in the treatment of cardiac asthma and left ventricular or congestive cardiac failure in adult patients.
Caution: Rapid injection may result in cardiac arrest.
Dose: 250-500mg given over 10-15 mins.
Prepns: See under Bronchodilators.

NIKETHAMIDE

❖ **NIKETHAMIDE Inj. Jayson**
Nikethamide 25% injection in 2ml amp: injection
Ind: Acute respiratory failure
C/I: Respiratory failure due to neurological disease or drug overdose.
S/E: Vomiting, restlessness, convulsions.
Dose: 2 to 10ml hy slow i.v injection of the usual 25% solution every 20 to 30 mins. if necessary.
10 amps pack: 50.00 IP

Pulmonary Surfactants

PHOSPHOLIPID[49] (Pulmonary Surfactants)

❖ **SURVANTA Intratracheal Suspn. Abbott/UniHealth**
Each 1ml of survanta contains 25mg of total phospholipids (beractant): Intratracheal suspension.
Ind: Treatment and prevention of neonatal respiratory distress syndrome (RDS).
S/E: Transient bradycardia has occurred.
Precautions: The specified dosing procedure for survanta should be followed carefully as errors could result in hyperinflation or obstruction of separate areas of the lungs. Close monitoring of arterial blood gases, the fraction of inspired oxygen, and ventilatory pressures is mandatory.
Dosage & admin: The recommended dose of survanta is 100mg phospholipid/kg body weight administered intratracheally in a volume not exceeding 4ml/kg. It is recommended that survanta should be administered in two half-doses (or four quarter-doses) through a neonatal suction valve, with the infant in different positions to ensure homogenous distribution. Treatment should be administered early in the course of RDS, i.e preferably in babies less than 8 hours of age. For treatment and prophylaxis of RDS in high risk infants, up to four doses of survanta may be administered within 48 hours. The first dose is given at 15 minutes postpartum, with up to three additional doses at intervals of at least six hours. Unopened, unused vials of survanta that have been warmed to room temperature, may be returned to the refrigerator within 8 hours of warming, and stored for future use. Survanta should not be warmed and re-refrigerated more than once. Used vials containing residual medicine should be discarded.
Note: For full prescribing information, please consult manufacturer's literature.
8ml vial: 24254.05 MRP

Morphine & other narcotic analgesic antagonists[21]

NALOXONE

NALOXONE: Injection
Naloxone hydrochloride is a respiratory stimulant, which antagonises the respiratory depression action of morphine & other narcotic analgesics.
Ind: Reversal of narcotic-induced respiratory depression, including that due to pentazocine & dextropropoxyphen. Overdosage with morphine like compounds. Diagnosis of acute opioid overdosage.
Caution: Pregnancy (except in labour); opioid dependence. Keep patient under observation as repeat doses may be needed.
Dosage & admin:
Adult: 0.4-2mg by i.v, i. m, or s.c inj. every 2-3 min. as required or by i.v infusion to a maximum of 10mg if respiratory function does not improve. By continuous i.v. infusion, 2mg diluted in 500ml i.v. infusion solution at a rate adjusted according to the response. Post operative- 0.1-0.2mg i.v. repeated as required. Child: Neonates, see below; Others, 10mcg/Kg by i.v., i.m. or s.c. inj. repeated as reqd. or by i.v. infusion

❖ **NALOXONE Inj. DBL/Globex**
Naloxone hydrochloride 400mcg (0.4mg)/1ml ampoule: injection
1ml ampoule: 180.10 MRP

8. AROMATIC INHALATIONS[21]

Aromatic inhalations: inhalations containing volatile substances such as benzoin tincture, menthol, eucalyptus oil- known as aromatic inhalations, are traditionally used in respiratory discomfort as in bronchitis for deliberate inspiration & also used for the relief of nasal obstruction in acute rhinitis or sinusitis.

BENZOIN TINCTURE[21,39]

BENZOIN TINCTURE: Inhalation
Benzoin tincture containing balsamic acids approx. 4.5% BP: volatile compound.
Ind: Respiratory discomfort as in bronchitis, nasal congestion in acute rhinitis or sinusitis.
Dosage & admin: add one teaspoonful to a pint of hot, (not boiling), water and inhale the vapour.
Children- the use of strong aromatic decongestants is not advised for infants under the age of 3 months.
Preparations: May be available in the market.

MENTHOL & EUCALYPTUS OIL[21]

MENTHOL & EUCALYPTUS OIL: Inhalation
Racementhol or levomenthol 2gm, eucalyptus oil 10ml, light magnesium carbonate 7gm, water to 100ml: inhalation
Ind: Respiratory discomfort as in bronchitis, nasal congestion in acute rhinitis or sinusitis.
Use: Add one teaspoonful to a pint of hot, (not boiling), water and inhale the vapour.
Children- the use of strong aromatic decongestants is not advised for infants under the age of 3 months.
Preparations: May be available in the market.

Chapter-4
DRUGS USED IN CENTRAL NERVOUS SYSTEM

DRUGS ACTING ON THE NERVOUS SYSTEM[21]

Drugs acting on the nervous system are classified in the following groups:

1. **Hypnotics**
2. **Sedative & tranquillisers: anxiolytics**
3. **Anti-psychotic and related drugs**
4. **Antidepressant drugs**
5. **Drugs used in nausea, vomiting & vertigo**
6. **Antiepileptics/ Anticonvulsants**
7. **Drugs used in parkinsonism & related disorders**
8. **Central nervous system stimulant**
9. **Appetite suppressants**
10. **Drugs for dementia**
11. **Analgesics**
12. **Drugs used in substance dependence**

1. HYPNOTICS[21]

Hypnotic: A drug that induces sleep. Hypnotics act as a sedative when given in low doses.
The commonly used hypnotics can be divided as following:

1.1 Benzodiazepines
1.2 Barbiturates
1.3 Chloral hydrate & its derivatives
1.4 Paraldehyde.
1.5 Miscellaneous hypnotics
- **a. Zolpidem & Zopiclone**
- **b. Chlormethiazole**
- **c. Antihistamines (such as diphenhydramine, promethazine)**

Benzodiazepines[21]

Benzodiazepines, that are used as hypnotics include- *Diazepam, Flurazepam, Nitrazepam, Loprazolam, Lormetazepam & Temazepam.*

Relative efficacy equivalence:[21]
Considering the diazepam as standard, the relative efficacy of different benzodiazepines are given as below:

Diazepam 5mg equals to-
- Chlordiazepoxide 15mg
- Loprazolam 0.5-1mg
- Lorazepam 0.5mg
- Lormetazepam 0.5-1mg
- Nitrazepam 5mg
- Oxazepam 15mg
- Temazepam 10mg

DIAZEPAM

See under the group of anxiolytic drugs.

FLURAZEPAM[21,33]

FLURAZEPAM: Capsule
Ind: Short-term treatment of insomnia where day time sedation is acceptable.
C/I: Acute pulmonary insufficiency, respiratory depression, chronic psychosis.
S/E: Hangover on the following day with drowsiness, dizziness, ataxia (particularly in elderly), confusion, dry mouth; G.I. disturbances; hypersensitivity reactions; visual disturbances; skin rashes; urinary retention; change in libido. Risk of dependence increases the higher the dose and the longer term treatment.
Caution: Chronic pulmonary insuffi-ciency, chronic renal or hepatic disease, the elderly, pregnancy, labour and lactation. Avoid long term use: withdraw gradually.
Dosage & admin: Adult: Elderly,15 mg at bed time & Others, 15-30mg at bedtime.
Child: Not recommended.

❖ **ALUCTIN Cap. Ambee**
Flurazepam hydrochloride 30mg/capsule.
100's pack: 354.00 MRP
❖ **FURAMANE Cap. Gaco**
Flurazepam hydrochloride 30mg/capsule.
100's pack: 299.45 MRP
❖ **SLIPAM Cap. General**
Flurazepam hydrochloride 15mg & 30mg/capsule.
15mg x 50's pack: 175.00 MRP
30mg x 30's pack: 180.00 MRP

MIDAZOLAM[21,34,50]

MIDAZOLAM: Tablet/Injection
It is a water soluble benzodiazepine which is often used in preference to diazepam. Recovery is faster than with diazepam.
Ind: Disturbance of sleep rhythm & all forms of insomina particularly difficulty in falling asleep either initially or after premature awakening. Sedation in premedication & induction of anaesthesia (local & general) before surgical and diagnostic procedure.
C/I; S/E; Caution: See above under Flurazepam. Important- profound sedation reported with oral midazolam.
Dosage & Admin: By mouth: The usual adult dose is 7.5-15mg daily. In elderly & debilitated patient the recommended dose is 7.5mg. This dose is also applied to the patient with impaired liver & kidney function. For premedication of adult 15mg of midazolam should be given orally 30-60 minutes before the operation unless the parenteral route is preferred.
By injection: Sedation, by i.v injection- over 30 seconds, 2mg (elderly 1-1.5mg) followed after 2 minutes by increments of 0.5-1mg if sedation not adequate; usual range 2.5-7.5mg (about 70mcg/kg), elderly 1-2mg.
Premedication, by i.m injection, 70-100mcg/kg 30-60 minutes before surgery; usual dose 5mg (2.5mg in elderly).
Induction, by slow i.v injection, 200-300mcg/kg (elderly 100-200mcg/kg).
Sedation of patients receiving intensive care, by i.v infusion, initially 30-300mcg/kg given over 5 minutes, then 30-200mcg/kg/hour; reduce dose (or omit initial dose) in hypovolaemia, vasoconstriction, or hypothermia; low doses may be adequate if opioid analgesic also used; avoid abrupt withdrawal after prolonged administration (safety after more than 14 days not established).
Drug inter: Plasma concentration increased by erythromycin, diltiazem and verapamil.

❖ **ANQUIL Tab. General**
Midazolam 7.5mg & 15mg/tablet.
7.5mg x 30's pack: 240.00 MRP
15mg x 10's pack: 135.00 MRP
❖ **DORMICUM Inj. Roche**
Midazolam 5mg/5ml ampoule & 15mg/3ml ampoule: injection
5mg (5ml) amp x 10's pack: 1350.00 MRP
15mg (3ml) amp x 5's pack: 1074.38 MRP
❖ **DORMICUM Tab. Roche**
Midazolam 7.5mg/tablet.
7.5mg x 30's pack: 360.30 MRP
❖ **HYPNOCUM Tab. Healthcare**
Midazolam 7.5mg/tablet.
7.5mg x 30's pack: 300.00 MRP
❖ **HYPNOFAST Tab. Incepta**
Midazolam 7.5mg & 15mg/tablet.
7.5mg x 30's pack: 240.00 MRP
15mg x 10's pack: 150.00 MRP
❖ **HYPNOFAST Inj. Incepta**
Midazolam 5mg/1ml ampoule, 5mg/5ml ampoule & 15mg/3ml ampoule: injection
5mg (1ml) amp x 1's pack: 50.00 MRP
5mg (5ml) amp x 1's pack: 55.00 MRP
15mg (3ml) amp x 1's pack: 150.00 MRP
❖ **MILAM Tab. SK+F**
Midazolam 7.5mg & 15mg/tablet.
7.5mg x 30's pack: 240.00 MRP
15mg x 10's pack: 150.00 MRP
❖ **MIZOLAM Tab. Acme**
Midazolam 7.5mg/tablet.
7.5mg x 30's pack: 240.00 MRP
❖ **SEDAQUIL Tab. Rangs Pharma**
Midazolam 7.5mg/tablet.
7.5mg x 30's pack: 240.00 MRP

NITRAZEPAM[21,33]

NITRAZEPAM: Tablet/Capsule
Ind: Short-term treatment of insomnia where day time sedation is acceptable; insomnia with early morning wakening.
C/I: Acute pulmonary insufficiency, respiratory depression, chronic psychosis.
S/E: Hangover on the following day with drowsiness, dizziness, ataxia (particularly in

elderly), confusion, dry mouth; G.I. disturbances; hypersensitivity reactions; visual disturbances; skin rashes; urinary retention; change in libido. Risk of dependence increases the higher the dose and the longer term treatment.
Caution: Chronic pulmonary insufficiency, ch. renal or hepatic disease, the elderly, pregnancy, labour and lactation. Avoid long term use; withdraw gradually.
Dosage: Adult: Elderly, 2.5-5mg at bedtime; others, 5-10mg at bedtime.
Child: Not recommended.

❖ **AMOCTIN Tab. Skylab**
Nitrazepam 5mg/tablet.
100's pack: 60.00 MRP
❖ **EPAM Tab. Opsonin**
Nitrazepam 5mg/tablet.
200's pack: 150.00 MRP
❖ **NOCTIN Tab. Ambee**
Nitrazepam 5mg/tablet.
100's pack: 69.00 MRP
❖ **OCTON-5 Tab. Gaco**
Nitrazepam 5mg/tablet.
100's pack: 100.70 MRP

Barbiturates

PHENOBARBITONE[21]

PHENOBARBITONE: Tablet/Elixir/ Injection.
Phenobarbitone (Phenobarbital), a barbiturate, nonselective, central nervous system depressant which is primarily used as a sedative hypnotic & also as an anticonvulsant in subhypnotic doses.
Ind: It is indicated for the following conditions: 1. As sedatives. 2. Hypnotics for the short-term treatment of insomnia. 3. Long-term (oral) anticonvulsants for the treatment of generalized tonic-clonic and cortical local seizures. And, parenteral preparations are used in the emergency control of certain acute convulsive episodes (those associated with status epilepticus, eclampsia, meningitis, tetanus, and toxic reactions to strychnine or local anesthetics). 4. Pre-anesthetics.
C/I; S/E; Caution: See under anti-epileptic drugs.
Dosage & admin: ***Adult:*** **15-30mg 2 or 3 times daily. Maximum, 600mg in 24 hours.**
Child: **Up to 1 year, 15-30mg daily; 1-12 years, 30-60mg daily, in divided doses.**
Preparations: See under anti-epileptic drugs.

Trichloroethanol derivatives

CHLORAL HYDRATE[21]

CHLORAL HYDRATE: Capsule/ Elixir/Mixture
Chloral hydrate (as mixture) 500mg/5ml, 200mg/5ml in paediatric elixir, & 500mg./1 capsule.
Ind: Insomnia, sedation in children and elderly; pre-operative sedative; adjunct to opiates and analgesics, and in first stage of labour (it induces sleep in about half an hour lasting 6-8 hours).
C/I: Severe hepatic, renal or cardiac disease; Gastritis.
S/E: Gastro-intestinal distrubances, skin rashes may occur, little hangover on the following day with drowsiness, dizziness, ataxia, headache, excitement & delirium; ketonuria.
Caution: Little hangover may affect patient's ability to drive or operate machinery judgement and dexterity may be impaired, patients should be warned of these effects. Doses are taken well diluted to minimise g.i. disturbances. Contact with skin and mucous membrane should be avoided.
Dosage & admin: Adult: *Insomnia,* 500 mg-1 gm taken with water 15-30 mins. before bedtime or 1-2 hours before surgery. Maximum, 2gm daily. *Sedation,* 250mg 3 times daily with water.
Child: 30-50mg/Kg upto a max. single dose of 1gm.
Preparations: May not be available.

Misc. Hypnotics

PROMETHAZINE[21,33]

PROMETHAZINE HCl : Tablet/Elixir/ Injection.
Ind: Sedation in children and adults, nasal allergy, urticaria and other allergic disorders.
S/E: Drowsiness, dryness of mouth, g.i. disturbances.
Caution: As patient is affected with sedation and drowsiness, should not drive or operate machinery requiring alertness. Alcohol and other CNS depressants can potentiate the sedative effect of antihistaminics and patient should be warned of these effects.
Dosage & admin: Adult: By mouth, 10-20mg, 2 or 3 times daily. By injection 25-50mg. by deep i.m. or slow i.v. inj. after dilution.
Child: By mouth, under 6 months, not recommended; 6 months-1 year, 5-10mg, 1-5 yrs. 5 to 15mg; over 5yrs. 10-25mg. If two doses in 24 hours are reqd. use lower amount stated. By injection, under 5 years not recommended; over 5 yrs. 6.25-12.50mg by deep i.m. injection.
Preparations: See in the section of anti-allergic drugs.

ZOPICLONE[21,35,52]

ZOPICLONE: Tablet
Zopiclone is a cyclopyrrolone product.
Mode of action: Zopiclone exhibits anticonvulsant, muscle relaxant and hypnosedative properties in animals. It recognizes specifically, and with high affinity, binding sites that belong to the GABAA - benzodiazepine chloride channel macromolecular receptor complex and increases the chloride ion secretion.
Ind: Short-term use for the treatment of insomnia (no longer than four weeks duration). As with other hypnotics, long-term continuous treatment is not recommended.
C/I: Sse in pregnancy should be avoided if a safer alternative is known. Zopiclone is excreted in breast milk, so use in nursing mother must be avoided.
Caution: Hepatic impairment; pregnancy and breast-feeding; elderly; history of drug abuse, psychiatric illness; avoid prolonged use (and abrupt withdrawal thereafter).
Driving- drowsiness may persist the next day and affect performance of skilled tasks (e.g. driving); effects of alcohol enhanced.
S/E: Bitter or metallic taste; gastro-intestinal disturbances including nausea and vomiting; irritability, confusion, depressed mood; drowsiness, dizziness, lightheadedness, and incoordination on next day; dependence; rarely urticaria and rashes; hallucinations, amnesia, and behavioural disturbances (including aggression) reported.
Dose: 7.5mg at bedtime increased to 15mg in severe insomnia; Elderly, initially 3.75mg at bedtime; Child not recommended.
Drug Inter: Patients should be cautioned against the simultaneous ingestion of zopiclone and alcohol or other CNS depressant drugs because of possible additive effects.

❖ **IMOVANE Tab. Sanofi-aventis**
Zopiclone 7.5mg/tablet.
30's pack: 227.70 MRP

ESZOPICLONE[46]

ESZOPICLONE: Tablet
Eszopiclone is a nonbenzodiazepine hypnotic, a pyrrolopyrazine derivative of the cyclopyrrolone class with a chemical structure unrelated to pyrazolopyrimidines, imidazopyridines, benzodiazepines, barbiturates, or other drugs with known hypnotic properties.
It is available as eszopiclone INN 1mg & 2mg film-coated tablet.
Mode of action: The precise mechanism of action of eszopiclone as a hypnotic is unknown, but its effect is believed to result from its interaction with GABA-receptor complexes at binding domains located close to or allosterically coupled to benzodiazepine receptors.
Ind: Eszopiclone is used for the treatment of insomnia (chronic insomnia, transient insomnia) characterized by difficulty falling asleep and/or difficulty maintaining sleep during the night and early morning.
C/I: Known case of hypersensitivity to eszopiclone.

S/E: The most common side effects are: drowsiness, dizziness, lightheadedness. difficulty with coordination.
Precautions: No need of specific precaution to be exercised.
Pregnancy & lactation: There are no adequate and well-controlled studies of eszopiclone in pregnant women. So, it should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.
It is not known whether eszopiclone is excreted in human milk. So, caution should be exercised when eszopiclone is administered to a nursing woman.
Dosage & admin: The recommended starting dose of eszopiclone for most non-elderly adults is 2mg immediately before bedtime. Dosing can be initiated at or raised to 3mg if clinically indicated. The recommended starting dose of eszopiclone for elderly patients whose primary complaint is difficulty falling asleep is 1mg immediately before bedtime. In these patients, the dose may be increased to 2mg if clinically indicated. For elderly patients whose primary complaint is difficulty staying asleep, the recommended dose is 2mg immediately before bedtime. Or, as directed by the physician.
Drug inter: Alcohol (which causes sedation) and drugs that have sedating effects should not be used with eszopiclone since their sedating effects, when added to those of eszopiclone, may cause excessive sedation.

❖ **S-CLON Tab. Beximco**
Eszopiclone INN 1mg & 2mg/tablet (f.c).
1mg x 50's pack: 120.00 IP
2mg x 30's pack: 90.00 IP
❖ **SLEEPIL Tab. Aristopharma**
Eszopiclone INN 1mg & 2mg/tablet (f.c).
1mg x 50's pack: 100.00 MRP
2mg x 30's pack: 90.00 MRP
❖ **SLEEPON Tab. Silva**
Eszopiclone INN 1mg & 2mg/tablet (f.c).
1mg x 50's pack: 100.00 MRP
2mg x 50's pack: 150.00 MRP
❖ **SLEEPWEL Tab. Popular**
Eszopiclone INN 1mg & 2mg/tablet (f.c).
1mg x 30's pack: 60.00 IP
2mg x 30's pack: 90.00 IP
❖ **SOMINEX Tab. SK+F**
Eszopiclone INN 1mg & 2mg/tablet (f.c).
1mg x 50's pack: 100.00 MRP
2mg x 30's pack: 90.00 MRP
❖ **SOMNOLENT Tab. Opsonin**
Eszopiclone INN 1mg & 2mg/tablet (f.c).
1mg x 50's pack: 100.00 MRP
2mg x 30's pack: 90.00 MRP
❖ **SONO Tab. Acme**
Eszopiclone INN 1mg & 2mg/tablet (f.c).
1mg x 30's pack: 60.00 MRP
2mg x 30's pack: 90.00 MRP
❖ **TICLON Tab. Sandoz/Novartis**
Eszopiclone INN 1mg & 2mg/tablet (f.c).
1mg x 60's pack: 150.00 MRP
2mg x 30's pack: 135.00 MRP
❖ **ZOPILONE Tab. Incepta**
Eszopiclone INN 1mg & 2mg/tablet (f.c).
1mg x 50's pack: 100.00 MRP
2mg x 50's pack: 150.00 MRP

2. SEDATIVE & TRANQUILLISERS: ANXIOLYTICS[21,23]

Sedative: A drug (or dose of a drug) that calms or soothes without inducing sleep though it may cause sleepiness: a small dose of a hypnotic or tranquilliser often suffices for this.
Tranquilliser: A drug that will quieten a patient without notably impairing consciousness. The ideal tranquilliser would allay pathological anxiety and nervous tension without altering any other cerebral functions; specially it would not cause sleepiness.
In fact there is no clear distinction between tranquillisers and sedatives.
The commonly used sedative & tranquillisers may be grouped as:

2.1 Benzodiazepines
2.2 Phenothiazines
2.3 Misc. anxiolytics

Benzodiazepines

Benzodiazepines that are used as anxiolytics include- ***Diazepam, Alprazolam, Bromazepam, Chlordiazepoxide, Clorazepate, Lorazepam, Oxazepam.***

DIAZEPAM[21,33]

DIAZEPAM: Tablet/Syrup/Injection/ Suppository.
Ind: Anxiety, insomnia, night terrors in children; adjunctive treatement of acute alcohol withdrawal; epilepsy & other convulsions.
C/I: Acute palmonary insufficiency, respiratory depression.
S/E: Drowsiness, dizziness, ataxia (particularly in elderly), occasionally confusion, dry mouth; resp. depression on i.v injection. Pain & thrombophlebitis.
Caution: Neuromuscular disorders, closed angle glaucoma, resp. disease, late pregnancy, nursing mothers; reduce dosages in elderly & debiliated patients, liver disease, renal impairment; patient's ability to avoid alcohol & other CNS depressants; avoid abrupt withdrawal.
Dosage & admin: By mouth: Anxiety, 2mg, 3 times daily, increased in severe anxiety to 15-30mg. daily in divided doses. Child, 1-5mg. daily in divided doses. Insomnia, 5-30 mg at bedtime.
By i.m. or slow i.v. injection: For severe anxiety, control of acute panic attack and acute alcoholic withdrawal, 10mg (at a rate of not more than 5mg/min.) repeat if necessary 4 hourly. In epilepsy- see under anticonvulsant drugs.
By rectum as suppositories: When oral route not appropriate, apply 10mg suppository 1 to 3 times daily.

❖ **DIAZEMET Tab. Medimet**
Diazepam 5mg/tablet.
100's pack: 22.00 MRP
❖ **EASIUM Tab. Opsonin**
Diazepam 5mg/tablet.
200's pack: 42.00 MRP
❖ **EASIUM Inj. Opsonin**
Diazepam 10mg in 2ml ampoule: injection
25 amps pack: 75.00 MRP
❖ **EASIUM Suppo. Opsonin**
Diazepam 10mg/suppository.
10's pack: 30.00 MRP
❖ **EVALIN Tab. Aristopharma**
Diazepam 5mg/tablet
500's pack: 105.00 MRP
❖ **G-DIAZEPAM Tab. Gonoshasthaya**
Diazepam 5mg/tablet.
100's pot: 12.00 MRP
100's strip: 20.00 MRP
❖ **G-DIAZEPAM Inj. Gonoshasthaya**
Diazepam 10mg in 2ml ampoule: injection
10 amps pack: 29.00 MRP
❖ **PHARMAPAM Tab. Pharmadesh**
Diazepam 5mg/tablet
250's pack: 62.50 MRP
❖ **RELAXEN Tab. Sonear**
Diazepam 5mg/tablet
100's pack: 22.00 MRP
500's pack: 110.00 MRP
❖ **ROZAM Tab. Navana**
Diazepam 5mg/tablet.
200's pack : 42.00 MRP
❖ **SEDAPAN Tab. Amico**
Diazepam 5mg/tablet.
100's pack: 21.00 MRP
❖ **SEDATAB Tab. Supreme**
Diazepam 5mg/tablet.
100's pack: 22.00 MRP
❖ **SEDATE Tab. Elixir**
Diazepam 5mg/tablet.
100's pack:
❖ **SEDIL Tab. Square**
Diazepam 5mg/tablet
500's pack: 110.00 MRP
❖ **SEDIL Inj. Square**
Diazepam 10mg in 2ml ampoule: injection
10 amps pack: 30.30 MRP
❖ **SEDIUM Tab. Salton**
Diazepam 5mg/tablet
100's pack: 21.00 MRP
❖ **SEDULIN Tab. Jayson**
Diazepam 5mg/tablet
100's pack: 21.00 MRP
❖ **SEDUXEN Tab. Ambee**
Diazepam 5mg/tablet

200's pack: 44.00 MRP

❖ **SEDUXEN Inj. Ambee**
Diazepam 10mg in 2ml ampoule: injection
10 amps pack: 35.90 MRP

❖ **SEEQUIL-S Tab. Seema**
Diazepam 5mg/tablet
100's pack: 21.00 MRP

ALPRAZOLAM[44]

ALPRAZOLAM: Tablet
It is a drug of benzodiazepine group, used as an anxiolytic.
Ind: Alprazolam has antianxiety properties, effective in treatment of generalized anxiety disorders, panic anxiety, agoraphobia, situational anxiety, anxiety depression syndrome, cardiac neurosis & anxiety associated with medical conditions & depressive disorders.
C/I: Sensitivity to the drug; acute narrow angle glaucoma; pregnancy & lactation.
Warning: Patients should avoid- driving & operation machinery or doing jobs requiring complete mental alertness, simultaneous ingestion of alcohol & other CNS depressant drugs like psychotropics, anticonvulsants etc.
Precautions: The dosage of alprazolam tablets should be withdrawn gradually, since withdrawal seizures have been reported upon abrupt withdrawal. Addiction-prone individuals should be under careful surveillance.
S/E: Side effects are generally observed at the beginning of therapy & usually disappear with continued medication
In usual course, the common side effects are an extension of the pharmacological activity e.g drowsiness, light headedness & dry mouth, nausea, vomiting, allergy,
tachycardia. Paradoxical reactions such as agitation may rarely occur.
Dosage & admin: For anxiety- 0.25-0.5mg 3 times daily (maximum dose 4mg daily).
For panic disorder of agoraphobia- 0.5mg 3 times daily after meals for 2 days and then the dose may be increased by adding 0.5mg to 1mg of the existing dose every 2-3 days until 2mg thrice daily is given; usual dose 3-6mg daily.
Dosage equivalence- 0.5mg of alprazolam is equivalent to 5mg of diazepam

❖ **ALPAM Tab. Asiatic**
Alprazolam 0.25mg & 0.5mg/tablet.
0.25mg x 100's pack: 100.00 MRP
0.5mg x 50's pack: 100.00 MRP

❖ **ALPRAX Tab. Opsonin**
Alprazolam 0.25mg & 0.5mg/tablet.
0.25mg x 50's pack: 50.00 MRP
0.5mg x 50's pack: 100.00 MRP

❖ **ALZOLAM Tab. Sun Pharma**
Alprazolam 0.25mg & 0.5mg/tablet.
0.25mg x 100's pack: 112.00 MRP
0.5mg x 100's pack: 203.00 MRP

❖ **NIXALO Tab. Square**
Alprazolam 0.25mg & 0.5mg/tablet.
0.25mg x 100's pack: 100.00 MRP
0.5mg x 100's pack: 175.00 MRP

❖ **SERELAM Tab. General**
Alprazolam 0.25mg & 0.5mg/tablet.
0.25mg x 100's pack: 100.00 MRP
0.5mg x 100's pack: 200.00 MRP

❖ **XANAX Tab. Navana**
Alprazolam 0.25mg & 0.5mg/tablet.
0.25mg x 100's pack: 100.00 IP
0.5mg x 50's pack: 100.00 IP

❖ **ZOLAX Tab. Beximco**
Alprazolam 0.25mg & 0.5mg/tablet.
0.25mg x 100's pack: 100.00 IP
0.5mg x 100's pack: 175.00 IP

❖ **ZOLIUM Tab. Incepta**
Alprazolam 0.25mg & 0.5mg/tablet.
0.25mg x 100's pack: 100.00 MRP
0.5mg x 100's pack: 200.00 MRP

BROMAZEPAM[21,50]

BROMAZEPAM: Tablet
Ind: Anxiety (short-term use).
C/I; S/E; Caution: See under diazepam.
Dosage & admin: Adult: 3-18mg daily in divided doses; elderly (or debilitated) half adult dose; max. (in exceptional circumstances in hospital patients) 60mg daily in divided doses. Child, not recommended.

❖ **ANCOTIL Tab. Rangs**
Bromazepam BP 3mg/tablet
50's pack: 150.00 MRP

❖ **ANXIREL Tab. Novo Healthcare**
Bromazepam BP 3mg/tablet
30's pack: 90.00 MRP

❖ **ANXOPAM Tab. Popular**
Bromazepam 3mg/tablet
30's pack: 90.00 IP

❖ **BOPAM Tab. Opsonin**
Bromazepam 3mg/tablet
50's pack: 150.00 MRP

❖ **BROMAZEP Tab. Orion**
Bromazepam 3mg/tablet
50's pack: 150.00 MRP

❖ **BRONIUM Tab. Doctor's**
Bromazepam 3mg/tablet
50's pack: 125.00 MRP

❖ **BROZE Tab. Bio-pharma**
Bromazepam 3mg/tablet
50's pack: 150.00 MRP

❖ **BROZEP Tab. Alco Pharma**
Bromazepam 3mg/tablet
100's pack: 300.00 MRP

❖ **LATEN Tab. Supreme**
Bromazepam 3mg/tablet
30's pack: 75.00 MRP

❖ **LAXONIL Tab. Rephco**
Bromazepam 3mg/tablet
30's pack: 60.00 MRP

❖ **LAXYL Tab. Square**
Bromazepam 3mg/tablet
50's pack: 150.00 MRP

❖ **LEXNIL Tab. Asiatic**
Bromazepam 3mg/tablet
30's pack: 90.00 MRP

❖ **LEXOPIL Tab. Healthcare**
Bromazepam 3mg/tablet
50's pack: 200.00 MRP

❖ **LEXOTANIL Tab. Roche**
Bromazepam 3mg/tablet
50's pack: 275.00 MRP

❖ **MAPEZ Tab. Kumudini**
Bromazepam 3mg/tablet
50's pack: 100.00 MRP

❖ **NIGHTUS Tab. Beximco**

Bromazepam 3mg/tablet
100's pack: 300.00 IP

❖ **NORRY Tab. Renata**
Bromazepam 3mg/tablet
50's pack: 150.00 MRP

❖ **NOTENS Tab. Aristopharma**
Bromazepam 3mg/tablet
50's pack: 150.00 MRP

❖ **RELAXIUM Tab. Amico**
Bromazepam 3mg/tablet
30's pack: 75.00 MRP

❖ **REM Tab. Ambee**
Bromazepam 3mg/tablet
30's pack: 60.00 MRP

❖ **RESTOL Tab. SK+F**
Bromazepam 3mg/tablet
30's pack: 90.00 MRP

❖ **SIESTA Tab. Incepta**
Bromazepam 3mg/tablet
30's pack: 75.00 MRP

❖ **TENAPAM Tab. General**
Bromazepam 3mg/tablet
30's pack: 90.00 MRP

❖ **TENIL Tab. Acme**
Bromazepam 3mg/tablet
100's pack: 300.00 MRP

❖ **XIONIL Tab. Sandoz/Novartis**
Bromazepam 3mg/tablet
50's pack: 200.00 MRP

❖ **ZEPAM Tab. ACI**
Bromazepam 3mg/tablet
100's pack: 300.00 MRP

CLOBAZAM[21,33]

CLOBAZAM: Tablet/Capsule
Ind: Anxiety, tension, agitation.
C/I; S/E; Caution: See under Diazepam.
Adult: Elderly, 20mg; others, 20-30mg. Both daily in divided doses or as a single dose at night. Max. 60mg daily.
Child: Under 3 years, not rcommended; 3-12 years, upto half adult dose.

❖ **CALM Tab. Bio-pharma**
Clobazam 10mg/tablet
100's pack: 250.00 MRP

❖ **CLOB Tab. Opsonin**
Clobazam 10mg/tablet
100's pack: 275.00 MRP

❖ **CLOBAM Tab. Square**
Clobazam 10mg/tablet
100's pack: 275.00 MRP

❖ **CLOBID Tab. Medimet**
Clobazam 10mg/tablet
100's pack: 275.00 MRP

❖ **CLOZAM Tab. Navana**
Clobazam 10mg/tablet
100's pack: 280.00 IP

❖ **COLAX Tab. Pharmadesh**
Clobazam 10mg/tablet
50's pack: 137.00 MRP

❖ **COSIUM Tab. Acme**
Clobazam 10mg/tablet
100's pack: 350.00 MRP

❖ **DETENS Tab. Orion**
Clobazam 10mg/tablet
30's pack: 82.50 MRP
❖ **EBAZAM Tab. Edruc**
Clobazam 10mg/tablet
100's pack: 270.00 MRP
❖ **ELICLOB Tab. Elixir**
Clobazam 10mg/tablet
100's pack:
❖ **EPSON Tab. Zenith**
Clobazam BP 10mg/tablet
100's pack: 280.00 MRP
❖ **FRISIUM Tab. Sanofi-aventis**
Clobazam 10mg/tablet
100's pack: 354.00 MRP
❖ **KEOLAX Tab. Beximco**
Clobazam 10mg/tablet.
100's pack: 275.00 IP
❖ **NEBIUM Tab. Globe**
Clobazam 10mg/tablet.
100's pack: 255.00 MRP
❖ **NOANXIT Tab. Rephco**
Clobazam 10mg/tablet.
50's pack: 160.00 MRP
❖ **PREZIUM Tab. Nipa**
Clobazam 10mg/tablet.
100's pack: 350.00 MRP
❖ **PROCALM Tab. Chemico**
Clobazam 10mg/tablet.
100's pack: 300.00 MRP
❖ **ROBAZAM Tab. Rasa**
Clobazam 10mg/tablet.
100's pack: 280.00 MRP
❖ **TENSNIL Tab. Alco Pharma**
Clobazam 10mg/tablet.
100's pack: 255.00 MRP
❖ **TRANQUIL Tab. Ibn Sina**
Clobazam 10mg/tablet.
100's pack: 350.00 IP
❖ **VENIUM Tab. Hudson**
Clobazam 10mg/tablet.
100's pack: 270.00 MRP

CLONAZEPAM

Please see under the anticonvulsant/antiepileptic drugs.

LORAZEPAM[21,26]

LORAZEPAM: Tablet/Injection
Lorazepam is a short-acting tranqulizer anxiolytic drug belonging to benzodiazepine group. It is available as 1mg tablet & 4mg in 1ml ampoule for i.m/i.v injection.
Mode of action: Lorazepam interacts with the γ-aminobutyric acid (GABA)-benzodiazepine receptor complex, which is widespread in the brain of humans as well as other species. This interaction is presumed to be responsible for lorazepam's mechanism of action. Lorazepam exhibits relatively high and specific affinity for its recognition site but does not displace GABA. Attachment to the specific binding site enhances the affinity of GABA for its receptor site on the same receptor complex. The pharmacodynamic consequences of benzodiazepine agonist actions include antianxiety effects, sedation, and reduction of seizure activity. The intensity of action is directly related to the degree of benzodiazepine receptor occupancy.
Ind: Lorazepam is used for the treatment of anxiety states, including anxiety associated with phobic & obsessional states, psychosomatic, organic or psychotic illness, insomnia associated with anxiety, nervousness, restlessness, nausea and vomiting related to chemotherapy and anticonvulsants, and as a premedicant before dental or general surgery or prior to investigative procedures where there may be discomfort.
Lorazepam injection is specially indicated in adult patients for preanesthetic medication, producing sedation (sleepiness or drowsiness), relief of anxiety, and a decreased ability to recall events related to the day of surgery. It is most useful in those patients who are anxious about their surgical procedure and who would prefer to have diminished recall of the events of the day of surgery.
Lorazepam injection is also effective in the treatment of status epilepticus, acute panic attacks & sedation with amnesia.
C/I; S/E; Caution: See under diazepam.

Dosage & admin: For optimal result dose, frequency of administration and duration of therapy should be individualized according to patient's response.
By mouth: **The usual range of dosage is 2-7mg/day given in divided doses; the largest dose being taken before bedtime, but the largest dosage may vary from 1 to 10mg/day. For anxiety, most patients require an initial dose of 2-3mg/day given b.i.d. or t.i.d.**
For elderly or debilitated patients, an initial dosage of 1-2mg/day in divided doses is recommended, to be adjusted as needed and tolerated. For insomnia 1-2mg before bedtime and as premedicant 1-2mg the night before surgery and 1 to 2 hour before surgery.
Lorazepam is not recommended in anxiety states in children but may be used as premedicant before surgery at a dose of 0.05mg/kg in children aged 5 to 13 years.
When needed, the dosage of lorazepam should be increased gradually to avoid adverse effects. When higher dosage is indicated, the evening dose should be increased before the daytime.

By injection:
Preanesthetic medication:
Intramuscular injection: **For the designated indications as a premedicant, the usual recommended dose of lorazepam for i.m injection is 0.05 mg/kg up to a maximum of 4 mg. As with all premedicant drugs, the dose should be individualized. For optimum effect, measured as lack of recall, i.m lorazepam should be administered at least two hours before the anticipated operative procedure.**
Intravenous injection: **For the primary purpose of sedation and relief of anxiety, the usual recommended initial dose of lorazepam for i.v injection is 2mg total, or 0.02mg/lb (0.044 mg/kg), whichever is smaller. This dose will suffice for sedating most adult patients and should not ordinarily be exceeded in patients over 50 years of age. In those patients in whom a greater likelihood of lack of recall for perioperative events would be beneficial, larger doses as high as 0.05mg/kg up to a total of 4mg may be administered. For optimum effect, measured as lack of recall, i.v lorazepam should be administered 15 to 20 minutes before the anticipated operative procedure.**
There are insufficient data to support efficacy or make dosage recommendations for i.m/ i.v lorazepam in patients less than 18 years of age; therefore, such use is not recommended.
Status epilepticus:
Intramuscular injection: **I.M lorazepam is not preferred in the treatment of status epilepticus because therapeutic lorazepam levels may not be reached as quickly as with i.v administration. However, when an i.v port is not available, the i.m route may prove useful.**
Intravenous injection: **For the treatment of status epilepticus, the usual recommended dose of lorazepam injection is 4 mg given slowly (2 mg/min) for patients 18 years and older. If seizures cease, no additional lorazepam injection is required. If seizures continue or recur after a 10 to 15 minutes observation period, an additional 4 mg intravenous dose may be slowly administered.**
Infants & children - 0.1mg/kg slow i.v over 2-5 minutes; do not exceed 4 mg/single dose; may repeat second dose of 0.05mg/kg slow i.v. in 10-15 minutes if needed.
Adolescents- 0.07mg/kg slow i.v over 2-5 minutes; maximum: 4 mg/dose; may repeat in 10-15 minutes.
Acute panic attacks:
I.M or slow i.v injection (into a large vein): 25-30mcg/kg (usual range 1.5-2.5 mg), repeated every 6 hours if necessary.
Child- not recommended.
Sedation with amnesia & premedication:
Slow i.v injection, preferably diluted with an equal volume of sodium chloride i.v infusion 0.9% or water for injections. 50mcg/kg, 30-40 minutes before operation. ***Intramuscular injection:*** **Diluted as above, 50mcg/kg, 60-90 minutes before operation.**

❖ **LORAPAM Inj. Popular**
Lorazepam USP 4mg/1ml ampoule: i.m/i.v injection.
4mg (1ml) amp x 5's pack: 375.00 MRP
❖ **LOZICUM Tab. Incepta**
Lorazepam USP 1mg/tablet.
1mg x 100's pack: 200.00 MRP

3. ANTIPSYCHOTIC & RELATED DRUGS[21]

3.1 Antipsychotic drugs
3.2 Atypical antipsychotic drugs
3.3 Antimanic drugs

Antipsychotic drugs[21]

Generally anti-psychotic drugs tranqui-llise without impairing consciousness and without causing paradoxical excitement, but they should not be regarded merely as tranquillisers.
In the short-term they are used to quieten disturbed patients whatever the underlying

psychopathology and to alleviate severe anxiety. The commonly used anti-psychotics are:

1. **Phenothiazines**
2. **Thiozanthenes**
3. **Butyrophenone**
4. **Dihydroindolone**
5. **Dibenzoxazepine**

Phenothiazine derivatives

CHLORPROMAZINE HCI[21,33]

CHLORPROMAZINE HCI: Tablet/ Syrup/Injection/Suppository.
Ind: Schizophrenia and related psychoses, tranquillization and emergency control in behavioral disturbances, psychoneuroses; induction of hypothermia; emesis & intractable hiccup; adjunctive treatment of alcohol or drug withdrawal or terminal disease.
C/I: Comatose state; poisoning caused by CNS depressants; bone-marrow depression.
S/E: Extrapyramidal symptoms (which can be reversed by dose reduction or anticholinergic agents) and on, prolonged administration, occasionally tardive dyskinesia; hypothermia, drowsiness, apathy, pallor, nightmares, insomnia, depression and more rarely agitation; anticholinergic symptoms e.g. dry mouth, constipation, difficulty with micturition and blurred vision; hypotension, cardiac arrhythmias.
Cautions: Liver and renal dysfunction; cardiovascular disease; parkinsonism, epilepsy; pregnancy, lactation; concurrent admn. of CNS depressants & guanethi-dine; past history of jaundice, leucopenia.
Dosage & admin: Adult, initially 25mg 3 times daily increasing if necessary by 25mg daily. Maintenance, usually 75-300mg daily. Child, upto 5 years 5-10mg 3 times daily; 5-12 yrs. third to half adult dose.
Injection: Adult, 25-50mg i.m. as a single dose or repeated if necessary 6 to 8 hourly. Follow as soon as possible by oral therapy. Child, severe cases only, use equv. oral dose by i.m. injection.

❖ **OPSONIL Tab. Opsonin**
Chlorpromazine hydrochloride 50mg & 100mg/tablet.
50mg x 100's pack: 60.00 MRP
100mg x 100's pack: 100.00 MRP
❖ **OPSONIL Inj. Opsonin**
Chlorpromazine hydrochloride 50mg in 2ml ampoule: injection
25 amps pack: 100.00 MRP

FLUPHENAZINE[21,33]

FLUPHENAZINE DECANOATE: Injection
Ind: Maintenance treatement of psychotic disorders particularly schizophrenia.
C/I: Phaeochromocytoma; marked cerebral atherosclerosis; renal or hepatic failure; cardiac insufficiency; anxiety & tension states or geriatric confusion and agitation.
S/E: Extrapyramidal symptoms occur more frequently (particularly in elderly females) usually a few hours after dose has been adminstered and continued for 2 days. See also under clopenthixol.
Cautions: Hepatic, respiratory and cardiac diseases, cardiac arrhythmias, thyrotoxicosis, epilepsy, glaucoma, hypothyroidism, myasthenia gravis, prostatic hypertrophy, pregnancy lactation.
Dosage & admin: Adult: Initially 12.5mg (6.25mg elderly) by deep i.m. inj. into gluteal region to test susceptibility to extrapyramidal reactions, then adjust dose according to response. Usual dosage range, 12.5mg-100mg every 2-5 weeks, starting 4 to 7 days after test. Child: Not recommended.

❖ **FENAZINE Inj. Incepta**
Fluphenazine decanoate 25mg/1ml ampoule: injection.
1ml amp x 5's pack: 350.00 MRP
❖ **FLUPHENAZINE DECANOATE-Rotex Inj. Rotex Medica/City Overseas**
Fluphenazine decanoate 25mg/ml: 1ml ampoule & 10ml vial: injection.
1ml amp x 10's pack: 960.00 TP
10ml vial x 1's pack: 700.00 TP
❖ **MODECATE Inj. Squibb/Kapricorn**
Fluphenazine decanoate 25mg/1ml ampoule: injection.
1ml amp: 116.55 MRP

TRIFLUOPERAZINE[21,65]

TRIFLUOPERAZINE: Tablet/Syrup/ Injection
Ind: Schizophrenia, psychoses due to organic brain damage, behavioral disorder and toxic psychoses. Anxiety, depressive symptoms secondary to anxiety. Senile agitation and confusion. Nausea & vomiting.
C/I; S/E; Caution: See under haloperidol.
Dose: By mouth: Adult, Psychoses- initially 10mg daily in single or divided doses increasing after 7 days to 15mg daily. If reqd. increase further by 5mg at 3 day intervals, then reduce to maintenance dose 10mg daily. Anxiety (Psychoneuroses)- 2 to 6mg daily in divided or single doses. Child, Psychoses- under 12 yrs. upto 5mg in divided doses, then adjust according to the response. Anxiety- under 3 yrs. not recommended; 3-5 yrs. 1 mg daily in divided doses (as syp.); 6-12 yrs. upto 4mg daily (as syp.) in divided doses.
By Injection: **Adult, 1-3mg daily by i.m. inj. max. 6mg daily. Child, 1mg/20kg body-wt. daily by i.m. inj. in divided doses.**

❖ **SIZONIL Tab. Healthcare**
Trifluoperazine dihydrochlor. 1mg & 5mg/tablet
1mg x 100's pack: 175.00 MRP
5mg x 100's pack: 300.00 MRP
❖ **STELA Tab. Delta**
Trifluoperazine dihydrochlor 1mg & 5mg/tablet
1mg x 50's pack: 75.01 MRP
5mg x 50's pack: 125.00 MRP
❖ **TELAZINE Tab. SK+F**
Trifluoperazine dihydrochlor. 1mg & 5mg/tablet
1mg x 100's pack: 150.00 MRP
5mg x 100's pack: 250.00 MRP

Phenothiazine related drugs

CLOZAPINE[21,33]

CLOZAPINE: Tablet
Ind: Schizophrenia in patients unresponsive to, or intolerant of, conventional antipsychotic drugs.
C/I: Severe cardiac disease; history of drug-induced neutropenia/ agranulocy-tosis; bone marrow disorders; alcoholic and toxic psychoses; history of circulatory collapse or paralytic ileus; drug intoxication; coma or severe CNS depression; uncontrolled epilepsy; pregnancy and breast-feeding.
S/E: See under chlorpromazine hydrochloride but less sedating and high incidence of antimuscarinic symptoms; extrapyramidal symptoms may occur less frequently; neutropenia and potentially fatal agranulocytosis, fever (evaluate to rule out underlying infection or agranulocytosis), headache and dizziness, hypersalivation, urinary incontinence, priapism, pericarditis and myocarditis; and deliruim; hypotension- rarely circulatory collapse with cardiac and respiratory arrest (but hypertension also reported), also nausea and vomiting; hyperglycaemia reported.
Cautions: See under chlorpromzine hydrochloride; initiation must be in hospital in-patients, and leucocyte and differential blood counts must be normal before treatment and must be monitored weekly for first 18 weeks then at least fortnightly- patients who have received clozapine for a year or more and have stable blood counts may have their blood monitoring reduced to every 4 weeks; avoid drugs which depress leucopoiesis such as co-trimoxazole and carbamaze-pine (and taper off conventional neuroleptic before starting); withdraw treatment if leucocyte count falls below 3000/mm3; patients should report any infections.
Withdrawal: On planned withdrawal reduce dose gradually over 1-2 weeks to avoid risk of rebound psychosis. If abrupt withdrawal necessary observe patient carefully.
Dosage & admin: (Close medical supervision on initiation- risk of collapse due to hypotension) 12.5mg once or twice on first day then 25-50mg on second day, then slowly increased (if well tolerated) in steps of 25-50mg over 14-21 days to 300mg daily in divided doses (larger dose at night, up to 200mg daily may be taken as a single dose at bed time); if necessary may be further increased in steps of 50-100mg once (preferably) or twice weekly; usual antipsychotic dose 200-450mg daily (max. 900mg daily); subsequent adjustment to usual maintenance of 150-300mg.
Child: Not recommended.
Elderly and special risk groups: in elderly,

12.5mg once on first day- subsequent adjustments restricted to 25mg daily; in cardiovascular disease, hepatic or renal impairment or if history of epilepsy, 12.5mg on first day-subsequent adjustments slowly and in small steps (if epileptic seizures-suspend for 24 hours and resume at lower dose); restarting after interval of more than 2 days, 12.5mg once or twice on first day (but may be feasible to increase more quickly than on initiation)- unless previous respiratory or cardiac arrest with initial dosing in which case extreme caution.

❖ **SENSIPIN Tab. Beximco**
Clozapine 25mg/tablet.
25mg x 30's pack: 75.00 IP
❖ **SIZOPIN Tab. Sun Pharma**
Clozapine 25mg & 100mg/tablet.
25mg x 50's pack: 125.00 MRP
100mg x 50's pack: 450.00 MRP

FLUPENTHIXOL[21,26,67]

FLUPENTHIXOL: Tablet/Injection
Flupenthixol- a neuroleptic with anxiolytic and antidepressant properties of its own when given in small doses.
Ind: Psychoses, schizophrenia except manic phase and psychomotor hyperactivity; maintenance in schizophrenia & related psychoses. Depression.
C/I: Intolerance to neuroleptic drugs; excitable or over active patient; parkinsonism; severe atherosclerosis; senile confusional state; advanced renal, hepatic or cardiovascular disease.
S/E: Extrapyramidal symptoms occur frequently (1-3 days after administration & continue for 5 days). Aggregation or agitation may appear (in this stage, should be replaced by another drug). Also see under chlorpromazine.
Caution: Renal & hepatic impairment; atherosclerosis; pregnancy.
Dosage & admin: Flupenthixol decanoate: By i.m injection- initially use test does 20mg; then 100-200mg by deep i.m injection (better gluteal muscle) after 5 to 10 days; repeat usually every 2 to 4 weeks maximum 400mg weekly.
Child: Not recommended.
Flupenthixol dihydrochloride: Adult, 3-9mg twice daily; maximum 18mg daily.
Child: Not recommended.

❖ **FLUANXOL Tab. Lundbeck/Lilac**
Flupenthixol dihydrochloride 0.5mg & 1mg/tablet.
0.5mg x 100's pack: 775.00 MRP
1mg x 50's pack: 390.00 MRP
❖ **FLUANXOL Depot Inj. Lundbeck/ Lilac**
Flupenthixol decanoate 20mg/ml & 40mg/2ml ampoule: injection
1ml amp x 10's pack: 2242.00 MRP
2ml amp x 10's pack: 3701.00 MRP
❖ **SENTIX Tab. SK+F**
Flupenthixol dihydrochloride 0.5mg & 1mg/tablet.
0.5mg x 50's pack: 150.00 MRP
1mg x 30's pack: 150.00 MRP

FLUPENTHIXOL + MELITRACEN[21,26,67]

FLUPENTHIXOL+ MELITRACEN: Tablet
Flupenthixol- a neuroleptic with anxiolytic and antidepressant properties of its own when given in small doses, and melitracen- a bipolar thymoleptic with activating properties in low doses. In combination the compounds render a preparation with antidepressant, anxiolytic and activating properties, but does not seem to influence the pharmacokinetic properties of the individual compounds.
Ind: Psychoses, schizophrenia except manic phase and psychomotor hyperactivity. Maintenance in schizophrenia & related psychoses.
C/I; S/E; Caution: See above under the text of 'flupenthixol'.
Dosage & admin: Flupenthixol + melitracen: Adult, usually 2 tablets daily divided in morning and evening doses. In severe cases, morning dose may be increased to 2 tablets. Elderly, 1 tablet in the morning; maintenance, usually 1 tablet in the morning.
Child: Not recommended.

❖ **ADELAX Tab. ACI**
Flupenthixol dihydrochloride INN equivalent to 0.5mg flupenthixol & melitracen hydrochloride INN equivalent to 10mg melitracen/tablet.
50's pack: 175.00 IP
❖ **AMILAX Tab. Amico**
Flupenthixol dihydrochloride INN equivalent to 0.5mg flupenthixol & melitracen hydrochloride INN equivalent to 10mg melitracen/tablet.
50's pack: 160.00 MRP
❖ **ANFREE Tab. Aristopharma**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
50's pack: 175.00 MRP
❖ **ANGENTA Tab. Healthcare**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
50's pack: 175.00 MRP
❖ **ANZET Tab. Popular**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
50's pack: 175.00 IP
❖ **BENZIT Tab. Bio-pharma**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
100's pack: 300.00 MRP
❖ **DELETA Tab. General**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
50's pack: 175.00 MRP
❖ **DEPNIL Tab. White Horse**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
50's pack: 175.00 MRP
❖ **DEPRESIL Tab. Rangs Pharma**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
50's pack: 162.50 MRP
❖ **DEXIT Tab. UniHealth**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
50's pack: 175.00 MRP
❖ **DICONTEN Tab. Drug Inter.**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
50's pack: 175.00 MRP
❖ **DINXI Tab. Chemist**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
50's pack: 150.00 MRP
❖ **DORMIR Tab. Somatec**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
50's pack: 175.00 MRP
❖ **EXUTEN Tab. Pharmadesh**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
30's pack: 105.00 MRP
❖ **FEMANOL Tab. Chemico**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
50's pack: 162.50 MRP
❖ **FLUXIT Tab. Opsonin**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
50's pack: 162.50 MRP
❖ **FRENXIT Tab. Beximco**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
150's pack: 525.00 IP
❖ **FREXIT Tab. Asiatic**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
30's pack: 105.00 MRP
❖ **HENXIT Tab. Hudson**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
100's pack: 350.00 MRP
❖ **INSPRA Tab. Medicon**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
50's pack: 150.00 MRP
❖ **LEANXIT Tab. Acme**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
100's pack: 350.00 MRP
❖ **MELIXOL Tab. Square**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.

50's pack: 175.00 MRP

❖ **MELTIX Tab. Navana**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
50's pack: 175.00 MRP

❖ **MELXIT Tab. Ziska**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
50's pack: 150.00 MRP

❖ **MIXIT Tab. Apex**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
50's pack: 160.00 MRP

❖ **NEOXIT Tab. Novo Healthcare**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
30's pack: 105.00 MRP

❖ **PENXIT Tab. Peoples**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
50's pack: 150.00 MRP

❖ **RADEX Tab. Globe**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
50's pack: 175.00 MRP

❖ **RELUX Tab. Rephco**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
50's pack: 150.00 MRP

❖ **REMOOD Tab. Ibn Sina**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
50's pack: 175.00 MRP

❖ **RENXIT Tab. Renata**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
50's pack: 175.00 MRP

❖ **SENSIT Tab. SK+F**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
50's pack: 175.00 MRP

❖ **TENAXIT Tab. Incepta**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
50's pack: 175.00 MRP

❖ **TENSA Tab. SAPL**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
50's pack: 175.00 MRP

❖ **THENXET Tab. Pacific**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
100's pack: 400.00 MRP

❖ **TIXOL Tab. Alco Pharma**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
50's pack: 150.00 MRP

❖ **U4 Tab. Orion**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
30's pack: 97.50 MRP

❖ **ZENXIT Tab. Zenith**
Flupenthixol dihydrochloride 0.5mg & melitracen hydrochloride 10mg/tablet.
100's pack: 325 MRP

ZUCLOPENTHIXOL[21,67]

❖ **CLOPIXOL Tab. Lundbeck/Lilac**
Zuclopenthixol dihydrochloride 10mg/tablet.
Ind: Psychoses, especially schizophrenia with agitation or aggression.
C/I; S/E; Caution: See under chlorpromazine hydrochloride & flupenthixol; should not be used in apathetic or withdrawn states; avoid in children and in porphyria.
Adult: Initially 20-30mg daily in divided doses. Maintenance, 20-50mg daily; maximum 150mg daily if nacessary.
Child: Not recommended.
100's pack: 1361.00 MRP

❖ **CLOPIXOL Depot Inj. Lundbeck/Lilac**
Zuclopenthixol decanoate 200mg/1ml ampoule: oily injection.
C/I; S/E; Caution: See under Chlorpromazine HCl & Flupenthixol; but less sedating; avoid in children and in porphyria;
Dose: By deep i.m injection into the gluteal muscle, test dose 100mg, then after 7-28 days 100-200mg or more, followed by 200-400mg repeated at intervals of 2-4 weeks, adjusted according to the response; max. 600mg weekly.
Child: Not recommended.
1ml amp x 10's pack: 3013.00 MRP

❖ **CLOPIXOL ACUPHASE Inj. Lundbeck/Lilac**
Zuclopenthixol acetate 50mg/1ml & 100mg/2ml ampoule: injection.
C/I; S/E; Caution: See under Chlorpromazine dihydrochlor. & Flupenthixol; avoid in children and in porphyria; treatment duration should not exceed 2 weeks.
Dose: By deep i.m. injection, 50-150mg (elderly 50-100mg), if necessary repeated after 2-3 days (1 additional dose may be needed 1-2 days after the first injection); max. cumulative dose 400mg per course and max. 4 injections; if maintenance treatment necessary change to an oral antipsychotic 2-3 days after last injection, or to a longer acting antipsychotic depot injection given concomitantly with last injection of zuclopenthixol acetate.
1ml amp (50mg) x 5's pack: 1671.00 MRP
2ml amp (100mg) x 5's pack: 2054.00 MRP

Butyrophenone: Haloperidol

HALOPERIDOL[21,33]

HALOPERIDOL: Tablet/Liquid/Injection.
Ind: Schizophrenia, mania, hypomania. Anxiety. Behavioral disorders in children. Alcohol withdrawlal syndrome & delirium tremens. Nausea, vomiting. Pre-anaesthetic medication.
C/I; S/E: See under chlorpromazine, but less sedating & fewer antichoinergic or hypotensive symptoms. Rarely blood dyscrasias, alterations in

liver function, g.i dsiturbances, and weight loss. Avoid in basal ganglia disease.
Caution: Liver and renal failure, epilepsy, thyrotoxicosis, parkinsonism, pregnancy, severe cardiovascular disease.
Dosage & admin: ***By mouth:*** **Adult, Psychoses- initially 0.5-5mg 2 or 3 times daily, increasing gradually as reqd. max. 200mg. daily, when control is achieved reduce to maintenance dose (5-10mg daily). Anxiety- 0.5mg twice daily. Child, 0.05mg/ kg body-wt. daily in 2 divided doses.**
By injection: **Adult, Psychoses- initially 2-30mg i.m, then 5mg 1 to 8 hourly as reqd. Child, as dose by mouth.**

❖ **HALOP Tab. Opsonin**
Haloperidol 5mg/tablet.
5mg x 100's pack: 50.00 MRP

❖ **HALOPID Tab. Incepta**
Haloperidol 5mg/tablet.
5mg x 100's pack: 100.00 MRP

❖ **HALOPID Inj. Incepta**
Haloperidol 5mg/1ml ampoule: injection.
10 amps pack: 108.00 MRP

❖ **PELDOL Tab. Gaco**
Haloperidol 1.5mg & 5mg/tablet.
1.5mg x 100's pack: 30.48 MRP
5mg x 100's pack: 50.35 MRP

❖ **PERIDOL Tab. Square**
Haloperidol 5mg/tablet.
5mg x 100's pack: 100.00 MRP

❖ **PERIGEN Tab. General**
Haloperidol 5mg/tablet.
5mg x 100's pack: 50.00 MRP

❖ **PEROL Tab. Ambee**
Haloperidol 5mg/tablet.
5mg x 100's pack: 50.00 MRP

❖ **PEROL Inj. Ambee**
Haloperidol 5mg/1ml ampoule: injection.
10 amps pack: 100.00 MRP

Atypical Antipsychotics[21]

The 'atypical antipsychotics' include- ***Amisulpride, Aripiprazole, Clozapine, Olanzapine, Quetiapine, Risperidone, Sertindole, Ziprasidone & Zotepine.***

ARIPIPRAZOLE[34]

ARIPIPRAZOLE: Tablet
Aripiprazole is an 'atypical antipsychotic drug'. It is available as aripiprazole INN 5mg, 10mg & 15mg film-coated tablet.
Ind: Schizophrenia; acute manic & mixed episodes associated with bipolar disorder.
C/I: Aripiprazole is contraindicated in patients

with a known hypersensitivity to the product; child, adolescent & breast feeding mothers.
S/E: Headache, asthenia, fever, nausea, vomiting, constipation, anxiety, insomnia, lightheadedness, somnolence, akathisia, tremor, rhinitis, coughing, rash, postural hypotension, dyspepsia and blurred vision. Neuroleptic malignant syndrome, tardive dyskinesia, hyperglycemia and diabetes mellitus have been rarely seen during aripiprazole therapy.
Cautions: Aripiprazole should be used cautiously in patients at risk of orthostatic hypotension, seizure, patients of cognitive and motor impairment, dysphagia, suicide, patients with concomitant illness, elderly, pregnancy.
Pregnancy & lactation: Aripiprazole should be used in pregnancy only if the potential benefits outweigh the potential risk to the fetus and it is recommended that women receiving aripiprazole should not breast-feed
Dosage & admin: Schizophrenia: Usual recommended starting and target dose for aripiprazole is 10mg to 15mg/day administered on a once-a-day schedule without regard to meals. Aripiprazole has been shown to be effective in a dose range of 10mg to 30mg/day. Maximum dosage increase should not be made before 2 weeks.
Acute manic & mixed episodes associated with bipolar disorder: Usual recommended starting dose is 30mg given once a day. Dose may be decreased to 15mg based on assessment of tolerability. Dosage adjustments are not routinely indicated on the basis of age, gender, race or renal or hepatic impairment status.
Drug inter: Ketoconazole and quinidine increase the AUC of aripiprazole; so, dose should be reduced by half when co-administered with these drugs. Carbamazepine decreases the AUC of aripiprazole; so dose should be doubled while carbamazepine is co-administered.

❖ **ARIPEN Tab. Opsonin**
Aripiprazole INN 10mg & 15mg/tablet
10mg x 30's pack: 150.00 MRP
15mg x 20's pack: 140.00 MRP
❖ **ARIPRA Tab. Incepta**
Aripiprazole INN 10mg & 15mg/tablet
10mg x 30's pack: 150.00 MRP
15mg x 30's pack: 210.00 MRP
❖ **ARIPRAZOLE Tab. General**
Aripiprazole INN 5mg & 10mg/tablet
5mg x 30's pack: 175.00 MRP
10mg x 30's pack: 150.00 MRP
❖ **SIZNIL Tab. Orion**
Aripiprazole INN 10mg/tablet
10mg x 50's pack: 250.00 MRP
❖ **SIZOPRA Tab. Acme**
Aripiprazole INN 10mg & 15mg/tablet
10mg x 30's pack: 150.00 MRP
15mg x 20's pack: 140.00 MRP

OLANZAPINE[52]

OLANZAPINE: Tablet
Olanzapine is a thienobenzodiazepine atypical antipsychotic drug.
Mode of action: Olanzapine is a thienobenzodiazepine atypical antipsychotic drug. It is a competitive antagonist of dopamine, acting by binding to the dopamine receptors (D1, D2 & D4) in the mesolimbic system of brain. It also has affinity for histamine (H1), serotonin (5-HT2), muscarinic (M1) & adrenergic (a1) receptors.
Ind: Olanzapine is indicated for the management of schizophrenia and other psychotic disorders. It is as effective as haloperidol against positive symptoms & more effective against negative symptoms in short-term & possibly in the long-term.
Olanzapine is also indicated for the short-term treatment of acute manic or mixed episodes of manic depression. It is associated with a relatively low incidence of extrapyramidal disorders and is therefore being used in the treatment of drug-induced psychosis in patients with Parkinson's disease.
C/I: i. Patients with a known hypersensitivity to the drug ii. Nursing mother iii. Patients with pre-existing CNS depression or coma. iv. Narrow-angle glaucoma v. Paediatric patients (under 18 years of age) vi. Patients with prolactin-dependent tumors.
S/E: Frequent (>10%)- somnolence & weight gain. Occasional (1-10%)- dizziness, increased appetite, peripheral oedema, orthostatic hypotension, mild & transient anticholinergic effects like constipation & dry mouth, elevated creatine phosphokinase & hepatic transaminse concentration. Other features are tachycardia, hypertension. Lower incidence- Parkinsonism, akathisia, dystonia. Rare (<1%)- photosensitivity, hyper-prolactinaemia, back pain, articular impairment, fever.
Warnings: Development of neuroleptic malignant syndrome (NMS)- immediate discontinuation of the drug should be considered & development of Tardive Dyskinesia due to long-term use- drug discon-tinuation or dose reduction should be done.

Precautions: Patients with known cardiovascular disease (history of myocardial infarction, ischemia, heart failure, conduction abnormalities). Patients with a history of seizure. Patients with hepatic impairment & who are being treated with potentially hepatotoxic drug or in case of elevation of hepatic transaminase. Patients receiving concomitant medication with anticholinergic drugs, being subject to dehydration or exposure to extreme heat. Patients with low leucocyte (neutrophil) count or hypereosinophilic condition. Patient with bone marrow depression/toxicity due to drug, chemotherapy, radiation or illness. Patient with clinically significant prostatic hypertrophy, history of paralytic ileus, diabetes mellitus, hypotension, myasthenia gravis. Patients with impaired kidney function. Elderly patients with dementia.
Patient receiving Olanzapine therapy should be cautious about operating hazardous machinery & motor vehicles.

Pregnancy & lactation: When potential benefit justifies the potential risk to the foetus. Patients should notify their physician if they become pregnant or intend to become pregnant during the therapy (since there is no report to show teratogenicity).
Dosage & Admin: Initial dose: 10mg once daily regardless of meal. Daily dosage may subsequently be adjusted on the basis of individual clinical status within the range of 5-20mg once daily. Doses of 15mg or more daily should be given only after appropriate clinical reassessment.
Metabolism rate of Olanzapine is slower in Female, elderly (over 65 years of age) & non-smokers. So, a lower initial & a more gradual dose schedule should be considered.
Patients with renal impairment- starting dose is 5mg once daily.
Patients with hepatic impairment- starting dose is 5mg once daily & only increased with caution.
Drug Inter: Drugs which inhibit or act as a substrate to Cytochrome P450 isoenzymes or glucoronyl transferase enzymes (omeprazole, rifampicin, fluvoxamine), Dopamine agonists, antihypertensives & antiarrhythmics (methyl dopa, guanethidine, procainamide, quinidine), tricyclic antidepressants (fluvoxamine. fluoxetine), antiepileptics (phenobarbitone, carbamazepine, phenytoin), Terfenadine.

❖ **DEPREX Tab. Square**
Olanzapine INN 5mg & 10mg/tablet
5mg x 100's pack: 150.00 MRP
10mg x 100's pack: 250.00 MRP
❖ **LOPEZ Tab. General**
Olanzapine INN 5mg & 10mg/tablet
5mg x 50's pack: 75.00 MRP
10mg x 50's pack: 125.00 MRP
❖ **OLANAP Tab. Incepta**
Olanzapine INN 5mg & 10mg/tablet
5mg x 50's pack: 75.00 MRP
10mg x 50's pack: 125.00 MRP
❖ **OLEANZ Tab. Sun Pharma**
Olanzapine INN 5mg & 10mg/tablet
5mg x 50's pack: 125.00 MRP
10mg x 50's pack: 225.00 MRP
❖ **XYTREX Tab. ACI**
Olanzapine INN 10mg/tablet
50's pack: 125.00 MRP

QUETIAPINE[26]

QUETIAPINE FUMARATE: Tablet
Quetiapine is an atypical psychotropic agent belonging to a chemical class, the dibenzothiazepine derivatives. It is available as quetiapine fumarate INN equivalent to quetiapine 25mg & 100mg/tablet (film-coated).
Mode of action: Quetiapine is an antagonist at multiple neurotransmitter receptors in the brain, such as- serotonin 5HT1 A and 5HT2, dopamine D1 and D2, histamine H1, and adrenergic 1 and 2 receptors. Quetiapine has no appreciable affinity at cholinergic muscarinic and benzodiazepine receptors. The actual mechanism of action of quetiapine is unknown. However, it has been proposed that this drug's efficacy in schizophrenia is mediated through a combination of dopamine D2 and serotonin 5HT2 antagonism. Quetiapine's antagonism of histamine H1 receptors may explain the somnolence and that of adrenergic 1 receptors may explain the orthostatic hypotension observed with this drug.
Ind: Bipolar mania: Quetiapine is indicated for the treatment of acute manic episodes associated with bipolar I disorder, as either monotherapy or

adjunct therapy to lithium or divalproex.
Schizophrenia: Quetiapine is indicated for the treatment of schizophrenia. C/I: Known hypersensitivity to this medication or any of its ingredients.
S/E: Somnolence, dizziness, dry mouth, constipation, dyspesia, postural hypotension, elevated ALT (SGPT) levels, weight gain.
Precautions: Neuroleptic malignant syndrome, tardive dyskinesia. Hypotension and syncope, specially during the initial dose titration period. Conduct eye examinations prior to or shortly after starting quetiapine and at 6-month intervals thereafter; doscontinue the drug if clinically significant lens changes are observed. History of seizures. Hypothyroidism. Hyperprolactinemia. Antiemetic effect. Suicide. Use with great caution in moderate or severe hepatic impairments. Renal impairment. Cardiovascular disease. Disruption of body temperature regulation. Hyperglycemia. Lactation (avoid breast-feeding).
Pregnancy & lactation: Quetiapine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. Nursing mothers receiving quetiapine should not breast feed.

Dosage & admin: ***Bipolar mania:*** **As monotherapy or as adjunct therapy with other anti-psychotic drugs: 1st day- 50mg twice daily; 2nd day- 100mg twice daily; 3rd day- 150mg twice daily; 4th day- 200mg twice daily; 5th day- 300mg twice daily; 6th day- 400mg twice daily.**
Data indicates that the majority of patients responded between 400mg to 800mg/day. The safety of doses above 800mg/day has not been evaluated in clinical trials.
Schizophrenia: **Usual dose: Quetiapine should generally be administered with an initial dose of 25mg twice daily, with increments of 25-50mg twice daily or thrice daily on the second and third day, as tolerated, to a target dose range of 300mg to 400mg daily by the 4th day, given twice daily or thrice daily. Further dosage adjustments- if indicated, should generally occur at intervals of not less than 2 days, as steady-state for quetiapine would not be achieved for approximately 1-2 days in the typical patient. When dosage adjustments are necessary, dose increments/decrements of 25-50mg twice daily are recommended. Most efficacy data with quetiapine were obtained using thrice daily regimens, but in one controlled trial 225mg twice daily was also effective.**
Physician who elects to use quetiapine for extended periods should periodically re-evaluate the long-term usefulness of the drug for the individual patient.
Pediatric use: **The safety and effectiveness of quetiapine in pediatric patients less than 18 years have not been established.**

Drug inter: May enhance the effects of other centrally acting drugs, certain antihypertensive agents; may antagonize the effects of dopamine agonists ans levodopa. Increased clearance of quetiapine by phenytoin, barbiturates, rifampicin, carbamazepine. Increased concentrations of quetiapine with azole antifungals and macrolide antibiotics.

❖ **QUIET Tab. Incepta**
Quetiapine fumarate INN equivalent to quetiapine 25mg & 100mg/tablet (film-coated).
25mg x 50's pack: 150.00 MRP
100mg x 30's pack: 300.00 MRP
❖ **QUTIPIN Tab. Sun Pharma**
Quetiapine fumarate equivalent to quetiapine 25mg & 100mg/tablet (film-coated).
25mg x 50's pack: 150.00 MRP
100mg x 50's pack: 500.00 MRP
❖ **TIAPINE Tab. General**
Quetiapine fumarate INN equivalent to quetiapine 100mg/tablet (film-coated).
100mg x 30's pack: 300.00 MRP

RISPERIDONE[106]

RISPERIDONE: Tablet
Risperidone is an atypical antipsychotic drug.
Ind: Schizophrenia including affective symptoms. Other psychotic conditions where positive and/or negative symptoms are prominent. Also, behavioural disturbances in patients with dementia where aggressive symptoms (verbal outbursts, physical violence), activity disturbances (agitation, wandering) or psychotic symptoms are prominent.
C/I: Hypersensitivity to the drug.
S/E: Generally well tolerated. Commonly- insomnia, agitation, anxiety, headache. Less conunonly- somnolence, fatigue, dizziness, impaired concentration, constipation, dyspepsia, nausea/vomiting, abdominal pain, blurred vision, priapism, erectile/ejaculatory dysfunction, orgasmic dysfunction, urinary incontinence, rhinitis, rash, allergic reactions. EPS are usually mild nad reversible. Rarely- neuroleptic malignant syndrome. Occasionally- orthostatic dizziness, hypotension (including orthostatic), tachycardia (including reflex) and hypertension observed. Raised plasma prolactin with associated galactorrhoea, gynaecomastia and menstrual cycle disturbances. Oedema and increased hepatic enzyme levels. A mild fall in neutrophil and/or thrombocyte count has been reported. Rarely- water intoxication with hyponatraemia, tardive dyskinesia, body temperature dysregulation and seizures.

Precautions: Orthostatic hypotension. Cardiovascular disease. Reduce dose if hypotension. If tardive dyskinesia, consider stopping all antipsychotic durgs. Parkinson's disease. Epilepsy. Advise of potential for weight gain. Advise not to drive or operate machinery if alertness affected.
Pregnancy & lactation: In pregnancy only if benefits outweigh the risks. In lactation, avoid the drug..

Dosage: Adults- Start with 2mg daily in single or two divided doses; may be increased to 4mg/day on the second day. Some patients slower in initiation. Maintain unchanged, or adjust if needed. Most patients benefit from doses of 4-6mg/day, but an optimal response may be obtained at lower doses. Above 10mg/day may increase extrapyramidal symptoms risk, consider risks vs benefits. Maximum dose 16mg/day.
Elderly, renal & liver disease: Start with 0.5mg b.d; adjust by 0.5mg twice daily to 1-2mg thrice daily.
Behavioural disturbances in patients with dementia: Start with 0.25mg b.d; adjust by 0.25mg b.d every other day. Optimum- 0.5mg b.d; some may benefit from 1mg b.d. Once target is achieved, consider once daily dosing. Review regularly, discontinue if no benefit seen or intolerance occurs. Well tolerated in elderly. Caution in renal and liver disease. Children: Not recommended.
Drug inter: Caution with centrally acting drugs. May antagonise effects of dopamine agonists. If starting or stopping hepatic enzyme-inducing drugs, re-evaluate dose.
Phenothiazines, tricyclic antidepressants and some beta-blockers may increase the plasma concentration of risperidone but not those of the antipsychotic fraction. Fluoxetine may increase the plasma concentration of risperidone but less so of the antipsychotic fraction.

❖ **FRENIA Tab. Incepta**
Risperidone INN 1mg, 2mg & 4mg/tablet.
1mg x 50's pack: 75.00 MRP
2mg x 50's pack: 125.00 MRP
4mg x 30's pack: 105.00 MRP
❖ **RESCO Tab. Drug Inter.**
Risperidone INN 1mg & 2mg/tablet.
1mg x 50's pack: 75.00 MRP
2mg x 50's pack: 100.00 MRP
❖ **RISCORD Tab. General**
Risperidone INN 2mg & 4mg/tablet.
2mg x 30's pack: 60.00 MRP
4mg x 30's pack: 105.00 MRP
❖ **RISDON Tab. UniMed/UniHealth**
Risperidone INN 1mg, 2mg & 4mg/tablet.
1mg x 30's pack: 90.00 MRP
2mg x 30's pack: 150.00 MRP
4mg x 30's pack: 270.00 MRP
❖ **RISPA Tab. Orion**
Risperidone INN 1mg & 2mg/tablet.
1mg x 50's pack: 75.00 MRP
2mg x 50's pack: 100.00 MRP
❖ **RISPERDEX Tab. Opsonin**
Risperidone INN 1mg & 2mg/tablet.
1mg x 50's pack: 75.00 MRP
2mg x 50's pack: 100.00 MRP
❖ **RISPOLUX Tab. Sandoz/Novartis**
Risperidone INN 1mg, 2mg & 4mg/tablet.
1mg x 100's pack: 300.00 MRP
2mg x 100's pack: 500.00 MRP
4mg x 30's pack: 270.00 MRP
❖ **SIZODON Tab. Sun Pharma**
Risperidone INN 1mg, 2mg & 4mg/tablet.
1mg x 50's pack: 90.00 MRP
2mg x 50's pack: 150.00 MRP
4mg x 50's pack: 275.00 MRP
❖ **SPERID Tab. Renata**
Risperidone INN 1mg & 2mg/tablet.
1mg x 50's pack: 75.00 MRP
2mg x 50's pack: 100.00 MRP

ZIPRASIDONE[130]

ZIPRASIDONE: Capsule
Ziprasidone INN 20mg & 40mg/capsule.
Ziprasidone is well absorbed after oral administration; the absorption is increased upto two-fold in the presence of food. Elimination of

ziprasidone is mainly via hepatic metabolism.
Ind: Ziprasidone is indicated for the treatment of schizophrenia.
C/I: Ziprasidone is contraindicated in patients with a known history of QT prolongation, with recent acute myocardial infarction, or with uncompensated heart failure.
S/E: The most common side effects are rash, asthenia, postural hypotension, anorexia, dry mouth, increased salivation, arthralgia, anxiety, dizziness, dystonia, hypertonia, somnolence, tremor, rhinitis and abnormal vision.
Precautions: Ziprasidone should be used with caution in patients with known cardiovascular disease including those associated with prolongation of QT interval.
Pregnancy & lactation: It should be used with caution during pregnancy and only if the expected benefit to the mother is greater than the possible risk to the fetus. It is excreted into breast milk; so, mothers should avoid using ziprasidone while breast-feeding.
Dosage & admin: Ziprasidone should be administered at an initial dose of 20mg twice daily with food. In some patients, daily dosage may subsequently be adjusted on the basis of individual clinical status up to 80mg twice daily; Or, as directed by the physician.
Drug inter: Ziprasidone may enhance the effects of certain antihypertensive agents, may antagonize the effects of levodopa and dopamine agonists.

❖ **ZIPRADON Cap. Drug Inter.**
Ziprasidone INN 20mg & 40mg/capsule.
20mg x 50's pack: 250.00 MRP
40mg x 30's pack: 300.00 MRP
❖ **ZIPSYDON Cap. Sun Pharma**
Ziprasidone INN 20mg/capsule.
20mg x 50's pack: 300.00 MRP

Antimanic drugs: Lithium salt

LITHIUM CARBONATE[21,68]

LITHIUM CARBONATE: Tablet.
Ind: Acute mania; prevention of manic depressive illness (prophylaxis of recurrent effective disorders).
C/I: Pregnancy, lactation. Addison's disease. Hypothyroidism, renal or cardiac disease. Conditions disturbing sodium balance.
S/E: Mild gastro-intestinal disturbances, fine tremor, polyuria, polydipsia; also weight gain and oedema.
Toxicity: Signs of Lithium intoxications are blurred vision, increasing g.i disturbances (anorexia, vomiting, diarrhoea), increasing CNS disturbances (mild drowsiness & sluggishness increasing to giddiness with ataxia, coarse tremor, lack of co-ordination, disarthria). Require withdrawal of treatment .
With severe overdosage (blood level 2mmol/L), hyperreflexia and hyper extension of limbs, fits, toxic psychoses, syncope, oliguria, circulatroy failure, coma and occasionlally death.
Cautions: Treatment should be initiated in hospital . Concurrent admin. of diuretics . Maintain adequate salt and fluid intake . Monitor thyroid function.
Dosage & admin: Adult: Acute mania, 0.25-2gm daily in divided doses, adjust the dose by daily blood tests to maintain a serum lithium level in range 0.6-1.2 mmol/L 12 hours after last dose for 5 to 7 days. Prophylaxis, 0.25-1.2 gm daily in divided doses, adjust the dose to minatiain a serum level in range 0.5-1 mmol/L for first 7 days.
Elderly, usually 0.5-1gm/day given in divided doses.
Child: Not recommended.
Overdosage: No specific antidote. Elimination of lithium can be
facilitated by infusion of sodi-bicarbnonate, acetazolamide, urea or mannitol. Continuous peritoneal dialysis may be effective.

❖ **LITHOSUN SR Tab. Sun Pharma**
Lithium carbonate 400mg/tablet. (sustained release).
50's pack: 200.00 MRP

4. ANTIDEPRESSANT DRUGS[21]

Antidepressants are the drugs effective in the treatment of pathological depression. They can be classified as:
4.1 Tricyclic & related antidepressants drugs
  a. Tertiary amines
  b. Secondary amines
  c. Piperazine
  d. Triazolepyridine
4.2 Monoamine-oxidase inhibitors (MAOIs)- such as ***Phenelzine, Isocarboxazid, Tranylcypromine.***
Reversible MAOIs- such as Moclobemide.
4.3 SSRIs & related antidepressants- such as ***Citalopram, Fluoxetine, Fluvoxamine, Paroxetine, Sertraline etc.***
4.4 Misc. Antidepressants- such as ***Bupropion, Flupenthixol, Lithium salt, Mirtazapine, Tryptophan, Trazodone, Venlafaxine.***

Tricyclic & related antidepressants

Tricyclic antidepressants: These drugs include- ***Amitriptyline, Amoxapine, Clomipramine, Dothiepin, Doxepin, Imipramine, Lofepramine, Nortriptyline, Protriptyline, Trimipramine.***
Related antidepressants: These drugs include- ***Maprotiline, Mianserin, Trazodone, Viloxazine.***

AMITRIPTYLINE[21,33]

AMITRIPTYLINE HCl : Tablet/Capsule/ Syrup/Injection.
Ind: Depressive illness particularly with anxiety (where sedation is reqd.), nocturnal enuresis in children.
C/I: Acute myocardial infarction; heart block; mania; pregnancy, severe liver disease.
S/E: Dry mouth, blurred vision, constipation, difficulty in micturition; sedation; postural hypotension, tachycardia, syncope partricularly with high doses. Sweating, tremor, rashes; behavioral disturbances (particularly in children); interference with sexual function etc.
Cautions: Cardiovascular disease, liver disorders, hyperthyroidism, epilepsy, diabetes; psychoses, patients with suicidal tendencies. Alertness may be impaired. Reduce doses for the elderly; extreme caution in glaucoma.
By mouth: Adult, initially 75mg (elderly 10-50mg) daily in divided doses or as a single dose at night, increasing if reqd. to max. 200mg daily. Usual maintenance, 50-100mg at night.
Nocturnal enuresis-child 7-10 years 10-20mg, 11-16 years 25-50mg at night for max. 3 months.
By inj: by i.m. or i.v. injection 20-30mg 4 times daily.

❖ **AMILIN Tab. Opsonin**
Amitriptylline hydrochloride 10mg & 25mg/tablet.
10mg x 100's pack: 50.00 MRP
25mg x 100's pack: 80.00 MRP
❖ **AMIT Tab. General**
Amitriptylline hydrochloride 10mg & 25mg/tablet.
10mg x 100's pack: 50.00 MRP
25mg x 100's pack: 90.00 MRP
❖ **AMITRIPTYLINE Tab. GlaxoSmithKline**
Amitriptylline hydrochloride 10mg & 25mg/tablet.
10mg x 200's bot: 110.00 MRP
25mg x 500's bot: 400.00 MRP
❖ **TRIP 10 Tab. Medicon**
Amitryptyline 10mg/tablet
10mg x 100's pack: 50.00 MRP
❖ **TRYPTIN Tab. Square**
Amitryptyline 10mg & 25mg/tablet
10mg x 200's pack: 110.00 MRP
25mg x 200's pack: 200.00 MRP

CLOMIPRAMINE[21]

CLOMIPRAMINE: Tablet/Capsule/Syrup/ Injection.
Ind: Depression, obsessive compulsive disorder, phobic and obsessional states; adjunctive treatment of cataplexy associated with narcolepsy.
C/I; S/E; Caution: See under amitriptyline hydrochloride.
Dose: By mouth, initially 10mg daily, increased gradually as necessary to 30-150mg daily in divided doses or as a single dose at bedtime; max. 250mg daily; usual maintenance 30-50mg daily; Elderly initially 10mg daily, increased to 30-50mg daily; Child not recommended.
Phobic and obsessional states, initially 25mg daily (elderly 10mg daily) increased over 2 weeks to 100-150mg daily; Child not recommended.
Adjunctive treatment of cataplexy associated with narcolepsy, initially 10mg daily, gradually increased until satisfactory response (range 10-50mg daily).
By i.m injection, initially 25-50mg daily, increased by 25mg daily to 100-150mg daily; Child not recommended.
By i.v infusion (careful monitoring see caution), initially to assess tolerance, 25-50mg,

then increase by 25mg daily to usual dose of 100mg daily for 7-10 days; Child not recommended.

❖ **ANAFRANIL Tab. Novartis**
Clomipramine hydrochloride 25mg/tablet.
50's pack: 275.00 MRP
❖ **CLOFRANIL Tab. Sun Pharma**
Clomipramine hydrochloride 25mg/tablet.
50's pack: 250.00 MRP

DOXEPIN[141]

DOXEPIN HYDROCHLORIDE: Capsule
Doxepin hydrochloride is one of a class of psychotherapeutic agents known as dibenzoxepin tricyclic compounds. Chemically, doxepin hydrochloride is a dibenzoxepin derivative and is the first of a family of tricyclic psychotherapeutic agents.
It is available as doxepin hydrochloride USP equivalent to 75mg of doxepin in capsule.
Ind: Doxepin hydrochloride is recommended for the treatment of: 1. Psychoneurotic patients with depression and/or anxiety; 2. Depression and/or anxiety associated with alcoholism (not to be taken concomitantly with alcohol); 3. Depression and/or anxiety associated with organic disease (the possibility of drug interaction should be considered if the patient is receiving other drugs concomitantly); 4. Psychotic depressive disorders with associated anxiety including involutional depression and manic-depressive disorders.
C/I: Doxepin is contraindicated in individuals who have shown hypersensitivity to the drug. Possibility of cross sensitivity with other dibenzoxepines should be kept in mind.
Doxepin is contraindicated in patients with glaucoma or a tendency to urinary retention. These disorders should be ruled out, particularly in older patients.
S/E: Nausea, vomiting, indigestion, taste disturbances, diarrhea, anorexia, dry mouth, blurred vision, constipation, drowsiness, confusion, disorientation, hallucinations, numbness, paresthesias, ataxia, extrapyramidal symptoms, seizures, tremor and urinary retention have been reported. Cardiovascular effects including hypotension, hypertension, and tachycardia have been reported occasionally. Skin rash, edema, photosensitization, and pruritus have occasionally occurred. Eosinophilia has been reported in a few patients. There have been occasional reports of bone marrow depression manifesting as agranulocytosis, leukopenia, thrombocytopenia, and purpura. Raised or lowered libido, testicular swelling, gynecomastia in males, enlargement of breasts and galactorrhea in the female, raising or lowering of blood sugar levels and syndrome of inappropriate antidiuretic hormone secretion have been reported with tricyclic administration. Dizziness, tinnitus, weight gain, sweating, chills, fatigue, weakness, flushing, jaundice, alopecia, headache, exacerbation of asthma, and hyperpyrexia (in association with chlorpromazine) have been occasionally observed as adverse effects.
Precautions: Patients, their families and their attendents should be encouraged to be alert to the emergence of anxiety, agitation, panic attacks, insomnia, irritability, hostility, aggressiveness, impulsivity, akathisia (psychomotor restlessness), hypomania, mania, other unusual changes in behavior, worsening of depression, and suicidal ideation, specially early during antidepressant treatment and when the dose is adjusted up or down. Families and caregivers of patients should be advised to look for the emergence of such symptoms on a day to day basis, since changes may be abrupt. Such symptoms should be reported to the patient's doctor specially if they are severe, abrupt in onset, or were not part of the patient's presenting symptoms. Symptoms such as these may be associated with an increased risk for suicidal thinking and behavior and indicate a need for very close monitoring and possibly changes in the medication.
Pregnancy & lactation: In animal studies, there was no evidence of harm to the animal fetus. The relevance to humans is not known. Since there is no experience in pregnant women who have received this drug, safety in pregnancy has not been established. There has been a report of apnea and drowsiness occurring in a nursing infant whose mother was taking doxepin.
Dosage & admin: Patients with mild to moderate illness, a starting daily dose of 75mg is recommended. Dosage may subsequently be increased or decreased at appropriate intervals and according to individual response. The usual optimum dose range is 75mg/day to 150mg/day.
In more severe illness, higher doses may be required with subsequent gradual increase to 300mg/day if necessary. Additional therapeutic effect is rarely to be obtained by exceeding a dose of 300mg/day.
In patients with very mild symptomatology or emotional symptoms accompanying organic disease, lower doses may suffice. Some of these patients have been controlled on doses as low as 25mg to 50mg/day.
The total daily dosage of doxepin (as hydrochloride) may be given on a divided or once a day dosage schedule. If the once a day schedule is employed the maximum recommended dose is 150mg/day. This dose may be given at bedtime. The 150mg capsule strength is intended for maintenance therapy only and is not recommended for initiation of treatment.
Children: Safety and effectiveness in the pediatric population have not been stablished.

❖ **ADNOR Cap. Apex**
Doxepin hydrochloride USP equivalent to 75mg of doxepin/capsule.
28's pack: 140.00 MRP

IMIPRAMINE[21,33]

IMIPRAMINE: Tablet/ Syrup/ Injection.
Ind: Depression; adjunct in chronic rheumatic pain. Nocturnal enuresis in children.
C/I; S/E; Cautions: See under Amitriptyline, but less sedative & s/e occurs more frequently.
By mouth: Adult, 25mg 3 times daily for 3 days, increasing to 50mg 3 or 4 times daily. Elderly, initially 10mg at night increasing to 10-25mg 3 times daily.
Child: (use syrup) under 6 yrs. not recommended; 6-7 yrs. 25mg; 8-11 yrs. 25-50 mg ; over 11 yrs. 50-75mg. All at bedtime for 6-8 wks. then gradually withdraw therapy.

❖ **PINOR Tab. Aristopharma**
Imipramine hydrochlor. 25mg/tablet.
50's pack: 100.00 MRP
❖ **TOFRANIL Tab. Novartis**
Imipramine hydrochlor. 25mg/tablet
100's pack: 450.00 MRP

MAPROTILINE[21,33]

MAPROTILINE:Tablet
Ind: All forms of depression particularly with anxiety.
C/I; S/E; Caution: See under amitriptylline but less sedating & anticholinergic effects occur less frequently. Rashes commonly occur & there is an increased risk of convulsions at higher dosage.
Dosage & admin: ***Adults:*** **Initially 25-75mg daily in one dose (usually at night) or 3 divided doses, adjusting after 1-2 weeks as necessary. Maximum 150mg daily.**
Elderly: **Initially 30mg at night or 10mg 3 times dialy.**
Child: Not recommended.

❖ **LUDIOMIL Tab. Novartis**
Maprotiline hydrochloride 25mg/tablet
50's pack: 250.00 MRP

NORTRIPTYLINE[21,33]

NORTRIPTYLINE: Tablet/Capsule/Syrup.
Ind: Depressive illness, nocturnal enuresis in children.
C/I; S/E; Cautions: Same as Imipramine.
Adult: 20-40mg daily in divided doses increasing if necessary to 100mg daily. Usual maintenance. 30-75mg daily.
Elderly: Initially 10mg 3 times daily.
Child: Enuresis, under 6 yrs. not recommended; over 6 yrs.10-35 mg 30mins. before bedtime.

❖ **NORTIN Cap. Navana**
Nortriptyline 10mg & 25mg/capsule.
10mg x 100's pack: 62.00 MRP
25mg x 100's pack: 85.00 MRP

Related Antidepressant

MIANSERIN

MIANSERIN HCl: Tablet
Prepn: May not be available.

Monoamine-oxidase inhibitors (MAOIs)

Monoamine-oxidase inhibitors (MAOIs):
These drugs include-
Phenelzine, Isocarboxazid, Tranylcypromine.

Reversible MAOIs : Such as Moclobemide.

Note: Preparations not yet available in our market.

SSRIs & Related Antidepressant

SSRIs & related antidepressants:
These drugs include- Citalopram, Escitalopram, Duloxetine, Fluoxetine, Fluvoxamine, Paroxetine, Sertraline etc.

CITALOPRAM[26]

CITALOPRAM: Tablet
Citalopram is an orally administered selective serotonin reuptake inhibitor (SSRI) with a chemical structure unrelated to that of other SSRIs, tricyclic, tetracyclic or other available antidepre-ssant agents.
Mode of action: The mechanism of action of citalopram as an antidepressant is presumed to be linked to potentiation of serotonergic activity in central nervous system resulting from its inhibition of CNS neuronal reuptake of serotonin (5-HT).
Ind: Citalopram is indicated for depressive illness and panic disorder. It is also indicated in substance abuse disorders and alcohol dependence. Citalopram has also been given in variety of anxiety disorders including obsessive-compulsive disorder and social phobia. It is also effective in generalized anxiety disorder, post-traumatic stress disorder, premenstrual syndrome, idiopathic Parkinson's disease and eating disorder.
C/I: Citalopram should not be used if the patient enters a manic phase. Patients taking MAO inhibitors. Hypersensitivity to the drug or any of its ingredients.
S/E: SSRIs are less sedating and have fewer antimuscarinic and cardiotoxic effects than tricyclic antidepressants. However, side-effects may be seen, include gastro-intestinal effects, such as nausea, vomiting, dyspepsia, abdominal pain, diarrhea, constipation; anorexia with weight loss, palpitations, tachycardia, postural hypotension, cough, confusion, impaired concentration, amnesia, urinary retention, sweating, movement disorders, urticaria, anaphylaxis, arthralgia, myalgia and photosensitivity.
Precaution: Caution should be taken in patients with epilepsy, concurrent electroconvulsive therapy, history of mania, cardiac disease, diabetes mellitus, angle-closure glaucoma, history of bleeding disorders, hepatic and renal impairment. Abrupt withdrawal of citalopram should be avoided.
Pregnancy & lactation: There are no adequate and well-controlled studies in pregnant women, therefore, citalopram should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. Citalopram is excreted in human breast milk, so, a decision should be made whether to discontinue nursing or to discontinue citalopram therapy, taking into account the importance of the treatment for the mother.
Dosage & admin: Depressive illness- 20mg daily as a single dose in the morning or evening; increased if necessary to maximum 60mg daily (elderly, maximum 40mg daily). Panic disorder- initially 10mg daily, increased to 20mg after 7 days; usual dose 20-30mg daily; maximum 60mg daily (elderly, maximum 40mg daily).
Drug inter: Ketoconazole, itraconazole or macrolide antibiotics and citalopram co-administration decreases the metabolism of the later. Co-administration with omeprazole might decrease the clearance of citalopram.

❖ **ARPOLAX Tab. Incepta**
Citalopram hydrobromide INN equivalent to citalopram 20mg/tablet.
20mg x 30's pack: 240.00 MRP
❖ **CITAPRAM Tab. General**
Citalopram hydrobromide INN equivalent to citalopram 10mg & 20mg/tablet.
10mg x 50's pack: 250.00 MRP
20mg x 30's pack: 240.00 MRP

ESCITALOPRAM[42]

ESCITALOPRAM: Tablet
Escitalopram oxalate INN 10mg/tablet (film-coated tablet).
Escitalopram oxalate is an orally administered selective serotonin reuptake inhibitor (SSRI). It is the pure s-enantiomer of the recemic bicyclic phthalane derivative of citalopram.
Mode of action: The mechanism of antidepressant action of escitalopram is presumed to be linked to potentiation of serotonergic activity in the central nervous system resulting from its inhibition of CNS neuronal reuptake of serotonin (5HT). Escitalopram is highly selective serotonin reuptake inhibitor (SSRI) with minimal effects on norepinephrine and dopamine neuronal reuptake. It is at least 100 times more potent than the R-enantiomar with respect to inhibtion of 5-HT reuptake and inhibition of 5-HT neuronal firing rate. Escitalopram has no or very low affinity for serotonergic (5-HT 1-7) or other receptors including alpha- and beta-adrenergic, dopamine (D1-5), histamine (H1-3), muscarinic (M1-5) and benzodiazepine receptors.
Ind: Escitalopram oxalate is indicated for the treatment of major depressive disorder and maintenance therapy to prevent people with depression from suffering a relapse. A major depressive episode implies a prominent and relatively persistent (nearly every day for at least 2 weeks) depressed or dysphoric mood that usually interferes with daily functioning, and includes at least five of the following nine symptoms: depressed mood, loss of interest in usual activities, significant change in weight and/or appetite, insomnia or hypersomnia, psychomotor retardation or agitation, increased fatigue, feelings of guilt or worthlessness, slowed thinking or impaired concentration, a suicide attempt or suicidal ideation.
C/I: Concomitant use in patients taking MAO inhibitor is contraindicated. This is contraindicated in patients with known hypersensitivity to escitalopram oxalate or citalopram. If a patient enters a manic phase, escitalopram oxalate should be discontinued. As with all drugs effective in the treatment of major depressive disorder, escitalopram should be used cautiously in patients with a history of mania. Escitalopram oxalate should be used with caution in patients with a history of seizure disorder. Rarely, the occurrence of serotonin syndrome has been reported in patients receiving SSRIs. A combination of symptoms, possibly including agitation, confusion, tremor, myoclonus and hyperthermia, may indicate the development of this condition. The use of citalopram in hepatically impaired patients should be approved with caution and a lower maximum dosage (10mg/day) is recommended. Clinical experience with escitalopram in patients with concomitant systemic illness is limited. Escitalopram should be used with caution in diabetic patients on insulin or other antidiabetic drugs.
S/E: The following adverse reactions have been reported: agitation or restlessness, blurred vision, diarrhea, indigestion, nausea, increased or decreased appetite, increased sweating, sexual difficulties (decreased sexual ability or desire, ejaculatory delay), taste alterations, tremor (shaking), weight changes.
Pregnancy & lactation: The safety of escitalopram during pregnancy and lactation has not been established. Therefore, escitalopram should not be used during pregnancy, unless, in the opinion of the concerned physician, the expected benefits to the patient markedly outweigh the possible hazards to the fetus. Escitalopram is excreted in human milk, so, it should not be administered to nursing mothers unless, in the opinion of the treating physician, that the expected benefits to the patient markedly outweigh the possible hazards to the child.
Dosage & admin: Adults: The initial dose of escitalopram oxalate is 10mg once daily. (A fixed dose trial of escitalopram oxalate demonstrated the effectiveness of both 10mg and 20mg of escitalopram, but failed to demonstrate a greater benefit of 20mg over 10mg). If the dose is increased to 20mg, this should occur after a minimum of one week. Elderly: A single oral dose of 10mg/day is the recommended dose for most elderly patients. No significant differences in safety or effectiveness between the elderly group (age 65 and over) and the younger subjects ware observed, but greater sensitivity of some elderly individuals could not be ruled out. Administering in excess of recommended dose has not been yet established.
Children: Safety and effectiveness in children below the age of 18 years have not been established.
Drug inter: Concomitant use in patients taking MAO inhibitor is contraindicated. Escitalopram should be used with caution in diabetic patients on insulin or other antidiabetic drugs.

❖ **CITALEX Tab. Opsonin**
Escitalopram oxalate INN equivalent to escitalopram 10mg/tablet (film-coated).
10mg x 20's pack: 160.00 MRP
❖ **CITALON Tab. Popular**
Escitalopram oxalate INN equivalent to escitalopram 10mg/tablet (film-coated).
10mg x 30's pack: 240.00 MRP
❖ **ESITA Tab. Healthcare**
Escitalopram oxalate INN equivalent to escitalopram 5mg & 10mg/tablet (film-coated).
5mg x 20's pack: 110.00 MRP
10mg x 20's pack: 200.00 MRP
❖ **LOSITA Tab. SK+F**
Escitalopram oxalate INN equivalent to

escitalopram 5mg & 10mg/tablet (film-coated).
5mg x 40's pack: 200.00 MRP
10mg x 20's pack: 160.00 MRP

❖ **MELIVA Tab. Jayson**
Escitalopram oxalate INN equivalent to escitalopram 10mg/tablet (film-coated).
10mg x 30's pack: 240.00 IP

❖ **NEXCITAL Tab. UniHealth**
Escitalopram oxalate INN equivalent to escitalopram 5mg & 10mg/tablet (film-coated).
5mg x 30's pack: 165.00 MRP
10mg x 30's pack: 300.00 MRP

❖ **NEXITO Tab. Sun Pharma**
Escitalopram oxalate INN equivalent to escitalopram 10mg/tablet (film-coated).
10mg x 30's pack: 270.00 MRP

❖ **OXAPRO Tab. Square**
Escitalopram oxalate INN equivalent to escitalopram 10mg/tablet (film-coated).
10mg x 30's pack: 240.00 MRP

❖ **S-CITAPRAM Tab. General**
Escitalopram oxalate INN equivalent to escitalopram 5mg & 10mg/tablet (film-coated).
5mg x 30's pack: 165.00 MRP
10mg x 20's pack: 200.00 MRP

DULOXETINE[26]

DULOXETINE HCl: Tablet
Duloxetine hydrochloride is a selective serotonin and norepinephrine reuptake inhibitor (SSNRI). It is available as duloxetine hydrochloride INN equivalent to duloxetine 20mg and 30mg/tablet (enteric-coated).

Mode of action: Duloxetine hydrochloride is a selective serotonin and norepinephrine reuptake inhibitor (SSNRI). It is a less potent inhibitor of dopamine reuptake. It has no significant affinity for dopaminergic, adrenergic, cholinergic, histaminergic, opioid, glutamate, and GABA receptors in vitro. Duloxetine dose not inhibit monoamine oxidase (MAO). Orally administered duloxetine hydrochloride is well absorbed. Elimination of duloxetine is mainly through hepatic metabolism.

Ind: 1. Treatment of major depressive disorder (MDD) which is associated with the following symptoms: i. depressed mood, ii. loss of interest in usual activities, iii. significant change in weight and/or appetite, iv. insomnia or hypersomnia, v. psychomotor agitation or retardation, vi. increased fatigue, vii. feelings of guilt or worthlessness, viii. slowed thinking or impaired concentration, ix. suicide attempt or suicidal ideation.
2. Management of neuropathic pain associated with diabetic peripheral neuropathy.

C/I: Duloxetine is contraindicated in patients with a known hypersensitivity to this drug or any of the inactive ingredients. Concomitant use in patients taking monoamine oxidase inhibitors (MAOIs) is contraindicated. It should be avoided in patinets with uncontrolled narrow-angle glaucoma.

S/E: The most commonly observed abverse events are- nausea, dizziness, dry mouth, constipation, decreased appetite, fatigue, somnolence, increased sweating, hyperhidrosis & asthenia. It may slightly increase blood pressure. No clinically significant differences were observed for QT, PR, & QRS intervals between duloxetine-treated and placebo-treated patients.

Precautions: Blood pressure should be measured prior to initiating treatment with duloxetine hydrochloride and preiodically measured throughout treatment. It should be used cautiously in patients with a history of mania, seizure disorder and controlled narrow-angle glaucoma. Duloxetine hydrochloride should ordinarily not be prescribed to patients with substantial alcohol use.

Pregnancy & lactation: Duloxetine should be used during pregnancy and labor only if the potential benefit justifies the potential risk to the fetus.
It is not known whether duloxetine and/or it's metabolites are excreted into human milk, however, breast feeding is not recommended when the mother is on duloxetine therapy.

Dosage & admin: ***Major depressive disorder (MDD):*** **20-30mg twice daily or 60mg once daily.**
Diabetic peripheral neuropathy: **A total dose of 60mg given once a day.**
Duloxetine hydrochloride can be taken regardless of meals.
Children: Safety and efficacy in pediatric patients have not been established.

Drug inter: Both CYP1A2 and CYP2D6 isozymes are responsible for duloxetine metabolism. When duloxetine was co-administered with fluvoxamine, a potent CYP1A2 inhibitor, the AUC, Cmax and tl/2 of duloxetine was increased. Other durgs that inhibit CYP1A2 metabolism include cimetidine and quinolone antimicrobials such as ciprofloxacin and enoxacin would be expected to have similar effects and these combinations should be avoided. Because CYP2D6 is involved in duloxetine metabolism, concomitant use of duloxetine with potent inhibitors of CYP2D6 may result in higher concentrations of duloxetine.

❖ **DELOXI DR Cap. SK+F**
Duloxetine hydrochloride INN equivalent to duloxetine 20mg & 60mg/capsule (delayed release).
20mg x 36's pack: 252.00 MRP
60mg x 16's pack: 288.00 MRP

❖ **DILINER DR Cap. Square**
Duloxetine hydrochloride INN equivalent to duloxetine 60mg/capsule (delayed release).
60mg x 18's pack: 288.00 MRP

❖ **DULOX Tab. Acme**
Duloxetine hydrochloride INN equivalent to duloxetine 20mg & 30mg/tablet (enteric-coated).
20mg x 10's pack: 70.00 MRP
30mg x 10's pack: 100.00 MRP

❖ **DULOXEN Tab. Incepta**
Duloxetine hydrochloride INN equivalent to duloxetine 20mg & 30mg/tablet (enteric-coated).
20mg x 30's pack: 210.00 MRP
30mg x 30's pack: 300.00 MRP

❖ **DUZELA 20 Cap. Sun Pharma**
Duloxetine hydrochloride INN equivalent to duloxetine 20mg/capsule.
20mg x 50's pack: 350.00 MRP

FLUOXETINE[21,33]

FLUOXETINE: Capsule/Tablet/Syrup
Fluoxetine is a selective serotonin re-uptake inhibitor (SSRI).

Mode of action: It acts by selectively inhibiting the re-uptake of serotonin (5-hydroxytryptamine), and considered to be an effective antidepressant preparation.

Ind: Depressive illness, bulimia nervosa, obsessive-compulsive disorder.

C/I: SSRI preparations should not be given in the patients entering a manic phase.

S/E: Gastro-intestinal (fairly common- include nausea, vomiting, dyspepsia, abdominal pain, diarrhoea, constipation, anorexia with weight loss and possible changes in blood sugar); hypersensitivity reactions (important: see also below); also dry mouth, nervousness, anxiety, headache, insomnia, palpitations, tremor, confusion, dizziness, hypotension, hypomania or mania, drowsiness, asthenia, convulsions, fever, sexual dysfunction, sweating; movement disorders and dyskinesias, neuroleptic malignant sydrome-like event; hyponatraemia (may be due to inappropriate antidiuretic hormone secretion-SIADH), abnormal liver function tests reported; also reported (no causal relationship established)- aplastic anaemia, cerebrovascular accident, ecchymoses, eosinophilic pneumonia, gastro-intestinal haemorrhage, hyperprolactinaemia, haemolytic anaemia, pancreatitis, pancytopenia, suicidal ideation, thrombocytopenia, thrombocytopenic purpura, vaginal bleeding on withdrawal, violent behaviour; hair loss also reported.
Hypersensitivity- angioedema, urticaria, pruritus, and other allergic reactions including anaphylaxis have been reported (discontinue if rash occurs, may be warning of impending serious systemic reaction, possibly associated with vasculitis); pharyngitis and rarely pulmonary inflammation or fibrosis (with dyspnoea only warning sign) also reported; possible hypersensitivity signs associated with other SSRIs include arthralgia, myalgia.
SSRI preparations should not be given in the patients enter a manic phase.

Precautions: SSRI preparations should be used with caution in patients with cardiac disease, epilepsy (avoid if poorly controlled, discontinue if convulsions develop), concurrent electroconvulsive therapy (prolonged seizures reported), history of mania, hepatic and renal impairment, pregnancy and breast-feeding, avoid

abrupt withdrawal.
Driving- may impair performance of skilled tasks (e.g. driving)
Pregnancy & lactation: Although no teratogenic effects have been observed SSRI preparations should be used during pregnancy or lactation with caution.
Dosage & admin: Depressive illness, 20mg daily;
Child, not recommended.
Bulimia nervosa, 60mg daily; Child, not recommended.
Obsessive-compulsive disorder, initially 20mg daily, dose increase may be considered if no response after several weeks, but may be increased potential for side-effects; max. 60mg daily; Child, not recommended.
Long duration of action- account should be taken of the long half-life of fluoxetine when adjusting dosage (or in overdosage)
Drug inter: Monoamine oxidase inhibitors- it is prudent to avoid their combined use, experience suggests that the combination may produce a potentially lethal serotonin syndrome.Oral anticoagulants - prothrombin time should be carefully monitored when fluoxetine therapy is initiated or stopped in patients on oral coagulants. CNS-active drugs- hypertension and CNS excitation may occur if used with dopaminergic drugs. Cemetidine- plasma concentration of fluoxetine increased by cemetidine.

❖ **MODIPRAN Cap. Beximco**
Fluoxetine hydrochloride 20mg/capsule
100's pack 287.00 IP
❖ **NODEPRESS Cap. Chemico**
Fluoxetine hydrochloride 20mg/capsule
50's pack: 130.00 MRP
❖ **OXETIN Cap. Decent**
Fluoxetine hydrochloride 20mg/capsule
50's pack: 144.00 MRP
❖ **PRODEP Cap. Sun Pharma**
Fluoxetine hydrochloride 20mg/capsule
50's pack: 150.00 MRP
❖ **PROLERT Cap. Square**
Fluoxetine hydrochloride 20mg/capsule
50's pack: 129.00 MRP
❖ **SEREN Cap. Sonear**
Fluoxetine hydrochloride 20mg/capsule
10's pack 28.00 MRP
30's pack 84.00 MRP

FLUVOXAMINE[34]

FLUVOXAMINE: Tablet
Fluvoxamine is a selective serotonin reuptake inhibitor (SSRI). It is available as fluvoxamine maleate BP 50mg tablet.
Ind: Obsessive-compulsive disorder, depressive illness. It is also indicated in panic disorder, eating disorders, chronic tension headache.
C/I: Fluvoxamine maleate should not be used if the patient enters a manic phase.
S/E: Gastro-intestinal side effects are- anorexia with weight loss (increased appetite and weight gain also reported), hypersensitivity reactions with rash, urticaria, angioedema, arthralgia, myalgia and photosensitivity. Other side effects include dry mouth, nervousness, anxiety, headache, insomnia and sexual dysfunction, palpitation, tachycardia (may also cause bradycardia), rarely postural hypotension, confusion, ataxia, abnormal liver function tests.
Precautions: Fluvoxamine maleate should be used with caution in patients with a history of mania, seizures, suicide, concurrent ECT therapy, cardiac disease, diabetes mellitus, angle-closure glaucoma, history of bleeding disorders (specially gastro-intestinal bleeding), hepatic and renal impairment. Fluvoxamine maleate may also impair preformance of skilled tasks (driving). Pregnancy & lactation: Fluvoxamine maleate should be avoided in pregnancy and lactation
Dosage & admin: Obsessive-compulsive disorder: Initially 50mg in the evening for 3-4 days, increasing if necessary to 300mg daily (over 150mg in divided doses). Child- over 8 years, initially 25mg daily, increased if necessary in steps of 25mg every 3-4 days to maximum 200mg daily in divided doses. Depression: Initially 50-100mg daily in the evening, increased if necessary to 300mg daily (over 150mg in divided doses). Usual maintenance dose 100mg daily. Child- not recommended.
Drug inter: Fluvoxamine maleate should not be used concurrently with monoamine oxidase inhibitors, warfarin, benzodiazepines, theophylline, aminophylline, tricyclic antidepressants and alcohol.

❖ **RELAFIN Tab. General**
Fluvoxamine maleate BP 50mg/tablet
30's pack: 450.00 MRP

PAROXETINE[48]

PAROXETINE HCl: Tablet.
Paroxetine is a potent selective serotonin re-uptake inhibitor (SSRI). It is available as paroxetine hydrochloride 20mg tablet.
Mode of action: Paroxetine selectively inhibits neuronal re-uptake of serotonin (5-Hydroxy tryptamine, 5-HT), which potentiates serotonergic activity in the central nervous system, which appears to be associated with antidepressant activity. Studies have demonstrated that paroxetine blocks the uptake of serotonin into human platelets. In vitro studies in animals also suggest that paroxetine has only very weak effects on norepinephrine and dopamine neuronal reuptake.
Ind: Major depressive disorder, Obsessive compulsive disorder, Panic disorder, Social anxiety disorder, Generalized anxiety disorder & Post-traumatic stress disorder.
C/I: Known hypersensitivity to paroxetine. Concomitant use in patients taking either monoamine oxidase inhibitors (MAOIs) or thioridazine.
S/E: Asthenia, sweating, nausea, decreased appetite, somnolence, dizziness, insomnia, tremor, nervousness, ejaculatory disturbance and other male genital disorders.
Precautions: Caution is advised when treating patients with cardiac conditions, patients with epilepsy (avoid if poorly controlled, discontinue if convulsions develop). Paroxetine should be discontinued in any patients who develops seizures ECT, (incidence of seizures in patients treated with paroxetine is <0.1 %). Caution is advised when treating patients with history of mania. Paroxetine may impair performance of skilled tasks (e.g driving).
Pregnancy & lactation: This drug should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. The effect of paroxetine on labor and delivery in humans is unknown. Like many other drugs paroxetine is secreted in human milk and caution should be exercised when administered in a nursing mother.
Dosage & admin: ***Major depressive disorder:*** **Usual initial dose is paroxetine 20mg as a single daily dose with or without food, preferably in the morning. Some patients not responding to 20mg dose may benefit from dose increases in 10mg/day increments up to a maximum of 50mg/day. Dose changes should occur at intervals of at least 1 week.** ***Maintenance therapy:*** **Efficacy of paroxetine hydrochloride is maintained for periods of up to 1 year with doses that averaged about 30mg.** ***Obsessive compulsive disorder (OCD):*** **Patients should be started on 20mg/day and the dose can be increased weekly in 10mg/day increments. Maintenance therapy: Efficacy of paroxetine hydrochloride is maintained for periods of up to 1 year with doses that averaged about 30mg.** ***Panic disorder:*** **Usual initial dose is paroxetine 20mg as a single daily dose with or without food, preferably in the morning. The target dose in the treatment of panic disorder is 40mg/day. Dose changes should occur in 10mg/day increments at intervals of at least 1 week. The maximum dosage should not exceed 60mg/day. Maintenance therapy- dosage adjustments should be made to maintain the patient on the lowest effective dosage and patients should be periodically reassessed to determine the need for continued treatment.** ***Social anxiety disorder (SAD):*** **Usual initial dose is paroxetine 20mg as a single daily dose with or without food, preferably in the morning. Dose may be increased after 2 weeks if necessary with an increments of 10mg at weekly intervals to a maximum of 50mg daily.** ***Generalized anxiety disorder (GAD):*** **The recommended starting dosage and the established effective dosage is 20mg/day.** ***Post-traumatic stress disorder (PTSD):*** **The recommended starting dosage and the established effective dosage is 20mg/day. Dose changes, if indicated, should occur in 10mg/day increments at intervals of at least 1 week.** ***Dosage for Elderly or Debilitated and Patients with Severe Renal or Hepatic impairment:*** **The recommended initial dose is 10mg/day for elderly patients, debilitated patients and/or patients with severe renal or hepatic impairment. Increases may be made if indicated. Dosage should not exceed 40mg/day.**
Drug inter: Tryptophan: An interaction between paroxetine and tryptophan may occur, resulting in a serotonin syndrome suggested by development of agitation, restlessness and gastrointestinal symptoms including diarrhoea. Drug metabolizing enzyme inducers/inhibitors: The metabolism and pharmacokinetics of

paroxetine may be affected by drugs, which induce or inhibit hepatic drug metabolizing enzymes. When paroxetine is to be co-administered with a known drug metabolizing inhibitor, consideration should be given to using doses at the lower end of the range. Alcohol: Although paroxetine does not increase the impairment of mental and motor skill caused by alcohol, the concomitant use of paroxetine and alcohol in depressed patients is not advised. Haloperidol/Amylobarbitone/Oxazepam: Paroxetine does not increase the sedation and drowsiness associated with haloperidol, amylobarbitone or oxazepam when given in combination. MAOIs: An interaction between paroxetine and monoamine oxidase (MAO) inhibitors may occur. Treatment with paroxetine should not be started until 2 weeks after stopping an MAOI. Lithium: The concurrent administration of paroxetine and lithium should be undertaken with caution. Lithium levels should be monitored. Phenytoin/Anticonvulsants: Co-administration of paroxetine and phenytoin is associated with an increased incidence of adverse experiences. Warfarin: Preliminary data suggest that there may be a pharmacodynamic, interaction between paroxetine and warfarin, which may result in increased bleeding in the presence of unaltered prothrombin times. Paroxetine should therefore be administered with great caution to patients receiving oral anticoagulants.

❖ **MELEV 20 Tab. Beximco**
Paroxetine hydrochloride 20mg/tablet
30's pack 285.00 IP
❖ **OXAT 20 Tab. Square**
Paroxetine hydrochloride 20mg/tablet
30's pack 285.00 MRP
❖ **PAROXET-20 Tab. Jayson**
Paroxetine hydrochloride 20mg/tablet
30's pack 270.00 MRP

SERTRALINE[21,34]

SERTRALINE: Tablet
Sertraline is a selective serotonin re-uptake inhibitor (SSRI). Therefore, it acts by selectively inhibiting the re-uptake of serotonin (5-hydroxytryptamine), and considered to be an effective antidepressant preparation.
Ind: Depressive illness; management of obsessive-compulsive disorder; panic disorder.
C/I; S/E; Cautions: See notes above under fluoxetine.
Pregnancy & lactation: See notes above under fluoxetine.
Dosage & Admin: Depression- initially 50mg daily, increased if necessary by 50mg over several weeks to max. 200mg daily; then reduced to usual maintenance dose 50mg daily.
Obsessive-compulsive disorder- initially 50mg daily, increased if necessary by 50mg over several weeks; usual dose range 50-200mg daily.
Panic disorder- 25mg once daily; after one week the dose should be increased to 50mg once daily.
Child: Not recommended.
Drug inter: See notes above under fluoxetine.

❖ **ANDEP Tab. Healthcare**
Sertraline hydrochloride INN 50mg & 100mg/tablet
50mg x 50's pack: 275.00 IP
100mg x 30's pack: 300.00 IP
❖ **ATRALIN Tab. Beximco**
Sertraline hydrochloride INN 50mg/tablet
50mg x 50's pack: 250.00 IP
❖ **CHEAR Tab. ACI**
Sertraline hydrochloride INN 25mg & 50mg/tablet
25mg x 100's pack: 300.00 MRP
50mg x 50's pack: 300.00 MRP
❖ **REPOSE Tab. Incepta**
Sertraline hydrochloride INN 25mg, 50mg & 100mg/tablet
25mg x 50's pack: 150.00 MRP
50mg x 50's pack: 250.00 MRP
100mg x 30's pack: 285.00 MRP
❖ **SARTRA Tab. Pacific**
Sertraline hydrochloride INN 50mg/tablet
50mg x 50's pack: 300.00 MRP
❖ **SELOTIN Tab. White Horse**
Sertraline hydrochloride INN 50mg/tablet
50mg x 30's pack: 150.00 MRP
❖ **SERA Tab. Ambee**
Sertraline hydrochloride INN 50mg/tablet
50mg x 50's pack: 200.00 MRP
❖ **SEROLUX Tab. Sandoz/Novartis**
Sertraline hydrochloride INN 25mg, 50mg & 100mg/tablet
25mg x 50's pack: 150.00 MRP
50mg x 50's pack: 250.00 MRP
100mg x 30's pack: 300.00 MRP
❖ **SERTAL Tab. Drug Inter.**
Sertraline hydrochloride INN 50mg/tablet
50mg x 50's pack: 250.00 MRP
❖ **SETRA Tab. General**
Sertraline hydrochloride INN 25mg, 50mg & 100mg/tablet
25mg x 50's pack: 150.00 MRP
50mg x 50's pack: 300.00 MRP
100mg x 30's pack: 285.00 MRP
❖ **TRALIN Tab. Silva**
Sertraline hydrochloride INN 25mg, 50mg & 100mg/tablet
25mg x 100's pack: 250.00 MRP
50mg x 50's pack: 200.00 MRP
100mg x 50's pack: 350.00 MRP

Misc. Antidepressant drugs

Misc. Antidepressants: Such as ***Bupropion, Flupenthixol, Lithium salt, Mirtazapine, Tryptophan, Trazodone, Venlafaxine.***

BUPROPION[48]

BUPROPION HCl: Tablet
Bupropion hydrochloride is an antidepressant of the aminoketone class, chemically unrelated to tricyclic, tetracyclic, or other known antidepressants. Its structure closely resembles that of diethylpropion; it is related to phenylethylamines.
Mode of action: Bupropion inhibits reuptake of dopamine, noradrenaline, and serotonin in the central nervous system, is a non-competitive nicotine receptor antagonist.
Ind: Bupropion hydrochloride is indicated in the treatment of depression. It is also indicated in smoking cessation.
C/I: Bupropion hydrochloride is contraindicated in patients with a seizure disorder, such as, patients with epilepsy. Bupropion hydrochloride is contraindicated in patients treated with other medications that contain bupropion because the incidence of seizure is dose-dependent. It is also contraindicated in patients with a current or prior diagnosis of bulimia or anorexia nervosa because of a higher incidence of seizures noted in such patients treated for bulimia with bupropion hydrochloride. The concurrent administration of bupropion hydrochloride and a monoamine oxidase (MAO) inhibitors is contraindicated. At least 14 days should elapse between discontinuation of an MAO inhibitor and initiation of treatment with bupropion hydrochloride. Bupropion hydrochloride is contraindicated in patients who have shown an allergic response to bupropion or other ingredients of the preparation.
S/E: Agitation, anxiety, and insomnia often occur during the initial stages of bupropion therapy. Other relatively common side effects reported are- fever, dry mouth, headache or migraine, dizziness, nausea and vomiting, constipation, tremor, sweating, and skin rashes. Hypersensitivity reactions, ranging from pruritus & urticaria, less commonly angioedema, dyspnea, and anaphylactoid reactions have occurred.

Precautions: As bupropion is contraindicated in patients with a history of seizure disorders, it should be used with extreme caution in patient with other predisposing factors for seizures, such as severe hepatic cirrhosis or CNS tumour, and in those undergoing abrupt withdrawal from alcohol or benzodiazepines. The use of bupropion in patients with other risk factors for seizures (e.g alcohol abuse, a history of head trauma, diabetes, and drugs known to lower the seizure threshold) should only be under taken when there are compelling clinical reasons. Bupropion should be used with caution in patients with bipolar depression or psychoses and in patients with a recent history of myocardial infarction or unstable heart diesease and in hepatic or renal impairment.
Pregnancy & lactation: There are no adequate and well-controlled studies in pregnant women. This drug should be used during pregnancy only if clearly needed. Like many other drugs, bupropion and its metabolites are secreted in human milk, because of the potential for serious adverse reactions in nursing infants from bupropion, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.
Dosage & admin: Depression: The usual adult target dose for bupropion is 300mg/day, given as 150mg twice daily. Treatment should begin at 150mg/day given as a single daily dose in the morning. If the 150mg initial dose is adequately tolerated, an increase to the 300mg/day target dose, given as 150mg twiee daily, may be made as early as fourth day of therapy. There should be an interval of at least

8 hours between successive doses. Increasing the dosage above 300mg/day: As with other antidepressants, the full antidepressant effect of bupropion hydrochloride may not be evident until 4 weeks of treatment or longer. An increase in dosage to the maximum of 400mg/day, given as 200mg twice daily, may be considered for patients in whom no clinical improvement is noted after several weeks of treatment at 300mg/day. Bupropion hydrochloride should be discontinued in patients who do not demonstrate an adequate response after an appropriate period of treatment at 450mg/day. Maintenance: The lowest dose that maintains remission is recommended. Although it is not known how long the patients should remain on bupropion hydrochloride, it is generally recognized that acute episodes of depression require several months or longer of anti-depressant drug treatment.
Child & adolescent under 18 years: Not recommended.
Drug inter: Bupropion should not be given concurrently with or within 14 days of stopping an MAO inhibitor. The use of alcohol should be minimised or avoided completely because it may alter the seizure threshold. Similarly, other drugs that lower the seizure threshold, such as other antidepressants, antimalarials, antipsychotics, sedating antihistamines, quinolones, tramadol, theophylline, or systemic corticosteroids, should be used with extreme caution together with bupropion. Carbamazepine, phenobarbital, or phenytoin may induce the metabolism of bupropion while other drugs such as cimetidine or ritonavir may inhibit its metabolism.
Interaction may occur between bupropion and orphenadrine, cyclophosphamide, and ifosfamide. Caution should be excercised when it is given with drugs such as some antidepressants, antipsychotics, beta-blockers, and type 1C antiarrhythmics.

❖ **DEPNOX SR Tab. Jayson**
Bupropion hydrochloride USP 150mg/tablet (sustained release)
150mg x 30's pack: 300.00 IP
❖ **ZYBEX SR Tab. Beximco**
Bupropion hydrochloride USP 150mg/tablet (sustained release)
150mg x 30's pack: 300.00 IP

FLUPENTHIXOL & FLUPENTHIXOL + MELITRACIN[21,26,67]

FLUPENTHIXOL + MELIT RACIN: Tablet/ Injection
Mode of action: Flupenthixol- a neuroleptic with anxiolytic and antidepressant properties of its own when given in small doses, and melitracen- a bipolar thymoleptic with activating properties in low doses.
In combination the compounds render a preparation with antidepressant, anxiolytic and activating properties, but does not seem to influence the pharmacokinetic properties of the individual compounds.
Ind: Depressive illness with anxiety, masked depression, asthenia & long lasting myogenic headache, migraine; psychosomatic affections with anxiety & asthenia. Dysphoria & depression in alcoholic and drug addicts.
C/I: Intolerance to neuroleptic drugs; excitable or over active patient; parkinsonism; severe atherosclerosis; senile confusional state; advanced renal, hepatic or cardiovascular disease.
S/E: Extrapyramidal symptoms occur frequently (1-3 days after admn. & continue for 5 days). Aggregation or agitation may appear (in this stage, should be replaced by another drug). Also see under chlorpromazine.
Caution: Renal & hepatic impairment; atherosclerosis; pregnancy.
Dosage & admin: Flupenthixol decanoate: See below under the individual preparation.
Flupenthixol dihydrochloride: See below under the individual preparation.
Flupenthixol + melitracen: Adult, usually 2 tablets daily divided in morning and evening doses. In severe cases, morning dose may be increased to 2 tablets. Elderly, 1 tablet in the morning; maintenance, usually 1 tablet in the morning.
Child: Not recommended.
Prepns: See above under antipsychotic drugs.

MIRTAZAPINE[34]

MIRTAZAPINE: Tablet
Mirtazapine is an antidepressant drug, belonging to miscellaneous group.
Ind: Mirtazapine is indicated for the treatment of depression.
C/I: Known case of hypersensitivity to mirtazapine.
S/E: Increased appetite and weight gain, sedation; less commonly oedema, dizziness, headache, rarely postural hypotension, abnormal dreams, mania, convulsions, tremor, myoclonus, paraesthesia, arthralgia, myalgia, restless legs, exanthema, reversible agranulocytosis.
Precautions: Epilepsy, hepatic or renal impairment, cardiac disorders, hypotension, history of urinary retention, angle-closure glaucoma, diabetes mellitus, psychoses (may aggravate psychotic symptoms), history of bipolar depression; avoid abrupt withdrawal.
Pregnancy & lactation: There are no adequate and well-controlled studies in pregnant women and lactating mother. So, it should not be used in pregnancy and nursing mother.
Dosage & admin: Adults: Initially 15mg daily at bedtime. The dosage may need to be increased to obtain an optimal clinical response. The effective daily dose is usually between 15 and 45mg as a single or 2 divided doses.
Children: Not recommended.
Overdose: Depression of the central nervous system with disorientation and prolong sedation, together with tachycardia and mild hyper- or hypotension have been reported with mirtazapine overdose. These patients should be treated by gastric lavage with appropriate symptomatic & supportive therapy.
Drug inter: Mirtazapine should not be used concomitantly with or within two weeks of discontinuing an MAOIs; at least two weeks should elapse between discontinuation of an MAOIs and initiation of mirtazapine therapy. Administration of mirtazapine concurrently with alcohol, anxiolytic or hypnotics may potentiate sedation effect.

❖ **MIRTAZ Tab. Sun Pharma**
Mirtazapine INN 15mg/tablet.
30's pack: 240.00 MRP
❖ **MITRAZIN Tab. General**
Mirtazapine INN 15mg/tablet.
30's pack: 240.00 MRP

VENLAFAXINE[21,34]

VENLAFAXINE HCl: Tablet
Venlafaxine hydrochloride is an antidepressant drug belonging to miscellaneous group.
Mode of action: Venlafaxine is a 'serotonin and noradrenaline reuptake inhibitor (SNRI)' having antidepressant effect, but it lacks of sedative and antimuscarinic action of typical tricyclic antidepressants.
Ind: It is indicated in depressive illness & generalised anxiety disorder.
C/I: Venlafaxine is contraindicated in severe hepatic or renal impairment, & during pregnancy and breast feeding.
S/E: Most frequently reported side-effects include nausea, headache insomnia, dry mouth, dizziness, constipation, sweating, nervousness, asthenia. Other side-effects reported include anorexia, dyspepsia, abdominal pain, anxiety, sexual dysfunction, visual disturbances, vasodilatation, vomiting, tremor, chills, palpitations, sgitation, rashes, convulsion, hypertension. Orthostatic hypotension has been seen occasionally.
Precautions: Patient should be treated very cautiously in case of history of myocardial infarction or unstable heart disease, blood pressure monitoring advisable if dose exceeds 200mg daily; history of epilepsy, mania, hepatic or renal impairment. Avoid abrupt withdrawal (if taken for more than 1 week, withdraw over at least 1 week). Glaucoma.
Dosage & admin: Depression- initially 75mg (1 tablet) in 2 divided doses, and can be increased if necessary after several weeks to 150mg daily in 2 divided doses.
Severely depressed or hospitalized patients- initially 150mg daily in 2 divided doses, and can be increased if necessary in steps of up to 75mg every 2-3 days to max. 375mg daily then gradually reduced. Generalised anxiety disorder- 75mg daily as a single dose.
Drug inter: Venlafaxine should not be used concomitantly with MAOIs. Cimetidine inhibits the hepatic metabolism of venlafaxine.

❖ **VENAX Tab. Renata**
Venlafaxine hydrochloride INN 42.45mg & 84.90mg equivalent to venlafaxine 37.5mg & 75mg per tablet respectively.
37.5mg x 20's pack: 80.00 MRP
75mg x 20's pack: 120.00 MRP
❖ **VENIZ XR 75 Cap. Sun Pharma**
Venlafaxine hydrochloride INN 84.90mg equivalent to venlafaxine 75mg per capsule (extended release).
75mg x 30's pack: 210.00 MRP

❖ **VENLAX Tab. General**
Venlafaxine hydrochloride INN 42.45mg & 84.90mg equivalent to venlafaxine 37.5mg & 75mg per tablet respectively.
37.5mg x 30's pack: 165.00 MRP
75mg x 20's pack: 200.00 MRP

Combined antidepressant preparations.

FLUPHENAZINE + NORTRIPTYLINE[21,33]

FLUPHENAZINE + NORTRIPTYLINE: Tablet.
Fluphenazine hydrochloride & Nortriptyline hydrochloride combination has been found as an effective preparation for the patients suffering from 'anxiety' or 'depression' or both.
Fluphenazine is a potent phenothiazine derivative. Nortriptyline is a tricyclic antidepressant having less sedative action. This combination helps to restore functional ability without developing any drug dependence.
Ind: Mild to moderate mixed anxiety/depression, emotional disturbance, sleep disorder, gastric problems.
C/I: History of grandmal epilepsy or organic brain damage, blood dyscrasias, severe cardiac insufficiency, renal or liver damage, MAO inhibitors, younger children.
S/E: Dryness of mouth, drowsiness, constipation, tachycardia, nasal congestion, blurred vision and excitement.
Caution: Concurrent admin. of CNS depressants. Patients with glaucoma, prostate enlargement, cardiac failure and myocardial infarction. The drug may impair alertness and abilities to drive a car or operating machinery. Safety in human pregnancy has not yet been established. Breast feeding is not recommended.

Dosage & admin: Adult: 1 tablet (fluphenazine hydrochlor. 0.5mg + nortriptyline hydrochlor. 10mg per tablet.) 2 to 3 times daily for max. 3 months.
Child: Not recommended.

❖ **AMIVAL Tab. Amico**
Fluphenazine hydrochloride 0.5mg + nortriptyline hydrochloride 10mg/tablet.
100's pack: 80.00 MRP
❖ **AMIVAL-F Tab. Amico**
Fluphenazine hydrochloride 1.5mg + nortriptyline hydrochloride 30mg/tablet.
100's pack: 201.00 MRP
❖ **ANFLU Tab. Alco Pharma**
Fluphenazine hydrochloride 0.5mg + nortriptyline hydrochloride 10mg/tablet.
100's pack: 75.00 MRP
❖ **APRESIN Tab. Beximco**
Fluphenazine hydrochloride 0.5mg + nortriptyline hydrochloride 10mg/tablet.
100's pack: 81.00 MRP
❖ **ATEVAL Tab. Ziska**
Fluphenazine hydrochloride 0.5mg + nortriptyline hydrochloride 10mg/tablet.
100's pack: 100.00 MRP
❖ **EUPHOR Tab. Bio-pharma**
Fluphenazine hydrochloride 0.5mg + nortriptyline hydrochloride 10mg/tablet.
100's pack: 80.00 MRP
❖ **FLUTRIP Tab. General**
Fluphenazine hydrochloride 0.5mg + nortriptyline hydrochloride 10mg/tablet.
100's pack: 70.00 MRP
❖ **FRESH Tab. Nipa**
Fluphenazine hydrochloride 0.5mg + nortriptyline hydrochloride 10mg/tablet.
100's pack: 80.00 MRP
❖ **MONITOL Tab. Skylab**
Fluphenazine hydrochloride 0.5mg + nortriptyline hydrochloride 10mg/tablet.
100's pack: 80.00 MRP
❖ **MOODON Tab. Ibn Sina**
Fluphenazine hydrochloride 0.5mg + nortriptyline hydrochloride 10mg/tablet.
100's pack: 81.00 MRP
❖ **MUDIBAK Tab. Rephco**
Fluphenazine hydrochloride 0.5mg + nortriptyline hydrochloride 10mg/tablet.
100's pack: 75.00 MRP
❖ **NORFLU Tab. Acme**
Fluphenazine hydrochloride 0.5mg + nortriptyline hydrochloride 10mg/tablet.
100's pack: 80.00 MRP
❖ **NORZIN Tab. Airstopharma**
Fluphenazine hydrochloride 0.5mg + nortriptyline hydrochloride 10mg/tablet.
250's pack: 200.00 MRP
❖ **SANIT Tab. Square**
Fluphenazine hydrochloride 0.5mg + nortriptyline hydrochloride 10mg/tablet.
100's pack: 80.00 MRP

5. C.N.S STIMULANT DRUGS[21]

CNS stimulants can be classified as:
1 **Weak central nervous stimulants, e.g *Caffeine.***
2 **Amphetamines & related drugs, e.g *Dexamphetamine, Methylphenidate, Atomoxetine, Modafinil.***
3 **Analeptics, e.g *Adrenaline, Aminophylline, Nikethamide (Note: Analeptics are discussed under respiratory drugs).***
4 **Drugs used for attention deficit hyperactivity disorder (ADHD): These also include- *Atomoxetine, Dexamphetamine, Methylphenidate.***

ATOMOXETINE[42]

ATOMOXETINE: Capsule
Atomoxetine is a selective norepinephrine reuptake inhibitor. It is primarily licensed for the management of attention deficit hyperactivity disorder (ADHD) in children. It is available as atomoxetine hydrochloride INN 10mg capsule. Atomoxetine is well-absorbed after oral administration and is minimally affected by food. It has a half-life of about 5 hours. This drug is excreted mainly in the urine (greater than 80%) & to a lesser extent in the feces (less than 17%).
Mode of action: The precise mechanism by which atomoxetine produces its therapeutic effects in attention-defcity hyperactivity disorder (ADHD) is unknown, but is thought to be related to selective inhibition of the pre-synaptic norepinephrine transporter, as determined in ex vivo uptake, & neurotransmitter depletion studies.
Ind: Atomoxetine is indicated for the treatment of attention-deficit hyperactivity disorder (ADHD).
C/I: This drug is contraindicated: 1. In patients with known hypersensitivity to atomoxetine; 2. Administration with an MAOI, or within 2 weeks after discontinuing an MAOI, or, treatment with an MAOI should not be initiated within 2 weeks after discontinuing atomoxetine; 3. Administration with other drugs that affect brain monoamine concentration; 4. In patients with narrow angle glaucoma.
S/E: Atomoxetine can increase blood pressure and heart rate. Although uncommon, it may cause allergic reactions, including angioneurotic edema, urticaria, & rash. Severe liver injury in rare cases.
Precautions: Atomoxetine should be used with caution in patients with hypertension, tachycardia, or cardiovascular or cerebrovascular diseases, because it can increase blood pressure and heart rate. Pulse & blood pressure should be measured at baseline, following atomoxetine dose increases, and periodically while on therapy. Postmarketing reports indicate that atomoxetine can cause severe liver injury in rare cases.

Dosage & admin: Initial treatment: Dosing of children & adolescents up to 70kg body weight: Atomoxetine should be initiated at a total daily dose of approximately 0.5mg/kg & increased after a minimum of 3 days to a target total daily dose of approximately 1.2mg/kg administered either as a single daily dose in the morning or in two divided doses in the morning and late afternoon/early evening. No additional benefit has been demonstrated for doses higher than 1.2mg/kg/day. The total daily dose in children and adolescents should not exceed 1.4mg/kg or 100mg, whichever is less. Dosing of adolescents over 70mg body weight & adults: Atomoxetine should be initiated at a total daily dose of 40mg & increased after a minimum of 3 days to a target total daily dose of approximately 80mg administered either as a single daily dose in the morning or in two divided doses in the morning & late afternoon/early evening. After 2 to 4 additional weeks, the dose may be increased to a maximum of 100mg in patients who have not achieved an optimal response. The maximum recommended total daily dose in children & adolescents over 70kg and adults is 100mg. There is no data that support increased effectiveness at higher doses. Maintenance/Extended treatment: There is no evidence available from controlled trials to indicate how long the patient with ADHD should be treated with atomoxetine. It is generally agreed, however, that pharmacological treatment of ADHD may be needed for extended periods. Nevertheless, the physicians who choose to use atomoxetine for extended periods should periodically reevaluate the long-term usefulness of the drug for the individual patient.

Drug inter: ***Albuterol:*** Atomoxetine should be administered with caution to patients being

treated with systemically administered (oral or intravenous) albuterol (or other beta$_2$ agonists), because the action of albuterol on the cardiovascular system can be potentiated resulting in increase in heart rate & blood pressure.
CYPO$_2$D$_6$ inhibitors: Atomoxetine is primarily metabolized by the CYP$_2$D$_6$ pathway to 4-hydroxyatomoxetine. Dosage adjustment of atomoxetine may be necessary when coadiministered with CYP$_2$D$_6$ inhibitors, e.g paroxetine, fluoxetine, and quinidine, patients treated with paroxetine or fluoxetine the AUC of atomoxetine is approximately 6 to 8 fold and Cmax is about 3 to 4 fold greater than atomoxetine alone.
Pressor agents: Because of possible effects on blood pressure, atomoxetine should be used cautiosly with pressor agents.

❖ **SUEV 10 Cap. Square**
Atomoxetine hydrochloride INN 10mg/capsule
30's pack 150.00 MRP

6. DRUGS USED IN NAUSEA, VOMITING & VERTIGO[21]

Drugs used in different types of nausea & vomiting:
1. **Drugs used in vestibular disorders including Meniere's disease**
2. **Drugs used in nausea in pregnancy**
3. **Symtomatic relief of nausea from underlying diseases**
4. **Drugs used in nausea & vomiting induced by cytostatic chemotherapy & radiotherapy.**

Drugs used in vestibular disorders

CINNARIZINE[21,33]

CINNARIZINE: Tablet
Ind: Nausea, vertigo, labyrinthine disorders, motion sickness, Meniere's disease, peripheral vascular disease, Raynaud's syndrome.
S/E; Cautions: See under the peripheral vasodilator drugs.

Dosage & admin: Adult: Nausea, 15-30mg 3 times daily. Vestibular disorder, 25- 30 mg 3 times daily. Motion sickness, 30mg 2 hours before. then 15mg 8 hourly during journey . Child: Under 5 yrs. not recommen ded; 5-12 yrs. half adult dose.

❖ **CINARIN Tab. Nipa**
Cinnarizine 15mg/tablet
100's pack: 100.00 MRP
❖ **CINARON Tab. Square**
Cinnarizine 15mg/tablet
200's pack: 200.00 MRP
❖ **CINARYL Tab. Opsonin**
Cinnarizine 15mg/tablet
100's pack: 100.00 MRP
❖ **CINARZIN Tab. Ibn Sina**
Cinnarizine 15mg/tablet
100's pack: 100.00 IP
❖ **CINAZIN Tab. Acme**
Cinnarizine 15mg/tablet
100's pack: 70.00 MRP
❖ **CINOMYST Tab. Mystic**
Cinnarizine 15mg/tablet
100's pack: 70.00 MRP
❖ **INARZIN Tab. Beximco**
Cinnarizine 15mg/tablet
100's pack: 90.00 IP
❖ **NEGARON Tab. Gaco**
Cinnarizine 30mg/tablet
100's pack: 50.35 MRP
❖ **SUZARON Tab. Rephco**
Cinnarizine 15mg/tablet
100's pack: 45.00 MRP
❖ **ZINCIN Tab. Aristopharma**
Cinnarizine 15mg/tablet
250's pack: 250.00 MRP

MECLIZINE[26]

MECLIZINE HCl: Tablet
Meclizine is a piperazine-derivative antihistamine, used mainly as an antiemetic. It has antiemetic, anticholinergic, and antihistaminic properties.
Mode of action: Meclizine reduces the sensitivity of the labyrinthine apparatus. The action may be mediated through nerve pathways to the vomiting centre (VC) from the chemoreceptor trigger zone (CTZ), peripheral nerve pathways, the VC, or other CNS centres.
Ind: Prevention and treatment of nausea, vomiting, dizziness, motion sickness, radiation sickness and vertigo associated with diseases of the vestibular system (e.g Meniere's syndrome, labyrinthitis and other vestibular disturbances). & morning sickness during pregnancy.
C/I: Known hypersensitivity to meclizine.
S/E: Drowsiness, dry mouth, and on rare occasions, blurred vision have been reported.
Precautions: As meclizine may impair mental alertness or physical coordination, patients should be warned regarding operating machinery, driving a motor vehicle, and other hazardous activities. Patients should avoid alcoholic beverages while taking this drug. Due to its potential anticholinergic action, this drug should be used with caution in patients with asthma, glaucoma, or enlargement of the prostate gland.
Pregnancy & lactation: Based on available data, meclizine found as an antiemetic with lowest risk of teratogenicity and is the drug of first choice in treating nausea and vomiting during pregnancy. Meclizine may excrete into the milk; although it causes no harm to the nursing babies, safety of meclizine has not been established during breast feeding.
Dosage & admin: Meclizine is administered orally.
Adult & children, 12 years & over: ***Nausea and vomiting:*** **25-50mg daily or as directed by the physician. Motion sickness: Take an initial dose of 25-50mg, 1 hour prior to travel; may repeat the dose every 24 hours for the duration of the journey.**
Radiation sickness: **50mg administered 2-12 hours prior to radiation treatment. Vertigo: 25-100mg daily in divided doses.**
Emergency contraception: **25-50mg, 1 hour before first ECP dose; repeat if needed in 24 hours.**
The safety and efficacy for use in children less than 12 years of age have not been established.
Drug inter: The CNS depressant effects of meclizine can be potentiated by concurrent use of ethanol or other CNS depressant agents such as benzodiazepines, barbiturates, tricyclic antidepressants, opiate agonists, skeletal muscle relaxants, and antihistamines. Concurrent use of other anticholinergics can potentiate the anticholinergic effects of meclizine. Meclizine can also increase the absorption of digoxin by decreasing gastrointestinal motility.
Overdosage: Overdosage of the drug is demonstrated by symptoms, such as extreme excitability, seizures, drowsiness and hallucinations. This can be combated by appropriate supportive and symptomatic treatment. Dialysis may be considered.
Storage: Store in a cool and dry place (temperature 15^{0}C-30^{0}C).

❖ **ACLIZ Tab. Aristopharma**
Meclizine hydrochloride 50mg/tablet (f.c).
50's pack: 125.00 MRP
❖ **ANOSEA Tab. Ibn Sina**
Meclizine hydrochloride 50mg/tablet (f.c).
50's pack: 125.00 MRP
❖ **AVERT Tab. Bio-pharma**
Meclizine hydrochloride 50mg/tablet (f.c).
100's pack: 250.00 MRP
❖ **CLIZIN Tab. Peoples**
Meclizine hydrochloride 50mg/tablet (f.c).
50's pack: 125.00 MRP
100's pack: 250.00 MRP
❖ **EMEGO Tab. Opsonin**
Meclizine hydrochloride 50mg/tablet (f.c).
50's pack: 125.00 MRP
❖ **EMENIL Tab. Incepta**
Meclizine hydrochloride 50mg/tablet (f.c).
100's pack: 250.00 MRP
❖ **EMEZIN Tab. SK+F**
Meclizine hydrochloride 50mg/tablet (f.c).
50's pack: 125.00 MRP
❖ **NOMOSIC Tab. Drug Inter.**
Meclizine hydrochloride 50mg/tablet (f.c).
50's pack: 125.00 MRP
❖ **VERTINA Tab. Square**
Meclizine hydrochloride 50mg/tablet (f.c).
50's pack: 125.00 MRP
❖ **VOMEC Tab. Beximco**
Meclizine hydrochloride 50mg/tablet (f.c).
50's pack: 125.00 IP

MECLIZINE + PYRIDOXINE[26,139]

MECLIZINE + PYRIDOXINE: Tablet
This is a combination preparation of meclizine & pyridoxine. Meclizine is a piperazine-derivative antihistamine, used as an antiemetic. Pyridoxine (B_6) is a vitamin B component having some antiemetic property.
This combination is available as a film coated tablet containing meclizine hydrochloride BP 25mg & pyridoxine hydrochloride BP 50mg.
Mode of action: Meclizine: See above under the text of meclizine
Pyridoxine (B6), either alone or in combination has been used to prevent nausea & vomiting due

to its antiemetic property.
Ind: For prophylaxis and symptomatic relief of nausea, vomiting, dizziness, motion sickness, radiation sickness and vertigo associated with diseases of vestibular system (e.g Meniere's syndrome, labyrinthitis & other vestibular disturbances) & morning sickness during pregnancy.
C/I: Known hypersensitivity to meclizine &/or pyridoxine.
S/E; Precautions: See above under the text of meclizine preparation.
Pregnancy & lactation: Meclizine: Large scale human studies have not demonstrated adverse fetal effects. Based on available data, it has been suggested that, meclizine presents the lowest risk of teratogenicity and is the drug of first choice in treating nausea and vomiting during pregnancy. Pyrioxine: Pyridoxine itself is considered safe during pregnancy, and has been used in pregnant women without any evidence of fetal harm.
Dosage & admin: The fixed dose combination (FDC) is recommended for oral administration.
***Nausea & vomiting (including morning sickness in pregnancy):* One tablet 1-2 times daily or as required.**
***Motion sickness:* The initial dose is one or two tablets daily, it should be taken one hour prior to journey for protection against motion sickness. Therfore, the dose may be repeated every 24 hours as indicated for the duration of the journey.**
***Vertigo:* One tablet two times daily or as required.**
***Labyrinthine and vestibular disturbances:* The optimal dosage of meclizine is usually 25-100mg daily in divided doses, depending on the clinical response.**
***Radiation sickness:* 50mg (meclizine) administered 2-12 hours prior to radiation treatment.**
***Dosage in pregnancy:* Meclizine: Dosage varies from 25-50mg/day in pregnancy or as required. Not recommended in last 2 weeks of pregnancy due to retrolental fibroplasia risk. Pyridoxine: 75mg/day is FDA-approved for use in pregnancy. Pregnant and breast feeding women should not take more than 100mg/day without a doctor's supervision.**
Drug inter: See above under the text of meclizine.

❖ **ACLIZ Plus Tab. Aristopharma**
Meclizine hydrochloride USP 25mg + pyridoxine hydrochloride BP 50mg/tablet (film coated).
50's pack: 150.00 MRP
❖ **DEVOMIT Tab. Silva**
Meclizine hydrochloride BP 25mg + pyridoxine hydrochloride BP 50mg/tablet (film coated).
50's pack: 150.00 MRP
❖ **EMEGO Plus Tab. Opsonin**
Meclizine hydrochloride USP 25mg + pyridoxine hydrochloride BP 50mg/tablet (film coated).
50's pack: 150.00 MRP
❖ **EMENIL Plus Tab. Incepta**
Meclizine hydrochloride USP 25mg + pyridoxine hydrochloride BP 50mg/tablet (film coated).
100's pack: 300.00 MRP
❖ **EMENOR Tab. Apex**
Meclizine hydrochloride USP 25mg + pyridoxine hydrochloride BP 50mg/tablet (film coated).
50's pack: 125.00 MRP
❖ **EMEZIN Plus Tab. SK+F**
Meclizine hydrochloride USP 25mg + pyridoxine hydrochloride BP 50mg/tablet (film coated).
50's pack: 150.00 MRP
❖ **MEC-P Tab. Navana**
Meclizine hydrochloride USP 25mg + pyridoxine hydrochloride BP 50mg/tablet (film coated).
50's pack: 150.00 MRP
❖ **MECLIXIN Tab. General**
Meclizine hydrochloride BP 25mg + pyridoxine hydrochloride BP 50mg/tablet (film coated).
50's pack: 125.00 MRP
❖ **PYRIMAC Tab. ACI**
Meclizine hydrochloride BP 25mg + pyridoxine hydrochloride BP 50mg/tablet (film coated).
50's pack: 150.00 IP
❖ **XMEC Tab. Beacon**
Meclizine hydrochloride BP 25mg + pyridoxine hydrochloride BP 50mg/tablet (film coated).
50's pack: 150.00 MRP

PROMETHAZINE[21,33]

PROMETHAZINE THEOCLATE: Tablet
Ind: Nausea, vertigo, labyrinthine disorders, motion sickness (acts longer than the promethazine hydrochloride).
C/I: Sensitivity to phenothiazine derivatives.
S/E: Drowsiness, headache, dry mouth, gastro-intestinal disturbances, blurred vision.
Caution: Hepatic disease, impairment in driving machinery; alcohol increases CNS depression.
Adult: 25-75 mg daily. For severe nausea & vomiting in pregnancy, 25mg at bedtime, increased if necessary to a max. of 100mg daily.
Child: 5-10 years. 12.5-37.5mg daily.

❖ **AVOMINE Tab. Sanofi-aventis**
Promethazine theoclate 25mg/tablet.
500's pack: 290.00 MRP

❖ ❖ ❖

PROMETHAZINE HCl: Tablet/ Syrup/ Injection.
Ind: Nausea, vomiting, vertigo, labyrinthine disorders, motion sickness, (and acts as anti-histaminic).
C/I; S/E; Caution: See above i.e as P. theoclate.
By mouth: Adult, 25-50mg daily in single or divided doses; Child, daily, upto 1 year 5-10mg; 1-5 yrs. 10-15 mg; 6-12 yrs. 15- 25mg.
***By injection:* Deep i.m injection, half oral dose.**
Prepns: See in the section of antihistaminics.

PROCHLORPERAZINE[21,33]

PROCHLORPERAZINE MALEATE: Tablet/ Syrup/Injection.
Ind: Nausea, vomiting, vertigo, labyrinth ine disorders, migraine, minor mental and emotional disturbances, acute and chronic psychoses specially schizophrenia.
C/I: Comatose state; bone marrow depression; liver damage.
S/E: Dry mouth, drowsiness. With high doses extrapyramidal symptoms may occur, particularly in children, elderly and debilitated patients.
Caution: Undiagnosed and prolonged vomiting. Cardiovascular disease. Pregnancy. Concurrent amin. of CNS depressants. Alertness may be impaired.
Dosage & admin: By month: Adult- minor mental disturbances, 5-20 mg daily in divided doses increasing to max. 40mg daily. Schizophrenia, 75-100mg daily.
Nausea & vomiting, initially 20mg then 10mg after 2 hours if reqd. vertigo- 15 mg daily in divided (3) doses, max. 30mg daily. Child, (use syrup) 1-5 yrs. 2.5mg twice daily; 6-12 yrs. 5mg 2 or 3 times daily.
By inj: Adult, 12.5 mg by deep i.m injection . Child, use syrup.

❖ **AMETIL Tab. Aristopharma**
Prochlorperazine 5mg/tablet.
250's pack: 72.50 MRP
❖ **AVOTIL Tab. Rephco**
Prochlorperazine 5mg/tablet.
100's pack: 30.00 MRP
❖ **EMITAB Tab. Sonear**
Prochlorperazine 5mg/tablet
100's pack: 30.00 MRP
❖ **MELATIL Tab. Gaco**
Prochlorperazine 5mg/tablet
100's pack: 27.83 MRP
❖ **MELATIL Inj. Gaco**
Prochlorperazine mesylate 12.5mg/ml: injection 1 ampoule: 3.54 MRP
❖ **PROMAT Tab. Navana**
Prochlorperazine maleate 5 mg/tablet.
200's pack : 58.00 MRP
❖ **STEMETIL Tab. Sanofi-aventis**
Prochlorperazine maleate 5mg/tablet.
500's pack: 150.00 MRP
❖ **VERGON Tab. Opsonin**
Prochlorperazine maleate 5mg/tablet.
200's pack: 60.00 MRP
❖ **VERGON Inj. Opsonin**
Prochlorperazine mesylate 12.5mg/ml: injection
50 amps pack: 250.00 MRP
❖ **VERTIGAN Tab. Pharmadesh**
Prochlorperazine maleate 5mg/tablet.
250's pack: 75.00 MRP

Drugs for Meniere's disease

BETAHISTINE[26,42]

BETAHISTINE: Tablet
Betahistine is a histamine analog that was

developed following successful parenteral use of histamine in patients with Meniere's syndrome. Betahistine is available as betahistine dihydrochloride & mesylate.

Mode of action: Betahistine relieves dizziness & vertigo symptoms by improving circulation in the microvasculature of the inner ear which leads to a pressure reduction on the membranous labyrinth and relives the symptoms of Meniere's disease.
Ind: Meniere's disease and Meniere's-like syndromes characterized by attacks of dizziness and feeling of dizziness, vertigo, tinnitus and/or progressive loss of hearing, usually accompanied also by nausea and vomiting.
C/I: Betahistine is contraindicated in Pheochromocytoma.
S/E: Betahistine is generally well tolerated and there is no known serious adverse effects. In some circumstances gastrointestinal disturbances (nausea/vomiting), headache, rashes and pruritus have been reported.

Precautions: Caution should be exercised in patients with- i. bronchial asthma (since betahistine has a histamin-like action, it may cause respiratory tract contraction through the intervention of H1-receptors), ii. and peptic ulceration (since betahistine has a histamin-like action, it may enhance gastric acid secretion through the intervention of H2-receptors).

Pregnancy & lactation: The safety of Betahistine in human pregnancy has not been completely established, although there is no known teratogenic effects in animals. A careful assessment of potential benefit should be made before prescribing Betahistine in pregnancy. Betahistine is excreted in the breast milk of mursing mother in concentrations similar to those found in plasma. But, toxicity to the neonate at these concentrations is not known.
Dosage & admin: See below under the individual preparation.
Drug inter: There are no proven cases of hazardous interactions. Yet there may be a chance of antagonism between Betahistine and antihistamines on a theoretical basis, but no such interactions have heen reported.

❖ **MENARIL Tab. Incepta**
Betahistine dihydrochloride INN 8mg/tablet
Ind; C/I; S/E; Cautions: See above under the text.
Dosage & admin: The usual initial dose is 8mg to 16mg 3 times daily taken preferably with meals; maintenance dosage up to 48mg daily have been recommended.
Children: Not recommended for children.
100's pack: 200.00 MRP

❖ **MERISON Tab. Square**
Betahistine mesylate INN 6mg/tablet
Ind; C/I; S/E; Cautions: See above under the text.
Dosage & admin: The usual initial dose is 6mg to 12mg 3 times daily taken preferably after meals. The dosage may be adjusted depending on the patient's age and symptoms. Maintenance dosage may be given up to 36mg daily.
Children: Not recommended for children.
100's pack: 200.00 MRP

❖ **TINIRIL Tab. Opsonin**
Betahistine dihydrochloride INN 8mg/tablet
Ind; C/I; S/E; Cautions: See above under the text.
Dosage & admin: The usual initial dose is 8mg to 16mg 3 times daily taken preferably with meals; maintenance dosage up to 48mg daily have been recommended.
Children: Not recommended for children.
100's pack: 200.00 MRP

Drugs used in nausea & vomiting in pregnancy[21]

Nausea & vomiting in the first trimester of pregnancy usually does not require drug therapy. If vomiting is severe, an antihistamine or a phenothiazine (e.g. promethazine) may be given. If not controlled within 24 to 48 hours, a specialist advice may be required.
Preparation: See above.

Symptomatic relief of nausea & vomiting from underlying diseases

CHLORPROMAZINE HC[121]

CHLORPROMAZINE HCI: Tablet/ Syrup/ Injection.
Ind: Nausea, vomiting, intractable hiccup. Other indications, see under antipsychotic drugs.
C/I; S/E; Caution: see under antipsychotic drugs.
By mouth: Adult, 25-50mg 3 times daily.
Child, upto 5 yrs. 5-10mg 3 times daily; 5-12 yrs. 3/4 to 1/2 adult dose
By inj: By s.c or i.m injection 12.5 -50mg 3 times daily.
Preparations: See in the section of antipsychotic drugs.

METOCLOPRAMIDE[21,33]

METOCLOPRAMIDE HCI: Tablet/ Syrup/ Drop/Injection.
Ind: Nausea & vomiting particularly due to gastro-intestinal disorders; Migraine, intolerence to drugs (i.e. vomiting); Congestive heart failure; Post-operative conditions; Deep X-ray or cobalt therapy.
S/E: Drowsiness, constipation, extra pyra-midal effects (spcecially in children.)
Cautions: Parkinsonism; Children; Concurrent admin. of anti cholinergics, phenothiazines or butyrophenones.
Adult: 15 to 20 years 5-10mg; others, 10mg. Both 3 times daily.
Child: Under 1 yr, 1 mg twice daily; 1-3 yrs. 1mg 2 or 3 times daily ; 3-5 yrs. 2mg 2 or 3 times daily; 5-14 yrs
2.5-5mg 3 times daily. All orally, i.m or i.v.
Usual max. doses, all ages 0.5mg/kg body-wt. daily.

❖ **MAXIL Tab. Nipa**
Metoclopramide hydrochlor. 10mg/tablet.
100's pack: 34.00 MRP

❖ **MAXIL Syp. Nipa**
Metoclopramide 5mg/5ml: syrup
100ml bot: 14.11 MRP

❖ **MAXOCOL Tab. Medimet**
Metoclopramide hydrochlor. 10mg/tablet.
100's pack: 34.00 MRP

❖ **MAXOCOL Syp. Medimet**
Metoclopramide hydrochloride 5mg/5ml: syrup.
100ml bot: 15.50 MRP

❖ **MECLID Tab. Jayson**
Metoclopramide hydrochlor. 10mg/tablet.
100's pack: 32.00 MRP

❖ **MECLID Inj. Jayson**
Metoclopramide hydrochloride 10mg/2ml ampoule: injection
10 amps pack: 35.40 MRP

❖ **METOCOL Syp. Opsonin**
Metoclopramide hydrochlor. 5mg/5ml: syrup
100ml bot.: 13.00 MRP

❖ **METOCOL Drop Opsonin**
Metoclopramide hydrochloride 1mg/1 ml: drop
15ml bot: 9.50 MRP

❖ **MOTILON Tab. Sanofi-aventis**
Metoclopramide hydrochloride 10mg/tablet
500's pack: 170.00 MRP

❖ **MOVLAN Tab. Gaco**
Metoclopramide hydrochloride 10mg/tablet
100's pack: 30.48 MRP

❖ **MOVLAN Syp. Gaco**
Metoclopramide hydrochloride 5mg/5ml: syrup
100ml bot: 14.11 MRP

❖ **ULTRAMET Tab. Ultra Pharma**
Metoclopramide hydrochloride 10mg/tablet.
30's pack: 10.20 MRP

Drugs used in nausea & vomiting induced by chemotherapy & radiotherapy

DOMPERIDONE[21,26]

DOMPERIDONE: Tablet/Suspension/ Suppositories
Domperidone is a dopamine antagonist. It is available as tablet, suspension & suppositories.
Preparations: The text literature and available preparations are being discussed in the chapter-1 under 'gastro-intestinal drugs'..

GRANISETRON[42]

GRANISETRON HCl: Tablet/Injection
Granisetron is a selective 5-hydroxytryptamine 3 (5-HT3) receptor antagonist with little or no affinity for other serotonin receptors. It is available as tablet and injection form. Each tablet contains granisetron 1mg as granisetron hydrochloride INN. Each injection ampoule contains granisetron 1mg in 1ml as granisetron hydrochloride INN.
Mode of action: Granisetron is a selective 5-hydroxytryptamine 3 (5-HT3) receptor antagonist with little or no affinity for other serotonin receptors, including 5-TH1, 5HT1A, 5-HT1B/C, 5-HT4; for alpha1, alpha2, or beta adrenoceptors;

for dopamine D2; or for histamine H1; benzodiazepine; picrotoxin; or opioid receptors.
Ind: Granisetron injection is indicated for the prevention of nausea and vomiting associated with initial and repeat courses of emetogenic cancer chemotherapy including high dose cisplatin; the prevention and treatment of postoperative nausea and vomiting.
Tablet preparation is also indicated for nausea and vomiting associated with initial and repeat courses of emetogenic cancer chemotherapy, including high dose cisplatin; nausea & vomiting associated with radiation, including total body irradiation and fractionated abdominal radiation.
C/I: Granisetron is contraindicated in patients with known hypersensitivity to this drug.
S/E: Headache, constipation, asthenia, diarrhea, abdominal pain, dyspepsia, nausea and vomiting, dizziness, insomnia, anxiety.
Pregnancy & lactation: No evidence of impaired fertility or harm to the animal fetus have been found. However, this drug may be used in pregnancy only if clearly needed. It is also not known whether granisetron is excreted in human milk, so, caution shoud be exercised when granisetron is administered to a nursing mother.

Dosage & admin: By Injection:
***Prevention of chemotherapy induced nausea and vomiting*: Adults- the recommended dosage is 10mcg/kg administered i.v within 30 minutes before initiation of chemotherapy, and only on the day(s) chemotherapy is given; injection may be administered i.v either undiluted over 30 seconds, or diluted with 0.9% sodium chloride or 5% dextrose and infused over 5 minutes. Paediatric patients- the recommended dose in paediatric patients 2-16 years of age is 10mcg/kg; uses of this drug under 2 years of age have not been studied. Geriatric patients, renal failure patients or hepatically impaired patients- no dosage adjustment is required.**
***Prevention & treatment of postoperative nausea & vomiting*: Adults- the recommended dosage for prevention of postoperative nausea and vomiting is, a single dose of 1mg (1ml) of injection should be diluted to 5ml and administered as a slow i.v injection (over 30 seconds); administration should be completed prior to induction of anesthesia. For the treatment of established post-operative nausea and vomiting in adults, a single dose of 1mg (1ml) of injection should be diluted to 5ml and administered by slow i.v injection (over 30 seconds). The recommended dosage for the treatment of nausea and/or vomiting after surgery is 1mg (1ml) of injection undiluted, administered i.v over 30 seconds. Paediatric patients- safety and effectiveness of parenteral injection have not been established. Geriatric patients, renal failure patients or hepatically impaired patients- no dosage adjustment is required.**

Tablet preparation:
***Emetogenic chemotherapy:* The recommended adult dosage of oral granisetron is 2mg once daily or 1mg twice daily. In the 2mg once-daily regimen, two 1mg tablets are given up to one hour before chemotherapy; in the 1mg twice-daily regimen, the first 1mg tablet is given up to one hour before chemotherapy, and the second tablet 12 hours after the frist; either regimen is administered only on the day(s) chemotherapy is given. Use in the elderly, renal failure patients or hepatically impaired patients- no dosage adjustment is required.**
***Radiation (either total body irradiation or fractionate abdominal radiation):* The recommended adult dosage of oral granisetron is 2mg once daily; two 1mg tablets are taken within one hour of irradiation. Paediatric use- there is no experience with oral granisetron in the prevention of radiation induced nausea and vomiting in paediatric patients.**
Drug inter: Granisetron does not induce or inhibit the cytochrome P450 drug-metabolizing enzyme system. Because granisetron is metabolized by hepatic cytochrome P450 drug metabolizing enzymes inducers or inhibitors of these enzymes may change the clearance and, hence, the half-life of granisetron.

❖ **NAURIF Tab. Square**
Granisetron hydrochloride INN equivalent to granisetron 1mg/tablet.
1mg x 20's pack: 560.00 MRP
❖ **NAURIF Inj. Square**
Granisetron hydrochloride INN equivalent to granisetron 1mg/1ml ampoule: injection
1mg (1ml amp) x 5's pack: 240.00 MRP

ONDANSETRON[50,58]

ONDANSETRON: Tablet/Syrup/Injection
Ondansetron hydrochloride dihydrate is a potent, highly selective 5-HT3 (serotonin) receptor antagonist.
Mode of action: Cytostatic chemotherapeutic agents & radiotherapy may cause increase in serotonin level by stimulating the mucous membrane of the stomach & the small intestine. Serotonin receptors of the 5-HT3 type are present both peripherally on vagal nerve terminals and centrally in the chemoreceptor trigger zone of the area postrema located on the floor of the fourth ventricle. Serotonin, by the activation of peripheral vagal afferent fibres containing 5-HT3 receptors initiates vomiting reflex, and also promotes emesis by stimulating 5-HT3 receptors present in the central chemoreceptor trigger zone of the area postrema. Ondansetron due to antagonism of 5-HT3 receptors on neurons located both in the central & peripheral nervous system, inhibits the triggering of vomiting reflex.
Ind: Prevention and treatment of nausea nad vomiting induced by cytostatic chemotherapy and radiotherapy and postoperative nausea and vomiting.
C/I: Hypersensitivity of any component of the preparation; pregnancy and lactation.
S/E: Headache, sensation of warmth or flushing; occasional alterations in liver enzymes; constipation; on rare occasions hypersensitivity reactions (including anaphylaxis); transient visual disturbance and dizziness (after rapid i.v administra-tion), pain, arrhythmias, bradycardia, hypotension, hiccup.
Dosage & admin: ***By mouth:***
A. In case of moderately emetogenic chemotherapy:
Adult: 8mg orally 1 to 2 hours before treatment, then followed by 8mg every 12 hours for up to 5 days (or up to 1 to 2 days after completion of chemotherapy).
Children (4 to 11 years age): The dosage is 4mg given 8 or 12 hourly 2 or 3 times a day for up to 5 days.
B. Severely (highly) emeto genic chemotherapy:
Adult: The recommended adult oral dosage is 24mg (3 tablets) to be administered 30 minutes before the start of single-day highly emetogenic chemotherapy, including cisplatin ? 50mg/m².
Then followed by 8mg orally every 12 hours for up to 5 days.
For geriatric patients, same as the general population.
The efficacy of ondansetron in highly emetogenic chemotherapy may be enhanced by addition of a single dose of 20mg dexamethasone sodium phosphate by i.v injection administered prior to chemotherapy.
Children (4 to 11 years age): The dosage is 4mg given 8 or 12 hourly 2 or 3 times a day for up to 5 days.
C. Radiotherapy induced nausea and vomiting:
The recommended oral dosage is one 8mg tablet given 3 times a day.
i. For total body irradiation, one 8mg tablet should be administered 1 to 2 hours before each fraction of radiotherapy administered each day.
ii. For single bigh-dose fraction radiotherapy to the abdomen, one 8mg tablet should be administered 1 to 2 hours before radiotherapy, with subsequent doses every 8 hours after the first dose for 1 to 2 days after completion of radiotherapy.
iii. For daily fractionated radiotherapy to the abdomen, one 8mg tablet should be administered 1 to 2 hours before radiotherapy, with subsequent doses every 8 hours after the first dose for each day radiotherapy is given.
D. Prevention of postoperative nausea and vomiting:
Adult- 16mg orally 1 hour before anaesthesia or 8mg 1 hour before anaesthesia followed by 8mg at intervals of 8 hours for 2 further doses.
By injection:
A. Moderately emetogenic chemotherapy or radiotherapy: By i.m or slow i.v injection 8mg immediately before treatment.
B. Severely emetogenic chemotherapy: By i.m or slow i.v njection 8mg immediately before treatment, when necessary followed by 8mg at intervals of 2-4 hours for further 2 doses.
Children: By slow i.v injection 5mg/m² immediately before chemotherapy.
C. Prevention and treatment of postoperative nausea and vomiting: By i.m or solw i.v injection 4mg at induction of anaesthesia.
Children (over 2 years): By slow i.v injection, 100mcg/kg (maximum 4mg before, during or after induction of anaesthesia.

❖ **ANSET Tab. Opsonin**
Ondansetron hydrochloride dihydrate equivalent to ondansetron 4mg & 8mg/tablet (film-coated).
4mg x 30's pack: 135.00 MRP
8mg x 30's pack: 300.00 MRP

❖ **ANSET Inj. Opsonin**
Ondansetron hydrochloride dihydrate BP 2.49mg equivalent to ondansetron 2mg/ml; 4ml ampoule: i.v injection.
4ml amp (8mg) x 5's pack: 125.00 MRP

❖ **EMETRON Inj. Gedeon Richter/City Overseas**
Ondansetron hydrochloride dihydrate equivalent to ondansetron 2mg/ml; 4ml (8mg) ampoule: i.v injection.
4ml amp (8mg) x 5's pack: 286.50 TP

❖ **EMISTAT Tab. Healthcare**
Ondansetron hydrochloride dihydrate equivalent to ondansetron 8mg/tablet (f.c).
8mg x 30's pack: 300.00 MRP

❖ **EMISTAT Inj. Healthcare**
Ondansetron hydrochloride dihydrate BP 2.49mg equivalent to ondansetron 2mg/ml; 4ml ampoule: i.v injection.
4ml amp (8mg) x 5's pack: 150.00 MRP

❖ **ONASERON Tab. Incepta**
Ondansetron hydrochloride dihydrate equivalent to ondansetron 8mg/tablet (film-coated).
8mg x 30's pack: 300.00 MRP

❖ **ONASERON Inj. Incepta**
Ondansetron hydrochloride dihydrate BP 2.49mg equivalent to ondansetron 2mg/ml; 4ml ampoule: i.v injection.
4ml amp (8mg) x 5's pack: 125.00 IP

❖ **ONCODEX-4 Tab. Jayson**
Ondansetron hydrochloride dihydrate equivalent to ondansetron 4mg/tablet (film-coated).
4mg x 30's pack: 135.00 IP

❖ **ONCODEX-8 Tab. Jayson**
Ondansetron hydrochloride dihydrate equivalent to ondansetron 8mg/tablet (film-coated).
8mg x 30's pack: 240.00 IP

❖ **ONCODEX-8 Inj. Jayson**
Ondansetron hydrochloride dihydrate equivalent to ondansetron 2mg/ml; 4ml (8mg) ampoule: i.v injection.
4ml amp (8mg) x 5's pack: 125.00 IP

❖ **ONSAT 8 Tab. Beximco**
Ondansetron hydrochloride dihydrate equivalent to ondansetron 8mg/tablet (film-coated).
8mg x 30's pack: 300.00 IP

❖ **OSETRON Tab. ACI**
Ondansetron hydrochloride dihydrate equivalent to ondansetron 8mg/tablet (film-coated).
8mg x 30's pack: 300.00 IP

❖ **OSETRON Inj. ACI**
Ondansetron hydrochloride dihydrate BP 2.49mg equivalent to ondansetron 2mg/ml; 4ml ampoule: i.v injection.
4ml amp (8mg) x 5's pack: 125.00 IP

❖ **SETON 8 Tab. Delta**
Ondansetron hydrochloride dihydrate equivalent to ondansetron 8mg/tablet (film-coated).
8mg x 30's pack: 240.01 MRP

❖ **ZOFER MD 4 Tab. Sun Pharma**
Ondansetron hydrochloride dihydrate equivalent to ondansetron 4mg/tablet (film-coated).
4mg x 30's pack: 117.00 MRP

❖ **ZOFRA ODT 4 Tab. SK+F**
Ondansetron hydrochloride dihydrate equivalent to ondansetron 4mg/tablet (film-coated).
4mg x 20's pack: 60.00 MRP

❖ **ZOFRA ODT 8 Tab. SK+F**
Ondansetron hydrochloride dihydrate equivalent to ondansetron 8mg/tablet (film-coated).
8mg x 20's pack: 100.00 MRP

❖ **ZOFRA Syp. SK+F**
Ondansetron (as hydrochloride) 4mg/5ml: syrup.
50ml bot: 30.00 MRP

7. ANTICONVULSANT/ ANTIEPILEPTIC DRUGS[1,2,3,21]

Drugs commonly used in the treatment of epilepsies & seizures are:

A. Generalised seizures:

1. **Drugs used in major or tonic-clonic seizures (grand mal):**
   Drugs of choice- ***Carbamazepine, Lamotrigine, Sodium valproate, Topiramate***
   Second-line drugs- ***Clobazam, Levetiracetam, & Oxcarbazapine***
   Third-line drugs- ***Phenytoin, Gabapentin, Primidone, Phenobarbitone, Tigabine or Acetazolamide***
2. **Drugs used in minor or absence seizures (petitmal):**
   Drugs of choice- ***Ethosuximide***
   Second-line drugs- ***Sodium valproate***
   Third-line drugs- ***Lamotrigine, Clonazepam, or Acetazolamide***
3. **Drugs used in myoclonus or myoclonic seizures:**
   Drugs of choice- ***Sodium valproate***
   Second-line drugs- ***Clonazepam***
   Third-line drugs- ***Lamotrigine, Phenobarbitone, or Piracetam***
4. **Drugs used in atypical absence, atonic, & tonic seizures:**
   Drugs of choice- ***Clonazepam, Lamotrigine & Sodium valproate***
   Second-line drugs- ***Clobazam, Ethosuximide, Levetiracetam, & Topiramate***
5. **Drugs used in status epilepticus:**
   Drug of choice- Start with parenteral ***Diazepam*** **(or** ***lorazepam*** **if fits are not controlled)**
   Followed by anticonvulsant drug- ***Phenytoin or Sodium valproate or Carbamazepine***

B. Partial (or focal) seizures with or without secondary generalisation:

1. **Drugs used in partial (focal) seizures:**
   Drugs of choice- ***Carbamazepine, Lamotrigine, Oxcarbazapine, Sodium valproate & Topiramate***
   Second-line drugs- ***Clobazam, Gabapentin, Levetiracetam, Pregabalin, Tiagabine & Zonisamide.***
   Third-line drugs: ***Clobazam, Phenytoin, Primmidone, Phenobarbitone, Oxcarbazepine, Levetiacetam, Vigabatrin or Acetazolamide***

CARBAMAZEPINE[21,54]

CARBAMAZEPINE: Tablet/Syrup
Carbamazepine is an anti-convulsant (anti-epileptic) drug, with neurotropic and psychotropic properties. It is effective in partial and generalized convulsion as well as in mixed types but not in petit mal seizures. It reduces or abolishes pain in trigeminal & glossopharyngeal neuralgia.
It is available as ordinary and controlled release tablet and also in suspension form.
Ind: Grandmal and temporal lobe epilepsy, trigeminal neuralgia, prophylaxis in manic depressive illness.
C/I: Hypersensitivity to carbamazepine, patients on MAO inhibitors or within 2 weeks of MAOI therapy.
S/E: Dizziness, drowsiness, visual and g.i disturbances; generalised erythematous rash (3%); leucopenia rarely.
Cautions: Renal or hepatic impairment. Blood dyscrasias. Pregnancy . Lactation.
Concurrent admin. of doxycycline, oral anticoagulants and oral contraceptives. Blood count regularly.
Dosage & admin: Adult: Initially 100-200mg once or twice daily increasing slowly to optimum dosage, usually 800mg to 1.2gm daily; maximum 1.6gm daily.
Child: Upto 1 year, 100-200 mg; 1-5 years 200-400mg; 5-10 years, 400-600mg; 10-15 years 600mg-1gm. All daily in divided doess.

❖ **CABRETOL Tab. Renata**
Carbamazepine 200mg/tablet
50's pack: 160.00 MRP

❖ **CABRETOL CR Tab. Renata**
Carbamazepine 200mg/tablet (controlled release)
50's pack: 195.00 MRP

❖ **CABRETOL Syp. Renata**
Carbamazepine 100mg/5ml: syrup
100ml bot: 300.00 MRP

❖ **CARBAZIN Tab. SK+F**
Carbamazepine BP 200mg/tablet
50's pack: 152.00 MRP

❖ **CARBAZIN CR Tab. SK+F**
Carbamazepine BP 200mg/tablet (controlled release)
50's pack: 202.50 MRP

❖ **CARMAPINE Tab. Incepta**
Carbamazepine BP 200mg/tablet
50's pack: 200.00 MRP

❖ **CARMAPINE CR Tab. Incepta**
Carbamazepine 200mg/tablet (controlled release)
50's pack: 250.00 MRP

❖ **CARMAPINE Susp. Incepta**
Carbamazepine 100mg/5ml: suspension
100ml bot: 250.00 MRP

❖ **CAZEP Tab. Opsonin**
Carbamazepine BP 200mg/tablet
50's pack: 200.00 MRP

❖ **EPILEP Tab. Beximco**
Carbamazepine BP 200mg/tablet
50's pack: 175.00 IP

❖ **EPILEP CR Tab. Beximco**
Carbamazepine BP 200mg/tablet (controlled release)
50's pack: 225.00 IP

❖ **TEGRETOL Tab. Novartis**
Carbamazepine BP 200mg/tablet
50's pack: 275.00 MRP

❖ **TEGRETOL CR Tab. Novartis**
Carbamazepine BP 200mg/tablet (controlled release)
50's pack: 300.00 MRP

❖ **TEGRETOL Syp. Novartis**

Carbamazepine BP 100mg/5ml: syrup
100ml bot: 371.25 MRP
❖ **ZEPTOL Tab. Sun Pharma**
Carbamazepine BP 200mg/tablet
100's pack: 350.00 MRP
❖ **ZEPTOL CR Tab. Sun Pharma**
Carbamazepine BP 200mg & 400mg/tablet (controlled release)
200mg x 100's pack: 430.00 MRP
400mg x 50's pack: 325.00 MRP

CLONAZEPAM[21]

CLONAZEPAM: Tablet/Drop/Injection
Ind: All forms of epilepsy; myoclonus; status epilepticus.
C/I: Respiratory depression; acute pulmonary insufficiency.
S/E: Drowsiness, fatigue, dizziness, muscle hypotonia, coordination disturbances; hypersalivation in infants, paradoxical aggression, irritability and mental changes; rarely blood disorders, abnormal liver-function tests.
Cautions: Respiratory disease, hepatic and renal impairment, elderly and debilitated; pregnancy and breast- feeding; avoid sudden withdrawal; porphyria.
Driving: Drowsiness may affect the performance of driving and other skilled tasks.
Dosage & admin: Adult: 1mg (elderly, 500mcg), initially at night for 4 nights, increased over 2-4 weeks to a usual maintenance dose of 4-8mg daily in divided doses.
Child, up to 1 year 250mcg increased as above to 0.5-1mg, 1-5 years 250mcg increased to 1-3mg, 5-12 years 500mcg increased to 3-6mg.
Overdosage: See treatment of poisoning.

❖ **AROTRIL Tab. Aristopharma**
Clonazepam 0.5mg & 2mg/tablet.
0.5mg x 50's pack: 100.00 MRP
0.5mg x 100's pack: 200.00 MRP
2mg x 30's pack: 120.00 MRP
❖ **CLOMA Tab. Bio-pharma**
Clonazepam 0.5mg & 2mg/tablet.
0.5mg x 50's pack: 100.00 MRP
2mg x 30's pack: 120.00 MRP
❖ **CLONAPIN Tab. Popular**
Clonazepam 0.5mg & 2mg/tablet.
0.5mg x 30's pack: 60.00 IP
2mg x 30's pack: 120.00 IP
❖ **CLONATRIL Tab. Healthcare**
Clonazepam 0.5mg & 2mg/tablet.
0.5mg x 50's pack: 175.00 MRP
2mg x 30's pack: 150.00 MRP
❖ **CLORON Tab. SK+F**
Clonazepam 0.5mg & 2mg/tablet.
0.5mg x 100's pack: 200.00 MRP
2mg x 30's pack: 120.00 MRP
❖ **CLORON Drop SK+F**
Clonazepam 2.5mg/ml: drop.
10ml drop: 80.00 MRP
❖ **DEPANIL Tab. Rangs Pharma**
Clonazepam 0.5mg & 2mg/tablet.
0.5mg x 50's pack: 100.00 MRP
2mg x 30's pack: 120.00 MRP
❖ **DISOPAN Tab. Incepta**
Clonazepam 0.5mg & 2mg/tablet.
0.5mg x 100's pack: 200.00 MRP
2mg x 50's pack: 200.00 MRP
❖ **DISOPAN Drop Incepta**
Clonazepam 2.5mg/ml: drop.
10ml drop: 80.00 MRP
❖ **EPICLON Tab. General**
Clonazepam 0.5mg & 2mg/tablet.
0.5mg x 50's pack: 100.00 MRP
2mg x 30's pack: 120.00 MRP
❖ **EPITRA Tab. Square**
Clonazepam 0.5mg & 2mg/tablet.
0.5mg x 100's pack: 200.00 MRP
2mg x 50's pack: 200.00 MRP
❖ **EPNIL Tab. Sandoz/Novartis**
Clonazepam 0.5mg & 2mg/tablet.
0.5mg x 50's pack: 125.00 MRP
2mg x 30's pack: 150.00 MRP
❖ **ESYPAN Tab. Silva**
Clonazepam 0.5mg & 2mg/tablet.
0.5mg x 50's pack: 100.00 MRP
2mg x 50's pack: 200.00 MRP
❖ **ESYPAN Drop Silva**
Clonazepam 1.25mg/ml: drop.
10ml drop: 80.00 MRP
❖ **LEPTIC Tab. Acme**
Clonazepam 0.5mg & 2mg/tablet.
0.5mg x 100's pack: 200.00 MRP
2mg x 50's pack: 200.00 MRP
❖ **LONAZEP Tab. Sun Pharma**
Clonazepam 0.5mg & 2mg/tablet.
0.5mg x 50's pack: 101.50 MRP
2mg x 50's pack: 210.50 MRP
❖ **PASE Tab. Opsonin**
Clonazepam 0.5mg & 2mg/tablet.
0.5mg x 50's pack: 100.00 MRP
2mg x 30's pack: 120.00 MRP
❖ **PASE Drop Opsonin**
Clonazepam 1.25mg/ml: drop.
10ml drop: 80.00 MRP
❖ **RIVOTRIL Tab. Roche**
Clonazepam 0.5mg & 2mg/tablet.
0.5mg x 50's pack: 250.50 MRP
2mg x 30's pack: 300.30 MRP
❖ **XETRIL Tab. Beximco**
Clonazepam 0.5mg & 2mg/tablet.
0.5mg x 100's pack: 200.00 IP
2mg x 50's pack: 200.00 IP

DIAZEPAM[21]

DIAZEPAM: Injection/Suppositories.
Ind: Status epilepticus; febrile and other convulsions where rapid effect is req.
C/I; S/E; Cautions: See under Anxiolytic drugs.
Adult: 10-20mg i.m or i.v at a rate of 2-5 mg/30 sec. repeated after 30-60 mins. if necessary. Then upto 3mg/ kg body-wt. by i.v inj. over 24 hours.
Child: 0.2-0.3 mg/kg.
Diazepam preprs: See under Sedatives & Anxiolytics.

FOSPHENYTOIN[133]

FOSPHENYTOIN: IM/IV Injection
Fosphenytoin sodium is a pro-drug intended for parenteral administration and its active metabolite is phenytoin. It is available as fosphenytoin sodium USP 150mg equivalent to 100mg phenytoin sodium in 2ml ampoule as a ready-mixed solution in water for i.m/i.v injection.
Ind: Fosphenytoin is indicated for short-term parenteral administration when other means of phenytoin administration are unavailable, inappropriate or deemed less advantageous. Fosphenytoin can be used for the control of generalized convulsive status epilepticus and prevention and treatment of seizures occurring during neurosurgery or head injury. It can also be substituted, short-term, for oral phenytoin. The safety and effectiveness of fosphenytoin in this use has not been systematically evaluated for more than 5 days.
C/I: Fosphenytoin is contraindicated in patients who have demonstrated hypersensitivity to fosphenytoin or its ingredients, or to phenytoin or other hydantoins. Fosphenytoin is also contraindicated in patients with sinus bradycardia, sino-atrial block, second and third degree A-V block, and Adams-Stokes syndrome.
S/E: The more important adverse clinical events caused by the i.v use of fosphenytoin or phenytoin are cardiovascular collapse and/or central nervous system depression. Hypotension can occur when either drug is administered rapidly by the i.v route. The rate of administration should not exceed 150mg PE/min. The adverse clinical events most commonly observed were nystagmus, dizziness, pruritus, paresthesia, headache, somnolence, and ataxia. General safety advice: I.V infusion of fosphenytoin has been associated with severe cardiovascular reactions including asystole, ventricular fibrillation, and cardiac arrest. Hypotension, bradycardia, and heart block have also been reported. The safety advices: 1. Monitor heart rate, blood pressure, and respiratory function for duration of infusion. 2. Observe patient for at least 30 minutes after infusion. 3. If hypotension occurs, reduce infusion rate or discontinue. 4. Reduce dose or infusion rate in elderly, and in renal or hepatic

impairment
Precautions: *Phosphate load:* The phosphate load provided by fosphenytoin (0.0037 mmol phosphate/mg PE fosphenytoin) should be considered when treating patients who require phosphate restriction, such as those with severe renal impairment.
General: Fosphenytoin is not indicated for the treatment of absence seizures.
Phenytoin and other hydantoins are contraindicated in patients who have experienced phenytoin hypersensitivity. Phenytoin has been infrequently associated with the exacerbation of porphyria. Phenytoin may also raise the serum glucose concentrations in diabetic patients.

Warnings: Doses of fosphenytoin are expressed as their phenytoin sodium equivalents in this labeling (PE=Phenytoin sodium Equivalent). Do not, therefore, make any adjustment in the recommended doses when substituting fosphenytoin for phenytoin sodium or vice versa. Fosphenytoin sodium should always be prescribed and dispensed in phenytoin sodium equivalent units (PE). The following warnings are based on experience with fosphenytoin or phenytoin. Status epilepticus dosing regime: Do not administer fosphenytoin at a rate greater than 150mg PE/min. The dose of i.v fosphenytoin (15 to 20mg PE/kg) that is used to treat status epilepticus is administered at a maximum rate of 150mg PE/min. The typical fosphenytoin infusion administered to a 50kg patient would take between 5 and 7 minutes. If rapid phenytoin loading is a primary goal, i.v administration of fosphenytoin is preferred. Withdrawal precipitated seizure, status epilepticus: Antiepileptic drugs should not be abruptly discontinued because of the possibility of increased seizure frequency, including status epilepticus. When the need for dosage reduction, discontinuation, or substitution of alternative antiepileptic medication arises, this should be done gradually. However, in the event of an allergic or hypersensitivity reaction, rapid substitution of alternative therapy may be necessary. Cardiovascular depression: Fosphenytoin should be used with caution in patients with hypotension and severe myocardial insufficiency. Rash: Fosphenytoin should be discontinued if a skin rash appears. Hepatic injury: Cases of acute hepatotoxicity, including infrequent cases of acute hepatic failure, have been reported with phenytoin. In these patients with acute hepatotoxicity, fosphenytoin should be immediately discontinued and not readministered. Hemopoietic system: Hemopoietic complications, some fatal, have occasionally been reported in association with administration of phenytoin. These have included thrombocytopenia, leukopenia, granulocytopenia, agranulocytosis, and pancytopenia with or without bone marrow suppression. Alcohol use: Acute alcohol intake may increase plasma phenytoin concentrations while chronic alcohol use may decrease plasma concentrations.

Pregnancy & lactation: Fosphenytoin is contraindicated during pregnancy. Because prenatal exposure to phenytoin may increase the risks for congenital malformations and other adverse developmental outcomes. Breast-feeding is not recommended for women receiving fosphenytoin.
Dosage & admin: The dose, concentration in dosing solutions, and infusion rate of i.v fosphenytoin is expressed as phenytoin sodium equivalents; (fosphenytoin sodium 1.5mg equivalent to phenytoin sodium 1mg) to avoid the need to perform molecular weight-based adjustments when converting between fosphenytoin and phenytoin sodium doses. Products with particulate matter or discoloration should not be used. Prior to i.v infusion, dilute fosphenytoin in 5% dextrose or 0.9% saline solution for injection to a concentration ranging from 1.5mg to 25mg PE/ml.
***Status epilepticus:* By i.v infusion (at a rate of 100mg-150mg (PE)/minute), initially 15mg (PE)/kg then by i.m injection or by i.v infusion (at a rate of 50mg-100mg (PE)/minute), 4-5mg (PE)/kg daily in 1-2 divided doses; dose adjusted according to response and through plasma-phenytoin concentration.**
Child 5 years and over: By i.v infusion (at a rate of 2-3mg (PE)/kg/minute), initially 15mg (PE)/kg then by intravenous infusion (at a rate of 1-2mg (PE)/kg/minute), 4-5mg (PE)/kg daily in 1-4 divided doses; dose adjusted according to response and through plasma-phenytoin concentration.
***Prophylaxis or treatment of seizures associated with neurosurgery or head injury:* By i.m injection or by i.v infusion (at a rate of 50-100mg (PE)/minute, initially 10-15mg (PE)/kg then by i.m injection or by i.v infusion (at a rate of 50-100mg (PE)/minute), 4-5mg (PE)/kg daily (in 1-2 divided doses), dose adjusted according to response and through plasma-phenytoin concentration.**
Child 5 years and over: By i.v infusion (at a rate of 1-2mg (PE)/kg/minute), initially 10-15 mg (PE)/kg then 4-5mg (PE)/kg daily in 1-4 divided doses; dose adjusted according to response and through plasma-phenytoin concentration.

***Temporary substitution for oral phenytoin:* By i.m injection or by i.v infusion (at a rate of 50-100mg (PE)/minute); same dose and dosing frequency as oral phenytoin therapy.**
Child 5 years and over: By i.v infusion (at a rate of 1-2mg (PE)/kg/minute), same dose and dosing frequency as oral phenytoin therapy.
Dosing in special populations: Patients with renal or hepatic disease: After i.v fosphenytoin administration to patients with renal and/or hepatic disease, or in those with hypoalbuminemia, fosphenytoin clearance to phenytoin may be increased without a similar increase in phenytoin clearance. This has the potential to increase the frequency and severity of adverse events. Elderly: Age does not have a significant impact on the pharmacokinetics of fosphenyton following fosphenyton administration. Phenyton clearance is decreased slightly in elderly patients and lower or less frequent dosing may be required.

Overdosage: Nausea, vomiting, lethargy, tachycardia, bradycardia, asystole, cardiac arrest, hypotension, syncope, hypocalcemia, metabolic acidosis, and death have been reported in cases of overdosage with fosphenytoin. Initial symptoms of acute phenytoin toxicity are nystagmus, ataxia, and dysarthria. Treatment is nonspecific since there is no known antidote to fosphenytoin or phenytoin overdosage. The adequacy of the respiratory and circulatory systems should be carefully observed, and appropriate supportive measures employed. Hemodialysis can be considered since phenytoin is not completely bound to plasma proteins. Total exchange transfusion has been used in the treatment of severe intoxication in children. In acute overdosage the possibility of other CNS depressants, including alcohol, should be borne in mind.
Drug inter: No drugs are known to interfere with the conversion of fosphenytoin to phenytoin. Drugs that may increase plasma phenytoin concentrations include: Acute alcohol intake, amiodarone, chloramphenicol, chlordiazepoxide, cimetidine, diazepam, dicumarol, disulfiram, estrogens, ethosuximide, fluoxetine, H_2-antagonists, halothane, isoniazid, methylphenidate, phenothiazines, phenylbutazone, salicylates, succinimides, sulfonamides, tolbutamide, trazodone. Drugs that may decrease plasma phenytoin concentrations include: Carbamazepine, chronic alcohol abuse, reserpine. Drugs that may either increase or decrease plasma phenytoin concentrations include: Phenobarbital, valproic acid, and sodium valproate. Similarly, the effects of phenytoin on phenobarbital, valproic acid and sodium plasma valproate concentrations are unpredictable.

❖ **FOSFEN IM/IV Inj. Popular**
Fosphenytoin sodium USP 150mg (equivalent to 100mg phenytoin sodium) in 2ml ampoule as a ready-mixed solution in water for i.m/i.v injection.
2ml (150mg) amp x 5's pack: 350.00 MRP

GABAPENTIN[26]

GABAPENTIN: Tablet
Gabapentin is an anti-convulsant drug. It is a structural analog of gamma-amino-butyric-acid (GABA).
Mode of action: Pharmacological actions of gabapentin are due to the activity of its parent compound. It increases brain GABA levels, binds to alpha-2-delta subunit of voltage-gated L-type calcium channel, and inhibit branched chain amino acid transferase and probably inhibits neurotransmitter release of excitatory amino acids.
Ind: 1. Neuralgia: (a) pain from diabetic neuropathy, (b) post herpetic neuralgia.
2. Partial seizures: Gabapentin is indicated as adjunctive therapy in the treatment of partial seizures with & with-out secondary generalization in patients over 12 years of age with epilepsy.
3. Sleep disturbances and mood disorders.
C/I: Known hypersensitivity to the drug.
S/E: Generally gabapentin is well tolerated but a few side effects like fatigue, dizziness, ataxia, weight gain, peripheral edema, dry mouth and somnolence may occur. Rarely, it may cause

fulminant hepatic failure, or aplastic anemia.
Precautions: Patients should be instructed to take gabapentin only as prescribed.
While using gabapentin patients should be instructed either not to drive a car or to operate other complex machinery until they have gained sufficinet experiences about gabapentin whether or not it affects their mental and/or motor performance adversely.
Pregnancy & lactation: Gabapentin is a pregnancy category-c drug; it should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.
Gabapentin may be secreted through the breast milk like many other drugs, so it should be used in women who are nursing, only if the benefits clearly outweigh the risks.
Dosage & admin: Neuralgia: The effective dose of gabapentin is 300-1800mg daily in three divided doses; maximum dose is 3600mg daily in 3 divided doses. Seizure: The effective dose of gabapentin is 900-1800mg daily in three divided doses. The starting dose is 300mg three times a day. Doses of 3600mg/day have also been administered to a small number of patients for a relatively short duration, and have been found well tolerated. The maximum time between doses should not exceed 12 hours.
In sleep disorder or mood disorder: 900mg daily in divided doses found effective.
Children: Safety and effectiveness in pediatric patients below the age of 12 years have not been established.
In case of renal impairment gabapentin doses must be reduced:
Creatinine clearance >60ml/min: max. dose 1200mg daily orally in 3 divided doses.
Creatinine clearance 30-60ml/min: max. dose 600mg daily orally in 2 divided doses.
Creatinine clearance 15-30ml/min: max. dose 300mg daily orally in single dose.
Creatinine clearance <15ml/min: max. dose 150mg daily orally in single dose or 300mg every alternate day.
For patients on hemodialysis: max. 300mg dose only after each dialysis session.
Gabapentin can be taken orally with or without food.
Drug inter: Antacids may reduce the bioavailability of gabapentin by up to 20%.
Cimetidine may alter its renal excretion.
Gabapentin does not interact with other antiepileptic agent or with oral contraceptive preparation.
Overdosage: Overdosage of up to 30gm has been reported. The symptoms consist of drwsiness, dizziness, slurred speech and mild diarrhea. Gabapentin can be removed by hemodialysis.

❖ **EPIPEN Tab. Beximco**
Gabapentin INN 300mg/tablet.
300mg x 30's pack: 540.00 IP
❖ **GABA Tab. Renata**
Gabapentin INN 300mg & 600mg/tablet.
300mg x 30's pack: 480.00 MRP
600mg x 20's pack: 600.00 MRP
❖ **GABAPEN Tab. Incepta**
Gabapentin INN 300mg & 600mg/tablet.
300mg x 30's pack: 480.00 MRP
600mg x 20's pack: 600.00 MRP
❖ **GABANTIN Cap. Sun Pharma**
Gabapentin INN 300mg/capsule
300mg x 30's pack: 450.00 MRP
❖ **GABATIN-300 Tab. UniHealth/UniMed**
Gabapentin INN 300mg/tablet.
300mg x 20's pack: 300.00 MRP
❖ **GABOTON Tab. Sandoz/Novartis**
Gabapentin INN 300mg & 600mg/tablet.
300mg x 30's pack: 480.00 MRP
600mg x 20's pack: 600.00 MRP
❖ **GPENTIN Tab. Opsonin**
Gabapentin INN 300mg & 600mg/tablet.
300mg x 30's pack: 480.00 MRP
600mg x 20's pack: 600.00 MRP
❖ **NEUROPEN Tab. Drug Inter.**
Gabapentin INN 300mg/tablet.
300mg x 30's pack: 480.00 MRP
❖ **NEUROTIN Tab. Silva**
Gabapentin INN 300mg & 600mg/tablet.
300mg x 30's pack: 450.00 MRP
600mg x 20's pack: 560.00 MRP

LAMOTRIGINE[47]

LAMOTRIGINE: Tablet
Ind: Monotherapy of partial seizures and primary and secondarily generalised tonic-clonic seizures; adjunctive treat-ment of partial seizure and secondarily generalised tonic-clonic seizures.
C/I: Hepatic impairment.
S/E: Commonly rashes, fever, malaise, influenza-like symptoms, drowsiness; rarely hepatic dysfunction, lymphadeno-pathy, leucopenia, and thrombocytopenia reported in conjuction with rash; angioedema, Stevens-Johnson syndrome, toxic epidermal necrolysis and photosensitivity also reported; diplopia, blurred vision, dizziness drowsiness insomnia, headache, ataxia, tiredness, gastro-intestinal disturbances, irriability, aggression, tremor, agitation, confusion; headache, nausea dizziness, diplopia and ataxia in patients also taking carbamazepine usually resolve when dose of either drug reduced.
Cautions: Closely monitor (including hepatic, renal and clotting parameters) and consider withdrawal if rash, fever, influenza-like symptoms, drowsiness, or worsening of seizure control develops, specially in the first month of treatment. (It is found that lamotrigine given with other antiepileptics has been associated with rapidly progressive illness with status epilepticus, multi-organ dysfunction, disseminated intravascular coagulation & death). Avoid abrupt withdrawal (taper off over 2 weeks or longer).
Renal impairment. Pregnancy & breast-feeding.
Dose: Important, do not confuse the different combinations:
Monotherapy, initially 25mg daily for 14 days then 50mg daily for further 14 days; usual maintenance as monotherapy, 100-200mg daily in 1-2 divided doses (up to 500mg daily has been required); Elderly not recommended.
Adjunctive therapy with valproate- initially 25mg every other day for 14 days then 25mg daily for further 14 days; usual maintenance with valproate 100-200mg daily in 1-2 divided doses; Elderly not be recommended.
Adjunctive therapy without valproate- initially 50mg daily for 14 days then 50mg twice daily for further 14 days; usual maintenance without valproate 200-400mg daily in 2 divided doses; Elderly not recommended.
Child: 2-12 years, adjunctive therapy with valproate, initially 200mcg/kg daily for 14 days then 500mcg/kg daily for further 14 days (those weighing less than 25kg may receive 5mg on alternate days for first 14 days); usual maintenance with valproate 1-5mg/kg daily in 1-2 divided doses.
Child: 2-12 years adjunctive therapy without valproate, initially 2mg/kg daily in 2 dividd doses for 14 days then 5mg/kg daily in 2 divided doses for further 14 days; usual maintenance without valproate 5-15mg/kg daily in 2 divided doses.

❖ **LAMICTAL Tab. GlaxoSmithKline**
Lamotrigine 50mg/tablet
30's pack: 1575.90 MRP
❖ **LAMITRIN Tab. ACI**
Lamotrigine 50mg/tablet
30's pack: 240.00 MRP

OXCARBAZEPINE[54]

OXCARBAZEPINE: Tablet
Oxcarbazepine 300mg and 600mg/tablet (f.c).
Ind: Epilepsy- partial seizures or generalised tonic-clonic seizures.
C/I: Hypersensitivity to oxcarbazepine or any other component of the formulation.
S/E: Very common- fatigue, dizziness, headache, somnolence, nausea, vomiting, diplopia. Common- asthenia, agitation, amnesia, apathy, ataxia, impaired concentration, confusion, depression, emotional lability, nystagmus, tremor, constipation, diarrhoea, abdominal pain, asymptomatic hyponatraemia, acne, alopecia, rash, vertigo, vision disorders. Uncommon- leucopenia, increase of liver enzymes, urticaria. Very rare- angioedema, multiorgan hypersensitivity disorders, arrhythmia, thrombocytopenia, hepatitis, symptomatic hyponatraemia, Stevens-Johnson syndrome, systemic lupus erythematosus.
Precautions & warnings: Hypersensitivity to carbamazepine. Pregnancy and lactation. Impaired renal function (creatinine clearance->30ml/min). Hyponatraemia (specially in patients on sodium-lowering comedication). Patients with pre-existing cardiac insufficiency and secondary heart failure. Hepatitis. Abrupt discontinuation of treatment. Road and machinery users. Alcohol.
Dosage & admin: Adults: 600-2400mg/day. Children: 2 years of age and above 8-46mg/kg/day. Administration in two divided doses.
Drug inter: Felodipine, oral contraceptives. Antiepileptics (e.g carbamazepine, phenobarbital, phenytoin).
Note: For further information consult full prescribing information.

❖ **OXAZEP Tab. Incepta**
Oxcarbazepine INN 300mg & 600mg/tablet (f.c).
300mg x 30's pack: 540.00 MRP
600mg x 20's pack: 600.00 MRP
❖ **OXAZEP Susp. Incepta**
Oxcarbazepine INN 300mg/5ml: suspension.
100ml bot: 350.00 MRP

❖ **OXETOL Tab. Sun Pharma**
Oxcarbazepine 150mg & 300mg/tablet (f.c).
150mg x 50's pack: 350.00 MRP
300mg x 50's pack: 600.00 MRP
❖ **TRILEPTAL Tab. Novartis**
Oxcarbazepine 300mg and 600mg/tablet (f .c).
300mg x 50's pack: 1250.00 MRP
600mg x 50's pack: 2250.00 MRP

PHENOBARBITONE[21,26,33]

PHENOBARBITONE:Tablet/Injection
Phenobarbitone (Phenobarbital), a barbiturate, nonselective, central nervous system depressant which is primarily used as a sedative hypnotic & also as an anticonvulsant in subhypnotic doses.
Ind: It is indicated for the following conditions: 1. As sedatives. 2. Hypnotics for the short-term treatment of insomnia. 3. Long-term (oral) anticonvulsants for the treatment of generalized tonic-clonic and cortical local seizures. And, parenteral preparations are used in the emergency control of certain acute convulsive episodes (those associated with status epilepticus, eclampsia, meningitis, tetanus, & toxic reactions to strychnine or local anesthetics). 4. Pre-anesthetics.
C/I: Patients with a history of alcohol or drug abuse, acute intermittent porphyria.
S/E: Drowsiness, lethargy, ataxia and allergic skin reacitons; paradoxical excitement, restlessness and confusion in the elderly & hyperkinesia in children, megaloblastic anaemia.
Cautions: Liver disorder, renal impairment, severe pulmonary insufficiency, the elderly & debilited, pregnancy, lactation. Tolerence and dependence may develop.
Dosage & admin: By mouth: Adults: Daytime sedative, 30mg to 120mg daily in 2 to 3 divided doses; At night, 60mg to 320mg. Children: As anticonvulsant 1-6mg/kg daily (febrile convulsion, 3-4mg/kg daily); Preoperative, 1mg to 3mg/kg.
By i.m or i.v injection: Adults: 50-200mg as a single dose, repeat after 6 hours if necessary, maximum 600mg daily. Children: By i.m or i.v injection, upto 1 year 30- 60mg; 1-5 years 90mg; 6-12 years 120mg, or 3-5mg /kg intramuscularly.
(For i.v. administration, dilute injection 1 in 10 with water before administration).

❖ **BARBIT Tab. Incepta**
Phenobarbital BP 30mg & 60mg/tablet
30mg x 100's pack: 78.00 MRP
60mg x 100's pack: 114.00 MRP
❖ **BARBIT Inj. Incepta**
Phenobarbital sodium BP 200mg/ml; 1ml ampoule: injection.
1ml amp: x 5's pack: 80.00 MRP
❖ **BERDINAL Tab. Gaco**
Phenobarbitone BP 50mg/tablet
50mg x 100's pack: 23.85 MRP
❖ **BERDINAL Inj. Gaco**
Phenobarbital sodium BP 200mg/ml; 1ml ampoule: injection.
1ml amp: x 1's pack: 5.21 MRP
❖ **PHENO Tab. Delta**
Phenobarbital BP 15mg, 30mg & 60mg/tablet
15mg x 100's pack: 57.00 MRP
30mg x 100's pack: 77.00 MRP
60mg x 100's pack: 114.00 MRP
❖ **PHENOBARBITONE Tab. Seema**
Phenobarbital BP 30mg/tablet
30mg x 100's pack: 60.00 MRP
❖ **PHENOSON Tab. Jayson**
Phenobarbital BP 30mg & 60mg/tablet
30mg x 100's pack: 78.00 MRP
60mg x 1000's pot: 190.00 MRP

PHENYTOIN[21,33]

PHENYTOIN: Tablet/Capsule/Syrup
Ind: Grandmal & temporal lobe epilepsy, trigeminal neuralgia, migraine.
C/I: Avoid i. v injection in patients with bradycardia or heart block.
S/E: Nausea, vomiting, mental confusion, dizziness, headache, tremor, transient nervousness, insomnia occur commonly; rarely dyskinesias, peripheral neuropathy; ataxia, slurred speech, nystagmus and blurred vision are signs of overdosage; rashes (discontinue, if mild re-introduce cautiously but discontinue immediately if recurrence), coarse facies, acne and hirsutism, fever and hepatitis; lupus erythematosus, erythema multiforme (Stevens-Johnson syndrome), toxic epidermal necrolysis, polyarteritis nodosa; lymphadenopathy; gingival hypertrophy and tenderness; rarely haematological effects, including megaloblastic anaemia may be treated with folic acid), leucopenia, thrombocytopenia, agranulocytosis, and aplastic anaemia; plasma calcium may be lowered (rickets and osteomalacia).
Cautions: Liver dysfunction, pregnancy (reduce dose), lactation. Withdraw drug slowly. Concurrent admin. of coumarin anticoagulants, isoniazid, chloramphenicol, sulthiame and oral contraceptives.
Dosage & admin: Adult: 200mg daily increased to 400mg daily (max. 600mg/day) in divided doses (2-4 times) according to patients response or 3-4 mg/kg daily in divided doses. Child: Upto 1 year 25 mg, 1-5 years 25- 50 mg increasing to 75mg, 6-12 years 50-100mg increasing to 150mg. All twice daily, or 5-8mg/kg daily in divided doses.

❖ **DIPHEDAN Tab. Ambee**
Phenytoin 100mg/tablet.
100's pack: 101.00 MRP
❖ **DIPHEDAN Susp. Ambee**
Phenytoin 60mg/5ml: suspension.
100ml bot: 30.34 MRP

PIRACETAM

Piracetam is indicated & may be used in epileptic patients who are suffering from myoclonus of cortical origin.
Piracetam is mainly a 'nootrope' psychotropic agent, which acts directly on the brain to improve the efficacy of the telencephalon in both normal subjects and those suffering from some functional deficits. This drug has been discussed in this chapter under the 'antiparkinson's drugs'.

PREGABALIN[21,26]

PREGABALIN: Capsule
Pregabalin is used as a second-line drug for the treatment of partial (or focal) seizures with or without secondary generalisation. It is also useful in the treatment of neuropathic pain & generalised anxiety disorder. It is available as-pregabalin INN 75mg, 100mg & 150mg capsule.
Ind: Treatment of partial (or focal) seizures with or without secondary generalisation, peripheral & central neuropathic pain, generalised anxiety disorder & post herpetic neuralgia.
C/I: Known hypersensitivity to pregabalin.
S/E: Pregabalin is well tolerated but a few side effects like dizziness, somnolence and blurred vision may occur.
Precautions: Abrupt or rapid discontinuation of pregabalin may produce some symptoms including insomnia, nausea, headache and diarrhoea. So, pregabalin should be tapered gradually over a minimum of 1 week rather than discontinuing abruptly.
Pregnancy & lactation: Pregabalin should be used during pregnancy & lactation only if the potential benefit justifies the potential risk to the fetus & infants.
Dosage & admin: Neuropathic pain: Initially 150mg daily in 2 divided doses, increased if necessary after 3-7 days to 300mg daily in 2 divided doses, increased further if necessary after 7 days to maximum 600mg daily in 2 divided doses.
Epilepsy: Initially 150mg daily in 2 divided doses, increased if necessary after 7 days to 300mg in 2 divided doses, increased further if necessary after 7 days to maximum 600mg daily in 2 divided doses.
Post herpetic neuralgia: The recommended dose of pregabalin is 75 to 150mg twice daily. Dosing should begin at 75mg two times a day and may be increased to 300mg daily within 1 week based on efficacy and tolerability.
Children: The safety & efficacy of pregabalin in pediatric patients have not been established.

❖ **GABAROL Cap. ACI**
Pregabalin 75mg, 100mg & 150mg/capsule.
75mg x 30's pack: 480.00 IP
100mg x 20's pack: 440.00 IP
150mg x 20's pack: 600.00 IP
❖ **PREGABA Cap. Opsonin**
Pregabalin INN 75mg & 150mg/capsule.
75mg x 30's pack: 480.00 MRP
150mg x 30's pack: 900.00 MRP
❖ **PREGABEN Cap. Incepta**
Pregabalin INN 75mg & 150mg/capsule.
75mg x 30's pack: 480.00 MRP
150mg x 20's pack: 600.00 MRP

SODIUM VALPROATE/VALPROIC ACID[21,63]

SODIUM VALPROATE /VALPROIC ACID: Tablet/Injection
Ind: All forms of epilepsy
Cautions: Monitor liver function before therapy and during first 6 months especially in patients most at risk, ensure no undue potential for bleeding before starting and before major surgery; renal impairment; pregnancy; breast-feeding; systemic lupus erythematosus; false-

positive urine tests for ketones; avoid sudden withdrawal.
Liver toxicity: Liver dysfunction (including fatal hepatic failure) has occurred in association with valproate (specially in children under 3 years of age and those with metabolic or degenerative disorders, organic brain disease or severe seizure disorders associated with mental retardation) usually in the first 6 months of therapy and usually involving multiple antiepileptic therapy (monotherapy preferred). Raised liver enzymes are not uncommon during valproate treatment and are usually transient but patients should be reassessed clinically and liver function (including prothrombin time) monitored until return to normal-an abnormally prolonged prothrombin time (particularly in association with other relevant abnor-malities) requires discontinuation of treatment. Any concomitant use of salicylates should be stopped.
C/I: Active liver disease, family history of severe hepatic dysfunction, porphyria
S/E: Gastric irritation, nausea, ataxia and tremor; hyperammonaemia, increased appetite and weight gain; transient hair loss (regrowth may be curly), oedema, thrombocytopenia, and inhibition of platelet aggregation; impaired hepatic function leading rarely to fatal hepatic failure withdraw treatment immediately if vomiting, anorexia, jaundice, drowsiness, or loss of seizure control occurs); rashes; sedation reported (rarely lethargy and confusion associated with too high an initial dose) and also increased alertness (occasionally aggression, hyperactivity and behavioral disturbances); rarely pancreatitis (measure plasma amylase in acute abdominal pain), leucopenia, pancytopenia, red cell hypoplasia, fibrinogen reduction; irregular periods, amenorrhoea, gynaecomastia, hearing loss, Fanconi's syndrome, dementia, toxic epidermal necrolysis, Stevens-Johnson syndrome, and vasculitis also reported.
Dosage & admin: By mouth- adult, initially, 600mg daily given in 2 divided doses, preferably after food, increasing by 200mg/day at 3-day intervals to a maximum of 2.5gm daily in divided doses, usual maintenance 1-2gm daily (20-30 mg/kg daily);
Child- up to 20 kg, initially 20mg/kg daily in divided doses, may be increased provided plasma concentrations monitored, (also monitor clinical chemistry and haematological parameters); over 20kg initially 400mg daily in divided doses increased until control (usually in range of 20-30mg/kg daily); max. 35mg/kg daily.

❖ **CONVULES CR Tab. Opsonin**
Convules CR 200 tablet: contains sodium valproate BP 133.2mg & valproic acid BP 58mg equivalent to sodium valproate 200mg.
Convules CR 300 tablet: contains sodium valproate BP 199.8mg & valproic acid BP 87mg equivalent to sodium valproate 300mg.
Convules CR 500 tablet: contains sodium valproate BP 333mg & valproic acid BP 145mg equivalent to sodium valproate 500mg. (All are controlled release tablet)
Dosage & admin: Convules CR is a prolonged release formulation of sodium valproate, thus Convules CR may be given once or twice daily. For dosage- see under the text (above).
200mg (CR tablet) x 50's pack: 200.00 MRP
300mg (CR tablet) x 30's pack: 180.00 MRP
500mg (CR tablet) x 20's pack: 200.00 MRP

❖ **ENCORATE Tab. Sun Pharma**
Sodium valproate 200mg/tablet (enteric coated).
50's pack: 142.50 MRP
❖ **ENCORATE Chrono 300 Tab. Sun Pharma**
Sodium valproate + valproic acid 300mg/tablet.
50's pack: 300.00 MRP
❖ **ENCORATE Chrono 500 Tab. Sun Pharma**
Sodium valproate + valproic acid 500mg/tablet.
30's pack: 300.00 MRP
❖ **EPILIM 200 Tab. Sanofi-aventis**
Sodium valproate 133.2mg + valproic acid 58mg/tablet.
50's pack: 200.00 MRP
❖ **EPILIM 300 Tab. Sanofi-aventis**
Sodium valproate 199.8mg + valproic acid 87mg/tablet.
50's pack: 300.00 MRP
❖ **EPILIM 500 Tab. Sanofi-aventis**
Sodium valproate 333mg + valproic acid 145mg/tablet.
30's pack: 300.00 MRP
❖ **EPILIM Syp. Sanofi-aventis**
Sodium valproate 200mg/5ml: syrup
100ml bot: 80.00 MRP
❖ **PROVAL Tab. General**
Sodium valproate 200mg/tablet.
50's pack: 125.00 MRP
❖ **PROVAL Syp. General**
Valproic acid as sodium valproate 200mg/5ml: syrup
100ml bot: 75.00 MRP
❖ **VALAPI Tab. Medimet**
Sodium valproate 200mg/tablet.
50's pack: 310.00 MRP
❖ **VALEX Tab. Incepta**
Sodium valproate 200mg/tablet.
50's pack: 125.00 MRP
❖ **VALEX CR Tab. Incepta**
Valex CR 200 tablet: contains sodium valproate BP 133.2mg & valproic acid BP 58mg equivalent to sodium valproate 200mg.
Valex CR 300 tablet: contains sodium valproate BP 199.8mg & valproic acid BP 87mg equivalent to sodium valproate 300mg.
Valex CR 500 tablet: contains sodium valproate BP 333mg & valproic acid BP 145mg equivalent to sodium valproate 500mg. (All are controlled release tablet)
Dosage & admin: Valex CR is a prolonged release formulation of sodium valproate, thus Valex CR may be given once or twice daily. For dosage- see under the text (above).
200mg (CR tablet) x 50's pack: 200.00 MRP
300mg (CR tablet) x 50's pack: 300.00 MRP
500mg (CR tablet) x 28's pack: 280.00 MRP
❖ **VALEX Syp. Incepta**
Valproic acid as sodium valproate 200mg/5ml: syrup
100ml bot: 75.00 MRP
❖ **VALPRO Tab. Somatec**
Sodium valproate 200mg/tablet.
50's pack: 125.00 MRP
❖ **VALPRO Syp. Somatec**
Valproic acid as sodium valproate 200mg/5ml: syrup
100ml bot: 75.00 MRP
❖ **VAPO Tab. White Horse**
Sodium valproate BP 200mg/tablet.
30's pack: 75.00 MRP

TOPIRAMATE[106]

TOPIRAMATE: Tablet
Topiramate 25mg & 50mg/tablet.
Ind: Topiramate is indicated as monotherapy or adjunctive therapy for adults and children (2 years and above) with partial onset seizures or generalized tonic-clonic seizures in epilepsy. It is also indicated as adjunctive therapy for the treatment of seizures associated with Lennox-Gastaut syndrome.
C/I: History of hypersensitivity to any component of this product.
Adverse effects:
Monotherapy: In a double-blind clinical trial, adverse events that occurred at a frequency greater than or equal to 10% in either treatment group, are- paraesthesia, headache, dizziness, fatigue, somnolence, weight decrease, nausea, and diarrhea. These adverse events with monotherapy were consistent with, but generally less frequent than the adverse events with adjunctive therapy.
Adjunctive therapy: Adults: In double-blind trials, adverse events that occurred with a frequency greater than or equal to 5% and with a higher incidence in the topiramate-treated adult patients than in the placebo group. These include-somnolence, dizziness, nervousness, ataxia, fatigue, speech disorders/related speech problems, psychomotor slowing, abnormal vision, difficulty with memory (not otherwise specified), confusion, paraesthesia, diplopia, anorexia, nystagmus, nausea, weight decrease, language problems, difficulty with concentration/attention, depression, abdominal pain, asthenia, and mood problems. Adverse events that occurred more frequently with adjunctive therapy than with monotherapy included somnolence, dizziness, difficulty with memory, psychomotor slowing, confusion, nervousness, ataxia, vision abnormal, diplopia, speech disorders and related speech problems, and nystagmus.
Pediatric patients: In double-blind clinical trials, adverse events that occurred at a frequency greater than or equal to 5% and with a higher incidence in the topiramate-treated pediatric patients than in the placebo group. These include-somnolence, anorexia, fatigue, nervousness, personality disorder, difficulty with concentration/ attention, aggressive reaction, weight decrease, abnormal gait, mood problems, ataxia, salivation, nausea, difficulty with memory (not otherwise specified), hyperkinesia, dizziness, speech disorders/related speech problems, and paraesthesia.
Warnings & precautions: Antiepileptic drugs, including topiramate, should be withdrawn gradually to minimize the potential of increased seizure frequency. In clinical trials, dosages were decreased by 100mg/day at weekly intervals. In some patients withdrawal was accelerated without complications.
The major route of elimination of unchanged topiramate and its metabolites is the kidney.

Renal elimination is dependent on renal function and is independent for age. Patients with moderate or severe renal impairment may take 10 to 15 days to reach steady-state plasma concentrations as compared to 4 to 8 days in patients with normal renal function.

In all patients, the titration schedule should be guided by clinical outcome (i.e seizure control, avoidance of side-effects) with the knowledge that subjects with known renal impairment may require a longer time to reach steady-state at each dose.

Some patients, specially those with a history of prior stone formation, or family history of nephrolithiasis or hypercalci-uria, are at increased risk for renal stone formation with topiramate therapy. Adequate hydration is recommended to reduce this risk.

In addition, patients taking other medica-tions associated with nephrolithiasis or on a ketogenic diet may be at increased risk. Therefore, while using topiramate, patient should avoid ketogenic diet.

In hepatic impaired patients, topiramate should be administered with caution as the clearnce of topiramate may be decreased.

A dietary supplement or increased food intake may be considered if the patient is losing weight while on this medication.

Effects on ability to drive and use machines: As with all AEDs, patient taking topiramate is potentially in danger while driving a vehicle or operating machinery, particulary until such time as the individual patient's experience with the drug is established.

Pregnancy & lactation: There are no studies using topiramate in pregnant women. But, as with other AEDs, topiramate was found teratogenic in mice, rats and rabbits. Therefore, topiramate should only be used during pregnancy, if the potential benefit outweighs the potential risk to the fetus. In lactating women, it is not known whether topiramate is excreted in breast milk. But, as topiramate is excreted in the milk of lactating rats, and as many drugs are excreted in human milk, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.

In marketing experience, cases of hypospadias have been reported in male infants exposed in utero to topiramate, with or without other anticonvulsants; however, a causal relationship with topiramate has not been established.

Dosage & admin: For optimal seizure control in both adults and children, it is recommended that therapy should be initiated at a low dose followed by titration to an effective dose. Because of the bitter taste, tablets should not be broken.

Monotherapy: **When concomitant anti-epileptic drugs (AEDs) are withdrawn to achieve monotherapy with topiramate, consideration should be given to the effects of this drug, that may have on seizure control. Unless safety concern, an abrupt withdrawal of the concomitant AED is not advised, rather a gradual discontinuation at the rate of approximately one third of the concomitant AED dose every 2 weeks is recommended.**

When enzyme-inducing drugs are withdrawn, topiramate levels will increase. A decrease in topiramate dosage may be required if clinically indicated.

Adults: Titration should begin at 25mg nightly for 1 week. The dosage should then be increased at 1- or 2-week intervals by increments of 25mg or 50mg/day, administered in two divided doses. If the patient is unable to tolerate the titration regimen, smaller increments or longer intervals between increments can be considered. Dose & titration rate should be guided by clinical outcome. The recommended initial target dose range for topiramate monotherapy in adults is 100mg to 200mg/day and the maximum recommended daily dose is 500mg. Some patients with refractory forms of epilepsy have tolerated topiramate monotherapy at doses of 1000mg/day. These dosing recommendations can be applied to all adults including the elderly in the absence of underlying renal disease.

Children: Treatment of children (2 years and above) should begin at 1mg to 3mg/kg nightly for the first week. The dosage should then be increased at 1- or 2-week intervals by increments of 1mg to 3mg/kg/day, administered in two divided doses. If the child is unable to tolerate the titration regimen, smaller increments or longer intervals between dose increments can be considered. Dose and titration rate should be guided by clinical outcome.

Adjunctive therepy:

Adults: Titration should begin at 25mg nightly for 1 week. Subsequently, at weekly or biweekly intervals, the dose should be increased by 25mg/day and given in two divided doses. Dose titration should be guided by clinical outcome. Some patients may achieve efficacy with once-a-day dosing. The usual total daily dose of topiramate as adjunctive therapy is 200mg to 400mg/day in two divided doses. Individual patients have received dosages as high as 1600mg/day. Because topiramate is removed from plasma by hemodialysis, a supplemental dose of topiramate equal to approximately one-half the daily dose should be administered in divided doses at the beginning and completion of the hemodialysis procedure. This supplemental dose may vary based on the characteristics of the dialysis equipment used. These dosing recommendations can be applied to all adults, including the elderly, in the absence of underlying renal disease.

Children: The recommended total daily dose of topiramate as adjunctive therapy for seizures in children is approximately 5mg to 9mg/kg/day in 2 divided doses. Titration should begin at 15mg to 25mg (or less based on a range of 1mg to 3mg/kg/day) nightly for the first week. To achieve optimal clinical response, the dosage should then be increased at 1- or 2-week intervals by increments of 1mg to 3mg/kg/day (administered in 2 divided doses). Dose titration should be guided by clinical outcome. Daily doses up to 30mg/kg/day have been studied and were generally well tolerated.

Drug inter: ***Effects of topiramate on other antiepileptic drugs:*** The addition of topiramate to other AEDs (phenytoin, carbamazepine, valproic acid, primidone, phenobarbitone) has no effect on their steady-state plasma concentrations, except in the occasiounal patient, where the addition of topiramate to phenytoin may result in an increase in plsma concentrations of phenytoin.

Consequently, any patient on phenytoin showing clinical signs or symptoms of toxicity should have phenytoin levels monitored.

Effects of other antiepileptic drugs on topiramate: Phenytoin and carbamazepine decrease the plasma concentration of topiramate. The addition or withdrawal of phenytoin or cabamazepine to topiramate therapy may require an adjustment in dosage of the latter. This should be done by titrating to clinical effect. The addition or withdrawal of valproic acid does not produce clinically significant changes in plasma concentrations of topiramate and, therefore, does not warrant dose adjustment of topiramate.

Other drug interactions: When topiramate is added or withdrawn in patients on digoxin therapy, careful attention should be given to the routine monitoring of serum digoxin levels. Topiramate is not recommended to use concomitantly with alcohol or other CNS depressant drugs. Patients taking topiramate concomitantly with oral contraceptives should be asked to report any change in their bleeding patterns.

❖ **TOPAMAX Tab. Janssen Cilag/UniHealth**
Topiramate 25mg/tablet.
25mg x 60's pack: 1780.80 MRP

❖ **TOPIRVA Tab. Incepta**
Topiramate INN 25mg & 50mg/tablet.
25mg x 50's pack: 150.00 MRP
50mg x 50's pack: 250.00 MRP

8. DRUGS USED IN PARKINSONISM & RELATED DISORDERS[21]

The drugs used in parkinsonism & related disorders are classified as:

1 **Dopaminergic drugs used in parkinsonism**
2 **Antimuscarinic drugs (anticholinergic drugs) used in parkinsonism**
7. **Drugs used in essential tremor, chorea, tics & related disorders**

Dopaminergic drugs[21]

Dopaminergic drugs include:

1. **Dopamine precursor: Levodopa and some combined preparations, viz:** ***Co-beneldopa, Co-careldopa.***
2. **Dopamine receptor agonists, viz:** ***Amantadine, Apomorphine, Bromocriptine, Cabergoline, Entacapone, Lysuride, Pergolide, Pramipexole, Rasagiline, Ropinirole, Rotigotine, Selegiline, Tolcapone.***

LEVODOPA[21,33]

LEVODOPA: Tablet/ Capsule.
Levodopa, the amino acid precursor of dopamine, acts mainly by replenishing depleted striatal dopamine. It improves bradykinesia and rigidity more than tremor. It is generally administered in conjuction with an extracerebral dopa-decarboxylase inhibitor (please see below).
Ind: Parkinsonism (idiopathic , post-encephalitic or arteriosclerotic, but not drug-induced extrapyramidal symptoms).
C/I: Severe psychoses, closed or narrow angle glaucoma, history of malignant melanoma. With or within 2 weeks of MAO inhibitors.
S/E: Anorexia, nausea; insomnia, agitation; postural hypotension, dizziness, tachycardia, cardiac arrhythmias; polyuria, incontinence, difficulty with micturition, discoloration of urine and other body fluids; rarely hypersensitivity; abdominal pain; abnormal involuntary movements and psychiatric symptoms may be dose-limiting.
Cautions: Cardiovascular, hepatic, renal, pulmonary or endocrine diseases. Peptic ulceration, wide angle glaucoma. Pregnancy. Monitor blood values and hepatic, renal & cardiovascular functions.
Adult: Initially 250mg daily in divided doses (two) after meals, increasing by 125mg every 3 or 4 days or weekly intervals. Until optimum response obtained, maintenance usually 2.5 - 8gm daily. The total daily dose being given in 4 or 5 divided doses after food. As the patient ages, the maintenance dose may need to be reduced.
Child: Not recommended.
Preparations: May not be available.

CO-CARELDOPA[21,33,44]

CO-CARELDOPA: Tablet
The combined preparation of carbidopa & levodopa is termed as co-careldopa. This combination is because, levodopa is generally administered in conjuction with an extracerebral dopa-decarboxylase inhibitor, viz. carbidopa (& benserazide) which prevents the peripheral degradation of levodopa to dopamine but, unlike levodopa, it does not cross the blood-brain barrier. So, effective brain concentration of dopamine can be achieved with lower doses of levodopa. The proportion of combination in the co-careldopa is either 10mg of carbidopa for each 100mg of levodopa, or 25mg of carbidopa for each 100mg of levodopa.
The available fixed combinations are: i. Co-careldopa 110 (levodopa 100mg + carbidopa 10mg)/tablet; ii. Co-careldopa 275 (levodopa 250mg + carbidopa 25mg)/tablet.
Ind: Parkinsonism (idiopathic, post-encephalitic or arteriosclerotic, but not drug-induced extrapyramidal symptoms).
C/I; S/E; Caution: See above under the text of levodopa.
Dosage & admin: Dosage of Co-careldopa 110 (levodopa 100mg + carbidopa 10mg)/tablet: Adult: Patients not receiving levodopa, initially 1 tablet 3 times daily increasing in small increments to maximum 8 tablets daily. Usual maintenance dose is 212 tablets 3 or 4 times daily after food. As the patient ages, the maintenance dose may need to be reduced.
Child: Not recommended.
Dosage of Co-careldopa 275 (levodopa 250mg + carbidopa 25mg)/tablet:
This preparation is for the patients already receiving plain levodopa. First discontinue levodopa atleast 12 hours before starting the therapy with this combination. The dose should be approximately 25% of the previous daily dosage of levodopa. When daily levodopa intake is greater than 1500mg, start with this co-careldopa 275 one tablet 3-4 times daily after food.
Maintenance therapy- this should be individualised and adjusted gradually; the patient must be maintained on the optimal therapeutic dosage. When the levodopa requirement is very high, the total dosage may be given as co-careldopa 275 tablets in 3 or 4 doses. As the patient ages, the maintenance dose may need to be reduced.
Child: Not recommended.

❖ **CO-DOPA 110 Tab. UniHealth/UniMed**
Levodopa 100mg + carbidopa 10mg/tablet
30's pack: 150.00 MRP
❖ **CO-DOPA 275 Tab. UniHealth/UniMed**
Levodopa 250mg + carbidopa 25mg/tablet
30's pack: 225.00 MRP
❖ **D-DOPA Plus Tab. Drug Inter.**
Levodopa 250mg + carbidopa 25mg/tablet
50's pack: 300.00 MRP
❖ **SYNDOPA 110 Tab. Sun Pharma**
Levodopa 100mg + carbidopa 10mg/tablet
50's pack: 175.00 MRP
❖ **SYNDOPA 275 Tab. Sun Pharma**
Levodopa 250mg + carbidopa 25mg/tablet
50's pack: 300.00 MRP

BROMOCRIPTINE[21,58]

BROMOCRIPTINE: Tablet
Ind: Parkinsonism (but not drug induced extrapyramidal symptoms); Endocrine disorders (Bromocriptine is used for the suppression of lactation when simpler measures fail, for the treatment of galactorrhoea and cyclical benign breast disease, for the treatment of prolactinomas and treatment of acromegaly but success rate is much lower than with prolactinomas).
C/I;S/E; Cautions: See under levodopa; perform annual gynaecological assessment for women (post-menopausal, every 6 month). Monitor for pituitary enlargement, particularly during pregnancy & for peptic ulceration in acromegalic patients
Dosage & admin: Adult: Parkinsonism: first week, 1-1.25mg at night, second week, 2-2.5mg at night, third week, 2.5mg twice daily, then 3 times daily increasing by 2.5mg every 3-14 days according to response to a usual range of 10-40mg daily; taken with food.
Prevention/suppression of lactation for medical reasons, 2.5 mg on 1st day (prevention) or daily for 2-3 days (suppression); then 2.5mg twice daily for 14 days.
Hypogonadism/galactorrhoea/infertility, initially 1-1.25mg at bedtime, increased gradually; usual dose 7.5mg daily in divided doses, increased if necessary to a max. of 30 mg daily. Usual dose in infertility without hyperprolactinaemia, 2.5 mg twice daily.
Cyclical benign breast disease and cyclical menstrual disorders (particularly breast pain), 1-1.25mg at bedtime, increased gradually; usual dose 2.5mg twice daily.
Acromegaly- initially 1-1.25mg at bedtime increase gradually to 5mg every 6 hours.
Prolactinoma- initially 1-1.25mg at bedtime; increased gradually to 5mg every 6 hours (occasional patients may require up to 30mg daily).
All doses should be taken during meals.
Child: not recommended.

❖ **BROMERGAN Tab. Sandoz/Novartis**
Bromocriptine mesylate 2.5mg/tablet.
30's pack: 332.40 MRP
❖ **BROMOCRIPTINE RICTER Tab. Gedeon Richter/City Overseas**
Bromocriptine mesylate 2.5mg/tablet.
30's pack: 550.00 TP
❖ **BROMODEL Tab. Opsonin**
Bromocriptine mesylate 2.5mg/tablet.
30's pack: 300.00 MRP
❖ **CRIPTINE Tab. Renata**
Bromocriptine mesylate 2.5mg/tablet.
30's pack: 300.00 MRP

ENTACAPONE[54]

❖ **COMTAN Tab. Novartis**
Entacapone 200mg/tablet (f.c).
It is a catechol-o-methyl transferase inhibitor.
Ind: Adjunct to levodopa/benserazide or levodopa/carbidopa treatment in patients with Parkinson's disease and end-of dose motor fluctuations, who cannot be stabilised on those combinations.
C/I: Known hypersensitivity to entacapone or any of the excipients. Pregnancy and breast-feeding. Liver impairment. Phaeochromocytoma. Concomitant use with nonselective monoamine oxidase inbibitors (MAO-A and MAO-B). Concomitant use with a selective MAO-A plus a selective MAO-B inhibitor. History of neuroleptic malignant syndrome (NMS) and/or nontraumatic rhabdomyolysis.
A/R: Dyskinesia; gastrointestinal symp-toms (e.g nausea, vomiting, abdominal pain, constipation, diarrhoea, dry mouth); discoloration of urine; fatigue, insomnia, paroniria, confusion, hallucinations; dizziness, postural hypotension, vertigo, headache; leg cramps, hyperkinesia, tremor, increased sweating; slight decrease in haemoglobin, erythrocyte count, and haematocrit. Increases in liver enzymes have been reported rarely.
Precautions & warnings: Dosage of levodopa and other antiparkinsonian medications (e.g dopamine agonists) may need to be adjusted when entacapone treatment is initiated. Levodopa-induced orthostatic hypotension may be aggravated. Effects of medicinal products metabolised by catechol-o-methyl transferase may be potentiated. Caution when discontinuing entacapone treatment (see full prescribing

information).
Dosage: 200mg with each levodopa/ dopadecarboxylase inhibitor dose. Maximum recommended daily dose is 2000mg.
Drug inter: Entacapone and iron preparations should be taken at least 2-3 hours apart.
30's pack: 2006.40 MRP
Note: For further information consult full prescribing information.

ROPINIROLE[42]

ROPINIROLE: Tablet
Ropinirole is an antiparkinson's drug. It is available as ropinirole hydrochloride INN 0.25mg & 2mg film-coated tablets.
Ind: 1. Parkinson's disease. 2. Restless legs syndrome (RLS).
S/E: Nausea, somnolence, leg edema, abdominal pain, vomiting, & syncope.
Pragnancy & lactation: Ropinirole should not be used during pregnancy. It should also not be used in nursing mothers as it may inhibit lactating.
Dosage & admin: Parkinson's disease: In all clinical studies, dosage was initiated at a subtherapeutic level & gradually titrated to therapeutic response. The dosage should be increased to achieve a maximum therapeutic effect, balanced against the principal side effects of nausea, dizziness, somnolence, & dyskinesia.
Ascending-dose schedule of ropinirole for Parkinson's disease:
The recommended starting dose for Parkinson's disease is 0.25mg 3 times daily. Based on individual response, dosage should then be titrated with weekly increments as described below:
After week 4, if necessary, daily dosage may be increased by 1.5mg/day on a weekly basis up to a dose of 9mg/day, & then by up to a total dose of 24mg/day. Doses greater than 24mg/day have not been tested in clinical trials.
When ropinirole is administered as adjunct therapy to L-dopa, the concurrent dose of L-dopa may be decreased gradually as tolerated. L-dopa dosage reduction was allowed during the advanced Parkinson's disease (with L-dopa) study if dyskinesias or other dopaminergic effects occurred.
Ropinirole for Parkinson's disease patients should be discontinued gradually over a 7-day period. The frequency of administration should be reduced from 3 times daily to twice daily for 4 days; for the rest 3 days, the frequency should be reduced to once daily up to complete withdrawal of ropinirole.
Restless legs syndrome: The recommended adult starting dosage for RLS is 0.25mg once daily, 1 to 3 hours before bedtime. After 2 days, the dosage can be increased to 0.5mg once daily & to 1mg once daily at the end of the first week of dosing, then increased as needed to achieve efficacy. For RLS, the safety & effectiveness of doses greater than 4mg once daily have not been established.
In clinical trials of patients being treated for RLS with doses up to 4mg once daily, ropinirole can be discontinued without a taper.
Note: For further information please consult manufacturer's literature.

❖ **PERKIROL Tab. Square**
Ropinirole hydrochloride INN 0.25mg & 2mg/tablet (film-coated).
0.25mg x 50's pack: 100.00 MRP
2mg x 30's pack: 180.00 MRP
❖ **REPITOL Tab. Beximco**
Ropinirole hydrochloride INN 0.25mg & 2mg/tablet (film-coated).
0.25mg x 30's pack: 60.00 MRP
2mg x 30's pack: 300.00 MRP
❖ **ROPINOL Tab. Incepta**
Ropinirole hydrochloride INN 0.25mg, 1mg & 2mg/tablet (film-coated).
0.25mg x 50's pack: 100.00 MRP
1mg x 30's pack: 120.00 MRP
2mg x 30's pack: 180.00 MRP

SELEGILINE[69]

SELEGILINE: Tablet/Syrup.
Selegiline is a monoamine-oxidase-B inhibitor used in severe parkinsonism in conjunction with levodopa to reduce 'end-of-dose' deterioration.
Ind: Parkinson's disease or symptomatic parkinsonism (but not drug-induced extrapyramidal symptoms), either used alone (in early disease) or as an adjunct to levodopa therapy.
S/E: Hypotension, nausea and vomiting, confusion, agitation.
Cautions: Side-effects of levodopa may be increased, concurrent levodopa dosage may need to be reduced by 20-50%; interactions- see Appendix (selegline)
Dose: 10mg in the morning, or 5mg at breakfast and midday.

❖ **JUMEX Tab. Chinoin/City Overseas**
Selegiline 5mg/tablet
50's pack: 725.00 TP

Antimuscarinic drugs[21]

Antimuscarinic (anticholinergic) drugs used in parkinsonism include: Benzatropine, Orphenadrine, Procyclidine & Trihexyphenidyl hydrochloride (Benzhexol hydrochloride).

PROCYCLIDINE[21,33]

PROCYCLIDINE: Tablet/ Injection
Ind: Parkinsonism; drug-induced extrapyramidal symptoms (but not tardive dyskinesia).
S/E: Dry mouth, g.i disturbances, dizziness, blurred vision; less commonly urinary retention, tachycardia, hypersensitivity, nervousness and with high doses in susceptible patients, mental confusion, excitement and psychiatric disturbances which may necessitate discontinuation of treatment.
Cautions: Urinary retention, closed-angle glaucoma, cardiovascular disease, hepatic or renal impairment; gastro-intestinal obstruction; avoid abrupt discontinuation of treatment; drugs of this type liable to abuse. May affect performance of skilled tasks

Dosage & admin: Adult: Initially 2.5-5mg 3 times daily increasing at intervals of 2 or 3 days by 2.5-5mg daily; usual max. 30mg daily. Parenteral dose, Adult- 10-20mg daily by i. m or i. v injection.
Acute dystonia- by i.m injection, 5-10mg repeated if necessary after 20 minutes; max. 20mg daily; by i.v. injection 5mg (usually effective within 5 minutes); an occasional patient may need 10 mg or more and may require up to half an hour to obtain relief.
Child: Not recommended.

❖ **CYCLID 5 Tab. Incepta**
Procyclidine hydrochloride 5mg/tablet.
100's pack: 100.00 MRP
❖ **CYCLID Inj. Incepta**
Procyclidine hydrochloride 10mg/2ml ampoule: injection.
1 amps pack: 30.00 MRP
❖ **EXTRANIL Tab. General**
Procyclidine hydrochloride 5mg/tablet.
100's pack: 75.00 MRP
❖ **KDRINE Tab. Opsonin**
Procyclidine hydrochloride 5mg/tablet.
100's pack: 42.00 MRP
❖ **KEMADRIN Tab. GlaxoSmithKline**
Procyclidine hydrochloride 5mg/tablet.
100's pack: 186.00 MRP
❖ **PERKINIL Tab. Square**
Procyclidine hydrochloride 5mg/tablet
200's pack: 150.00 MRP
❖ **PERKINIL Inj. Square**
Procyclidine hydrochloride 10mg/2ml ampoule: injection.
1 amps pack: 30.00 MRP

Drugs used in essential tremor, chorea, tics & related disorders[21]

The drugs include in this group are: Haloperidol, Piracetam, Riluzole & Tetrabenazine.

HALOPERIDOL[21]

HALOPERIDOL: Tablet/Syrup/ Injection
Ind: Motor tics, adjunctive treatment in choreas and Gilles de la Tourette syndrome; (for other indications, see under antipsychotic drugs).
C/I; S/E; Cautions: See under antipsychotic drugs.
Dose: by mouth, 0.5-1.5mg 3 times daily adjusted according to the response; 10mg daily or more may occasionally be necessary in Gilles de la Tourette syndrome; Child, Gilles de la Tourette syndrome up to 10mg daily.
Preparations: See under antipsychotic drugs

PIRACETAM[42]

PIRACETAM: Tablet/Syrup/Injection
Piracetam is a 'nootrope', psychotropic agent.
Mode of action: Piracetam as a psychotropic agent, acts directly on the brain to improve the efficacy of the telencephalon in both normal subjects and those suffering from some functional deficits. This area of the brain is involved in cognition and also has a role to play in learning and memory, in alertness and in consciousness. Piracetam does not cause sedation or stimulation. It acts on the central nervous system in different ways. It can modify neurotransmission within the brain, and can help to improve the metabolic environment essential for good neuronal function. It is also a haemorrheological agent and can improve microcirculation without producing vasodilation. When given as acute or long-term treatment for patients, suffering from a functional CNS deficit, it enhances alertness and increases cognitive function. Piracetam also protects and restores cognitive functional capacity for cerebral trauma, e.g hypoxia or intoxication, and after electroshock therapy. Piracetam may be given alone or in combination with other drugs when treating myoclonia due to anoxia. It reduces the duration of vestibular nystagmus. Piracetam also improves regional oxygen and glucose uptake in the brain in patients suffering from dementia subequent to multiple infarcts, or in those with cerebral ischaemia. Piracetam inhibits the increased aggregation of activated platelets and, in conditions where there is abnormal rigidity of the RBC, it can restore deformability and the ability to pass through the microvasculature.
Ind: 1. Cerebral vascular accidents and cerebral insufficiencies- ischaemic or even haemorrhagic acute accidents, stroke, chronic manifestations of the above accidents of cerebral atherosclerosis.
2. Mental retardation in children- ease of resuming individual contact, sociability & learning, improved intellectual performances and school results.
3. Behaviour and psychotic problems in old age- memory deficits, particularly with regard to fixation and evocation asthenia adoption disorders, disturbed psychomotor reactions.
4. Patients suffering from myoclonus of cortical origin.
S/E: The side effects reported include- nervousness, agitation, irritability, anxiety and sleep disturbances. The incidence of these during clinical trials was approximately 5% and they were more often noted in the older patients taking >2.4gm daily. In the majority cases, a dose reduction causes disappearance of the symptoms. Some patients may complain very rarely of fatigue or drowsiness, gastrointestinal problems e.g nausea, vomiting, diarrhoea and stomach pain. Other symptoms e.g vertigo, headache, trembling and sexual stimulation have occasionally been reported.
C/I & Precaution: Piracetam is contra-indicated in patients with severe renal insufficiency (creatinine clearance<20ml/min), hepatic impairment. As the principal route of elimination for piracetam is via the kidney, special care must be taken when treating patients suffering from renal insufficiency. Monitoring of renal function is recommended in such cases. This is also true for the older patients in whom creatinine clearance is dependent on age.
When the creatinine clearance is <60ml/min, or serum creatinine is >1.25mg/100ml, the dosage should be given half of the normal dose; accordingly when the creatinine clearance is <40ml/min, or serum creatinine is >1.70mg/100ml, the dosage should be given quarter of the normal dose.
Pregnancy & lactation: Piracetam should not be prescribed during pregnancy or when breast feeding, except under exceptional circumstances. Piracetam crosses the placental barrier.
Dosage & Admin: Adults, in cerebro-cortical insufficiency disoders, usual dose is 800mg 3 times a day. In myoclonic seizures, a dose of 7.2gm daily, increasing by 4.8gm per day every 3 to 4 days up to maximum of 20gm daily, given in 2 or 3 divided doses.
Children, 50mg/kg of body weight in 3 divided doses. Once the desired results has been obtained, reduce the initial dose by half.

❖ **CEBROTONIN Tab. Chinoin/City Overseas**
Piracetam 800mg/tablet (f.c)
800mg x 30's pack: 215.55 TP
❖ **LUCETAM Tab. Egis/City Overseas**
Piracetam 1200mg/tablet (f.c)
1200mg x 20's pack: 254.00 TP
❖ **MEMOPIL Tab. ACI**
Piracetam INN 800mg & 1200mg/tablet
800mg x 50's pack: 300.00 IP
1200mg x 30's pack: 270.00 IP
❖ **MEMOPIL Syp. ACI**
Piracetam INN 500mg/5ml: syrup
100ml bot: 150.00 IP
❖ **MEMOPIL Inj. ACI**
Piracetam INN 200mg/1 ml ampoule: injection
1ml amp (200mg) x 4's pack: 300.00 IP
❖ **NEUROLEP Tab. Square**
Piracetam INN 800mg/tablet
800mg x 40's pack: 240.00 MRP
❖ **NEUROLEP Syp. Square**
Piracetam INN 500mg/5ml: syrup
100ml bot: 150.00 MRP

9. APPETITE SUPPRESSANTS/ ANTIOBESITY DRUGS[21]

Appetite suppressants can be classified as:

1. **Anti-obesity drugs acting on the g.i tract-**
   a. **Bulk forming drugs- (discussed unde gastrointestinal preparations)**
   b. **Pancreatic lipase inhibitor e.g Orlistat**
2. **Centrally acting appetite suppressant viz: Sibutramine**

Pancreatic lipase inhibitor

ORLISTAT[50]

ORLISTAT: Capsule
Orlistat is an anti-obesity drug acting on the gastrointestinal tract.
Mode of action: It is a pancreatic lipase inhibitor, which reduces the absorption of dietary fat.
Ind: For long-term management of obese and overweight patients, including patients with risk factors e.g hypercholesterolaemia, noninsulin dependent diabetes mellitus (NIDDM), impaired glucose tolerance, hyperinsulinaemia, hypertension associated with obesity and in a reduction of visceral fat.
C/I: Chronic malabsorption syndrome; patients with known hypersensitivity to orlistat or any of the other components contained in the preparation.
A/R: Adverse reactions are largely gastrointestinal in nature. Commonly observed events are oily spotting, flatus with discharge, faecal urgency, fatty or oily stool, oily evacuation, increased defaecation and faecal incontinence. These are generally mild and transient.
Cautions: The possibility of experiencing gastrointestinal events may increase when orlistat is taken with a diet high in fat.
Pregnancy & Lactation: The safety of orlistat has not been established in pregnant women. Orlistat should not be taken by breast-feeding women, unless the potential benefit outweighs the potential risk.
Dosage & Admin: Adults, 120mg with each main meal; if a meal is missed or contains no fat, the dose of orlistat may be omitted for that meal. In case of hepatic and renal impairment, dose adjustment is not required. Children, below the age of 18 years not recommended.
Drug inter: There are no evidences of interactions with commonly prescribed medications. However, orlistat enhances the bioavailability and lipid lowering effect of pravastin.

❖ **ADIPONIL Cap. Incepta**
Orlistat 120mg/capsule
10's packs: 400.00 MRP
❖ **DIETIL Cap. SK+F**
Orlistat 120mg/capsule
10's packs: 400.00 MRP
❖ **XENICAL Cap. Roche**
Orlistat 120mg/capsule
84's packs: 4837.50 MRP

Centrally acting appetite suppressants

Centrally acting appetite suppressant, currently available for medical use- Sibutramine.

SIBUTRAMINE[42,52]

SIBUTRAMINE: Capsule
Sibutramine is an effective anti-obesity drug. It works against obesity- i. by supporting the natural weight-control functions in the body by inhibition of re-uptake of monoamine neurotransmiters & ii. by stimulating metabolic activity.
Mode of action: Sibutramine produces its therapeutic effect by inhibition of re-uptake of neural messenger substances viz. norepinephrine, serotonin and dopamine (neurotransmiters) in the brain. Sibutramine and its major pharmacologically active metabolites (M1 and M2) do not act via release of monoamines. Sibutramine exerts its phamacological actions predominantly by its secondary (M1) and primary (M2) amine metabolilte. However, prevention of resorption of the aforesaid neurotransmiters in the brain, allowing them to act at higher concentration on the nerve cells. Thus increases the feeling of fullness of stomach. Sibutramine also stimulates thermogenesis (metabolic activity) indirectly by activating the 3-system in brown aolipose tissue.
Ind: Sibutramine is used in the management of obesity, including weight loss and management of weight loss when used in conjunction with a reduced caloric diet. Sibutramine is recommended for obese patients with an initial body mass index (BMI) ? 30kg/m2 or ? 27kg/m2 in the presence of other risk factors (e.g hypertension, diabetes, dyslipidaemia). (BMI is calculated by taking the patient's weight in kg and dividing by the patient's height, in meters, squared. Metric conversions are as follows: Pounds 2.2=kg; inches x 0.0254=meters.)
C/I: Patients receiving monoamine oxidase inhibitors (MAOIs); hypersensitivity to sibutramine or any of the active ingredients of sibutramine; patients with anorexia nervosa; patients taking other centrally acting appetite-suppressant drugs.
S/E: Commonly reported side-effects of sibutramine are dry mouth, headache, insomnia and constipation; diarrhoea, dizziess, drowsiness and rhinitis have also occured. Less frequently reported side-effects include dysmenorrhoea, oedema, influenza-like symptoms, and depression. Abnormal bleeding, acute interstitial nephritis, emotional lability, migraine, seizures and skin rashes have been reported rarely. Clinically significant increase in heart rate and blood pressure may occur. Sibutramine may decrease salivary flow and therefore increase the risk of dental caries, periodontal disease, or other oral disorders. It may also produce mydriasis. Increases in liver enzyme have been reported.
Cautions: Give with caution to those patients with a history of hypertension and do not give to patients with uncontrolled or poorly controlled hypertension. Use with caution when prescribing sibutramine with other agents that may raise blood pressure or heart rate including certain decongestant, cough, cold & allergy medications that contain agents such as phenylpropanolamine, ephedrine or pseudoephedrine.
Pregnancy & lactation: The use of sibutramine is not recommended during pregnancy, and in nursing mothers.
Dosage & admin: The recommended starting dose is 10mg once daily with or without food. If there is inadequate weight loss, the dose may be increased after 4 weeks to a total of 15mg once daily. The 5mg dose should be reserved for patients who do not tolerate 10mg dose. Blood pressure and heart rate changes should be taken into account when making decisions regarding dose titration. Analysis of numerous variables has indicated that 60% of patients who lose at least 4 lbs in the first 4 weeks of treatment with a given dose of sibutramine in combination with a reduced-calorie diet lose at least 5% of their initial body weight by the end fo 6 months to 1 year of treatment on that dose. Conversely, 80% of patients who do not lose at least 4 lbs in the first 4 weeks of treatment with a given dose, do not lose at least 5% of their initial body weight by the end of 6 months to 1 year of treatment on that dose. If a patient has not lost at least 4 lbs in the first 4 weeks of treatment, consider re-evaluation of therapy which may include increasing the dose or discontinuing sibutramine. The safety and efficacy of sibutramine have not been determined beyond 1 year at this time.
Drug inter: Sibutramine should not be given concurrently with, or within at least two weeks of stopping an MAOI; at least two weeks should elapse between discontinuation of sibutramine and starting therapy with an MAOI. There is a risk of the serotonin syndrome developing if sibutramine is administered together with other serotonergic drug such as selective serotonin reuptake inhibitors (SSRIs), sumatriptan, lithium, pethidine, fentanyl, dextromethorphan and pentazocine. Sibutramine should not be used with other drugs that may increase heart rate or blood pressure such as ephedrine, phenylpropanolamine, and pseudoephedrine (which may be ingredients of some cough and cold remedies). Alcohol should be avoided. Inhibitors of the cytochrome P450 isoenzyme CYP3A4, such as ketoconazole and erythromycin, may increase plasma concentrations of sibutramine.

❖ **BUTRAMIN Cap. Drug Inter.**
Sibutramine hydrochloride monohydrate INN equivalent to 5mg sibutramine hydrochloride INN/capsule.
30's pack: 120.00 MRP
❖ **OBENIL Cap. Square**
Sibutramine hydrochloride monohydrate INN equivalent to 5mg sibutramine hydrochloride INN/capsule.
30's pack: 150.00 MRP
❖ **REDUX Cap. UniHealth**
Sibutramine hydrochloride monohydrate INN equivalent to 5mg sibutramine hydrochloride INN/capsule.
30's pack: 150.00 MRP
❖ **SIBULIN Cap. Beximco**
Sibutramine hydrochloride monohydrate INN equivalent to 5mg sibutramine hydrochloride INN/capsule.
60's pack: 300.00 IP
❖ **SIBUTRIN Cap. General**
Sibutramine hydrochloride monohydrate INN equivalent to 5mg & 10mg sibutramine hydrochloride INN/capsule.
5mg x 30's pack: 150.00 MRP
10mg x 20's pack: 160.00 MRP

10. DRUGS FOR DEMENTIA

Currently available drugs that are used in the treatment of dementia of Alzheimer's type include anticholinesterase agents, such as- Donepezil, Rivastigmine.

DONEPEZIL[26,54]

DONEPEZIL: Tablet
Donepezil hydrochloride is a centrally acting & reversible anticholinesterase agent.
Mode of action: Donepezil hydrochloride binds reversibly & selectively with acetylcholinesterase and inactivates it, thus inhibiting hydrolysis of acetylcholine.
As a result the concentration of acetylcholine increases at cholinergic synapses in the brain.
Ind: Symptomatic treatment of mild to moderate dementia of Alzheimer's type.
C/I: Known hypersensitivity to donepezil hydrochloried or to piperidine derivatives.
S/E: Generally well tolerated but some patients may experience nausea, vomiting & diarrhoea. These adverse events are of mild intensity and transient, resolving during continued treatment without the need for dose modification. Less frequent side effeccts are insomnia, fatigue, anorexia, muscle cramps, generalized seizure etc.
Precautions: Caution should be taken in sick sinus syndrome or other supraventricular conduction abnormalities, patients at risk of developing peptic ulcers, asthma, obstructive airway disease and during anaesthetic procedure.
Pregnancy & lactation: There are no adequate and well controlled studies in pregnant woman. Donepezil should be used durng pregnancy only if the potential benefit justifies the potential risk to the fetus. Nursing mother- it is not known whether Donepezil hydrochloride is secreted in human breast milk or not, so it is not advised in nursing mother.

Dosage & admin: 5mg once daily orally at bed time, for at least one month, in order to allow the earliest clinical response to treatment to be assessed and to allow steady-state concentrations of donepezil hydrochloride to be achieved. Following a one-month clinical assessment of treatment, the dose can be increased to 10mg/day (once-a-day dosing). Since food does not affect the rate or extent of absorption of donepezil, it can be administered with or without food.
In case of renal & hepatic impairment- a similar dose schedule can be followed for patients with renal or mild to moderate hepatic impairment as clearance of donepezil hydrochloride is not affected by these conditions.
In case of children- Donepezil is not recommended for use in children.

Drug inter: Drugs with anticholinergic properties and which cross into the brain, such as atropine, benztropine produce the opposite effects of Donepezil and should be avoided during therapy with donepezil. Medication with carbamazepine, dexamethasone, phenobarbital, phenytoin may reduce the effect of donepezil, whereas ketoconazole, quinidine, cimetidine may increase the effects.

❖ **AMELOSS Tab. Incepta**
Donepezil hydrochloride INN 5mg/tablet (f.c).
5mg x 30's pack: 300.00 MRP
❖ **DIMENTA Tab. Healthcare**
Donepezil hydrochloride INN 5mg/tablet (f.c).
5mg x 30's pack: 300.00 MRP
❖ **ELZER Tab. Square**
Donepezil hydrochloride INN 5mg/tablet (f.c).
5mg x 30's pack: 300.00 MRP
❖ **MEMORIN Tab. Beximco**
Donepezil hydrochloride INN 5mg/tablet (f.c).
5mg x 30's pack: 300.00 MRP

RIVASTIGMINE[26,54]

RIVASTIGMINE: Capsule
Rivastigmine is a centrally acting, reversible non-competitive acetylcholinesterase inhibitor, introduced as the specific drug therapy for Alzheimer's patients to improve their functional ability & preserve cognitive performance.
Mode of action: Rivastigmine binds reversibly & selectively with acetylcholinesterase and inactivates it, thus inhibiting hydrolysis of acetylcholine.
As a result the concentration of acetylcholine increases at cholinergic synapses in the brain at selectivity region.
Ind: Mild to moderately severe dementia of the Alzheimer type.
C/I: Known hypersensitivity to rivastigmine, other carbamate derivatives, or excipients of the formulation.
S/E: Nausea, vomiting, diarrhoea, abdominal pain, loss of appetite, dyspepsia, dizziness, headache.
Precautions/warnings: Sick sinus syndrome, severe cardiac arrhythmias, gastroduodenal ulcerative conditions in predisposed patients, respiratory disease, urinary obstruction, seizure, pregnancy and lactation.

Dosage: 1.5mg twice daily is the recommended starting dose. If well tolerated, it may be increased after a minimum of 2 weeks of treatment to 3mg twice daily, subsequently to 4.5mg twice daily, up to a maximum of 6mg twice daily. Adverse effects may respond to omitting one or more doses. If they persist, the daily dose should be reduced to the previous well tolerated dose.

Drug inter: Cholinomimetic drugs, anticholinergic medications.

Note: For further information please consult manufacturer's literature.

❖ **EXELON Cap. Novartis**
Rivastigmine (as hydrogen tartrate) 1.5mg, 3mg, 4.5mg & 6mg/capsule
1.5mg x 60's pack: 5962.50 MRP
3.0mg x 60's pack: 5962.50 MRP
4.5mg x 60's pack: 5962.50 MRP
6.0mg x 60's pack: 5962.50 MRP

❖ **RIVAMER Cap. Sun Pharma**
Rivastigmine (as hydrogen tartrate) 1.5mg/ capsule
1.5mg x 30's pack: 360.00 MRP

11. ANALGESICS

Analgesics are discussed with antipyretic drugs in the section-8.

12. DRUGS USED IN SUBSTANCE DEPENDENCE

Alcohol & Opioid dependence

NALTREXONE[78]

NALTREXONE HCl: Tablet
Naltrexone hydrochloride is an opioid antagonist and is effective in the treatment of opioid dependence and alcoholism. It is available as naltrexone hydrochloride USP 25mg & 50mg film-coated tablet.
Mode of action: As an opioid antagonist, naltrexone blocks the effects of opioids by competitive binding (i.e analogous to competitive inhibition of enzymes) at opioid receptors. Naltrexone when co-administered with morphine on a regular basis, it blocks the physical dependence to morphine, heroin and other opioids. In subjects physically dependent on opioid, naltrexone precipitates withdrawal symptoms. Naltrexone markedly attenuates or completely blocks, reversibly, the subjective effects of intravenously administered opioids; 50mg of naltrexone will block the pharmacologic effects of 25mg of intravenously administered heroin for periods as long as 24 hours, doubling the dose of naltrexone provides blockade for 48 hours, and tripling the dose provides blockade for about 72 hours.
The mechanism of action of naltrexone in alcoholism is not understood; however, naltrexone has been shown to reduce alcohol consumption in clinical studies.
Naltrexone produces some pupillary constriction, by an unknown mechanism.
Ind: Naltrexone is indicated in the treatment of opioid dependence and alcoholism. It has not been shown to provide any therapeutic benefit except as part of an appropriate plan of management for the addictions.
C/I: Naltrexone is contraindicated in patients receiving opiold analgesics, patients currently dependent on opioids, patients in acute opioid withdrawal, any individual who has failed the naloxone challenge test or who has a positive urine screen for opioids, any individual with a history of sensitivity to naltrexone or there is any cross-sensitivity with naloxone or the phenanthrene containing opioids, any individual with acute hepatitis or liver failure.
S/E; Precautions & warnings: Please see manufacturer's literature.

Dosage & admin: A patient is candidate for treatment with naltrexone if - i. the patient is willing to take a medicine, ii. the patient is opioid free for 7-10 days, iii. the patient dose not have severe or active liver or kidney

problems, iv. the patient is not allergic to naltrexone and no other contraindications are present.
In opioid dependence, treatment should be initiated carefully with an initial dose of 25mg of naltrexone; if no withdrawal signs occur, the patient may be started with 50mg a day thereafter.

12. DRUGS USED IN SUBSTANCE DEPENDENCE

Alcohol & Opioid dependence

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The mechanism of action of naltrexone in alcoholism is not understood; however, naltrexone has been shown to reduce alcohol consumption in clinical studies.
Naltrexone produces some pupillary constriction, by an unknown mechanism.
Ind: Naltrexone is indicated in the treatment of opioid dependence and alcoholism. It has not been shown to provide any therapeutic benefit except as part of an appropriate plan of management for the addictions.
C/I: Naltrexone is contraindicated in patients receiving opiold analgesics, patients currently dependent on opioids, patients in acute opioid withdrawal, any individual who has failed the naloxone challenge test or who has a positive urine screen for opioids, any individual with a history of sensitivity to naltrexone or there is any cross-sensitivity with naloxone or the phenanthrene containing opioids, any individual with acute hepatitis or liver failure.
S/E; Precautions & warnings: Please see manufacturer's literature.
Dosage & admin: A patient is candidate for treatment with naltrexone if- i. the patient is willing to take a medicine, ii. the patient is opioid free for 7-10 days, iii. the patient dose not have severe or active liver or kidney problems, iv. the patient is not allergic to naltrexone and no other contraindications are present.
In opioid dependence, treatment should be initiated carefully with an initial dose of 25mg of naltrexone; if no withdrawal signs occur, the patient may be started with 50mg a day thereafter.
In alcoholism, a dose of 50mg once daily (up to 12 weeks) is recommended for most patients.
If there is any question of occult opioid dependence, perform a naloxone challenge test and do not initiate naltrexone therapy until the naloxone challenge is negative.
Alternative dosing schedules: Once the patient has been started on naltrexone, 50mg every other day, or 150mg every third day. The degree of blockade produced by naltrexone may be reduced by these extended dosing intervals.
Drug inter: Caution is advised if the concomitant administration of naltrexone and other drugs is required. The safety & efficacy of concomitant use of two potentially hepatotoxic medications is not ordinarily recsuommended unless the probable benefits outweigh the known risks. Lethargy and somnolence have been reported following doses of naltrexone and thioridazine. Patients taking naltrexone may not be benefited from opioid containing medications such as cough and cold preparations, antidiarrhoeal preparations and opioid analgesics.
Note: For further information, please consult manufacturer's literature.

❖ **NALTRAX-50` Tab. Navana**
Naltrexone hydrochloride USP 50mg/tablet (film-coated).
50mg x 10's pack: 850.00 MRP

Chapter-5
DRUGS USED IN ENDOCRINE SYSTEM/DISEASES

DRUGS USED IN ENDOCRINE SYSTEMS/DISEASES

Drugs & hormones used in the different endocrine diseases are discussed under the following sections:

1. **Drugs & hormones used in diabetes**
2. **Thyroid & antithyroid drugs & hormones**
3. **Corticosteroid drugs & hormones**
4. **Sex hormones & drugs**
5. **Hypothalamic & pituitary hormones & anti-oestrogens**
6. **Drugs affecting bone metabolism**
7. **Other endocrine drugs**

1. DRUGS USED IN DIABETES[21]

Two groups of drugs are used in the treatment of diabetes:

1.1 Insulin & its preparations
1.2 Oral hypoglycaemic drugs.
1.3 Drugs for diabetic peripheral neuropathy.

Insulin prepns.[21]

Insulin is a polypeptide hormone of complex structure. It is usually extracted from beef or pork pancreas and purified by crystallization; it can also be made biosynthetically or semisynthetically as human insulin. The basic structure of insulin is common to all mammalian species but there are minor species differences which result in the development of antibodies in all patients treated with animal insulins.
Sources of insulin: Three main sources of insulin with their minor differences are given as below:
* **Bovine insulin-** differs from human insulin by 3 amino acids and is more antigenic to man than else one.
* **Porcine insulin-** which differs from human type by only one (1) amino acid.
* **Human insulin-** is made either by enzyme modification of porcine insulin, or by using recombinant DNA to synthesise the proinsulin, precursor molecule for insulin. This is done by artificially introducing the DNA into either E.coli or yeast. These 3 forms of insulin have the same amino acid sequence, but are separately designated as - insulin emp (enzyme modified porcine), insulin prb (proinsulin recombinant in bacteria) and insulin pyr (precursor insulin yeast recombinant).
There is no systematic difference in activity in human and animal insulin.

Types of Insulin: There are three main types of insulin preparations:

1. ***Short acting:*** Rapid onset of action, soluble forms of insulin.
2. ***Intermediate acting:*** Isophane insulin & insulin zinc suspension.
3. ***Long acting:*** Slower in onset and lasts for long periods e.g. human ultratard.

INSULIN[21,26,33,35]

INSULIN: Injection
Insulin is a polypeptide hormone of complex structure. It is usually extracted from beef or pork pancreas and purified by crystallization. Now a day, insulin is produced biosynthetically or semisynthetically as human insulin by recombinant DNA method.

Mode of action: The blood glucose lowering effect of insulin is due to the facilitated uptake of glucose following binding of insulin to receptors on muscle and fat cells and to the simultaneous inhibition of glucose output from the liver.
Ind: 1. In all cases of Insulin dependent Diabetes mellitus (IDDM)
2. In Non-Insulin dependent Diabetes mellitus (NIDDM) whenever good control with diet and oral hypoglycemic agent is no longer attainable (e.g. secondary failure with sulphonylurea therapy).
3. In malnutrition related Diabetes mellitus (MRDM)
4. In NIDDM subjects whenever special metabolic stresses arise in consequence of operations, febrile illness or accidents (the need of insulin therapy is temporary)
5. During diabetic emergencies such as ketoacidosis, serious breakdown of control.
6. Pregnant diabetic women when diet alone fails to maintain therapeutic goal.
C/I: Hypoglycaemia. Hypersensitivity to the active substances or to any of the excipients.
S/E: Local reactions and lipo-atrophy at the site of injection; overdose causes hypoglycaemia (signs are vomiting specially in children, palpitation, trembling, sweating, tingling in the hands or lip, pallor, impaired visioin, listlessness, confusion and dizziness); lipodystrophy, insulin resistance & hypersensitivity are arely reported with human insulin.
Cautions: Dosages require proper adjustment druing infections, pregnancy, emotional distress, change in species of origin, type or purity of insulin. Besides insulin requirements may increase during concomitant therapy with thyroxine, corticosteroids & MAOI's may effect insulin requirement.

Dosage & admin: Adult & Child: By s.c, i.m or i.v injection. Dosage according to individual requirments & initially be determined by the physician. There is no fixed rules for insulin dosage, adjustment in dosages is needed to achieve and maintain desired blood glucose level. The average insulin requirement is between 0.5 to 1 i.u per kg body wt. per day. Duration: Soluble or short acting insulin approx. 7-8 hours; intermediate acting, approx. 18-24 hours; long acting approx. 24-36 hours. For dosage, also see in the treatment section.
Mode of admin. of Human insulin: Actrapid HM may be given s.c, i.m or i.v, but Monotard HM, Actraphane HM, Protaphane HM & Ultratard HM are given by s.c injection.
Management of Hypoglycaemia:
Glucose should be given orally, or if the patient is unconcious, intravenously.
Glucagon injection may also be administered subcutaneous or intramuscularly.

Short Acting Insulin

❖ ACTRAPID Novolet Novo Nordisk/ Transcom
Neutral insulin injection (human monocomponent) 100 i.u/ml; 3ml prefilled syringe.
In this novolet system, prefilled syringe is provided with an ultra thin silicone coated novofine needle. This is virtually a painless and easy way of insulin administration- 'dial and inject method'.
3ml (prefilled syringe) x 5's pack: 2720.00 MRP

❖ HUMULIN R Inj. Eli Lilly/Int. Agencies (Bd.)
Soluble or regular human insulin (rDNA) BP 100 i.u/ml: injection
100 i.u x 4ml vial: 266.88 MRP
100 i.u x 10ml vial: 607.00 MRP

❖ INSUL R Inj. Popular
Soluble or regular human insulin (rDNA) BP 40 i.u/ml & 100 i.u/ml: injection
40 i.u x 10ml vial: 195.00 MRP
100 i.u x 10ml vial: 415.00 MRP

❖ INSULIN ACTRAPID HM Novo Nordisk/ Transcom
Neutral insulin injection (human monocomponent) 40 i.u/ml & 100 i.u/ml: injection
40 i.u x 10ml vial: 232.00 MRP
100 i.u x 10ml vial: 532.00 MRP

❖ INSULIN ACTRAPID HM (Penfill) Novo Nordisk/Transcom
Neutral insulin injection (human monocomponent) 100 i.u/ml.with penfill.
3ml cartidge x 5's pack: 1662.00 MRP

❖ INSUMAN Rapid Inj. Sanofi-aventis
A fast acting regular or soluble human insulin solution 100 i.u/ml: injection
Onset of action within 30 minutes; maximal effect at 1-4 hours; duration of action 7-9 hours.
100 i.u x 5ml vial: 259.69 MRP

❖ MAXSULIN R Inj. Incepta
Soluble or regular human insulin (rDNA) BP 40 i.u/ml & 100 i.u/ml: injection
40 i.u x 10ml vial: 195.00 MRP
100 i.u x 10ml vial: 415.00 MRP

Medium Acting Insulin

❖ HUMULIN N Inj. Eli Lilly/Int. Agencies (Bd.)
NPH (isophane) human insulin 100 i.u/ml: injection
100 i.u x 4ml vial: 266.88 MRP
100 i.u x 10ml vial: 607.00 MRP

❖ HUMULIN 70/30 Inj. Eli Lilly/Int. Agencies (Bd.)
Biphasic premix human insulin, 70% isophane insulin & 30% soluble insulin; 100 i.u/ml: injection
100 i.u x 4ml vial: 266.88 MRP
100 i.u x 10ml vial: 607.00 MRP

❖ INSUL 30/70 Inj. Popular
Biphasic premix human insulin (rDNA), as soluble (regular) human insulin 30% & isophane human insulin (NPH) 70%; 40 i.u/ml & 100 i.u/ml: injection
40 i.u x 10ml vial: 195.00 MRP
100 i.u x 10ml vial: 415.00 MRP

❖ INSUL 50/50 Inj. Popular
Biphasic human insulin (rDNA), as soluble (regular) human insulin 50% & isophane human insulin (NPH) 50%; 40 i.u/ml: injection
40 i.u x 10ml vial: 195.00 MRP

❖ INSUL N Inj. Popular
Neutral isophane human insulin (rDNA) BP 40 i.u/ml & 100 i.u/ml: s.c injection.
40 i.u x 10ml vial: 195.00 MRP
100 i.u x 10ml vial: 415.00 MRP

❖ INSULATARD Novolet Novo Nordisk/ Transcom
Neutral isophane insulin injection (human monocomponent) 100 i.u/ml; 3ml prefilled syringe.
In this novolet system, prefilled syringe is provided with an ultra thin silicone coated novofine needle. This is virtually a painless and easy way of insulin administration- 'dial and inject method'.
3ml (prefilled syringe) x 5's pack: 2720.00 MRP

❖ INSULIN INSULATARD HM Novo Nordisk/Transcom
Neutral isophane insulin injection (human monocomponent) 40 i.u/ml & 100 i.u/ml: injection.
40 i.u x 10ml vial: 232.00 MRP
100 i.u x 10ml vial: 532.00 MRP

❖ INSULIN INSULATARD HM (Penfill) Novo Nordisk/Transcom
Neutral isophane insulin injection (human monocomponent) 100 i.u/ml with penfill.
3ml cartidge x 5's pack: 1662.00 MRP

❖ INSULIN MIXTARD 30 HM Novo Nordisk/Transcom
Biphasic isophane insulin injection (human monocomponent) 30% soluble insulin & 70% isophane insulin; 40 i.u/ml & 100 i.u/ml: injection.
40 i.u x 10ml vial: 232.00 MRP
100 i.u x 10ml vial: 522.00 MRP

❖ INSULIN MIXTARD 30 HM (Penfill) Novo Nordisk/Transcom
Biphasic isophane insulin injection (human monocomponent) 30% soluble insulin & 70% isophane insulin; 100 i.u/ml with penfill.
3ml cartidge x 5's pack: 1662.00 MRP

❖ INSULIN MIXTARD 50 HM Novo Nordisk /Transcom
Biphasic isophane insulin injection (human monocomponent) 50% soluble insulin & 50% isophane insulin; 100 i.u/ml: injection
100 i.u x 10ml vial: 605.00 MRP

❖ INSULIN MIXTARD 50 HM (Penfill) Novo Nordisk/Transcom
Biphasic isophane insulin injection (human monocomponent) 50% soluble insulin & 50% isophane insulin; 100 i.u/ml with penfill.
3ml cartidge x 5's pack: 1662.00 MRP

❖ INSUMAN Basal Inj. Sanofi-aventis
An intermediate acting human insulin suspension 100 i.u/ml: injection
Onset of action within 60 minutes (gradual); maximal effect at 3-4 hours; duration of action 11-20 hours.
100 i.u x 5ml vial: 259.69 MRP

❖ INSUMAN Comb 25 Inj. Sanofi-aventis
A combination of short acting and intermediate acting human insulin suspension where 25% regular (soluble) insulin and 75% isophane insulin; 100 i.u/ml: injection.
Onset of action within 30-60 minutes (gradual); maximal effect at 2-4 hours; duration of action 12-19 hours (moderately long).
100 i.u x 5ml vial: 281.70 MRP

❖ **MAXSULIN 30/70 Inj. Incepta**
Biphasic human insulin (rDNA), as soluble (regular) human insulin 30% & isophane human insulin (NPH) 70%; 40 i.u/ml & 100 i.u/ml: injection
40 i.u x 10ml vial: 195.00 MRP
100 i.u x 10ml vial: 415.00 MRP

❖ **MAXSULIN 50/50 Inj. Incepta**
Biphasic human insulin (rDNA), as soluble (regular) human insulin 50% & isophane human insulin (NPH) 50%; 100 i.u/ml: injection
100 i.u x 10ml vial: 415.00 MRP

❖ **MAXSULIN N Inj. Incepta**
Neutral isophane human insulin (rDNA) BP 40 i.u/ml & 100 i.u/ml: injection.
40 i.u x 10ml vial: 195.00 MRP
100 i.u x 10ml vial: 415.00 MRP

❖ **MIXTARD 30 Novolet Novo Nordisk/ Transcom**
Biphasic isophane insulin injection (human monocomponent) 30% soluble insulin & 70% isophane insulin; 100 i.u/ml; 3ml prefilled syringe.
In this novolet system, prefilled syringe is provided with an ultra thin silicone coated novofine needle. This is virtually a painless and easy way of insulin administration- 'dial and inject method'.
3ml (prefilled syringe) x 5's pack: 2720.00 MRP

❖ **MIXTARD 50 Novolet Novo Nordisk/ Transcom**
Biphasic isophane insulin injection (human monocomponent) 50% soluble insulin & 50% isophane insulin; 100 i.u/ml; 3ml prefilled syringe.
In this novolet system, prefilled syringe is provided with an ultra thin silicone coated novofine needle. This is virtually a painless and easy way of insulin administration- 'dial and inject method'.
3ml (prefilled syringe) x 5's pack: 2720.00 MRP

❖ **NOVOMIX 30 Flexpen Novo Nordisk/ Transcom**
Biphasic insulin aspart injection (recombinant human insulin analogue), 30% insulin aspart, 70% insulin aspart protamine, 100 i.u/ml; 3ml prefilled disposable injection devices (flexpen).
3ml (prefilled injection) x 5's pack: 3810.00 MRP

Long Acting Insulin

❖ **LANTUS Optiset Inj. Sanofi-aventis**
Insulin glargine (recombinant human insulin analogue) 100 units/ml; 3ml prefilled pen with injection device: injection
3ml (prefilled pen with injection device) x 5's pack: 5395.75 MRP

Oral Hypoglycaemic drugs [21,23,105]

Oral hypoglycaemic drugs are used for non-insulin dependent (type 2) diabetes; they should not be used until patients have been shown not to respond adequately to a period of at least three month's restriction of energy and carbohydrate intake. They should be used to augment the effect of diet, and not to replace it.
The oral hypoglycaemic drugs can be classified as:

A. **Sulphonylureas:**
Frist generation-
i. Acetohexamide
ii. Chlorpropamide,
iii. Tolazamide iv. Tolbutamide
Second generation-
i. Glibenclamide,
ii. Gliclazide, iii. Glimepiride,
iv. Glipizide, v. Glyburide,
vi. Glyquidone etc.
B. Biguanides:
i. Metformin (only available biguanide).
C. **Other antidiabetics:**
a)? -Glucosidase inhibitor:
i. Acarbose
b) Meglitinide analogs (carbamomethyl benzoic acid-CMBA derivatives):
i. Nateglinide ii.. Repaglinide
c) Thiazolidinedione group:
i. Pioglitazone ii. Rosiglitazone

Sulfonylureas [21,26,42,53,86]

The sulfonylureas are the most widely used oral antidiabetic agents for the treatment of Type 2 diabetes mellitus (Non-insulin-dependent diabetes mellitus- NIDDM).
Mode of action: The mode of action of the sulphonylureas include- i. stimulation of insulin release from the functioning -cells of the pancreas, ii. increasing sensitivity of peripheral tissues & receptors to insulin (during long-term administration), & iii. reduction of serum glucagon levels.
Ind: See below under the individual preparation.
C/I: Insulin dependent (Type 1) diabetes mellitus; diabetic precoma or coma. Hypersensitivity to sulfonylureas, and other sulfonamides. Patients with severe renal or hepatic impairment; endocrine disorders; stress, infection; surgical procedure. Pregnancy & lactation
S/E: Hypoglycaemic manifestations- such as sweating, pallor, intense hunger, malaise, temporary viual impairment. Other side-effects include gastro- intestinal disturbances, such as anorexia, nausea, vomiting, epigastric discomport; others may include weakness, paraesthesia, sensitivity reactions including fever, rashes, jaundice, headache. Very rarely blood disorders, which may include thrombocytopenia, agranulocytosis, and aplastic anaemia. Patients on sulfonylurea therapy may develop facial flushing after alcohol drinking.
Abnormal laboratory results affecting blood and liver functions.
Precautions: Hepatic & renal insufficiency; obese patients. Elderly patients should avoid long-acting sulphonylureas (e.g chlorpropamide), as it may cause hypoglycaemia.
Warnings: Hypoglycaemia: This medicine is susceptible to cause episodes of hypoglycaemia (decrease of blood sugar levels); in the case of sweating, intense hunger, trembling, pallor, visual disturbances, feeling of malaise, abnormal behavior, immediately eat sugar or something containing sugar and inform your physician.
Hypoglycaemia is favoured by a strict or poorly balanced diet, by prolonged or strenuous exercise, by the intake of alcohol or during use of other hypoglyca-emic drugs (see drug interactions below).
In consequence, treatment with a hypoglycaemic sulphonylurea requires: i. a regular diet- it is important to eat regular meals, including breakfast, never miss a meal; ii. Precise regularity in treatment- it is important to take the treatment regularly.

Pregnancy & lactation: In case of pregnancy diabetes should be treated with insulin. In case of suspecting or diagnosing a new pregnancy while taking oral diabetic medication, stop the therapy immediately, and prescribe a more suitable treatment schedule with insulin for the rest period of pregnancy.
In case of desired pregnancy, a suitable treatment schedule should be prescribed with insulin
Sulphonylureas are also contra-indicated when breast-feeding, so, a suitable treatment schedule should be prescribed with insulin during the nursing period.

Dosage & Amdin: See below under the individual preparation.

Advices to the patients: **Follow as closely as possible the dietary advice & medicine prescribed by the doctor. Regularly carry out the laboratory tests as advised you. Inform your physician in different conditions, such as- in the case of surgery, trauma, fever or infection, difficult eating; in the case of a planned pregnancy; in the case of taking other drugs, particularly an anti-inflammatory agent, beta-blocker, corticosteroid.**

Overdose: **The administration of an excessive dose of any sulphonylurea results in hypoglycaemia (see warnings) whcih should be treated immediately by the administration of sugar (4 to 6 lumps). In severe cases, if there is clouding of consciousness, 10%-30% hypertonic glucose solution must be administered intravenously without delay and the patient should be transferred to the hospital immediately.**
Missing dose: **In case of forgotten or missing one or more doses- do not take a double dose to compensate or the single dose that is forgotten or missed to take. Take the regular dose in regular time.**

Drug inter: The hypoglycemic effect of sulphonylureas may be potentiated by NSAID particularly aspirin, phenylbuta-zone, sulphonamides, coumarin derivatives, MAOIs,-adrenergic blockers, H2 antagonists e.g cimetidine, tetracyclines, chloramphenicol, clofibrate, and anti-fungal oral agents like miconazole & fluconazole. Ingestion of alcohol may also increase the hypoglyce-mic effect of gliclazide.
Some drugs, on the contrary, may reduce its activity e.g barbiturates, corticoste-roids, thiazide diuretics, thyroid hormones, phenytoin, laxatives and oral contraceptives.

GLIBENCLAMIDE[21,33]

GLIBENCLAMIDE: Tablet.
Ind: Non-insulin dependent (Type 2) diabetes mellitus.
C/I; S/E; Cautions: See above under the text of sulfonylurea.
Pregnancy & lactation: Sulphonylureas are contra-indicated during pregnancy & breast-feeding, so, a suitable treatment schedule should be prescribed with insulin.
Dosage & admin: Adult: Initially 5mg daily as single dose at breakfast, increasing if necessary by 2.5-5mg at weekly intervals to max. 15 mg daily.
Child: not recommended.
Overdose; Drug inter: See above under the text of sulfonylurea.

❖ **DAOSIN Tab. Gaco**
Glibenclamide 5mg/tablet
100's pack: 27.83 MRP
❖ **DIBENOL Tab. Square**
Glibenclamide 5mg/tablet
300's pack: 84.00 MRP
❖ **DICON Tab. Jayson**
Glibenclamide 5mg/tablet
100's pack: 28.00 MRP
❖ **GLUBAN Tab. Chemico**
Glibenclamide 5mg/tablet
100's pack: 28.00 MRP
❖ **GLUCON Tab. Opsonin**
Glibenclamide 5mg/tablet
100's pack: 28.00 MRP
❖ **GLUCONIL Tab. Acme**
Glibenclamide 5mg/tablet
100's pack: 28.00 MRP
❖ **SUGANIL Tab. Skylab**
Glibenclamide 5mg/tablet
200's pack: 56.00 MRP

GLICLAZIDE[21,53,86]

GLICLAZIDE: Tablet
Ind: Gliclazide is used alone in Type 2 diabetes patients with diet & exercise after an adequate trial of dietary therapy and exercise that have been proved unsatisfactory. It can also be used in combination with other oral insulin sensitizing drugs like metformin, acarbose & piogliazone, and with insulin when diet, exercise and the above oral hypoglycemic agents do not result in adequate glycemic control.
C/I; S/E; Cautions: See above under the text of sulfonylurea.
Pregnancy & lactation: Sulphonylureas are contra-indicated during pregnancy & breast-feeding, so, a suitable treatment schedule should be prescribed with insulin.
Dosage & admin:
Dosage of 80mg Plain tablet: Initially 40-80mg daily, adjusted according to response; up to 160mg as a single dose with breakfast; higher dose should be given in divided doses; max. 320mg may be given daily.
Dosage of 30mg MR (modified release) tablet/CR (controlled release) capsule: The usual daily dosage is 1 to 4 MR tablets or CR capsules per day as a single dose. It is recommedned that the drug should be taken at breakfast time. The tablets/capsules must be taken whole with half a glass of water just before breakfast.
Every administration of tablets/capsules must be followed by a meal.
Overdose; Drug Inter: See above under the text of sulfonylurea.

❖ **ADMIRA MR Tab. UniMed/UniHealth**
Gliclazide 30mg/tablet (modified release).
30's pack: 180.00 MRP
❖ **COMPRID Tab. Square**
Gliclazide 80mg/tablet
40's pack: 240.00 MRP
❖ **COMPRID XR Tab. Square**
Gliclazide 30mg/tablet (extended release).
30's pack: 180.00 MRP
❖ **CONSUCON Tab. Incepta**
Gliclazide 80mg/tablet
50's pack: 300.00 MRP
❖ **CONSUCON MR Tab. Incepta**
Gliclazide 30mg/tablet (modified release).
30's pack: 180.00 MRP
❖ **DELA Tab. Mystic**
Gliclazide 80mg/tablet
50's pack: 250.00 MRP
❖ **DIAB Tab. Rephco**
Gliclazide 80mg/tablet
50's pack: 300.00 MRP
❖ **DIABID Tab. Cosmic**
Gliclazide 80mg/tablet
50's pack: 275.00 MRP
❖ **DIAGLE Tab. Aexim**
Gliclazide 80mg/tablet
50's pack: 225.00 MRP
❖ **DIAMICRON MR Tab. Servier**
Gliclazide 30mg/tablet (modified release).
30's pack: 264.00 MRP
❖ **DIAPRID Tab. Alco Pharma**
Gliclazide 80mg/tablet
30's pack: 135.00 MRP
❖ **DIAPRO Tab. Beximco**
Gliclazide 80mg/tablet
50's pack: 250.00 IP
❖ **DIATROL Tab. Pacific**
Gliclazide 80mg/tablet
50's pack: 400.00 MRP
❖ **DIATROL MR Tab. Pacific**
Gliclazide 30mg/tablet (modified release).
50's pack: 400.00 MRP
❖ **DIGREEN Tab. Nipa**
Gliclazide 80mg/tablet
50's pack: 225.00 MRP
❖ **DIMEROL Tab. Drug Inter.**
Gliclazide 80mg/tablet
50's pack: 300.00 MRP
❖ **DIMEROL-MR Tab. Drug Inter.**
Gliclazide 30mg/tablet (modified release).
50's pack: 300.00 MRP

❖ **ELIMEROL Tab. Elixir**
Gliclazide 80mg/tablet
50's pack:
❖ **EZIDE Tab. Edruc**
Gliclazide 80mg/tablet
50's pack: 300.00 IP
❖ **GIDE Tab. Medicon**
Gliclazide 80mg/tablet
50's pack: 250.00 MRP
❖ **GLAD Tab. Sandoz/Novartis**
Gliclazide 80mg/tablet
50's pack: 275.00 MRP
❖ **GLICA Tab. Modern**
Gliclazide 80mg/tablet
40's pack: 200.00 MRP
❖ **GLICASIL Tab. Silva**
Gliclazide 80mg/tablet
50's pack: 250.00 MRP
❖ **GLICLID Tab. Acme**
Gliclazide 80mg/tablet
50's pack: 250.00 MRP
❖ **GLICRON Tab. Renata**
Gliclazide 80mg/tablet
30's pack: 150.00 MRP
❖ **GLICRON CR Cap. Renata**
Gliclazide 30mg/capsule (controlled release).
30's pack: 180.00 MRP
❖ **GLIMICRON Tab. White Horse**
Gliclazide 80mg/tablet
50's pack: 300.00 MRP
❖ **GLIMICRON MR Tab. White Horse**
Gliclazide 30mg/tablet (modified release).
50's pack: 300.00 MRP
❖ **GLITAB Tab. Hudson**
Gliclazide 80mg/tablet
100's pack: 450.00 IP
❖ **GLIZID Tab. Opsonin**
Gliclazide 80mg/tablet
30's pack: 180.00 MRP
❖ **GLIZID MR Tab. Opsonin**
Gliclazide 30mg/tablet (modified release).
30's pack: 180.00 MRP
❖ **GLUCOSTAT Tab. Bio-pharma**
Gliclazide 80mg/tablet
50's pack: 225.00 MRP
❖ **GLUCOZID Tab. Aristopharma**
Gliclazide 80mg/tablet
50's pack: 300.00 MRP
❖ **GLUZIT Tab. Popular**
Gliclazide 80mg/tablet
50's pack: 275.00 IP
❖ **GORED Tab. General**
Gliclazide 80mg/tablet
50's pack: 300.00 MRP
❖ **GORED MR Tab. General**
Gliclazide 30mg/tablet (modified release).
28's pack: 168.00 MRP
❖ **KEZID Tab. Chemico**
Gliclazide 80mg/tablet

DIETA® 1,2,3 & 4

Glimepiride Tablets

PACIFIC

50's pack: 250.00 MRP

❖ **LOZIDE Tab. ACI**
Gliclazide 80mg/tablet
40's pack: 240.00 MRP

❖ **OCLAZID Tab. Orion**
Gliclazide 80mg/tablet
50's pack: 300.00 MRP

❖ **ORAZID Tab. Somatec**
Gliclazide 80mg/tablet
30's pack: 150.00 IP

❖ **PROGLID Tab. Supreme**
Gliclazide 80mg/tablet
30's pack: 150.00 MRP

❖ **SINAZID Tab. Ibn Sina**
Gliclazide 80mg/tablet
50's pack: 300.00 MRP

❖ **SUCOTAB Tab. Globe**
Gliclazide 80mg/tablet
50's pack: 225.00 MRP

❖ **XIDO Tab. Delta**
Gliclazide 80mg/tablet
50's pack: 250.03 MRP

❖ **ZENZIDE Tab. Zenith**
Gliclazide 80mg/tablet
30's pack: 150.00 MRP
100's pack: 500.00 MRP

❖ **ZIDE Tab. Pharmadesh**
Gliclazide 80mg/tablet
50's pack: 250.00 MRP

GLIMEPIRIDE[21,42,86]

GLIMEPIRIDE: Tablet
Glimepiride is a newer long-acting sulphonylurea. It is available as glimepiride INN 1mg, 2mg & 3mg tablet.
Mode of action: Glimepiride appears to lower blood glucose level acutely by stimulating the release of insulin from the functioning pancreatic beta-cells. In addition, extrapancreatic effects may also play a role in the activity of sulfonylureas, that glimepiride administration can lead to increased sensitivity of peripheral tissues to insulin.
Ind: Glimepiride is used alone in type 2 diabetes patients with diet & exercise after an adequate trial of dietary therapy and exercise that have been proved unsatisfactory. It can also be used in combination with other oral insulin sensitizing drugs like metformin, acarbose & piogliazone, and with insulin when diet, exercise and the above oral hypoglycemic agents do not result in adequate glycemic control.
C/I: Known hypersensitivity to glimepiride or any of the ingredients of the product. Diabetic ketoacidosis, with or without coma, this condition should be treated with insulin.
S/E: *Hypoglycemia:* The incidence of hypoglycemia with glimepiride is documented. *Others:* In patients treated with glimepiride, adverse events, other than hypoglycemia, considered to be possibly or probably related to study drug that occurred in more than 1% of patients included dizziness (1.7%), asthenia (1.6%), headache (1.5%), and nausea (1.1%); Allergic skin reactions, e.g., pruritus, erythema, urticaria, and morbilliform or maculopapular eruptions, occur in less than 1% of treated patients, (these may be transient and may disappear despite continued use of glimepiride).
Precautions: In the initial weeks of treatment, the risk of hypoglycemia may be increased and careful monitoring is essential. If such risk is present it may be necessary to adjust the dosage of glimepiride. Hypoglycemia can almost always be promptly controlled by immediate intake of carbohydrates (glucose or sugar e.g, in the form of sugar lumps, sugar-sweetened fruit juice or sugar-sweetened tea). Caution in renal insufficiency and obese patients.
Pregnancy & lactation: Sulphonylureas are contra-indicated during pregnancy & breast-feeding, so, a suitable treatment schedule should be prescribed with insulin.
Dosage & Admin: The dosage of glimepiride must be the lowest one, which is sufficient to achieve the desired metabolic control. The usual initial dose is 1mg once daily. If necessary, the daily dose can be increased. Any increase should be based on regular blood sugar monitoring, and gradual, i.e at intervals of one to two weeks, and carried out stepwise as follows- 1mg-2mg-3mg-4mg-6mg. In patients with well controlled diabetes, the usual dose range is 1 to 4mg daily. Normally, a single daily dose is sufficient. This should be taken immediately before a substantial breakfast or- if none is taken- immediately before the first main meal, with sufficient amounts of liquid (approximately half glass). I tis very important not to skip meals after taking the drug.
Secondary dosage adjustment- as the contr ol of diabetes improves, sensitivity to insulin increases; therefore, glimepiride requirement may fall as treatment proceeds. To avoid hypoglycemia, timely dose reduction or cessation of glimepiride therapy must be considered. A dose adjustment must also be considered whenever the patient's weight or life-style changes, or other factors arise which cause an increased susceptibility to hypo- or hyperglycemia.
When substituting glimepiride for other oral diabetic agents, the initial daily dose is 1mg, this applies even in changeover from the maximum dose of the drug.
Drug inter: Certain drugs tend to produce hyperglycemia and may lead to loss of control. These drugs include the thiazides and other diuretics, corticosteroids, phenothiazines, thyroid products, estrogens, oral contraceptives, phenytoin, nicotinic acid, sympathomimetics, and isoniazid. When these drugs are administered to a patient receiving glimepiride, the patient should be closely observed for loss of control. When these drugs are withdrawn from a patient receiving glimepiride, the patient should be observed closely for hypoglycemia. A potential interaction between oral miconazole and oral hypoglycemic agents leading to severe hypoglycemia has been reported. Whether this interaction also occurs with the intravenous, topical, or vaginal preparations of miconazole is not known. Potential interactions of glimepiride with other drugs metabolized by cytochrome P450 2C9 also include phenytoin, diclofenac, ibuprofen, naproxen, and mefenamic acid.

❖ **ADGLIM Tab. UniHealth/UniMed**
Glimepiride INN 1mg & 2mg/tablet
1mg x 30's pack: 90.00 MRP
2mg x 30's pack: 150.00 MRP

❖ **AMARYL Tab. Sanofi-aventis**
Glimepiride INN 1mg, 2mg & 3mg/tablet
1mg x 30's pack: 184.20 MRP
2mg x 30's pack: 360.00 MRP
3mg x 30's pack: 465.00 MRP

❖ **CONDIA Tab. RAK Pharma**
Glimepiride INN 1mg/tablet
1mg x 30's pack: 90.00 MRP

❖ **DACTUS Tab. Acme**
Glimepiride INN 1mg & 2mg/tablet
1mg x 50's pack: 150.00 MRP
2mg x 40's pack: 200.00 MRP

❖ **DIALON Tab. SK+F**
Glimepiride INN 1mg, 2mg & 4mg/tablet
1mg x 50's pack: 125.00 MRP
2mg x 30's pack: 120.00 MRP
4mg x 20's pack: 120.00 MRP

❖ **DIARYL Tab. Beximco**
Glimepiride INN 1mg & 2mg/tablet
1mg x 30's pack: 75.00 IP
2mg x 30's pack: 135.00 IP

❖ **DIETA Tab. Pacific**
Glimepiride INN 1mg, 2mg & 4mg/tablet
1mg x 30's pack: 90.00 MRP
2mg x 30's pack: 150.00 MRP
4mg x 30's pack: 240.00 MRP

❖ **GIPID Tab. Alco Pharma**
Glimepiride INN 1mg & 2mg/tablet
1mg x 30's pack: 75.00 MRP
2mg x 30's pack: 120.00 MRP

❖ **GLEMEP Tab. Healthcare**
Glimepiride INN 1mg & 2mg/tablet
1mg x 30's pack: 90.00 IP
2mg x 30's pack: 150.00 IP

❖ **GLIMIRID Tab. ACI**
Glimepiride INN 1mg & 2mg/tablet
1mg x 30's pack: 90.00 MRP
2mg x 30's pack: 150.00 MRP

❖ **GLIMS Tab. Opsonin**
Glimepiride INN 1mg & 2mg/tablet
1mg x 30's pack: 90.00 MRP
2mg x 30's pack: 150.00 MRP

❖ **GLIRID Tab. General**
Glimepiride INN 1mg & 2mg/tablet
1mg x 30's pack: 90.00 MRP
2mg x 30's pack: 150.00 MRP

❖ **GLUCONOR Tab. Aristopharma**
Glimepiride INN 1mg & 2mg/tablet
1mg x 50's pack: 150.00 MRP
2mg x 30's pack: 150.00 MRP

❖ **GLUTIM Tab. Techno Drugs**
Glimepiride INN 1mg/tablet
1mg x 30's pack: 180.00 MRP

❖ **LIMARYL Tab. Popular**
Glimepiride INN 1mg, 2mg, 3mg & 4mg/tablet
1mg x 30's pack: 90.00 MRP
2mg x 30's pack: 150.00 MRP
3mg x 30's pack: 210.00 MRP
4mg x 30's pack: 240.00 MRP

❖ **LIMEP Tab. Chemico**
Glimepiride INN 1mg & 2mg/tablet
1mg x 50's pack: 150.00 MRP

2mg x 50's pack: 250.00 MRP

❖ **LIMERID Tab. Supreme**
Glimepiride INN 1mg & 2mg/tablet
Img x 30's pack: 90.00 MRP
2mg x 30's pack: 150.00 MRP

❖ **LIMPET Tab. Drug Inter.**
Glimepiride INN Img & 2mg/tablet
1mg x 50's pack: 150.00 MRP
2mg x 50's pack: 200.00 MRP

❖ **LOSUCON Tab. Incepta**
Glimepiride INN 1mg & 2mg/tablet
1mg x 50's pack: 150.00 MRP
2mg x 50's pack: 250.00 MRP

❖ **MEPID Tab. Renata**
Glimepiride INN 1mg, 2mg & 4mg/tablet
1mg x 30's pack: 75.00 MRP
2mg x 30's pack: 120.00 MRP
4mg x 30's pack: 210.00 MRP

❖ **PRIDE Tab. White Horse**
Glimepiride INN 1mg, 2mg & 4mg/tablet
1mg x 50's pack: 150.00 MRP
2mg x 50's pack: 250.00 MRP
4mg x 30's pack: 240.00 MRP

❖ **SECRIN Tab. Square**
Glimepiride INN 1mg, 2mg, 3mg & 4mg/tablet
1mg x 30's pack: 90.00 MRP
2mg x 30's pack: 150.00 MRP
3mg x 30's pack: 210.00 MRP
4mg x 30's pack: 240.00 MRP

❖ **STIMULIN Tab. Orion**
Glimepiride INN 1mg & 2mg/tablet
1mg x 30's pack: 90.00 MRP
2mg x 30's pack: 150.00 MRP

GLIPIZIDE[21,33,86]

GLIPIZIDE: Tablet
Ind: Glipizide is used alone in Type 2 diabetes patients with diet & exercise after an adequate trial of dietary therapy and exercise that have been proved unsatisfactory. It can also be used in combination with other oral insulin sensitizing drugs like metformin, acarbose & piogliazone, and with insulin when diet, exercise and the above oral hypoglycemic agents do not result in adequate glycemic control.

C/I; S/E; Cautions: See above under the text of sulphonylurea.

Pregnancy & lactation: Sulphonylureas are contra-indicated during pregnancy & breast-feeding, so, a suitable treatment schedule should be prescribed with insulin.

Dosage & admin: Initially 2.5-5mg daily, adjusted according to response; max. 40mg daily; upto 15mg may be given as a single dose before breakfast; higher doses divided.
For maximum effect in reducing postprandial hyperglycemia, glipizide should be ingested 30 minutes before breakfast, since rapid absorption is delayed when the drug is taken with food.
Overdose; Drug inter: See above under the text of sulfonylurea.

❖ **ACTINE Tab. Aristopharma**
Glipizide 5mg/tablet
5mg x 50's pack: 200.00 MRP

❖ **DIACTIN Tab. Beximco**
Glipizide 5mg/tablet
5mg x 100's pack: 150.00 IP

❖ **DIAPIZI Tab. Medimet**
Glipizide 2.5mg & 5mg/tablet
2.5mg x 100's pack: 100.00 MRP
5mg x 50's pack: 100.00 MRP

❖ **DIAPLUS Tab. Pacific**
Glipizide 5mg/tablet
5mg x 50's pack: 100.00 MRP

❖ **DIAPLUS XR Tab. Pacific**
Glipizide 5mg/tablet (extended release).
5mg x 30's pack: 84.00 MRP

❖ **GLIMEROL Tab. Drug Inter.**
Glipizide 5mg/tablet
5mg x 100's pack: 150.00 MRP

❖ **PIZIDE-5 Tab. Chemico**
Glipizide 5mg/tablet
5mg x 100's pack: 200.00 MRP

Biguanides

METFORMIN[21,86]

METFORMIN HCl: Tablet/Oral Solution.
Metformin is a biguanide antihyperglycemic agent which improves glucose tolerance tn Type 2 diabetes patients by lowering basal and post-prandial plasma glucose.
Mode of action: Metformin inhibits hepatic glucose production (gluconeogenesis), reduces intestinal absorption of glucose, and improves peripheral insulin sensitivity (increases peripheral glucose uptake & utilization). Unlike sulfonylureas, metformin does not produce hypoglycemia in either diabetic or non-diabetic subjects. Metformin helps lower cholesterol level and also helps obese patient to lose weight.
Ind: In non-insulin dependent (Type 2) diabetes mellitus- alone, when blood glucose & obesity are not responding to dietary therapy; in combination with a sulfonylurea, repaglinide, pioglitazone, acarbose, or insulin.
Adjuvant therapy in insulin-dependent (Type 1) diabetes, particularly in the obese.
C/I: Individual hypersensitivity to metformin, renal impairment, liver disease, predisposition to lactic acidosis, heart failure, severe infection or trauma, dehydration and alcohol dependence. Metformin is not advised during pregnancy & lactation; and not for pediatric use.
S/E: Normally well tolerated but hypoglycaemic attack may occur especially in elderly, debilitated or traumatised cases. Lactic acidosis is a very rare occurence (0.003%), when the patient taking metformin over the course of a year, the symptoms are anorexia, nausea, vomiting, fever increased respiratory rate, malaise, abdominal pain, diarrhea. It may induce malabsorption of vitamin B12, folic acid & elevate liver enzymes.

Cautions: Metformin should only be prescribed when diet and weight reducton has proven inadequate. During concomitant therapy with other oral hypoglycemic drugs, blood sugar should be monitored carefully because combined therapy may cause hypoglycemia. Patient must be colsely monitored in order to identify any factor or condition that may favour the onset of lactic acidosis. The risk of lactic acidosis is higher among the patients over 60. Patients shouldbe instructed how to recognize the early symptoms of lactic acidosis (see above inder side-effects). In the event of severe trauma, injuries, infectious diseases & high fever, and surgery, it may be necessary to give insulin to maintain adequate metabolic control. Caution in excess alcohol intake.

Pregnancy & lactation: Metformin is not recommended during pregnancy and breast-feeding, so, a suitable treatment schedule should be prescribed with insulin.

Dosage & admin: Adult: Initially 500mg twice daily or 850mg daily with meals increasing gradually if necessary to maximum 3gm daily. Reduce to maintenance, usually 500mg thrice or 850mg twice daily.
Child: Not applicable

Dosage of ER, LA, SR or XR preparations: **The usual starting dose of ER, LA, SR or XR 500mg (metformin hydrochloride- long acting or extended release) is one tablet once daily with the evening meal. Dosage can be increased with a rate of 500mg weekly, up to a maximum of 2000mg once daily with the evening meal. If glycemic control is not achieved ER, LA, SR or XR 2000mg once daily, a trial of ER, LA, SR or XR 1000mg twice daily should be considered.**

Drug Inter: Nifedipine appears to enhance the absorption of metformin but the latter has minimal effects on nifedipine. Thiazides, corticosteroids, phenothiazines, thyroid hormones, estrogens, oral contraceptives, phenytoin, nicotinic acid, sympathomimetics, calcium channel blockers and isoniazid tend to produce hyperglycemia and may lead to loss of glycemic control. Metformin may enhance the effects of anti-coagulants.

❖ **BIGMET Tab. Renata**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 100's pack: 200.00 MRP
850mg x 100's pack: 250.00 MRP

❖ **COMET Tab. Square**
Metformin hydrochloride 500mg, 750mg & 850mg/tablet
500mg x 100's pack: 200.00 MRP
750mg x 60's pack: 150.00 MRP
850mg x 50's pack: 150.00 MRP

METFO®

Metformin 500, 850 & 500 mg XR Tablets

PACIFIC

❖ **COMET X R 500 Tab. Square**
Metformin hydrochloride 500mg/tablet (extended release).
500mg x 50's pack: 200.00 MRP

❖ **COMET XR 1gm Tab. Square**
Metformin hydrochloride 1gm/tablet (extended release).
1gm x 30's pack: 210.00 MRP

❖ **DAOMIN Tab. Acme**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 100's pack: 200.00 MRP
850mg x 40's pack: 120.00 MRP

❖ **D-FO Tab. Decent**
Metformin hydrochloride 850mg/tablet
850mg x 30's pack: 75.00 MRP

❖ **DIABEX Tab. Gaco**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 50's pack: 55.50 MRP
850mg x 30's pack: 82.68 MRP

❖ **DIAFRE Tab. Mystic**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 100's pack: 150.00 MRP
850mg x 50's pack: 150.00 MRP

❖ **DIA-M Tab. Medimet**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 50's pack: 55.00 MRP
850mg x 50's pack: 125.00 MRP

❖ **DIA-M SR Tab. Medimet**
Metformin hydrochloride 500mg/tablet (sustained release).
500mg x 50's pack: 100.00 MRP

❖ **ETFORM Tab. Sandoz/Novartis**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 100's pack: 200.00 MRP
850mg x 50's pack: 150.00 MRP

❖ **ETFORMIN Tab. Elixir**
Metformin hydrochloride 500mg/tablet
500mg x 100's pack:

❖ **FORMET Tab. Bio-pharma**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 100's pack: 110.00 MRP
850mg x 50's pack: 125.00 MRP

❖ **FORMIN Tab. Skylab**
Metformin hydrochloride 850mg/tablet
850mg x 30's pack: 90.00 MRP

❖ **FORMIN Tab. Zenith**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 100's pack: 150.00 MRP
850mg x 100's pack: 300.00 MRP

❖ **GLUCOMET Tab. Aristopharma**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 100's pack: 200.00 MRP
850mg x 50's pack: 150.00 MRP

❖ **GLUCOMET 500 XR Tab. Aristopharma**
Metformin hydrochloride 500mg/tablet (extended release).
500mg x 50's pack: 200.00 MRP

❖ **GLUCOMET 750 XR Tab. Aristopharma**
Metformin hydrochloride 750mg/tablet (extended release).
500mg x 30's pack: 180.00 MRP

❖ **GLUNOR Tab. SK+F**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 50's pack: 100.00 MRP
850mg x 50's pack: 150.00 MRP

❖ **GLUNOR XR Tab. SK+F**
Metformin hydrochloride 500mg/tablet (extended release).
500mg x 50's pack: 200.00 MRP

❖ **GLUPHAGE XR Tab. Silva**
Metformin hydrochloride 400mg/tablet (extended release).
400mg x 50's pack: 185.00 MRP

❖ **GLYMIN Tab. Healthcare**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 50's pack: 75.00 MRP
850mg x 50's pack: 150.00 MRP

❖ **GLYMIN 500 XR Tab. Healthcare**
Metformin hydrochloride 500mg/tablet (extended release).
500mg x 50's pack: 230.00 MRP

❖ **G-PHASE Tab. Edruc**
Metformin hydrochloride 850mg/tablet
850mg x 30's pack: 90.00 MRP

❖ **HI-MET Tab. Hudson**
Metformin hydrochloride 850mg/tablet
850mg x 100's pack: 300.00 IP

❖ **INFO Tab. Bristol**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 50's pack: 100.00 MRP
850mg x 50's pack: 150.00 MRP

❖ **INFORMET Tab. Beximco**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 100's pack: 110.00 IP
850mg x 60's pack: 150.00 IP

❖ **INFORMET LA Tab. Beximco**
Metformin hydrochloride BP 500mg/tablet (long acting).
500mg x 100's pack: 400.00 IP

❖ **INSIMET Tab. Ibn Sina**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 100's pack: 250.00 MRP
850mg x 50's pack: 175.00 MRP

❖ **KEMIN Tab. Chemico**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 50's pack: 100.00 MRP
850mg x 50's pack: 150.00 MRP

❖ **MEFOREX Tab. Jayson**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 50's pack: 55.00 IP
850mg x 30's pack: 75.00 IP

❖ **MEFORIN XR Tab. RAK Pharma**
Metformin hydrochloride 500mg/tablet (extended release).
500mg x 30's pack: 150.00 MRP

❖ **MEFORIN 850 Tab. RAK Pharma**
Metformin hydrochloride 850mg/tablet
850mg x 50's pack: 200.00 MRP

❖ **MEGLU Tab. UniHealth/UniMed**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 30s pack: 60.00 MRP
850mg x 30s pack: 90.00 MRP

❖ **MEGLU ER-500 Tab. UniHealth/UniMed**
Metformin hydrochloride 500mg/tablet (extended release).
500mg x 30's pack: 150.00 MRP

❖ **MET Tab. Opsonin**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 30's pack: 60.00 MRP
850mg x 30's pack: 90.00 MRP

❖ **METARIN Tab. Popular**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 30's pack: 60.00 IP
850mg x 30's pack: 90.00 IP

❖ **METFAR Tab. White Horse**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 50's pack: 100.00 MRP
850mg x 50's pack: 150.00 MRP

❖ **METFAR SR Tab. White Horse**
Metformin hydrochloride 500mg & 1000mg/tablet (sustained release).
500mg x 50's pack: 200.00 MRP
1000mg x 30's pack: 210.00 MRP

❖ **METFAST ER 500 Tab. Aexim**
Metformin hydrochloride 500mg/tablet (extended release).
500mg x 50's pack: 200.00 MRP

❖ **METFEN Tab. Doctor's**
Metformin hydrochloride 850mg/tablet
850mg x 50's pack: 125.00 MRP

❖ **METFO Tab. Pacific**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 50's pack: 125.00 MRP
850mg x 30's pack: 120.00 MRP

❖ **METFO XR 500 Tab. Pacific**
Metformin hydrochloride 500mg/tablet (extended release).
500mg x 30's pack: 150.00 MRP

❖ **METFORM Tab. ACI**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 100's pack: 200.00 MRP
850mg x 50's pack: 200.00 MRP

❖ **METFORM ER 1000 Tab. ACI**
Metformin hydrochloride 1000mg/tablet (extended release).
1000mg x 32's pack: 224.00 IP

❖ **METIN Tab. Supreme**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 50's pack: 75.00 MRP
850mg x 30's pack: 90.00 MRP

❖ **METMIN-850 Tab. Alco Pharma**
Metformin hydrochloride 850mg/tablet
100's pack: 225.00 MRP

❖ **MINIFOR Tab. Rephco**
Metformin hydrochloride 850mg/tablet
100's pack: 380.00 MRP

❖ **NOBESIT Tab. Incepta**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 50's pack: 100.00 MRP
850mg x 50's pack: 150.00 MRP

❖ **NOBESIT XR 500 Tab. Incepta**
Metformin hydrochloride500mg/tablet (extended release).
500mg x 50's pack: 200.00 IP

❖ **NV MET Tab. Navana**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 50's pack: 100.00 MRP
850mg x 50's pack: 150.00 MRP

❖ **NV MET-500 SR Tab. Navana**
Metformin hydrochloride500mg/tablet (sustained release).
500mg x 50's pack: 150.00 MRP

❖ **OBID Tab. Delta**
Metformin hydrochloride500mg & 850mg/tablet
500mg x 100's pack: 199.94 MRP
850mg x 30's pack: 89.99 MRP

❖ **ORAMET Tab. Drug Inter.**
Metformin hydrochloride500mg & 850mg/tablet
500mg x 100's pack: 200.00 MRP
850mg x 100's pack: 300.00 MRP

❖ **ORAMET-SR Tab. Drug Inter.**
Metformin hydrochloride 500mg/tablet (sustained release).
500mg x 50's pack: 200.00 MRP

❖ **ORMIN Tab. Orion**

Metformin hydrochloride 500mg & 850mg/tablet
500mg x 50's pack: 100.00 MRP
850mg x 50's pack: 150.00 MRP

❖ **P-MIN Tab. Pharmadesh**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 100's pack: 110.00 MRP
850mg x 30's pack: 90.00 MRP

❖ **PREFORM-850 Tab. Apex**
Metformin hydrochloride 850mg/tablet
850mg x 100's pack: 250.00 MRP

❖ **PREFORM-SR Tab. Apex**
Metformin hydrochloride 500mg/tablet (sustained release).
500mg x 50's pack: 200.00 MRP

❖ **SUCOMET Tab. Globe**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 100's pack: 100.00 MRP
850mg x 50's pack: 115.00 MRP

❖ **SUCOMET-850 Tab. Globe**
Metformin hydrochloride 850mg/tablet
850mg x 50's pack: 115.00 MRP

❖ **SUGAMET Tab. General**
Metformin hydrochloride 500mg & 850mg/tablet
500mg x 100's pack: 200.00 MRP
850mg x 40's pack: 120.00 MRP

Other Antidiabetic agents

α-Glucosidase inhibitor

ACARBOSE[86,108]

ACARBOSE: Tablet
Acarbose is an oral hypoglycaemic agent.
Mode of acation: It inhibits intestinal -glucosidase enzyme with resultant reduction in carbohydrate digestion and absorption. It slows down the digestion of carbohydrates & lengthens the time it takes for carbohydrate to convert to glucose (i.e convertion of disaccharide into monosaccharides), thereby facilitates better blood glucose control. It mainly influences the level of blood sugar after earting, and hence flattens post meal rises in glucose and insulin levels. It is also believed that acarbose improves insulin sensitivity & prevents or delays the progressive deterioration in pancreatic -cells that routinely occurs in patients with Type II Diabetes mellitus.
Ind: Acarbose as monotherapy, is indicated as an adjunct to diet to lower blood glucose in patients with type II diabetes mellitus (NIDDM) whose hyperglycaemia can not be managed on diet alone. It may also be used in combination with a sulfonylurea when diet plus either acarbose or a sulfonylurea do not result an adequate glycaemic control.
C/I: Known hypersensitivity to the drug. Since the information on its effects and tolerability in children and adolescents is still insufficient it should not be used in patients under 18 years of age. Chronic inflammatory & other bowel disorders associated with distinct disturbances of digestion and absorption (e.g. ulcerative colitis, Crohn's disease). States which may deteriorate as a result of increased gas formation in the intestine (e.g. Roemheld's syndrome, major hernias, intestinal obstruction and intestinal ulcers). Acarbose should not be administered during pregnancy & lactation, as no information is available on its use in these conditions in humen. Acarbose should not be used in patients with severe renal impairment (creatinine clearance <25ml/min).
S/E: Frequently flatulence and bowel sounds, occasionally diarrhoea and abdominal distension and less frequently abdominal pain. These side effects may be severe and might be confused with ileus or ileus-like symptoms. If the prescribed diabetic diet is not maintained the intestinal side effects may be intensified. If strongly distressing symptoms develop in spite of maintaining diabetic diet prescribed, the doctor must be consulted and the dose may temporarily or permanently be reduced. In individual cases hypersensitive skin reactions may occur e.g erythema, exanthema and urticaria. Very rarely, hepatitis and/or jaundice have been reported.
Warnings & Precautions: Asymptomatic liver enzyme elevations may occur in individual cases specially at higher dosages. Therefore, appropriate liver enzyme monitoring should be considered during the first 6 to 12 months of treatment. In evaluable cases these changes were reversible on discontinuation of the drug.
Pregnancy & lactation: Acarbose is not recommended during pregnancy and breast-feeding, so, a suitable treatment schedule should be prescribed with insulin.

Dosage: Starting dosage: 25mg 3 times daily with meals. Usual dosage: 50-100mg 3 times daily or as the number of meals, depending on the patient's weight and tolerance of side-effects. Some patients may benefit from gradual dose adaptation by initiating treatment at 50mg once a day for 1 or 2 weeks, then 50mg twice a day for 1 or 2 weeks followed by 50mg three times a day. If necessary, dose can be increased to 100mg three times a day depending on the clinical response. Acarbose is to be taken orally, chewed with the first mouthful of food, or swallowed whole with a little liquid directly before the meal. Patients should be encouraged to follow their dietary guidelines and avoid sucrose. In elderly patients no dosage adjustment is required. Acarbose shoud not be interrupted without consulting a physician as this can lead to a rise in blood glucose.

Drug inter: Sucrose (cane sugar) and foods containing sucrose often cause abdominal discomfort or even diarrhoea during treatment with acarbose as a result of increased carbohydrate fermentation in the colon.
Acarbose has an antihyperglycaemic effect, but does not itself induce hypoglycaemia. If acarbose is prescribed in addition to sulphonylurea or metformin, or in addition to insulin, a fall of the blood glucose level into the hypoglycaemic range may necessitate a suitable decrease in the sulphonylurea, metformin or insulin dose. If acute hypoglycaemia develops it should be borne in mind that sucrose (cane sugar) is broken down into fructose and glucose more slowly during treatment with acarbose, for this reason sucrose is unsuitable for a rapid alleviation of hypoglycaemia & glucose should be used instead. Simultaneous administration of cholestyramine, intestinal adsorbents, and digestive enzyme products should be avoided as they may possibly influence the action of acarbose. Certain other drugs tend to produce hyperglycaemia and may lead to loss of blood glucose control, such as, thiazides and other diuretics, corticosteroids, phenothiazines, thyroid products, estrogens, oral contraceptives, phenytoin, nicotinic acid, sympathomimetics, calcium channel blockers and isoniazides.

❖ **ACARID Tab. White Horse**
Acarbose INN 50mg/tablet.
50mg x 30's pack: 300.00 MRP

❖ **SUGATROL Tab. Pacific**
Acarbose INN 50mg & 100mg/tablet.
50mg x 30's pack: 300.00 MRP
100mg x 30's pack: 450.00 MRP

Meglitinide Analogues

NATEGLINIDE[54,86]

NATEGLINIDE: Tablet
Nateglinide is an oral blood glucose-lowering drug belonging to a new class of insulinotropic agents called meglitinide analog (a carbamomethyl benzoic acid- CMBA derivative).
Ind: Treatment of patients with Type-2 diabetes, whose hyperglycaemia can not be controlled by diet and physical exercise. Nateglinide can be used as monotherapy or in combination with other oral antidiabetic agents with a complementary mode of action, such as metformin and troglitazone.
C/I: Hypersensitivity to nateglinide or to any of the excipients, Type-1 diabetes, diabetic ketoacidosis, pregnancy and lactation.
S/E: Hypoglycaemia; rare cases of elevations in liver enzymes and hypersensitivity reactions.
Precautions & Warnings: Hypoglycaemia has been observed in patients with Type-2 diabetes on diet and exercise, and in those treated with oral antidiabetic agents. Elderly, malnourished patients and those with adrenal or pituitary insufficiency are more susceptible to the glucose lowering effect of these treatments. The risk of hypoglycaemia in Type-2 diabetic patients may be increased by strenuous physical exercise, or ingestion of alcohol. Combination with other oral antidiabetic agents may increase the risk of hypoglycaemia. Hypoglycaemia may be difficult to recognise in subjects receiving blockers.
Pregnancy & lactation: Nateglinide is not recommended during pregnancy and lactation, so, a suitable treatment schedule should be prescribed with insulin.
Dosage: The usual dose is 120mg before main meals.
Drug inter: The hypoglycaemic action of oral antidiabetic agents may be potentiated by certain drugs, including non-steroidal anti-inflammatory agents, salicylates, monoamine oxidase inhibitors, and non-selective adrenergic-

blocking agents. The hypoglycaemic action of oral antidiabetic agents may be reduced by certain drugs, including thiazides, corticosteroids, thyroid products and sympathomimetics.
Note: Before prescribing, please consult full prescribing information.

❖ **STARLIX Tab. Novartis**
Nateglinide 120mg/tablet.
84's pack: 2155.44 MRP

REPAGLINIDE[26,86]

REPAGLINIDE: Tablet
Repaglinide is an oral blood glucose-lowering drug belonging to a new class of insulinotropic agents (secretagogue) called meglitinide analog (a carbamomethyl benzoic acid- CMBA derivative). It is used in the management of Type 2 diabetes mellitus (NIDDM).
Mode of action: In Type 2 diabetes, the characteristic defect is 'failure of mealtime insulin response, which is usually slow and insufficient'. When repaglinide is taken prior to meals, it rapidly corrects mealtime insulin secretion abnormalities in Type 2 diabetes (NIDDM) and causes disposal of the mealtime glucose load. Repaglinide, as selectively stimulates insulin secretion in response to high glucose level in the prandial phase, which in turn controls blood glucose peaks- called 'prandial glucose regulation (PGR)'- is a novel concept in NIDDM management. Repaglinide does not stimulate insulin release from the beta cells in the post-prandial fasting period i.e in the absence of excess glucose. After oral administration, repaglinide is rapidly and completely absorbed from the gut - as the serum concentration increases, its rapid onset and relatively short duration of action on -cells the plasma insulin level rises immediately and usually returns to baseline before the next mealtime. Rapid elimination ensures that post-prandial insulin levels quickly returns to pre-prandial levels as the high prandial glucose level subsides. Repaglinide allows the pancreas of a person with NIDDM to respond to meal-related increase in blood glucose level in a similar manner of the pancreas of a healthy person without diabetes.
Ind: Repaglinide is indicated in Type 2 diabetes mellitus (NIDDM) as monotherapy with diet and exercise (whose hyperglycaemia cannot be controlled satisfactorily by diet and exercise alone); or in combination with metform in overweight patients (whose hyperglycaemia cannot be controlled by either repaglinide or metformin alone even in conjunction with diet & exercise).
C/I: Known hypersensitivity to the drug or its excipients; Type 1 diabetes mellitus; diabetic ketoacidosis, with or without coma; severe renal or hepatic impairment; pregnancy and breast-feeding.
S/E: Gastrointestinal side-effects include- abdominal pain, diarrhoea, constipation, nausea and vomiting. Hypersensitivity reactions include rashes and urticaria. Other side-effects may include- elevated liver enzymes, paresthesia, chest pain, upper respiratory tract infections, urinary tract infections & tooth disorder.
Precautions & warnings: Use with caution in impaired hepatic function. Safety and efficacy have not been established in children. Substitute insulin during intercurrent illness such as, myocardial infarction, coma, infection, trauma, surgical intervention & renal impairment. All oral blood glucose lowering drugs are capable of producing hypoglycaemia so, repaglinide should be administered with meals to lessen the risk of hypoglycaemia.
Pregnancy & lactation: Repaglinide is not recommended during pregnancy and lactation, so, a suitable treatment schedule should be prescribed with insulin.
Dosage & Admin: Initially 0.5mg to 1mg within 30 minutes before main meals, adjusted according to response at intervals of 1-2 weeks; upto 4mg may be given as a single dose, maximum 16mg daily. Patients who skip a meal (or add an extra meal) should be instructed to skip (or add) a dose for that meal.
Drug inter: Repaglinide metabolism may be inhibited by antifungal agents like ketoconazole & miconazole, and antibacterial agents like erythromycin, clarithromycin & azithromycin; may be increased by troglitazone, rifampicin, barbiturates & carbamazepine. Highly protein-bound drugs (e.g NSAIDs) may increase the plasma level of unbound repaglinide and potentiate its glucose lowering effect. Thus concurrent administration of these drugs with repaglinide may increase the risk of hypoglycaemia. Concomitant administration with salicylates, sulfonamides, chloramphenicol, probenecid, monoamine oxidase (MAO) inhibitors, and -adrenergic blockers may increase the risk of hypoglycaemia.

❖ **DIAREPA Tab. Techno Drugs**
Repaglinide INN 1mg/tablet.
1mg x 30's pack: 274.80 MRP
❖ **DIANORM Tab. Rephco**
Repaglinide INN 1mg/tablet.
1mg x 30's pack: 112.50 MRP
❖ **GLIMET Tab. Drug Inter.**
Repaglinide INN 1mg/tablet.
1mg x 50's pack: 150.00 MRP
❖ **GLURETOR Tab. Pacific**
Repaglinide INN 0.5mg, 1mg & 2mg/tablet.
0.5mg x 30's pack: 84.00 MRP
1mg x 30's pack: 120.00 MRP
2mg x 30's pack: 180.00 MRP
❖ **NOMOPIL Tab. Incepta**
Repaglinide INN 0.5mg, 1mg & 2mg/tablet.
0.5mg x 100's pack: 200.00 MRP
1mg x 100's pack: 300.00 MRP
2mg x 50's pack: 250.00 MRP
❖ **PRANDIL-1 Tab. UniHealth/UniMed**
Repaglinide INN 1mg/tablet.
1mg x 30's pack: 90.00 MRP
❖ **PREFID Tab. White Horse**
Repaglinide INN 1mg & 2mg/tablet.
1mg x 50's pack: 150.00 MRP
2mg x 30's pack: 150.00 MRP
❖ **PREMIL Tab. Beximco**
Repaglinide INN 0.5mg, 1mg & 2mg/tablet.
0.5mg x 30's pack: 60.00 IP
1mg x 30's pack: 90.00 IP
2mg x 30's pack: 150.00 IP
❖ **REGLIN Tab. General**
Repaglinide INN 0.5mg & 1mg/tablet.
0.5mg x 45's pack: 90.00 MRP
1mg x 30's pack: 90.00 MRP
❖ **REPAGLID Tab. Alco Pharma**
Repaglinide INN 1mg & 2mg/tablet.
1mg x 30's pack: 90.00 MRP
2mg x 30's pack: 150.00 MRP
❖ **SINGLIN Tab. Renata**
Repaglinide INN 0.5mg, 1mg & 2mg/tablet.
0.5mg x 100's pack: 200.00 MRP
1mg x 100's pack: 300.00 MRP
2mg x 50's pack: 250.00 MRP

Thiazolidinedione Group

PIOGLITAZONE[21,26,86]

PIOGLITAZONE: Tablet
Pioglitazone is a newer oral antidiabetic agent, belonging to the thiazolidinedione group. It improves insulin sensitivity by decreasing insulin resistance in patients with Type 2 diabetes mellitus. It is available as pioglitazone hydrochloride INN 15mg & 30mg tablet.
Mode of action: In Type 2 diabetes mellitus (NIDDM), where the cause of diabetes is the development of insulin resistance in the periphery and in the liver- pioglitazone decreases insulin resistance in the peripheral tissues (skeletal muscle & adipose tissue) and in the liver- as it is a potent and highly selective agonist for 'peroxisome proliferator activated receptor gamma (PPAR)', activation of PPAR nuclear receptors modulates the transcription of a number of insulin responsive genes involved in the control of glucose and lipid metabolism. Thus, pioglitazone improves insulin sensitivity in muscles and adipose tissues and inhibits hepatic gluconeogenesis.
Ind: Pioglitazone is indicated in patients with Type 2 diabetes mellitus (NIDDM) as an adjunct to diet & exercise to bring glycaemic control. It may be used alone or in conjunction with insulin, metformin (in obese patients), or a sulfonylurea when diet & exercise plus the single agent does not bring satisfactory glycaemic control.
C/I: Pioglitazone is contraindicated in liver disease, heart disease; Type 1 diabetes mellitus (insulin-dependent diabetes) and diabetic ketoacidosis. It should not be given to patients who have a serious infection, illness, injury or need surgery. Known hypersensitivity to this product or any of its components.
S/E: The most common adverse experiences with pioglitazone therapy are upper respiratory tract infection, injury, and headache. Other adverse events reported in controlled clinical studies include- myalgia (5.4%), tooth disorder (5.3%), diabetes mellitus aggravated (5.1%) and pharyngitis (5.1%), respectively. In other monotherapy studies, edema was reported for 4.8% (with doses from 7.5 mg to 45mg) of patients treated with pioglitazone.
Warnings & precautions: Use cautiously in patients with oedema. If a patient misses a dose,

he has to take the missed dose as soon as he remembers. If he does not remember until the next day, should skip the dose he missed and take only his next regularly scheduled dose but should not take double dose. Follow the diet, medication and exercise routines very closely. Use carefully with other drugs and during taking alcohol.
Hyperglycaemia may occur if one does not take adequate or skip a dose of drug.
Pregnancy & lactation: Pioglitazone is not recommended during pregnancy and lactation, so, a suitable treatment schedule should be prescribed with insulin.

Dosage & admin: The dose of pioglitazone will be different in different conditions. Pioglitazone alone: Adults- at first, the dose is 15 or 30mg once daily; it may be increased later up to 45mg once daily. Children- dose must be determined by the physician. Pioglitazone with insulin, metformin or sulfonylurea: Adults & children- dose is as same as pioglitazone alone. Pioglitazone may be taken with or without food by a full glass of water.

Drug inter: Use of ketoconazole with pioglitazone may decrease the effect of pioglitazone. Co-administration of pioglitazone and an oral contraceptive resulted in decrease in ethinyl estradiol plasma concentrations. There were no significant changes in norethindrone AUC (0-24h) and cmax. In other drug-drug interaction studies, pioglitazone had no significant effect on the pharmacokinetics of fexofenadine, metformin, digoxin, warfarin, ranitidine, or theophylline.

❖ **ACTOSE Tab. UniMed & UniHealth/UniMed**
Pioglitazone hydrochloride INN 15mg & 30mg/tablet.
15mg x 30's pack: 240.00 MRP
30mg x 20's pack: 300.00 MRP

❖ **ADPAS Tab. General**
Pioglitazone hydrochloride INN 15mg/tablet.
15mg x 30's pack: 240.00 MRP

❖ **DIAGLIT Tab. Beximco**
Pioglitazone hydrochloride INN 15mg & 30mg/tablet.
15mg x 30's pack: 240.00 IP
30mg x 30's pack: 450.00 IP

❖ **DIAPIOTAB Tab. Medimet**
Pioglitazone hydrochloride INN 15mg & 30mg/tablet.
15mg x 50's pack: 400.00 MRP
30mg x 50's pack: 600.00 MRP

❖ **DIATAG Tab. ACI**
Pioglitazone hydrochloride INN 15mg, 30mg & 45mg/tablet.
15mg x 30's pack: 240.00 IP
30mg x 30's pack: 360.00 IP
45mg x 30's pack: 450.00 IP

❖ **GLITAZON Tab. Ibn Sina**
Pioglitazone hydrochloride INN 15mg/tablet.
15mg x 30's pack: 240.00 IP

❖ **GLUCOZON Tab. Aristopharma**
Pioglitazone hydrochloride INN 15mg & 30mg/tablet.
15mg x 30's pack: 210.00 MRP
30mg x 20's pack: 220.00 MRP

❖ **LIT Tab. White Horse**
Pioglitazone hydrochloride INN 15mg & 30mg/tablet.
15mg x 50's pack: 350.00 MRP
30mg x 50's pack: 460.00 MRP

❖ **OGLI Tab. Chemico**
Pioglitazone hydrochloride INN 15mg & 30mg/tablet.
15mg x 30's pack: 240.00 MRP
30mg x 20's pack: 240.00 MRP

❖ **PEEGEE Tab. Jayson**
Pioglitazone hydrochloride INN 15mg & 30mg/tablet.
15mg x 30's pack: 180.00 IP
30mg x 30's pack: 300.00 IP

❖ **PIGLIT Tab. Pacific**
Pioglitazone hydrochloride INN 15mg & 30mg/tablet.
15mg x 30's pack: 240.00 MRP
30mg x 30's pack: 360.00 MRP

❖ **PIODAR Tab. Incepta**
Pioglitazone hydrochloride INN 15mg & 30mg/tablet.
15mg x 30's pack: 240.00 MRP
30mg x 20's pack: 300.00 MRP

❖ **PIOGLIN Tab. Renata**
Pioglitazone hydrochloride INN 15mg & 30mg/tablet (film coated).
15mg x 30's pack: 240.00 MRP
30mg x 10's pack: 150.00 MRP

❖ **PIOL Tab. Opsonin**
Pioglitazone hydrochloride INN 15mg & 30mg/tablet (film coated).
15mg x 30's pack: 240.00 MRP
30mg x 20's pack: 300.00 MRP

❖ **PIOLIT Tab. Alco Pharma**
Pioglitazone hydrochloride INN 15mg/tablet.
15mg x 30's pack: 240.00 MRP

❖ **POIZENA Tab. Drug Inter.**
Pioglitazone hydrochloride INN 15mg & 30mg/tablet.
15mg x 50's pack: 300.00 MRP
30mg x 30's pack: 300.00 MRP

❖ **SAGLIT Tab. Sanofi-aventis**
Pioglitazone hydrochloride INN 15mg & 30mg/tablet.
15mg x 30's pack: 240.00 MRP
30mg x 20's pack: 300.00 MRP

❖ **TOS Tab. Square**
Pioglitazone hydrochloride INN 15mg & 30mg/tablet.
15mg x 30's pack: 240.00 MRP
30mg x 30's pack: 360.00 MRP

ROSIGLITAZONE[26,42,86]

ROSIGLITAZONE: Tablet
Rosiglitazone is a newer oral antidiabetic agent, belonging to the thiazolidinedione group. It improves insulin sensitivity by decreasing insulin resistance in patients with Type 2 diabetes mellitus. It is available as rosiglitazone maleate INN 2mg & 4mg tablet.
Mode of action: See above under the text of pioglitazone.
Ind: 1. Rosiglitazone is indicated as monotherapy as an adjunct to diet & exercise to improve glycemic control in type-2 diabates.
2. In combination with a sulfonylurea, repaglinide, metformin, acarbose, or insulin when

diet, exercise and single agent do not result in adequate glycemic control.
3. In combination with- i. Sulfonylurea or repaglinide plus metformin ii. Sulfonylurea or repaglinide plus acarbose iii. Sulfonylurea or repaglinide plus insulin, when diet, exercise & 2-drug regimen do not result in adequate glycemic control.
C/I: See above under the text of pioglitazone.
S/E: Gastrointestinal disturbances, headache, dizziness, edema, anemia, & weight gain occur which are usually mild to moderate in severity & generally do not require discontinuation of treatment with rosiglitazone.
Precaution: See above under the text of pioglitazone. Monitoring of liver functions before treatment should be done in all patients & periodically thereafter.
Pregnancy & lactation: Rosiglitazone is not recommended during pregnancy and lactation, so, a suitable treatment schedule should be prescribed with insulin.

Dosage & admin: The management of antidiabetic therapy should be individualized.
Monotherapy: **Rosiglitazone may be administered either at a starting dose of 4mg as a single daily dose or divided as 2mg twice daily in the morning and evening. For patients who respond inadequately following 8-12 weeks of treatment, as determined by reduction in fasting plasma glucose (FPG), the dose may be increased to maximum of 8mg daily as a single dose or divided (twice daily) as monotherapy; or may be given in combination with any other insulin secretor or sensitizer or insulin, or any other 2-drug (antidiabetic) regimen. Rosiglitazone may be taken with or without food.**
Combination therapy: **When rosiglitazone is added to exiting therapy, the current dose of the agent can be continued upon initiation of rosiglitazone therapy.**
Sulfonylurea: **When used in combination with sulfonylurea, rosiglitazone may be administered either at a starting dose of 4mg as a single daily dose or divided as 2mg twice daily. While giving with an insulin secretagogue, the dose of sulfonylurea should be decreased if patients report hyperglycemia.**
Metformin: **When used in combination with metformin, rosiglitazone may be administered either at a starting dose of 4mg as a single daily dose or divided as 2mg twice daily. It is unlikely that the dose of metformin will require adjustment due to hypoglycemia during combination therapy with rosiglitazone.**
Insulin: **Dose of rosiglitazone greater than 4mg daily in combination with insulin are not currently indicated. It is rcommended that the insulin dose be decreased by 10-25% if the patients report hypoglycemia or if FPG concentration decrease to less than 100mg/dl. Further adjustments should be individualized based on glucose-lowering response.**

No dosage adjusment is required when rosiglitazone is used as monotherapy in patients with renal impairment.
Use in children: **The safety & effectiveness of rosiglitazone in pediatric patients under 18 years have not been established.**
Drug inter: A decrease in the dose of rosiglitazone may be needed when gemfibrozil is introduced. Dosage adjustment is also required when administered with rifampicin. It was shown to have no clinically relevant effect on the pharmacokinetics of nifedipine & oral contraceptives.

❖ **ROGLIT 4 Tab. Pacific**
Rosiglitazone maleate INN 4mg/tablet (f.c).
4mg x 30's pack: 240.00 MRP
❖ **ROMEROL Tab. Drug Inter.**
Rosiglitazone maleate INN 2mg & 4mg/tablet (f.c).
2mg x 50's pack: 250.00 MRP
4mg x 30's pack: 240.00 MRP
❖ **ROSIT-2 Tab. Delta**
Rosiglitazone maleate INN 2mg/tablet (f.c).
2mg x 30's pack: 150.02 MRP
❖ **SENSULIN Tab. Square**
Rosiglitazone maleate INN 2mg & 4mg/tablet (f.c).
2mg x 30's pack: 150.00 MRP
4mg x 30's pack: 240.00 MRP
❖ **TAZONE-4 Tab. Chemico**
Rosiglitazone maleate INN 4mg/tablet (f.c).
4mg x 30's pack: 240.00 MRP

Combination preparations

GLIMEPIRIDE + PIOGLITAZONE[42]

GLIMEPIRIDE + PIOGLITAZONE: Tablet
This is a combination of two antihyperglycemic agents, in which glimepiride is a member of second generation sulfonylurea and pioglitazone hydrochloride is a member of the thiazolidinedione group of other antidiabetics. The combination preparations of glimepiride and pioglitazone are available in two fixed presentations viz: i. Glimepiride 2mg + pioglitazone 30mg; ii. Glimepiride 4mg + pioglitazone 30mg.
Mode of action: See above under the text of glimepiride & pioglitazone given separately.
Ind: This combination is indicated as an adjunct to diet and exercise to improve glycemic control in patients with type 2 diabetes who are already treated with a combination of pioglitazone and sulfonylurea as separate tablet or who are not adequately controlled on a sulfonylurea alone or for those patients who have initially responded to pioglitazone alone and require additional glycemic control.
C/I: Known hypersensitivity to any of the components of the combination. Diabetic ketoacidosis, with or without coma, this condition should be treated with insulin.
S/E: See above under the text of glimepiride & pioglitazone given separately.
Precautions & warnings: *General:* Due to the mechanisms of action, pioglitazone is active only in the presence of endogenous insulin. Therefore, combination of pioglitazone and glimepiride should not be used in patients with type 1 diabetes or for the treatment of diabetic ketoacidosis. *Hypoglycemia:* All sulfonylurea drugs are capable of producing severe hypoglycemia. Proper patient selection, dosage, and instructions are important to avoid hypoglycemic episodes. Elderly patients are particularly susceptible to hypoglycemic action of glucose lowering drugs. Debilitated or malnourished patients and those with adrenal, pituitary, renal, or hepatic insufficiency are particularly susceptible to the hypoglycemic action of glucose lowering drugs. *Loss of control of blood glucose:* When a patient stabilized on any antidiabetic regimen is exposed to stress such as fever, trauma, infection, or surgery, a temporary loss of glycemic control may occur. At such times, it may be necessary to withhold combination of pioglitazone and glimepiride and temporarily administer insulin. Combination of pioglitazone and glimepiride may be reinstituted after the acute episode is resolved. *Edema:* Combination of pioglitazone and glimepiride should be used with caution in patients with edema. Since thiazolidinediones, including pioglitazone can cause fluid retention, which can exacerbate or lead to congestive heart failure, combination of pioglitazone and glimepiride should be used with caution in patients at risk for heart failure. *Weight gain:* Dose-related weight gain was seen with pioglitazone alone and in combination with other hypoglycemic agents. The mechanism of weight gain is unclear but probably involves a combination of fluid retention and fat accumulation. *Hepatic Effects:* Liver enzymes should be checked prior to the initiation of therapy with combination of pioglitazone and glimepiride in all patients and periodically thereafter per the clinical judgment of the healthcare professional. Therapy with combination of pioglitazone and glimepiride should not be initiated in patients with increased baseline liver enzyme levels (ALT >2.5 x upper limit of normal). If at any time ALT levels increase to >3 x the upper limit of normal in patients on therapy with combination of pioglitazone and glimepiride, liver enzyme levels should be rechecked as soon as possible. If ALT levels remain >3 x the upper limit of normal, therapy with combination of pioglitazone and glimepiride should be discontinued. If any patient develops symptoms suggesting hepatic dysfunction, which may include unexplained nausea, vomiting, abdominal pain, fatigue, and anorexia, and/or dark urine, liver enzymes should be checked.
Pregnancy & lactation: This combination is not recommended during pregnancy & lactation, so, a suitable treatment schedule should be prescribed with insulin.
Dosage & admin: Selecting the starting dose of this combination should be based on the patient's current regimen of pioglitazone and/or sulfonylurea. Those patients who may be more sensitive to antihyperglycemic drugs should be monitored carefully during dose adjustment. It is recommended that a single dose of this combined product can be administered once daily with the first main meal.
Starting dose for patients currently on Glimepiride monotherapy:
Based on the usual starting dose of pioglitazone (15 mg or 30mg daily), this combined product may be initiated at 2mg/30mg or 4mg/30mg tablet strengths once daily, and adjusted after assessing adequacy of therapeutic response.
Starting dose for patients currently on Pioglitazone monotherapy:
Based on the usual starting doses of Glimepiride (1mg or 2mg once daily), and pioglitazone 15mg or 30mg, this combined product may be initiated at 2mg/30mg once daily, and adjusted after assessing adequacy of therapeutic response.
Starting dose for patients switching from combination therapy of glimepiride plus pioglitazone as separate tablets:
This combined product may be initiated with 2mg/30mg or 4mg/30mg tablet strengths based on the dose of glimepiride and pioglitazone already being taken. Patients who are not controlled with 15mg of pioglitazone in combination with glimepiride should be carefully monitored when switched to this combined product.
Starting dose for patients currently on a different sulfonylurea monotherapy or switching from combination therapy of pioglitazone plus a different sulfonylurea:
No exact dosage relationship exists between glimepiride and the other sulfonylurea agents. Therefore, based on the maximum starting dose of 2mg glimepiride, this combined product should be limited initially to a starting dose of 2mg/30mg once daily, & adjusted after assessing adequacy of therapeutic response.
Pediatric patients: **Safety and effectiveness of this combination in pediatric patients have not been established.**
Drug inter: See above under the text of glimepiride & pioglitazone given separately.

❖ **DIATAG Plus 2 Tab. ACI**
Glimepiride INN 2mg + Pioglitazone hydrochloride INN 30mg/tablet
30's pack: 390.00 IP

❖ **DIATAG Plus 4 Tab. ACI**
Glimepiride INN 4mg + Pioglitazone hydrochloride INN 30mg/tablet
30's pack: 450.00 IP

❖ **TOSIRIN 2 Tab. Square**
Glimepiride INN 2mg + Pioglitazone hydrochloride INN 30mg/tablet
15's pack: 195.00 MRP

❖ **TOSIRIN 4 Tab. Square**
Glimepiride INN 4mg + Pioglitazone hydrochloride INN 30mg/tablet
15's pack: 225.00 MRP

GLIMEPIRIDE + ROSIGLITAZONE[42]

GLIMEPIRIDE + ROSIGLITAZONE: Tablet
This is a combination of two antihyperglycemic agents, in which glimepiride is a member of second generation sulfonylurea and rosiglitazone maleate is a member of the thiazolidinedione group of other antidiabetics.
The combination preparations of glimepiride and rosiglitazone are available in two fixed presentations viz: i. Glimepiride 1mg + rosiglitazone 4mg; ii. Glimepiride 2mg + rosiglitazone 4mg
Mode of action: See above under the text of glimepiride & rosiglitazone given separately.
Ind: This combination is indicated as an adjunct to diet and exercise to improve glycemic control in patients with type 2 diabetes who are already treated with a combination of rosiglitazone and sulfonylurea as separate tablet or who are not adequately controlled on a sulfonylurea alone or for those patients who have initially responded to rosiglitazone alone and require additional glycemic control.
C/I: Known hypersensitivity to glimepiride or rosiglitazone or any of the components of combination. Diabetic ketoacidosis, with or without coma, this condition should be treated with insulin.
S/E: See above under the text of glimepiride & rosiglitazone given separately.
Precautions & warnings: See above under the text of glimepiride & pioglitazone combined product.
Pregnancy & lactation: This combination is not recommended during pregnancy & lactation, so, a suitable treatment schedule should be prescribed with insulin.
Dogage & admin: This combined preparation should be given once daily with the first meal of the day. The dosage of antidiabetic therapy with this combination should be individualized on the basis of effectiveness and tolerability. ***For patients inadequately controlled on sulfonylurea monotherapy or who have initially responded to rosiglitazone alone and require additional glycemic control:*** **The usual starting dose of glimepiride and rosiglitazone combination is 1mg/4mg or 2mg/4mg once daily. When switching from combination therapy of glimepiride and rosiglitazone as separate tablets, the usual starting dose is the dose of glimepiride and rosiglitazone already being taken. The maximum recommended daily dose of this combination is 4mg of glimepiride and 8mg of rosiglitazone. Sufficient time should be given to assess adequacy of therapeutic response. Fasting glucose should be used to determine the therapeutic response to this combination therapy.** ***For patients previously treated with sulfonylurea monotherapy switched to this combination:*** **It may take 2 weeks to see a reduction in blood glucose and 2 to 3 months to see the full effect of the rosiglitazone component. If additional glycemic control is needed, the dose of the glimepiride component may be increased. The dose of the rosiglitazone component should not exceed 8mg. As with other sulfonylurea-containing antidiabetic agents, no transition period is necessary when transferring patients to this combination therapy. Patients should be observed carefully (1 to 2 weeks) for hypoglycemia when being transferred from longer half-life sulfonylureas (e.g chlorpropamide) to this combination therapy due to potential overlapping of drug effect. For patients previously treated with thiazolidinedione monotherapy switched to this combination therapy, dose titration is recommended if patients are not adequately controlled after 1 to 2 weeks. If additional glycemic control is needed, the daily dose of this combination may be increased by increasing the glimepiride component in no more than 2mg increments at 1 to 2 weeks intervals up to the maximum recommended total daily dose of 4mg glimepiride/8mg rosiglitazone. If hypoglycemia occurs during up-titration of the dose or while maintained on therapy, a dosage reduction of the sulfonylurea component of this combination may be considered.**
Drug inter: See above under the text of glimepiride & rosiglitazone given separately.

❖ **GLYROS 1 Tab. Square**
Glimepiride 1mg + rosiglitazone 4mg/tablet
30's pack: 300.00 MRP

❖ **GLYROS 2 Tab. Square**
Glimepiride 2mg + rosiglitazone 4mg/tablet
30's pack: 330.00 MRP

❖ **ROGLIM 1 Tab. ACI**
Glimepiride USP 1mg + rosiglitazone 4mg/tablet
30's pack: 300.00 IP

❖ **ROGLIM 2 Tab. ACI**
Glimepiride USP 2mg + rosiglitazone 4mg/tablet
30's pack: 330.00 IP

❖ **SUGANA 1 Tab. Pacific**
Glimepiride 1mg + rosiglitazone 4mg/tablet
30's pack: 300.00 MRP

❖ **SUGANA 2 Tab. Pacific**
Glimepiride 2mg + rosiglitazone 4mg/tablet
30's pack: 360.00 MRP

GLIPIZIDE + METFORMIN[86]

GLIPIZIDE + METFORMIN: Tablet
This is a combination of two antihyperglycemic agents, in which glipizide is a sulfonylurea and metformin is a biguanide.
The combination preparations of glipizide and metformin are available in three fixed presentations, viz: i. Glipizide 2.5mg + Metformin hydrochloride 250mg, ii. Glipizide 2.5mg + Metformin hydrochloride 500mg, and iii. Glipizide 5mg + Metformin hydrochloride 500mg.

Mode of action: See above under the text of glipizide & metformin given separately.
Ind: This combination is indicated as initial therapy, as an adjunct to diet and exercise, to improve glycemic control in patients with type 2 diabetes whose hyperglycemia cannot be satisfactorily managed with diet and exercise alone. It is also indicated as second line therapy when diet, exercise and initial treatment with glipizide or metformin do not result in adequate glycemic control in patients with type 2 diabetes.
C/I: Severe hepatic or renal dysfunction; congestive heart failure requiring pharmacologic treatment; known hypersensitivity to glipizide or metformin hydrochloride; acute or chornic metabolic acidosis, including diabetic acidosis, with or without coma.
S/E: The most common side effects of this combination are normally minor ones such as diarrhea, nausea, vomiting, dizziness, headache and abdominal pain which usually occur during the first few weeks of therapy.
Precautions: In the events of severe trauma, injuries, infectious diseases, severe renal & hepatic impairment, myocardial infarction, coma, high fever & surgery it may be necessary to give insulin to maintain adequate metabolic control. Patients receiving continuous therapy should have an annual estimation of vitamin B12 level.
Pregnancy & lactation: This combination is not recommended during pregnancy & lactation, so, a suitable treatment schedule should be prescribed with insulin.
Dosage & admin: Initial therapy: For patients with type 2 diabetes whose hyperglycemia can not be satisfactorily managed with diet and exercise alone: the recommended starting dose of combination is 2.5mg/250mg once daily with meal. In clinical trials of this combination as initial therapy, there was no experience with total daily doses greater than 10mg/2000mg per day. Second line therapy: For patients not adequately controlled on either glipizide or metformin alone, the recommended starting dose of this combination is 2.5mg/500mg or 5mg/500mg twice daily with the morning and evening meals. The daily dose should be titrated in increments of no more than 5mg/500mg up to the minimum effective dose to achieve adequate control of blood glucose or to a maximum dose of 20mg/2000mg per day.
Drug inter: The hypoglycemic action of glipizide component may be potentiated by aspirin & phenylbutazone, sulfonamides, chloramphenicol, coumarins, probenecid, monoamino oxidase inhibitors, beta-adrenergic blocking agents, H2 antagonists and oral antifungal agents like miconazole and fluconazole. Metformin may enhance the effects of anticoagulants, thiazides, corticosteroids, thyroid hormones, estrogens, oral contraceptives,

phenytoin, nicotinic acid, sympathomimetics, calcium channel blockers and isoniazid tend to produce hyperglycemia and may lead to loss of glycemic control.

❖ **GLYMIN Plus Tab. Healthcare**
Glipizide 2.5mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 97.50 MRP
❖ **MEFOGLIP 250 Tab. Incepta**
Glipizide 2.5mg + metformin hydrochloride 250mg/tablet (film-coated)
50's pack: 95.00 IP
❖ **MEFOGLIP 500 Tab. Incepta**
Glipizide 2.5mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 84.00 IP
❖ **MEFOGLIP DS Tab. Incepta**
Glipizide 5mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 111.00 MRP
❖ **METAZID Tab. Popular**
Glipizide 2.5mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 75.00 IP
❖ **METGLIP Tab. Pacific**
Glipizide 2.5mg + metformin hydrochloride 250mg/tablet (film-coated)
50's pack: 95.00 MRP
❖ **METGLIP Plus Tab. Pacific**
Glipizide 2.5mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 89.40 MRP
❖ **METGLIP DS Tab. Pacific**
Glipizide 5mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 120.00 MRP

PIOGLITAZONE + METFORMIN[42]

PIOGLITAZONE + METFORMIN: Tablet
This is a combination of two antihyperglycemic agents, in which metformin is a biguanide and pioglitazone is a member of the thiazolidinedione group of other antidiabetics.
The combination preparations of pioglitazone and metformin are available as tablet in two fixed presentations, viz: i. Pioglitazone 15mg + Metformin hydrochloride BP 500mg; ii. Pioglitazone 15mg + Metformin hydrochloride BP 850mg.

Mode of action: See above under the text of pioglitazone and metformin given separately.
Ind: This combination is indicated as an adjunct to diet and exercise to improve glycemic control in patients with type 2 diabetes- i. who are already treated with a combination of pioglitazone and metformin as separate tablets, or ii. whose diabetes is not adequately controlled with metformin alone, or iii. for those patients who have initially responded to pioglitazone alone and require additional glycemic control.
C/I: Combination of pioglitazone and metformin is contraindicated in patients with: i. Renal disease or renal dysfunction [e.g, as suggested by serum creatinine levels >1.5mg/dl (males), > 1.4mg/dl (females), or abnormal creatinine clearance] which may also result from conditions such as cardiovascular collapse (shock), acute myocardial infarction, and septicemia; ii. Known hypersensitivity to pioglitazone, metformin or any other component of the combination; iii. Acute or chronic metabolic acidosis, including diabetic ketoacidosis, with or without coma. Diabetic ketoacidosis should be treated with insulin. Combination of pioglitazone and metformin should be temoprarily discontinued in patients undergoing radiologic studies involving intravascular administration of iodinated contrast materials, becaues use of such products may result in acute alteration of renal function.
S/E: The most common adverse events were upper respiratory tract infection, diarrhea, combined edema/peripheral edema and headache, respectively. Most clinical adverse events were similar between groups treated with pioglitazone in combination with metformin and those treated with pioglitazone monotherapy.
Precautions: ***General:*** Pioglitazone hydrochloride exerts its antihyperglycemic effect only in the presence of insulin. Therefore, combination of pioglitazone and metformin should not be used in patients with type 1 diabetes or for the treatment of diabetic ketoacidosis. Metformin is known to be substantially excreted by the kidney and the risk of metformin accumulation and lactic acidosis increases with the degree of impairment of renal function. Thus, patients with serum creatinine levels above the upper limit of normal for their age should not receive combination of pioglitazone and metformin.
Cardiovascular: Therapy with pioglitazone, cases of congestive heart failure has been reported in patients both with and without previously known heart disease. Combination of pioglitazone and metformin should be used with caution in patients with edema. Since thiazolidinediones, including pioglitazone can cause fluid retention, which can exacerbate or lead to congestive heart failure. So, combination of pioglitazone and metformin should be used with caution in patients at risk for heart failure.
Hepatic effects: Serum ALT (alanine aminotransferase) levels should be evaluated prior to the initiation of therapy with combination of pioglitazone and metformin in all patients and periodically thereafter do the clinical judgment of the health care professional. Other liver function tests should also be done for patients if symptoms suggestive of hepatic dysfunction, e.g nausea, vomiting, abdominal pain, fatigue, anorexia, or dark urine. If jaundice is observed, drug therapy should be discontinued.
Pregnancy & lactation: This combination is not recommended during pregnancy & lactation, so, a suitable treatment schedule should be prescribed with insulin.

Dosage & admin: Selecting the starting dose of this combination should be based on the patient's current regimen of pioglitazone and/or metformin. This combination should be given in divided daily doses with.meals to reduce the gastrointestinal side effects associated with metformin.
Starting dose for patients inadequately controlled on metformin monotherapy: **Based on the usual starting dose of pioglitazone (15-30mg daily), this combination may be initiated at either the 15mg/500mg or 15mg/850mg tablet once or twice daily, and gradually titrated after assessing adequacy of therapeutic response.**
Starting dose for patients who initially responded to pioglitazone monotherapy and require additional glycemic control: **Based on the usual starting doses of metformin (500mg twice daily or 850mg daily), this combination may be initiated at either the 15mg/500mg tablet twice daily or 15mg/850mg tablet once daily, and gradually titrated after assessing adequacy of therapeutic response.**
Starting dose for patients switching from combination therapy of pioglitazone plus metformin as separate tablets: **Either combination 15mg/500mg or combination 15mg/850mg based on the dosage of pioglitazone and metformin already being taken.**
Maximum recommended dose: **The maximum recommended dose for pioglitazone is 45mg daily. The maximum recommended daily dose for metformin is 2550mg in adults.**

❖ **ACTOMEG 500 Tab. UniMed Pharma**
Pioglitazone 15mg + metformin hydrochloride 500mg/tablet (film-coated)
20's pack: 180.00 MRP
❖ **ACTOMEG 850 Tab. UniMed Pharma**
Pioglitazone 15mg + metformin hydrochloride 850mg/tablet (film-coated)
20's pack: 200.00 MRP
❖ **COMPIMET 500 Tab. Incepta**
Pioglitazone 15mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 270.00 MRP
❖ **COMPIMET 850 Tab. Incepta**
Pioglitazone 15mg + metformin hydrochloride 850mg/tablet (film-coated)
30's pack: 300.00 MRP
❖ **GLITAMIN 500 Tab. White Horse**
Pioglitazone 15mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 270.00 MRP
❖ **GLITAMIN 850 Tab. White Horse**
Pioglitazone 15mg + metformin hydrochloride 850mg/tablet (film-coated)
30's pack: 300.00 MRP
❖ **METOPA Tab. SK+F**
Pioglitazone 15mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 270.00 MRP
❖ **PIOL-M 500 Tab. Opsonin**
Pioglitazone 15mg + metformin hydrochloride 500mg/tablet (film-coated)
20's pack: 180.00 MRP
❖ **PIOL-M 850 Tab. Opsonin**
Pioglitazone 15mg + metformin hydrochloride 850mg/tablet (film-coated)
20's pack: 200.00 MRP
❖ **PIOMET 500 Tab. Silva**
Pioglitazone 15mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 180.00 MRP

❖ **PIOMET 850 Tab. Silva**
Pioglitazone 15mg + metformin hydrochloride 850mg/tablet (film-coated)
30's pack: 210.00 MRP

❖ **PIOMIN 500 Tab. Pacific**
Pioglitazone 15mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 300.00 MRP

❖ **PIOMIN 850 Tab. Pacific**
Pioglitazone 15mg + metformin hydrochloride 850mg/tablet (film-coated)
30's pack: 345.00 MRP

❖ **POLITOR 500 Tab. ACI**
Pioglitazone 15mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 270.00 IP

❖ **POLITOR 850 Tab. ACI**
Pioglitazone 15mg + metformin hydrochloride 850mg/tablet (film-coated)
30's pack: 300.00 IP

❖ **REZULIN 500 Tab. Square**
Pioglitazone 15mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 270.00 MRP

❖ **REZULIN 850 Tab. Square**
Pioglitazone 15mg + metformin hydrochloride 850mg/tablet (film-coated)
30's pack: 300.00 MRP

ROSIGLITAZONE + METFORMIN[42]

ROSIGLITAZONE + METFORMIN: Tablet
This is a combination of two antihyperglycemic agents, in which metformin is a biguanide and rosiglitazone is a member of the thiazolidinedione group of other antidiabetics. The combination preparations of rosiglitazone and metformin are available as tablet in two fixed presentations, viz: i. Rosiglitazone 1mg + Metformin hydrochloride BP 500mg; ii. Rosiglitazone 2mg + Metformin hydrochloride BP 500mg.

Mode of action: See above under the text of rosiglitazone and metformin given separately.

Ind: This combination is indicated as an adjunct to diet and exercise to improve glycemic control in patients with type 2 diabetes- i. who are already treated with a combination of rosiglitazone and metformin as separate tablets, or ii. whose diabetes is not adequately controlled with metformin alone, or iii. for those patients who have initially responded to rosiglitazone alone and require additional glycemic control.

C/I; S/E; Precautions: See above under the text of pioglitazone and metformin combined preparations.

Pregnancy & lactation: This combination is not recommended during pregnancy & lactation, so, a suitable treatment schedule should be prescribed with insulin.

Dosage & admin: General: The dosage of antidiabetic therapy with this combination should be individualized on the basis of the effectiveness and tolerability of the individual component of the product. All patients should start the rosiglitazone component of the combination at the lowest recommended dose. Further increases in the dose of rosiglitazone should be accompanied by careful monitoring for adverse events related to fluid retention. This combined preparation is generally given in divided doses with meals, with gradual dose escalation. This reduces gastrointestinal side effects (largely due to metformin) and permits determination of the minimum effective dose for the individual patient.
Combination therapy in drug-naïve patients: The recommended starting dose of this combination is 2mg/500mg administered once or twice daily. For patients with HbA 1c>11 % or FPG>270mg/dl, a starting dose of 2mg/500mg twice daily may be considered. The dose of this combination may be increased in increments of 2mg/500mg per day to a maximum of 8mg/2,000mg per day given in divided doses if patients are not adequately controlled after 4 weeks.
Combination therapy in patients inadequately controlled with rosiglitazone or metformin monotherapy: The selection of the dose of this combination in patients treated with rosiglitazone and/or metformin therapy should be based on the patient's current doses of rosiglitazone and/or metformin. After an increase in metformin dosage, dose titration is recommended if patients are not adequately controlled after 1 to 2 weeks. After an increase in rosiglitazone dosage, dose titration is recommended if patients are not adequately controlled after 8 to 12 weeks.
For patients inadequately controlled on metformin monotherapy, the usual starting dose of this combination is 4mg rosiglitazone (total daily dose) plus the dose of metformin already being taken.
For patients inadequately controlled on rosiglitazone monotherapy, the usual starting dose of this combination is 1000mg metformin (total daily dose) plus the dose of rosiglitazone already being taken.
When switching from combination therapy of rosiglitazone plus metformin as separate tablets, the usual starting dose of this combination is the dose of rosiglitazone & metformin already being taken.

❖ **AROMET-1 Tab. Aristopharma**
Rosiglitazone 1mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 120.00 MRP

❖ **AROMET-2 Tab. Aristopharma**
Rosiglitazone 2mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 180.00 MRP

❖ **METARIN Plus Tab. Popular**
Rosiglitazone 1mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 120.00 MRP

❖ **METIGLIT 1 Tab. General**
Rosiglitazone 1mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 120.00 MRP

❖ **METIGLIT 2 Tab. General**
Rosiglitazone 2mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 180.00 MRP

❖ **ORAMET-PLUS Tab. Drug Inter.**
Rosiglitazone 2mg + metformin hydrochloride 500mg/tablet (film-coated)
50's pack: 350.00 MRP

❖ **ROGMET 2 Tab. Pacific**
Rosiglitazone 2mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 180.00 MRP

❖ **ROSIMET-1 Tab. Delta**
Rosiglitazone 1mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 120.01 MRP

❖ **ROSIMET-2 Tab. Delta**
Rosiglitazone 2mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 180.00 MRP

❖ **ROSIMIN 1 Tab. White Horse**
Rosiglitazone 1mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 120.00 MRP

❖ **ROSIMIN 2 Tab. White Horse**
Rosiglitazone 2mg + metformin hydrochloride 500mg/tablet (film-coated)
50's pack: 350.00 MRP

❖ **ROTAMIN 2 Tab. ACI**
Rosiglitazone 2mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 180.00 IP

❖ **ROTAMIN 2 DS Tab. ACI**
Rosiglitazone 2mg + metformin hydrochloride 1000mg/tablet (film-coated)
32's pack: 240.00 IP

❖ **ROTAMIN 4 Tab. ACI**
Rosiglitazone 4mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 255.00 IP

❖ **ROTAMIN 4 DS Tab. ACI**
Rosiglitazone 4mg + metformin hydrochloride 1000mg/tablet (film-coated)
32's pack: 320.00 IP

❖ **SENSIMET 1 Tab. Square**
Rosiglitazone 1mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 120.00 MRP

❖ **SENSIMET 1 DS Tab. Square**
Rosiglitazone 1mg + metformin hydrochloride 1000mg/tablet (film-coated)
30's pack: 225.00 MRP

❖ **SENSIMET 2 Tab. Square**
Rosiglitazone 2mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 180.00 MRP

❖ **SENSIMET 2 DS Tab. Square**
Rosiglitazone 4mg + metformin hydrochloride 1000mg/tablet (film-coated)
30's pack: 300.00 MRP

❖ **SENSIMET 4 Tab. Square**
Rosiglitazone 4mg + metformin hydrochloride 500mg/tablet (film-coated)
30's pack: 255.00 MRP

Drugs for Diabetic Peripheral Neuropathy

EPALRESTAT[65]

EPALRESTAT: Tablet
Epalrestat is an aldose reductase inhibitor (ARI).

It is available as epalrestat INN 50mg film coated tablet.

Mode of action: In diabetes mellitus, 'nerve fiber degeneration' and development of 'peripheral neuropathy' starts by activating 'aldose reductase pathway'. This pathway is activated by intracellular hyperglycemia, resulting in increased sorbitol formation in presence of the enzyme aldose reductase that causes a hyperosmotic affects (accumulation of water and swelling) on the nerves. This, in turn results in decreased myo-inositol formation, which breaks the enzyme Na^+/K^+- ATPase and ultimately causes decreased cellular activity (propagation of impulses and maintenance of nerve conduction velocity) of Na^+/K^+- ATPase. Aldose reductase inhibitor (ARI) , epalrestat inhibits the enzyme aldose reductase thus inhibits the process of formation of sorbitol and nerve damage. Epalrestat, thereby improves subjective symptoms and nerve dysfunction in patients with diabetic peripheral neuropathy.

Ind: Epalrestat is indicated for the improvement of subjective symptoms (numbness and pain), abnormality of vibration sense and abnormal change in heartbeat associated with diabetic peripheral neuropathy (when high glycohemoglobin value is noted).

C/I: Known hypersensitivity to epalrestat.

A/R: Major adverse reactions are hepatic function abnormalities and thrombocytopenia. In cases of hepatic abnormalities drug should be discontinued immediately and appropriate measures should be taken. Other reactions may be malaise, headache, abdominal pain, nausea, hypersensitivity reaction etc.

Precautions: The administration of epalrestat should be considered to patients showing high glycohemoglobin values even after fundamental therapies for diabetes mellitus, such as- diet therapy, exercise therapy and treatment with an oral hypoglycemic agent, insulin etc. The efficacy of this product has not been established in patients with diabetic peripheral neuropathy with irreversible organic changes. The patient should be carefully monitored during the administration of this product. When the efficacy of this product is not observed even after 12 weeks of administration, other appropriate therapies should be taken.

Pregnancy & lactation: The safety of epalrestat in pregnant women has not been established. The drug may be used in pregnant women or in women who may possibly be pregnant only if expected therapeutic benefits outweigh the possible risks associated with the treatment. Breast-feeding should be avoided during administration of epalrestat.

Dosage & admin: The usual adult dose is 50mg 3 times daily before each meal. The dosage may be adjusted according to the patient's age and symptoms.

❖ **ALDORIN Tab. SK+F**
Epalrestat INN 50mg/tablet (film-coated).
24's pack: 192.00 MRP

2. THYROID & ANTITHYROID DRUGS[21]

2.1 Thyroid drugs/hormones
2.2 Antithyroid drugs
2.3 Drugs for iodine deficiency goitre

Thyroid drugs & hormones

These include:

1. **Thyroxine &**
2. **Liothyronine.**

THYROXINE/LEVOTHYROXINE[21,26]

THYROXINE/ LEVOTHYROXINE SODIUM: Tablet

Thyroxine sodium (levothyroxine sodium) is a synthetic thyroid hormone, used in the thyroxine replacement therapy. Thyroxine (T4) is a naturally occurring hormone produced by the thyroid gland & converted to the more active hormone tri-iodothyronine (T3) in peripheral tissues. The thyroid hormones are required for normal growth and development particularly of the nervous system. Thyroxine sodium (levothyroxine sodium) after ingestion is incompletely and variably absorbed from the gastrointestinal tract. The half-life of T4 in normal plasma is 6-7 days, while that of T3 is about 1 day. The plasma half-lives of T4 and T3 are decreased in hyperthyroidism and increased in hypothyroidism. Thyroxine sodium (Levothyroxine sodium) is largely bound to plasma protein, mainly to thyroxine binding globulin (TBG) but also to prealbumin and less avidly to albumin. The unbound or free fraction, although only about 0.03% of total thyroxine sodium (levothyroxine sodium), is of course the fraction available for peripheral action and conversion to the more active metabolite tri-iodothyronine (T3).

Ind: 1. Congenital hypothyroidism including cretinism 2. Acquired hypothyroidism- primary thyroid failure, autoimmune, post surgery, post radioiodine therapy, drug therapy, myxoedema 3. Hypothyroidism secondary to pituitary/hypothalamic diseases 4. Suppression of goiter 5. In conjunction with antithyroid drugs in treatment of thyrotoxicosis.

C/I: Thyroxine sodium (levothyroxine sodium) is contraindicated in patients with thyrotoxicosis, angina, cardiovascular disorders; hypersensitivity to thyroid hormone. It is also contraindicated in the patients with uncorrected adrenal insufficiency.

S/E: Side-effects may include anginal pain, arrhythmias, palpitation, skeletal muscle cramps, tachycardia, diarrhoea, vomiting, tremors, restlessness, excitability, insomnia, headache, flushing, sweating, fever, heat intolerance, excessive loss of weight and muscular weakness.

Precautions: Thyroxine sodium (levothyroxine sodium) should be used with caution in patients with cardiovascular disorders, including angina, coronary artery disease, and hypertension, and in the elderly who have a greater likelihood of occult cardiac disease. Use of thyroxine sodium (levothyroxine sodium) in patients with concomitant diabetes mellitus, diabetes insipidus or adrenal cortical insufficiency may aggravate the intensity of their symptoms. Appropriate adjustments of the various therapeutic measures directed at these concomitant endocrine diseases may therefore be required.

Pregnancy & lactation: Women on maintenance levothyroxine for hypothyroidism who become pregnant should not need to alter the dose because of the pregnancy so long as they are confirmed to be euthyroid initially, by normal TSH levels. T4 dose not cross the placental barrier in the second and third trimester, although it may do so in early pregnancy. The amount of T4 in breast milk is variable but not sufficient to affect the normal infant.

Dosage & Admin: In adult patients without cardiac problems: initially adult oral dose is 50-100mcg daily, preferably in the fasting state, adjusted in steps of 50mcg every 3-4 weeks until normal metabolism maintained. The patient's well being and thyroid function tests are reassessed after 6-8 weeks. The daily dosage may then require further minor adjustment so as to ensure clinical and biochemial euthyroidism. It is important to correct any steroid deficiency first before initiating thyroxine replacement therapy.
In the elderly and in patients with cardiac problems: Initially 25mcg daily or 50mcg on alternate days adjusted in steps of 25mcg every 4 weeks until euthyroid.
Maintenance therapy: The usual maintenance dose to relieve hypothyro-idism is 100-200mcg daily, which can be administered as a single dose.
Neonates and children: **Replacement therapy should be started as soon as the diagnosis is made to prevent the mental and physical retardation that would otherwise occur. The initial diagnosis and cause can be reappraised when the infant is 1 year old.**
Dosage: At age 0-6 mon, 8-10mcg/kg/day; 6-12mon, 6-8mcg/kg/day; 1-5 yrs; 5-6mcg/kg/day; 6-12 yrs; 4-5mcg; 12 years and over 2mcg/kg/day.

Over dosage: A massive acute overdose is fortunately uncommon, but potentially lethal. If the patient presents soon after ingestion of an acute overdose then gastric aspiration and lavage are indicated. Other treatment includes propranolol and supportive measures to maintain the circulation.

Drug inter: Levothyroxine, when given to hypothyroid patients who are already on anticoagulants, will potentiate the effect of warfarin and other dicoumarin anticoagulants necessitating a marked reduction (50%) in warfarin dosage to prevent excessive prolongation of the prothrombin time and partial thrombo-plastin time.
Cholestyramine may reduce absorption of levothyroxine. Phenylbutazone, carbamazepine and phenytoin may cause a false low total serum T4 levels. Serum T3 and TSH levels rather than T4 should be used to monitor the patient's thyroid status.

❖ **ELTROXIN Tab. GlaxoSmithKline**
Levothyroxine sodium 50mcg/tablet
100's pack: 255.60 MRP
❖ **EUTHYCIN Tab. Incepta**
Levothyroxine sodium 50mcg/tablet

100's pack: 120.00 MRP
❖ **JAROXIN-50 Tab. Jayson**
Levothyroxine sodium 50mcg/tablet
100's pack: 120.00 MRP
❖ **THYRONOR Tab. Nuvista**
Thyroxine sodium 50mcg/tablet
30's pack: 60.00 MRP
100's pack: 200.00 MRP
❖ **THYROX Tab. Renata**
Thyroxine sodium 50mcg/tablet
90's pack: 108.00 MRP

Antithyroid drugs

These include:

1. **Carbimazole**
2. **Iodine & iodide**
3. **Propyl thiouracil**
4. **Propranolol**

CARBIMAZOLE[21,33]

CARBIMAZOLE: Tablet
Carbimazole is available as carbimazole BP 5mg/tablet.
Ind: Thyrotoxicosis.
C/I: Tracheal obstruction, breast feeding.
S/E: Nausea, headache , rashes, arthralgia, rarely alopecia, agranulocytosis. Advice patients to inform you of sore throats, mouth ulcer; if so, dicontinue drug.
Cautions: Pregnancy.
Pregnancy & lactation: Carbimazole is contraindicated in breast feeding mother. In pregnant woman it can only be given if it is clearly needed. but caution should be exercised.
Dosage & admin: Adult: Moderate cases, 30 mg; severe cases, 40-60mg. All daily in divided doses for 4-6 weeks; when the evidence of hyperthyroidism has disappeared, reduce to min. daily dose of 10-15mg to maintain control (treatment is usually maintained for 18 months).
Child: 15 mg daily in divided doses.

❖ **CARBIZOL Tab. Square**
Carbimazole BP 5mg/tablet.
5mg x 60's pack: 180.00 MRP

Drugs for Iodine deficiency goitre

LUGOLS IODINE SOLN.[21]

LUGOLS IODINE: Solution
Aqueous iodine solution (iodine 5%, potassium iodide 10%, made upto 100 parts in purified water), total iodine 130mg/ml.
Ind: Pre-operative treatment of thyrotoxicosis
S/E: Hypersensitivity like reactions, including headache, lachrymation, conjunctivitis, pain in salivary glands, laryngitis, bronchitis, rashes; on prolonged treatment depression, insomnia, impotence, myxoedema; goitre in infants of mothers taking iodides.
Cautions: Pregnancy, children
Dose: 0.1-0.3 ml 3 times daily (well diluted with milk or water) for about 2 weeks.
Prepa: May be available.

POTASSIUM IODIDE[21]

POTASSIUM IODIDE: Tablet
Potassium iodide 60mg/tablet
Ind: Preoperative treatment of thyrotoxicosis.
S/E; Cautions: Same as Lugol's iodine solution
Dose: 30-60mg daily for about 2 weeks.
Prepn: May be available.

3. CORTICOSTEROID DRUGS/HORMONES[21]

Adrenal steroids are chiefly used in medicine for the following purposes:

1. **Replacement therapy:** In adrenocortical insufficiency, Addison's disease.
2. **Glucocorticoid therapy:** Mainly useful for its anti-inflammatory and immunosuppressive effects.

BETAMETHASONE[21,33]

BETAMETHASONE: Tabet/Injection
Ind: Severe asthma, hayfever, allergic skin conditions, rheumatoid arthritis, collagen diseases, shock and adrenal crisis.
C/I: Tuberculosis, local or systemic infections unless controlled by chemotheraphy, herpes simplex keratitis, active peptic ulcer, psychoses, osteoporosis, renal dysfunctions, diabetes mellitus, glaucoma, hypertension, cushing's syndrome, myasthenia gravis, thromboembolic disorders, congestive heart failure, diverticulitis, fresh intestinal anastomoses and pregnancy.
S/E: Hypertension, sodium retention, potassium loss, muscle weakness; diabetes; osteoporosis (particularly in elderly); mental disturbances; euphoria is frequently observed; peptic ulceration which may result in haemorrhage or perforation; suppression of growth (in children); spread of infections; adrenal suppression; menstrual irregularities. Overdoses may cause cushing's syndrome , with moon face striae, and acne.
Cautions: Systemic corticosteroid therapy should be avoided in patients with psoriasis , as subsequent reduction commonly followed by a severe and persistent exacerbation; growth and development in infants & children on prolonged therapy should be observed; withdrawal of corticosteroid therapy should be gradually tapered to avoid symptoms of acute adrenal insufficiency.
Dosage & admin: By mouth: Adults:
1. *Rheumatoid arthritis & other rheumatic Conditions:* Initially 1-2.5mg daily; maintenance 0.5-1.5mg.
2. *Acute rheumatic fever:* 6-8mg daily; maintenance minimum effective dose.
3. *Asthmatic attack:* initially 3.5-4.5mg, maintenance, minimum effective dose; chronic refractory asthma 3.5mg daily, maintenance 0.5-2.5mg daily.
4. *Allergic dermatosis:* 2.5-4.5mg daily.
5. *Inflammatory ocular conditions:* 2.5-4.5mg daily; maintenance minimum effective dose.
Children: Under 1 year, not recommended; 1-7 years, 1/4 to 1/2 adult dose; 7-12 years 1/2 to 3/4 adult dose.
By injection: (specially in shock, adrenal crisis & acute conditions).
Adults: 4-20mg iv. repeated 3 or 4 times daily if required.
Children: Upto 1 year 1mg; 1-5 years, 2mg; 6-12 years 4mg. All by i.v. injection.

❖ **BETNELAN Tab. GlaxoSmithKline**
Betamethasone 0.5mg/tablet
500's pack: 360.00 MRP

DEXAMETHASONE[21,33]

DEXAMETHASONE: Tablet/Injection
Ind: Severe asthma, hayfever, allergic skin conditions, rheumatoid arthritis, collagen diseases, shock and adrenal crisis. Cerebral oedema.
C/I; S/E; Cautions: See under betamethasone (above).
Dosage & admin:
By mouth: Adult, 1.5-3 mg daily in divided doses, reducing by 0.25 or 0.5mg every 3 or 4 days to maintenance 0.5 -1.5mg. daily.
Cerebral oedema, initially 4-8 mg daily then 10-20mg daily.
Children, under 1 year, not recommended; 1-7 yrs 1/4 to 1/2 adult dose; 7-12 years. 1/2 to 3/4 adult dose, or 0.010-0.04mg/kg. body-wt.
By Injection: Adult - acute condition, such as shock, severe allergic reactions, fuliminating infections, hepatic coma and cerebral oedema, 8-40mg by slow i.v injection or infuction.
Intra- articular, 2-4mg.
Children- (above acute conditions) 0.25-0.5mg/kg body-wt. daily by slow i.v injection or infusion.

❖ **ALSONE Tab. Alco Pharma**
Dexamethasone 0.5mg/tablet
200's pack: 80.00 MRP
❖ **AMASON Tab. Ambee**
Dexamethasone 0.5mg/tablet
100's pack: 46.00 MRP
❖ **D-CORT Tab. Globe**
Dexamethasone 0.5mg/tablet
100's pack: 38.00 MRP
❖ **D-CORT Inj. Globe**
Dexamethasone sodium phosphate 5mg/1ml ampoule: injection

10 amps pack: 130.00 MRP

❖ **DECAFOS Inj. Techno Drugs**
Dexamethasone sodium phosphate 5mg/1ml ampoule: injection
10 amps pack: 90.00 MRP

❖ **DECASON Tab. Opsonin**
Dexamethasone 0.5mg/tablet
200's pack: 100.00 MRP

❖ **DECASON Inj. Opsonin**
Dexamethasone sodium phosphate 5mg/1ml ampoule: injection
25 amps pack: 375.00 MRP

❖ **DESON Tab. Zenith**
Dexamethasone 0.5mg/tablet
100's pack: 125.00 MRP

❖ **DEXA Inj. Renata**
Dexamethasone 5mg/1ml ampoule: injection.
10 amps pack: 150.00 MRP

❖ **DEXAM Tab. Medimet**
Dexamethasone 0.5mg/tablet.
100's pack: 50.00 MRP

❖ **DEXAM Inj. Medimet**
Dexamethasone 5mg/1ml ampoule: injection.
10 amps pack: 128.80 MRP

❖ **DEXAMET Tab. Rephco**
Dexamethasone 0.5mg/tablet.
100's pack: 45.00 MRP

❖ **DEXAMET Inj. Rephco**
Dexamethasone sodium phosphate 5mg/1ml ampoule: injection.
10 amps pack: 100.00 MRP

❖ **DEXAMIN Tab. Jayson**
Dexamethasone 0.5mg/tablet.
100's pack: 42.00 IP

❖ **DEXAMIN Inj. Jayson**
Dexamethasone 5mg/1ml ampoule: injection
10 amps pack: 120.00 IP

❖ **DEXAN Tab. Chemist**
Dexamethasone 0.5 mg/tablet.
250's pack. 105.00 MRP

❖ **DEXAN Inj. Chemist**
Dexamethasone 5mg/1ml ampoule: injection
10 amps pack: 133.50 MRP

❖ **DEXATAB Tab. Renata**
Dexamethasone 0.5 mg/tablet.
250's pack. 150.00 MRP

❖ **DEXON Inj. Ibn Sina**
Dexamethasone 5mg/1ml ampoule: injection.
10 amps pack: 150.00 MRP

❖ **DEXTASON Tab. Ziska**
Dexamethasone 0.5 mg/tablet.
100's pack. 38.00 MRP

❖ **DEXTASON Inj. Ziska**
Dexamethasone 5mg/1ml ampoule: injection.
10 amps pack: 90.00 MRP

❖ **DEXASONE Tab. Pharmadesh**
Dexamethasone 0.5mg/tablet.
100's pack. 45.00 MRP

❖ **G-DEXAMETHASONE Inj. Gonoshas.**
Dexamethasone 5mg/1ml ampoule: injection
10 amps pack: 98.60 MRP

❖ **GLUDEX Tab. Chemico**
Dexamethasone 0.5mg/tablet.
100's pack. 50.00 MRP

❖ **MERADEXON Tab. Gaco**
Dexamethasone 0.5mg/tablet.
100's pack. 50.35 MRP

❖ **MERADEXON Inj. Gaco**
Dexamethasone 5mg/1ml ampoule: injection
1 ampoule pack: 9.81 MRP

❖ **ORADEXON Tab. Nuvista**
Dexamethasone 0.5mg/tablet.
500's pack: 445.00 MRP

❖ **ORADEXON Inj. Nuvista**
Dexamethasone 5mg/1ml ampoule: injection
10 amps pack: 220.00 MRP

❖ **SONEXA Inj. Aristopharma**
Dexamethasone 5mg/1ml ampoule: injection
10 amps pack: 130.00 MRP

❖ **STERON Tab. Acme**
Dexamethasone 0.5mg/tablet.
100's pack: 45.00 MRP

HYDROCORTISONE[21,33]

HYDROCORTISONE: Injection
Ind: Medical emergencies amenable to intensive corticosteroid therapy e.g. status asthmaticus; acute adrenal crisis; cardiogenic haemorrhagic anaphylactic or septic shock; shock due to burn; overwhelming infections (with chemotherapy); Ulcerative colitis.
C/I; S/E; Cautions: See under Betamethasone (above).
Dosage & admin: Adult: Shock, 100-500mg i.v repeated as necessary every 2-6 hours; Status asthmaticus, 500 mg. i.v. stat, may be repeated 4-6 hours later or followed by an infusion of 500 mg. every 4 hours; Acute adrenal crisis, 250 mg. i.v. then approximately 250mg. every 12 hours interval by i.v. infusion; Ulcerative colitis, 100mg. dissolved in 120 ml saline and administered as rectal drip. Child: Usual doses are 6-10mg/kg body wt. but 50 mg/kg body-wt. may be required if life threatening states. The dose should not fall below 25mg daily.

❖ **ANACORT Inj. Techno Drugs**
Hydrocortisone sodium succinate 100mg/2ml vial: injection
100mg (2ml) vial: 45.00 MRP

❖ **CORTAID Inj. Novo Healthcare**
Hydrocortisone sodium succinate 100mg/2ml vial: injection
100mg (2inl) vial: 50.00 MRP

❖ **COTSON Inj. Opsonin**
Hydrocortisone sodium succinate 100mg/2ml vial: injection
100mg (2ml) vial: 50.00 MRP

❖ **G-HYDROCORTISONE Inj. Gonoshasthya**
Hydrocortisone sodium succinate 100mg/2ml ampoule: injection
100mg (2ml) amp x 5's pack: 200.00 MRP

❖ **HISON Inj. ACI**
Hydrocortisone sodium succinate 100mg/2ml vial: injection
100mg (2ml) vial: 60.00 MRP

❖ **HYDROCORTISONE-Rotex Inj. Rotex Medica/City Overseas**
Hydrocortisone sodium succinate 100mg/2ml vial: injection.
2ml vial: 56.00 TP

❖ **INTASONE Inj. Incepta**
Hydrocortisone sodium succinate 100mg/2ml vial: injection
100mg (2ml) vial: 50.00 MRP

PREDNISOLONE[21,33,40]

PREDNISOLONE: Tablet/Injection.
Prednisolone is a synthetic glucocorticoid. It has 4 times the anti-inflammatory potency and 0.8 times the salt-retaining potency of the natural adrenocortical hormone, hydrocortisone. It is available as prednisolone USP 5mg normal & micronised tablet. Micronised tablet is easily absorbed from the gastro-intestinal tract. due to its special property.
Ind: Bronchial asthma, allergic disorders, nephrotic syndrome, rheumatoid arthritis, rheumatic fever, allergic and inflammatory skin diseases; shock, pulm. oedema, cerebral oedema, status asthmaticus (as parenteral preparation).
C/I; S/E; Cautions: See under betamethasone (above)
Dosage & admin: *By mouth:* Adult, 10-20mg daily in divided (2-3) doses reducing by 2.5 or 5mg every 3 or 4 days to maintenance 5-15mg daily.
Child, under 1 year, not recommended; 1-7 yrs. 1/4 to half adult dose; 7-12years 1/2 to 3/4 adult dose.
***By injection:* By i.v or i.m injection, upto 100mg (as sodium phosphate); by i.m. injection, prednisolone acetate 25-100mg. Parenteral route usually used in acute conditions. After remission of acute symptoms, continue for a few days orally as mentioned above.**

❖ **ADAM 33 Micro. Tab. Nuvista**
Prednisolone USP 5mg/tablet (micronised).
5mg x 300's pack: 261.00 MRP

❖ **CORTAN Tab. Incepta**
Prednisolone 5mg, 10mg & 20mg/tablet.
5mg x 200's pack: 150.00 MRP
10mg x 100's pack: 120.00 MRP
20mg x 50's pack: 107.50 MRP

❖ **DELTACORT Tab. Desh**
Prednisolone 5mg/tablet.
5mg x 500's pack: 350.00 MRP

❖ **DELTAPRED Tab. Ziska**
Prednisolone 5mg/tablet.
5mg x 500's pack: 350.00 MRP

❖ **DELTASONE Tab. Renata**
Prednisolone 5mg/tablet.
5mg x 500's pack: 435.00 MRP
10mg x 100's pack: 144.00 MRP
20mg x 50's pack: 107.50 MRP

❖ **G-PREDNISOLONE Tab. Gonoshasthaya**
Prednisolone 5mg/tablet
5mg x 30's pack: 12.00 MRP

❖ **PRECODIL Tab. Opsonin**
Prednisolone 5mg & 20mg/tablet
5mg x 200's pack: 140.00 MRP
20mg x 60's pack: 129.00 MRP

❖ **PREDNELAN Tab. GlaxoSmithKline**
Prednisolone 20mg/tablet
20mg x 100's pack: 250.00 MRP

❖ **PREDNICORTIL Tab. Gaco**
Prednisolone 5mg/tablet
5mg x 100's pack: 64.93 MRP

❖ **PREDNISOLONE Tab. Ambee**
Prednisolone 5mg/tablet
5mg x 500's pack: 330.00 MRP

❖ **PREDNISOLONE Tab. GlaxoSmithKline**
Prednisolone 5mg/tablet
5mg x 500's pack: 400.00 MRP

❖ **PREXAN Tab. Chemist**
Prednisolone 5mg/tablet

5mg x 500's pack: 350.00 MRP
❖ **REDNISONE Tab. Rephco**
Prednisolone 5mg/tablet
5mg x 500's pack: 260.00 MRP
❖ **ZENILON Tab. Zenith**
Prednisolone 5mg/tablet
5mg x 100's pack: 175.00 MRP

METHYL PREDNISOLONE[21,60]

METHYL PREDNISOLONE: Injection
Methyl prednisolone acetate 40mg/ml; 1ml & 2ml vial: injection
Ind: Rheumatoid arthritis, inflammatory and allergic conditions, osteoarthritis, cerebral oedema.
C/I; S/E; Cautions: See under betamethasone (above).
Pregnancy & lactation: There are no adequate & well-controlled studies in pregnant women. As animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed. Prednisolone is excreted in breast milk, it is reasonable to assume that as all corticosteroids appear in small amounts in breast milk, methyl prednisolone acetate may also appear in breast milk, but no specific data in known for methyl prednisolone acetate. A maternal dose of prednisolone up to 40mg daily is unlikely to cause systemic effects in the infants. Therefore, infants should be monitored for adrenal suppression if the mothers are taking a higher doses.
Dosage & admin: Rheumatoid & osteoarthritis: The dosage depends upon the size of the joint and severity of the conditions; max. dose may be upto 120 mg. Injection may be repeated if needed at an interval of 1 to 5 or more weeks depending upon the degree of relief obtained from initial dose.
Dermatological conditions: **40-120mg (1-3ml).**
Allergic conditions: **80-120mg (2-3ml).**
Collagen diseases: 40-120mg (1-3ml) repeated 2-3 weekly if required.
Adrenogenital syndrome: **40mg (1ml) every 2 weeks.**
Note: For further information, please consult manufacturer's literature.

❖ **DEPO-MEDROL Inj. Pharmacia-Pfizer/ Janata**
Methyl prednisolone acetate 40mg/ml; 1ml & 2ml vial: injection
1ml (40mg) vial: 101.73 MRP
2ml (80mg) vial: 125.67 MRP
❖ **MEDROL Inj. Techno Drugs**
Methyl prednisolone acetate 40mg/ml; 1ml & 2ml vial: injection
1ml (40mg) vial x 5's pack: 325.00 MRP
2ml (80mg) vial x 1's pack: 90.00 MRP

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METHYL PREDNISOLONE SODIUM SUCCINATE: Injection
Methyl prednisolone sodium succinate 40mg, 125mg, 500mg & 1gm vial: injection
Ind: See below with the dosage.
C/I; S/E; Cautions: See above under the text of betamethasone.
Pregnancy & lactation: Please see above under the text of methyl prednisolone acetate.
Indications & Dosage: 1. ***As adjunctive therapy in life-threatening conditions-*** **the recommended dose is 30mg/kg given i.v over a period of at least 30 minutes; this dose may be repeated evry 4-6 hours for up to 48 hours.**
2. ***Corticosteroid responsive diseases in exacerbation and/or unresponsive to standard therapy- suggestive schedule:***
i. Rheumatic disorders: 1gm/day for 1, 2, 3 or 4 days i.v or 1mg/month for 6 months i.v.
ii. Systemic lupus erythematosus (SLE): 1gm/day for 3 days i.v.
iii. Multiple sclerosis: 1gm/day for 3 days or 5 days i.v.
iv. Oedematous states: e.g glomerulonephritis, lupus nephritis: 30mg/kg every other day for 4 days i.v or 1gm/day for 3, 5 or 7 days i.v.
3. ***Mild to moderately emetogenic chemotherapy:*** **Administer 250mg i.v over at least 5 minutes 1 hour before chemotherapy, at the initiations of chemotherapy, & at the time of discharge. A chlorinated phenothiazine may also be used with the first dose of methyl prednisolone sodium succinate injection for increased effect.**
4. ***Severely emetogenic chemotherapy:*** **Administer methyl prednisolone sodium succinate 250mg i.v over at least 5 minutes with appropriate dosage of metoclopramide or a butyrophenone 1 hour before chemotherapy, then 250mg i.v at the initiation of chemotherapy & at the time of discharge.**
5. ***In other indications:*** **Initial dosage will vary from 10 to 500mg depending on the clinical problem being treated. Larger dosage may be required for short-term management of severe, acute conditions. The initial dose, up to 250mg, should be given i.v over a period of at least 5 minutes; subsequent dosage may be given i.v or i.m at intervals dictated by the patients response & clinical conditions. Corticosteroid therapy is an adjunct to & not replacement for, conventional therapy. Dosage may be reduced for infants & children but should be governed more by severity of the condition & response of the patient than by age or size. It should not be less than 0.5mg/kg every 24 hours.**
Methyl prednisolone sodium succinate may be administered by i.v or i.m injection or by i.v infusion, the preferred method for initial emergency use being intravenous injection.
Note: For further information, please consult manufacturer's literature.

❖ **SOLU-MEDROL Inj. Pharmacia-Pfizer/Janata**
Methyl prednisolone sodium succinate 40mg, 125mg, 500mg & 1gm vial: injection
40mg vial x 1's pack: 299.03 MRP
125mg vial x 1's pack: 498.40 MRP
500mg vial x 1's pack: 1011.05 MRP
1gm vial x 1's pack: 1685.17 MRP

TRIAMCINOLONE[21,33]

TRIAMCINOLONE: Tablet/Injection
Ind: Allergic disease, dermatoses or generalized rheumatoid arthritis and other connective tissue disorders. May also be given by intra-articular or intra-bursal administration in traumatic arthritis, synovitis, bursitis and tendinitis.
C/I: Local for systemic viral infections, tuberculosis, active peptic ulcer, acute glomerulonephritis. Pregnancy is relative contraindication for corticosteroid therapy particularly in the first trimester of pregnancy. Local administration is contraindicated in presence of active infections.
S/E: Cushingoid syndrome, weakness, bruising or purpura, masking of infections, activation or aggravation of peptic ulcer, activation of latent or aggravation of existing diabetes, altered menstrual cycle, hirsutism, acnel form eruptions. There should be gradual termination in dosage.
Dosage & Admin: For children from 6 to 12 years, initial dose is 40mg. Initial systemic dose for adults and children over 12 years is 40 to 80mg. For adults maximum daily dose is 80 to 100mg. For local areas, dose for adults is upto 10mg for smaller and 40mg for larger areas.

❖ **CYNOCORT Inj. Techno Drugs**
Triamcinolone acetonide 40mg/ml: i.m injection.
1ml amp: 60.00 MRP
❖ **KENACOL Tab. Skylab**
Triamcinolone BP 4mg/tablet
100's pack: 290.00 MRP
❖ **KENACORT-A Inj. Squihb/ Kapricorn**
Triamcinolone acetonide 40mg/ml: i.m injection.
1ml amp: 68.27 MRP
❖ **TRIALON Inj. Drug Inter.**
Triamcinolone acetonide 40mg/ml: i.m injection.
1ml amp x 3's pack: 180.00 MRP
❖ **TRIMCORT Inj. Chemist**
Triamcinolone acetonide 40mg/ml: i.m injection.
1ml amp x 2's pack: 120.00 MRP

4. SEX HORMONES[21]

Sex hormones are discussed under the following hroad headings:

1 **Female sex hormones**
2 **Male sex hormones**
3 **Anabolic steroids**
4 **Oral Contraceptive prepns.**

Female Sex hormones

There are two groups of female sex hormones:
1. Oestrogens &
2. Progestogens.

OESTROGENS[21,33]

Oestrogen is a female sex hormone produced by the ovary & also by the placenta during pregnancy. The most potent natural oestrogen is estradiol-17β .
In terms of oestrogenic activity natural oestrogens (oestradiol, oestrone & oestriol) have a more appropriate profile for hormone replacement therapy (HRT) than synthetic oestrogens (ethinyloestradiol, mestranol &

stilboestrol); the profile of conjugated oestrogens resembles that of natural oestrogens.
Oestrogen therapy is given cyclically or continuously for a number of gynaecological conditions. If long-term therapy is required a progestogen should be added to reduce the risk of cystic hyperplasia of the endometrium and possible transformation to cancer. This addition of a progestogen is not necessary if the patient has had a hysterectomy or in the case of tibolone.

ESTRIOL[21,47]

ESTRIOL: Tablet/Cream
Estriol is a natural oestrogenic hormone.
Ind: See below under the individual preparation.
C/I: Pregnancy; thrombosis; known or suspected oestrogen-dependent tumours; undiagnosed vaginal bleeding; a history of manifestation or deterioration of otosclerosis during pregnancy or previous use of steroids.
S/E: Breast tension or pain, nausea, spotting, fluid retention and cervical hypersecretion may occasionally occur and be indicative of too high a dosage. Headache, hypertension, leg cramps and vision disturbances are seldom observed. In general most of these adverse reactions disappear after the first treatment week.
Pregnancy & lactation: This medicine is contraindicated during pregnancy. There are insufficient data on the use of this medicine during breast-feeding to assess potential harm to the inant. It is known, however, that estriol is excreted in breast milk and may decrease milk production.
Warnings & precautions:
1. In order to prevent endometrial stimulation, the daily dose should not exceed 8mg (or 1 application of intravaginal cream- 0.5mg estriol) nor should this maximum dose be used for longer than several weeks.
2. During prolonged treatment with oestrogens, periodic medical examinations are advisable.
3. With vaginal infections, a concomitant specific treatment is recommended.
4. Patients also should be monitored for the other adverse effects as with other oestrogens.
Dosage & Admin: see below under the individual preparation.

❖ OVESTIN Tab. Nuvista
Estriol 1mg/tablet.
Ind: See under the doses.
C/I; S/E; Warnings & Precautions: See above under the text of estriol.
Indications & Dosage: Atrophy of the lower urogenital tract related to oestrogen dficiency leading to dyspareunia, dryness and itching, recurrent infections of the va gina and lower urinary tract including mild urinary incontinence: 4-8mg per day for the first week, followed by a gradual reduction, based on relief of symptoms, until a maintenance dosage (e.g. 1-2mg per day) is reached. In certain cases of urinary incontinence a higher maintenance dosage will be required.
Pre- & postoperative therapy in post-menopausal women undergoing vaginal surgery: 4-8mg per day in the 2 weeks before surgery; 1-2mg per day in the 2 weeks after surgery.
Climacteric complaints such as hot flushes and night sweating: 4-8mg per day during the first week, followed by a gradual reduction. For maintenance therapy the first week, followed by a gradual reduction. For maintenance therapy the lowest effective dosage should be used.
A diagnostic aid in case of a doubtful atrophic cervical smear: 2-4mg per day for 7 days before taking the next smear.
Infertility due to cervical hostility: In general 1-2mg per day on days 6-15 of the menstrual cycle. However, for some patients dosages as low as 0.25mg per day are sufficient. Whereas others may need up to 8mg per day. Therefore, the dosage should be increased each month until an optimal effect on the cervical mucus is obtained.
Administration: **Ovestin tablets should be taken orally, preferably with some fluid. It is important that the total daily dose is taken at one time.**
30's pack: 240.00 MRP

❖ OVESTIN Cream Nuvista
Estriol 1mg/gram: cream.
Ind: see under the doses.
C/I; S/E; Warnings & Precautions: See above under the text of estriol. As ovestin cream is applied to the mucosal surfaces, it may cause local irritation or itching.
Indications & Dosage: Atrophy of the lower urogenital tract related to oestrogen dficiency leading to dyspareunia, dryness and itching, recurrent infections of the va gina and lower urinary tract including mild urinary incontinence: 1 application per day for the first week, followed by a gradual reduction, based on relief of symptoms, until a maintenance dosage (e.g. 1 application twice a week) is reached. In certain cases of urinary incontinence a higher maintenance dosage will be required.
Pre- & postoperative therapy in post-menopausal women undergoing vaginal surgery: 1 application per day in the 2 weeks before surgery; 1 application twice a week in the 2 weeks after surgery.
A diagnostic aid in case of a doubtful atrophic cervical smear: 1 application on alternate days in the week before taking the smear.
Administration: **Ovestin cream should be administered intravaginally by means of a calibrated applicator before retiring at night. 1 application (applicator filled to the ring mark) contains 0.5gm ovestin cream which corresponds with 0.5mg estriol.**
15gm tube with applicator: 1114.00 MRP

CONJUGATED OESTROGENS

CONJUGATED OESTROGENS: Tablet
Conjugated oestrogens (equine) 0.625mg & 1.25mg/tablet.
Ind: Menopausal & post-menopausal oestrogen replacement; post-menopausal osteoporosis; senile vaginitis, functional amenorrhoea, prostatic carcinoma.
C/I: Pregnancy. Uterine myomatosis. Endometriosis. Uterine or mammary carcinoma. Severe cardiac, hepatic or renal disease. History of thromboembolic disease. Undiagnosed vaginal bleeding.
S/E: Nausea & vomiting, wt. gain, breast enlargement and tenderness, withdrawal bleeding, sodium retention with oedema, changes in liver function, jaundice, rashes and chloasma, depression, headache, endometrial carcinoma in post-menopausal women.
Dosage & admin: Adult-Menopausal, usually 0.625mg or 1.25mg daily for 21 days starting on 5th day of menstruation then repeat after 7 days. Postmenopausal osteoporosis, cyclically 0.625mg or 1.25mg daily. Functional amenorrhoea, 0.625mg or 1.25mg daily for 21 days. For the last 7 days progesteron therapy should be added.
Child: Not applicable.

❖ EQUIN 0.6 Tab. Aldo-Union, Spain/ Medinam
Conjugated oestrogens (equine) 0.625mg/tablet.
0.625 mg x 28's: 360.00 MRP
❖ PREMARIN Tab. Ayerst
Conjugated oestrogens (equine) 0.625mg & 1.25mg/tablet.
0.625 mg x 100's: 202.60 MRP
1.25 mg x 100's: 349.70 MRP
Note: Prices could not be revised; but preparations may be available in the market.
❖ PREMARIN I.V. Inj. Ayerst
Conjugated oestrogen 25mg in 5ml ampoule: i.v injection
Ind: Severe uterine haemorrhage; Breast cancer.
C/I & S/E: Same as tablet prepn.
Adult: By slow i.v injection 25mg. repeat after 6-12 hours if required. Child: Not applicable.
1 amp. 173.50 MRP
Note: Prices could not be revised; but preparations may be available in the market.
❖ PREMARIN Vaginal Cream Ayerst.
Conjugated oestrogen 0.625mg in 1 gm: non liquifying cream.
Ind: Atrophic vaginitis; pruritus vulvae; before and after postmenopausal surgery.
Adult: 1-2gm daily topically or intravaginally using calibrated applicator for 3 weeks followed by 1 week rest.
Child: Not applicable.
42.5 gm. tube: 170.80 MRP
Note: Prices could not be revised; but preparations may be available in the market.
❖ PREMICON Tab. Techno Drugs
Conjugated oestrogens USP 0.625mg/tablet (film-coated).
0.625mg x 28's: 140.00 MRP

PROGESTERONE[21,33,40,70]

PROGESTERONE: Tablet/Gel/Pessary
Description & mode of action: Progesterone is a female sex hormone produced by the corpus luteum, which develops from the ruptured ovarian follicle immediately after ovulation i.e the empty follicle that remains when the ovum emerges at mid-cycle. Progesterone then promotes transformation of the oestrogen-primed endometrium, as a result, the endometrium is transformed into an environment that is receptive

to embryo implantation and able to support early pregnancy. Synchronization between embryo development and endometrial receptivity begins with ovulation and production of progesterone by the corpus luteum. The embryo arrives in the uterine cavity from the fallopian tube 4 to 5 days after ovulation-cycle day 18 or 19 at the morula stage, but does not implant until day 20 or 21 at the blastocyst stage. At that time, there is peak activity of the glands of the endometrium and it is best prepared to support the embryo. Thus, it is clear that the establishment of pregnancy depends not only on successful fertilisation and embryo quality but on endometrial receptivity to embryo implantation.

Progenterone is clearly a critical hormone in achieving and maintaining pregnancy. This hormone is essential for the preparation of the endometrium for implantation; it is also essential for the maintenance of a viable pregnancy. If progesterone is withdrawn, miscarriage will occur.

Ind: See below under individual preparation.

C/I: Progesterone should not be used in individuals with any of the following conditions:

1. Pregnancy or suspected pregnancy.
2. Known sensitivity to progesterone.
3. Undiagnosed vaginal bleeding.
4. Liver dysfunction or disease.
5. Known or suspected malignancy of the breast or genital organs.
6. Missed abortion.
7. Active thrombophlebitis or thromboembolic disorders, or a history of hormone-associated thrombophlebitis or thromboembolic disorders.

Adverse effects: Nausea, weight-gain, headache, depression, changes in libido, breast enlargement, altered menstrual cycles, virilisation of foetus, acne, urticaria.

Also see under the individual preparation.

Warnings: The physician be alert to the earliest manifestations of thrombotic disorders (thrombophlebitis, cerebrovascular disorders, pulmonary embolism, and retinal thrombosis). If any of these occur or be suspected, the drug should be discontinued immediately.

Progesterone and progestins have been used to prevent miscarriage in women with history of recurrent spontaneous pregnancy losses. But, no adequate evidence is available to show that they are effective for this purpose.

Precautions: General-

1. The pretreatment physical examination should include special reference to breast and pelvic organs, as well as papanicolaou smear.
2. In cases of breakthrough bleeding, as in all cases of irregular vaginal bleeding, nonfunctional causes should be considered; in cases of undiagnosed vaginal bleeding, adequate diagnostic measures should be undertaken.
3. Because progestogens may cause some degree of fluid retention, conditions which might be influenced by this factor (e.g epilepsy, migraine, asthma, cardiac^{o} r renal dysfunction) require careful observation.
4. The pathologist should be advised of progesterone therapy when relevant specimens are submitted.
5. Patients who have a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree.
6. A decrease in glucose tolerance has been observed in a small percentage of patients on estrogen-progestin combination drugs. The mechanism of this decreaes is not known. For this reason, diabetic patients should be carefully observed while receiving progestin therapy.
7. In case of intravaginal gel preparation or pessary, the patient should be advised not to use concurrently with other local intravaginal therapy. If it is needed to be used concurrently, there should be at least a 6-hour interval.

Dosage & admin: Please see below under the individual preparation.

❖ CRINONE 8% Gel Serono/Janata Healthcare

Crinone is a bioadhesive vaginal gel preparation, containing micronized progesterone 8% in an emulsion system, which is contained in single use, one piece polyethylene vaginal applicators. (There is also another preparation with low strength - Crinone 4%, not available in our market).

Ind: i. Assisted reproductive technology - Crinone 8% (90mg) is indicated for progesterone supplementation or replacement as part of an assisted reproductive technology ('ART') treatment for infertile women with progesterone deficiency.

ii. Secondary amenorrhea - Crinone 4% is indicated for the treatment of secondary amenorrhea. Crinone 8% (90mg) is indicated for use in women who have failed to respond to treatment with crinone 4%.

C/I: Please see above under the text of progesterone.

Adverse reactions: ***Assisted reproductive technology (ART):*** In a study of 61 women with ovarian faliure undergoing a donor oocyte t ransfer procedure receiving progesterone 8% (90mg) twice daily, treatment-emergent adverse events occurring in 5% or more of the women are as follows:

Body as a whole- bloating, cramps, pain; Central and peripheral nervous system- dizziness, headache; Gastrointestinal system- nausea; *Reproductive-* breast pain, genital moniliasis, vaginal discharge; Skin and appendages- genital pruritus.

In a second study of 139 women using progesterone 8% (90mg) once daily for luteal phase support while undergoing an 'in vitro fertilization' procedure, treatment-emergent adverse events reported in 5% or more of the women are as follows:

Body as a whole- abdominal pain, perineal pain; *Central and peripheral nervous system-* headache; Gastrointes-tinal system- constipation, diarrhea, nausea, vomiting; Musculoskeletal system- arthralgia; Psychiatric- depression, libido decreased, nervousness, somnolence; *Reproductive-* breast enlar-gement, dyspareunia; *Urinary system-* nocturia.

Secondary amenorrhea:

In three studies, 127 women with secondary amenorrhea received estrogen replacement therapy and progesterone 4% or 8% every other day for six doses. Treatment emergent adverse events during estrogen and progesterone treatment that occurred in 5% or more of women are as follows:

Body as a whole- abdominal pain, appetite increased, abnormal crying, allergic reaction, allergy, asthenia, edema, face edema, fever, hot flushes, influenza-like symptoms, water retention, xerophthalmia decreased, asthenia, edema, face edema, fever, hot flushes, influenza-like decreased, asthenia, edema, face edema, fever, hot fiushes, influenaz-like symptoms, water refention,

xerophthalmia. bloating, cramps, fatigue; Central and peripheral nervous system- headache; *Gastrointestinal system-* nausea; Musculoskeletal system- back pain, myalgia; Psychiatric- depression, emotional lability, sleep disorder; *Reproductive-* vaginal discharge; Resistance mechanism- upper respiratory tract infection; Skin and appendages- genital pruritus.

Additional adverse events reported in women at a frequency < 5% in progesterone ART and secondary amenorrhea studies include:

Body as a whole- abnormal crying, allergic reaction, allergy, appetite decreased, asthenia, edema, face edema, fever, hot flushes, influenza-like symptoms, water retention, xerophthalmia; CVS- syncope; *Central and peripheral nervous system-*migraine, tremor; *Autonomic nervous system-* dry mouth, increased sweating; *Gastrointestinal-* dyspepsia, eructation, flatulence, gastritis, toothache; Metabolic & nutritional- thirst; *Musculoskeletal system-* leg cramps, leg pain, skeletal pain; *Neoplasm-*benign cyst; *Platelet, bleeding & clotting-* purpura; Psychiatric- aggressive reactions, forgetfulness, insomnia; RBC- anemia;

Reproductive- dysmenorrhea, premenstrual tension, vaginal dryness; *Resistance mechanism-* infection, pharyngitis, sinusitis, urinary tract infection; Respiratory system- asthma, dyspnea, hyperventilation, rhinitis;

Skin and appendages- acne, pruritis, rash, seborrhea, skin discoloration, skin disorder, urticaria; *Urinary system-* cystitis, dysuria, micturition frequency; Vision disorder- conjunctivitis.

Warnings & Cautions: Please see above under the text of progesterone.

Pregnancy & lactation: Progesterone 8% (90mg) has been used to support embryo implantation and maintain pregnancies through its use as part of ART treatment regimens in two clinical studies. In the first study, 54 women were treated with progesterone 8%. Out of them clinical pregnancies occurred in 26 women (48%). Among these 26 pregnancies, one woman had an elective termination of pregnancy at 19 weeks due to congenital malformations (omphalocele) associated with a chromosomal abnormality; one woman pregnant with triplets had an elective termination of her pregnancy; seven women had spontaneous abortions; and 17 women delivered 25 apparently normal newborns. In the second study, progesterone 8% (90mg) was used in the luteal phase support of women undergoing 'in vitro fertilization (IVF)' procedures. In this multi-centre, open-label study, 139 women received progesterone 8% (90mg) once daily beginning within 24 hours of embryo

transfer and continuing through day 30 past-transfer. Clinical pregnancies assessed at day 90 post-transfer were seen in 36 women (26%). 32 women (23%) delivered newborns & 4 women (3%) had spontaneous abortions. Of the 47(?) newborns delivered, one had a teratoma associated with a cleft plate; one had respiratory distress syndrome; 44 were apparently normal & one has lost to followup.
Detectable amounts of progestins have been identified in the milk of mothers receiving them. The effect of this on the nursing infant has not been determined. Pregnancy: progesteron 8% (90mg)
Dosage & admin: ***Assisted reproductive technology (ART):*** **Progesterone 8% (90mg) is adminis-tered vaginally at dose of 90mg once daily in women who require progesterone supplementation. Progesterone 8% (90mg) is adminis-tered vaginally at a dose of 90mg twice daily in women with partial or complete ovarian failure wbo require progesterone replacement. If pregnancy occurs, treatment may be continued until placental autonomy is achieved, up to 10-12 weeks.**
Secondary amenorrhea: **Progesterone 4% is administered vaginally every other day up to a total of six doses. For women wbo fail to respond, a trial of progesterone 8% (90mg) every other day up to a total of six doses may be instituted.**
It is important to note that a dosage increase from tbe 4% gel can only be accomplished by using the 8% gel. Increasing the volume of gel administered dose not increasee the amount of progesterone absorbed.
How to use Crinone: **Please consult the manufacturer's insert.**
Drug inter: No drug interactions have been assessed with crinone.
Price:
Crinone 8% single-use prefilled applicator x 15's pack: 4288.53 MRP

❖ **CYCLOGEST Pessary Actavis/Tajarat**[140]
Each pessary contains 400mg progesterone: For vaginal or rectal insertion.
Ind: Habitual abortion, threatened abortion, pre-menstrual syndromde, post- natal depression, & luteal phase support.
C/I: See above under the text of progesterone.
S/E: See above under the text of progesterone. Menstruation may occur earlier than expected, or be delayed. Soreness, diarrhoea and flatulence with rectal application. Leakage of pessary base.
Precautions & warnings: See above under the text of progesterone.
Hepatic dysftunction, conditions that may be hromone sensitive. Warnings: Use rectally if barrier methods of contraception are used, if patient has vaginal infection, recurrent cystitis, or has recently given birth. Use vaginally where colitis or faecal incontinence present.
Dosage & application: Habitual abortion: 400mg twice a day rectally or vaginally for 3 months. Threatened abortion: Starting dose 800mg rectally, followed by 400mg every 12 hours, till bleeding stops. Pre-menstrual syndrome: Start on day 14 of cycle witb 200mg or 400mg once or twice a day, vaginally or rectally, continue until menstruation starts; if symptoms present at ovulation, start by day 12. Post- natal depression: 200mg or 400mg once or twice a day, rectally, till menses occur. Luteal phase support: 400mg twice daily vaginally or rectally.
Overdosage: There is a wide safety margin, but overdosage may produce euphoria or dysmenorrhoea.
400mg pessary x 15 pcs box:

ALLYLESTRENOL[62]

ALLYLESTRENOL: Tablet
Allylestrenol is an orally active gestagen. It is an effective and safe pregnancy maintaining preparation. It is available as 5mg tablet for oral administration.
Mode of action: Allylestrenol has a pronounced pregnancy maintaining action in castrated animals without producing hormonal side-effects. In the human, premature termination of pregnancy often follows a fall in the levels of placental hormones. Allylestrenol has been shown to stimulate the placental progesterone production in vitro and to promote the secretion of placental hormones (human chorionic gonadotrophin, human placental lactogen, oestrogens and progesterone) and oxytocinase in patients with pregnancy at risk. In agreement to this the trophoblastic layers of the placenta show histological signs of activation. Clinical studies have indicated that allylestrenol is an effective and safe pregnancy maintaining preparation. Administration of allylestrenol in combination with bed rest can remove or prevent the threat of abortion in early pregnancy or stop threatened premature labor.
Ind: Threatened abortion, habitual abortion; threatened premature labor.
C/I: There are no known contra-indications.
A/R: Allylestrenol is generally well tolerated. Serious adverse reactions have neither been reported in the mother nor in the offspring. Gastrointestinal complaints (nausea, vomiting) have been reported occasionally.
Precautions & warnings: No warnings or precautions are applicable.
Dosage & admin: Threatened abortion: 5mg three times daily for 5-7 days. If necessary, the treatment period may be extended. After disappearance of the symptoms the dosage should be gradually reduced unless symptoms return.
Habitual abortion: **5-10mg daily as soon as pregnancy has been diagnosed. The administration should be continued until at least one month after tbe end of tbe critical period.**
Threatened premature labor: **Tbe dosage must be determined individually. High dosages (up to 40mg daily) have been used.**

❖ **GESTRENOL Tab. Renata**
Allylestrenol 5mg/tablet
30's pack: 240.00 MRP

LYNESTRENOL[40]

LYNESTRENOL: Tablet
Lynestrenol is a progestogenic agent specially effective in correcting different menstrual disorders due to hormonal imbalance. It is available as 5mg tablet.
Indications & Dosage:
Polymenorrhoea- **1 tab. daily on days 14-25 of the cycle.**
Menorrhagia & Metrorrhagia- **2 tahs. daily for 10 days. Usually tbe bleeding will cease within a few days after the start of the treatment. Treatment is repeated during tbe next 3 menstrual cycles with 1 tab. daily on days 14-25 of each cycle.**
Further diagnostic procedures are necessary if the complaints do not disappear during or after this treatment.
Selected cases of primary and secondary amenorrhoea and oligomenorrhoea- **Treatment should start with the adminis-tration of an estrogen, e.g 0.02-0.05mg ethinylestradiol per day for 25 days. In conjunction with tbis, 1 tab. daily of Orgametril is administered on days 14-25.**
After cessation of treatment, a witb- drawal bleeding usually occurs within 3 days. Treatment is resumed (second cycle) starting on day 5 of this withdrawal bleeding with the estrogen given on days 5-25 of the cycle and again with 1 tab. daily of Orgametril on days 14-25.
This treatment should be repeated for at least another cycle.
Premenstrual syndrome- **1 tablet daily on days 14-25 of the cycle.**
Endometriosis- **1-2 tablets daily for at least 6 months.**
Selected cases of endometrial carcinoma- **6-10 tabs. daily for prolonged periods.**
Benign breast disease- 1 tablet daily on days 14-25 of the cycle or at least 3-4 months.
Suppression of menstruation, ovulation and ovulation pain; dysmenorrhoea- **Treatment with 1 tab. daily should start preferably on day 1, but no later than day 5 of the cycle. The treatment can be continued for many months (without tablet-free days). If in spite of treatment, a breakthrough bleeding occurs, the dosage should be increased to 2 or 3 tabs. daily for 3-5 days.**
Postponement of menstruation- **Treatment with 1 tab. daily should start preferably 2 weeks before the expected onset of menstruaton. If treatment is started less than 1 week before the expected onset of menstruation the dosage should be 2-3 tabs. per day. However, in that case a delay of more than 1 week is undesirable.**
Tbe risk of breakthrough bleeding increases if treatment is started later. Therefore, treatment should not be started later than 3 days before the expected onset of menstruation.
As an adjunct to estro gen therapy in peri-and postmenopause, in order to avoid endometrial hyperplasia- **$\frac{1}{2}$ - 1 tablet daily for 12-15 days per month, e.g. for the first 2 weeks of every calendar month; the estrogen may be administered daily without tablet free intervals at the lowest effective dose.**
Administration: **Orgametril tablet should be taken orally with some fluid.**

Note: Throughout the text, take the first day of the menstrual bleeding as day 1 of the cycle.
C/I: Please see above under the text of progesterone.
A/R: During continuous treatment regimens breakthrough bleeding or spotting will occur frequently (over 10%) during the first two months.
During cyclic treatment regimens breakthrough bleeding and spotting will be seen occasionally (1-10%).
Temporarily increasing the dose will control the bleeding in most cases.
Other adverse effects- almost same as other progestogenic hormones.
Cautions & warnings: Please see above under the text of progesterone.

❖ **ORGAMETRIL Tab. Nuvista**
Lynestrenol 5mg/tablet.
30's pack: 268.80 MRP
❖ **ORGATRIL Tab. Nuvista**
Lynestrenol 5mg/tablet.
30's pack: 268.80 MRP

MEDROXYPROGESTERONE[73]

❖ **PERLUTEX Tab. Leo Pharma/ Kapricorn**
Medroxyprogesterone acetate 5mg/tablet.
Ind: Menstrual irregularities and other disorders caused by inadequate endocrine secretion of the corpus luteum hormone, such as- i. functional uterine bleeding, ii. amenorrhoea and oligomenorrhoea, iii. infertility due to inadequate luteal phase, iv. endometriosis.
C/I; S/E; Warnings & Cautions: Please see above under the text of progesterone.
Dosage: Functional uterine bleeding: 5-10mg daily for 5-10 days commencing on the assumed or calculated 16-21st day of the cycle so as to complete treatment on the 26th day of the cycle. Treatment should be given for two consecutive cycles. When bleeding occurs from a poorly developed prolife-rative endometrium, conventional oestrogen therapy may be employed in conjunction with medroxyprogesterone acetae, in doses of 5-10mg for 10 days.
Amenorhoea and Oligomenorrhoea: 5-10mg for 10 days starting from the assumed 16th day of the cycle. When indicated, oestrogen therapy should be given prior to Perlutex.
Infertility due to inadequate luteal phase: 2.5-10mg daily from day 16 to day 25.
Endometriosis: 5-20mg daily for 3-6 months.
Child: Not applicable
20's pack: 212.40 MRP

NORETHISTERONE[58]

NORETHISTERONE: Tablet
Norethisterone is a synthetic progesterone hormone. It is available as 5mg tablet.
Ind: Postponement of menstruation; dysmenrrhoea, menorrhagia and premenstrual syndrome; metropathia haemorrhagica; Polymenorrhoea; endometriosis.
C/I; S/E; Warnings; Cautions: Please see above under the text of progesterone.
Dosage & admin: Adult: Postponement of mens.- 5mg 3 times daily starting 3 days before expected onset of menstruation. Dysmenorrhoea- 5mg 3 times daily for 20 days starting on 5th day of menstruation, then 8 tablet-free days. Maintain treatment for 3 or 4 cycles. Menorrhagia and pre-menstrual syndrome. 5mg. 2 or 3 times daily from day 19-26 of cycle.
Child: Not applicable.

❖ **NORCOLUT Tab. Gedeon Richter/City Overseas**
Norethisterone 5mg/tablet.
20's pack: 145.00 TP
❖ **NORMENS Tab. Renata**
Norethisterone 5mg/tablet.
30's pack: 150.00 MRP

Male Sex hormones: Androgens[21]

Male sex hormones (androgens) include:

1. **Testosterone & esters**
2. **Mesterolone**
3. **Methyltestosterone (not in use)**

ANDROGEN[21,26,33]

TESTOSTERONE & ESTERS: Capsule/Gel/ Injection
Testosterone is the male hormone, indicated for replacement therapy in males for conditions associated with a deficiency or absence of endogenous testosterone.
It is available in capsule, gel and injection form for oral, transdermal and parenteral administration.
Ind: Testosterone is indicated for replacement therapy in males for conditions associated with a deficiency or absence of endogenous testosterone:
1. Primary hypogonadism (congenital of acquired): Testicular failure due to cryptorchidism, bilateral torsion, orchitis, vanishing testis syndrome, orchiectomy, Klinefelter's syndrome, chemotherapy, or toxic damage from alcohol or heavy metals. These men usually have low serum testosterone levels and gonadotropins (FSH, LH) above the normal range.
2. Hypogonadotropic hypogonadism (congenital or acquired): Idiopathic gonadotropin or luteinizing hormone-releasing hormone (LHRH) deficiency or pituitary-hypothalamic injury from tumors, trauma, or radiation. These men have low testosterone serum levels but have gonadotropins in the normal or low range.
(Symptoms of hypogonadism include: Inpotence, decreased sexual desire, fatigue and loss of energy, mood depression, regression of secondary sexual characteristics, osteoporosis).
3. Inoperable mammary carcinoma.
C/I: Testosterone is contraindicated in prostatic or mammary carcinoma in the male; nephrosis; hypercalcaemia; pregnancy & breast-feeding.
Testosterone is not indicated for use in women and must not be used in women (except in inoperable mammary carcinoma)
S/E: Sodium retention with oedema; increase in

weight; hypercalcaemia, increased bone growth, priapism, precocious sexual development, gynecomastia and premature closure of epiphyses in pre-pubertal males; virilism in women, and suppression of spermatogenesis in men.
Other side-effects include-allergic reaction, acne, alopecia, asthenia, depression, headache, hypertension, nausea or vomiting, changes in skin color, swelling of the ankles, breathing disturbances, abdominal pain or discomfort and fatigue.
Cautions: Cardiac, renal or hepatic impairment, epilepsy, migraine, hypertension, ischaemic heart disease; skeletal metastases; pre-pubital boys; elderly.
Pregnancy & lactation: Testosterone is not indicated for use in women and must not be used in women. In women it is only indicated in inoperable mammary carcinoma, but in that case it should be avoided during pregnancy & lactation.
Dosage & admin: See below under individual preparations.

❖ **ANDRIOL TESTOCAPS Cap. Nuvista**
Testosterone undecanoate 40mg/capsule (testocaps).
Dosage & admin: Initially 120-160mg daily for 2-3 weeks is adequate, followed by a maintenance dosage of 40-120mg daily.
30's pack: 545.00 MRP
❖ **SUSTANON 250 Inj. Nuvista**
Testosterone propionate 30mg, testosterone phenylpropionate 60mg, testosterone isocaproate 60mg, testosterone decanoate 100mg/ml; 1ml ampoule: injection.
Dosage & admin: Adult: By deep i.m injection 1ml every 3 weeks. (In mammary carcinoma dose or frequency may be increased).
Child: Not applicable.
1ml ampoule: 129.53 MRP
❖ **SUSTOGEN Inj. Techno Drugs**
Testosterone BP 250mg/ml; 1ml ampoule: injection.
Dosage & admin: Adult: By deep i.m injection 1ml every 3 weeks. (In mammary carcinoma dose or frequency may be increased).
Child: Not applicable.
1ml ampoule: 95.00 MRP
❖ **TESTANON 250 Inj. Nuvista**
Testosterone propionate 30mg, testosterone phenylpropionate 60mg, testosterone isocaproate 60mg, testosterone decanoate 100mg/ml; 1ml ampoule: injection.
Dosage & admin: Adult: By deep i.m injection 1ml every 3 weeks. (In mammary carcinoma dose or frequency may be increased).
Child: Not applicable.
1ml ampoule: 129.53 MRP
❖ **TESTOSTERONE-ROTEX Inj. Rotex Medica/City Overseas**
Testosterone enanthate 250mg/ml; 1ml ampoule: injection.
Dosage & admin: Adult: By deep i.m injection 1ml every 3 weeks. (In mammary carcinoma dose or frequency may be increased).
Child: Not applicable.
1ml amp x 10's pack: 1400.00 TP
❖ **Y-45 Gel Incepta**
Testosterone USP 1% (10mg/gm): gel preparation
Ind: See above under the text.
S/E: See above under the text. Other side-effects include- an allergic reaction, acne, alopecia, asthenia, depression, gynecomastia, headache, hypertension, nausea or vomiting, changes in skin color, swelling of the ankles, breathing disturbances, too frequent or prolonged erections; abdominal pain or discomfort, fatigue.
Dosage & admin: Adult: The recommended starting dose of Y-45 gel is 5gm applied once daily (preferably in the morning) to clean, dry, intact skin of the shoulders, upper arms and/or abdomen. Serum testosterone levels should be measured approximately 14 days after initiation of therapy to ensure proper dosing. If the serum testosterone concentration is below the normal range, or if the desired clinical response is not achieved, the daily Y-45 gel dose may be increased from 5gm to 7.5gm and from 7.5gm to 10gm as instructed by the physician. Y-45 gel must not be applied to the genitals.
Children & adolescents: Y-45 gel has not been clinically evaluated in males under 18 years.
20gm gel tube: 200.00 MRP

Anabolic steroid (Androgen)

NANDROLONE[21,40]

NANDROLONE DECANOATE: Injection
Ind: Osteoporosis, debility, convalescence, during corticosteroid therapy, aplastic anaemia and anaemia of chronic renal failure or malignant disease.
C/I: Severe hepatic impairment, prostate cancer, male hreast cancer, pregnancy and breast-feeding, porphyria.
S/E: Acne, sodium retention with oedema, virilisation with high doses including voice changes (sometimes irreversible), amenorrhoea, inhibition of spermatogenesis, premature epiphyseal closure; abnormal liver-function tests reported with high doses; jaundice on prolonged treatment; liver tumours reported occasionally on prolonged treatment with anabolic steroids.
Cautions: Cardiac and renal impairment, hepatic impairment, hypertension, diabetes mellius, epilepsy, migraine; monitor skeletal maturation in young patients; skeletal metastases (risk of hypercalcaemia).
Dosage & admin: Adult: 25-50mg i.m. every three weeks.
Anaemia of chronic renal failure, 100-200 mg weekly by deep i.m. injection; aplastic anaemia, 50-150mg weekly; anaemia due to cytotoxic therapy, 200mg weekly starting 2 weeks prior to cytotoxic therapy and continuing until blood count is normal.
Child: Not recommended.

❖ **DECABOLON Inj. Techno Drugs**
Nandrolone decanoate 50mg/1ml amp: injection
1ml ampoule: 112.00 MRP
❖ **DECA-DURABOLIN Inj. Nuvista**
Nandrolone decanoate 50mg/1ml amp: injection
1ml ampoule: 169.00 MRP
❖ **HYDECA Inj. Chemist**
Nandrolone decanoate 50mg/1ml amp: injection
1ml ampoule: 110.00 MRP

❖ ❖ ❖

NANDROLONE PHENYLPROPIONATE: Injection
Ind: Osteoporosis, debility, convalescence, during corticosteroid therapy, refractory anaemias, uraemia.
C/I; S/E; Caution: See above under 'Nandrolone decanoate'.
Dosage & admin: Adult: 25-50mg i.m weekly.
Child: Not recommended.

❖ **ANABOLIN Inj. Techno Drugs**
Nandrolone phenylpropionate 25mg/1ml
ampoule: injection
5 amps pack: 200.00 MRP
❖ **DURABOLIN Inj. Nuvista**
Nandrolone phenylpropionate 25mg/1ml
ampoule: injection
5 amps pack: 345.00 MRP
❖ **HYBOLIN Inj. Chemist**
Nandrolone phenylpropionate 25mg/1ml
ampoule: injection
5 amps pack: 190.00 MRP

Oral Contraceptive prepns.

See later under contraceptive preparations

5. HYPOTHALAMIC & PITUITARY HORMONES & ANTI OESTROGENS[21]

Hypothalamic and pituitary hormones are classified as follows:

1. **Hypothalamic and anterior pituitary hormones and anti-oestrogens:**

a. **Hypothalamic hormones-** viz. *Gonadorelin, Protirelin, Sermorelin,*
b. **Anterior pituitary hormones**- viz. *Corticotrophins (tetracosactrin); Gonadotrophins (chorionic gonadotrophin, Follitrophin alpha & beta, human menopausal gonadotrophin, urofollitrophin); Growth hormone (omatrophin)*
c. **Anti-oestrogens- viz.** *Clomiphene, Tamoxifen.*

2. **Posterior pituitary hormones & antagonists**

a. **Poserior pituitary hormones-** viz. *Vasopressin, (synthetic analogue, desmopressin and lypressin).*
b. **Antagonists (antidiuretic hormone antagonists)-** viz. *Demeclocycline*

Drugs for Sterility

CLOMIPHENE[21,33]

CLOMIPHENE: Tablet
Ind: Sterility due to ovulatory failure due to impaired hypothalamic-pituitary function; oligospermia; secondary amenorrhoea.
C/I: Liver dysfunction; large ovarian cyst; Endometrial carcinoma, undiagnosed uterine bleeding.
S/E: Visual disturbances (withdraw), ovarian hyperstimulation (withdraw), hot flushes, abdominal discomfort, occasion-ally nausea,

vomiting, depression, insomnia, breast tenderness, weight gain, rashes, dizziness, hair loss.
Caution: Exclude pregnancy, before and during tratment. Withdraw if visual disturbances occur.
Dosage & admin: Adult: 50mg (1 tab) daily for 5 cons-ecutive days starting on within about 5 days of onset of menstrual cycle (preparably 2nd day). Or at any time if cycle has ceased. Ovulation usually occurs 6 to 10 days following the last day of treatment. In absence of satisfactory result, daily 100mg may be given in the subsequent cycle as a rule for 3 (not more than 6) cycle.
Oligospermia- 50mg daily for 6 weeks.
Secondary amenorrhoea- 50mg daily for 5 days starting at any time.
Child: Not applicable.

❖ **COMIPEN Tab. Pacific**
Clomiphene citrate 50mg/tablet.
50mg x 30's pack: 150.00 MRP
❖ **FERMID Tab. Gaco**
Clomiphene citrate 50mg/tablet.
50mg x 10's pack: 85.00 MRP
❖ **FERTIL Tab. Beximco**
Clomiphene citrate 50mg/tablet.
50mg x 50's pack: 250.00 IP
❖ **OVUCLON Tab. Incepta**
Clomiphene citrate 50mg/tablet.
50mg x 30's pack: 150.00 MRP
❖ **OVULET Tab. Renata**
Clomiphene citrate 50mg & 100mg/tablet.
50mg x 10's pack: 100.00 MRP
100mg x 5's pack: 90.00 MRP
❖ **REOMEN Tab. SK+F**
Clomiphene citrate 25mg, 50mg & 100mg/tablet.
25mg x 25's pack: 125.00 MRP
50mg x 20's pack: 200.00 MRP
100mg x 10's pack: 180.00 MRP

FOLLITROPIN ALFA[70]

❖ **GONAL-F Inj. Serono/Janata Healthcare**
Follitropin alfa, the active ingredient is recombinant follicle stimulating hormone (r-hFSH) as a freeze-dried powder in ampoule with solvent. Available as 75 i.u/ampoule: injection.
Ind: i. Follitropin alfa, followed by chorionic gonadotrophin (hCG), is recommended for the stimulation of follicular development and ovulation in women with hypothalamic-pituitary dysfunction who present with either oligomenorrhoea or amenorrhoea. These women are classified as WHO Group II patients and usually receive clomiphene citrate as primary therapy. They have evidence of endogenous oestrogen production and thus will either spontaneously menstruate or experience withdrawal bleeding after progestagen administration. Polycystic ovarian disease (PCOD) is part of the WHO II classification and is present in the majority of these patients.
ii. Follitropin alfa is indicated for stimulation of multifollicular development in patients undergoing superovulation for assisted reproductive technologies (ART) such as in vitro fertilization (IVF), gamete intra-fallopian transfer (GIFT and zygote intra-fallopian transfer (ZIFT).
C/I: Gonal-F is contraindicated for safety reasons in:

- pregnancy & lactation,
- ovarian enlargement or cyst not due to polycystic ovarian disease,
- gynaecological haemorrhages of unknown aetiology,
- ovarian, uterine or mammary carcinoma,
- tumours of the hypothalamus and pituitary gland,
- case of prior hypersensitivity to Gonal-F. Gonal-F is contraindicated when an effective response cannot be obtained, such as:
- primary ovarian failure,
- malformation of sexual organs incompatible with pregnancy,
- fibroid tumors of the uterus incompatible with pregnancy.

S/E; Warnings & Cautions: Please see below, under the text of follitropin beta (Puregon injection).
Dosage & Admin: Follitropin alfa is intended for subcutaneous or intramuscular administration. The powder should be reconstituted immediately prior to use with the diluent provided. In order to avoid the injection of large volumes, up to 3 containers of Gonal-F 75 or 150 may be dissolved in 1ml of diluent.
Women with hypothalamic-pituitary dysfunction who present with either oligomenorrhoea or amenorrhoea (WHO Group II) :
The object of Gonal-F therapy is to develop a single mature Graafian follicle from which the ovum will be liberated after the administration of hCG.
Gonal-F may be given as a course of daily injections. In menstruating patients treatment should commence within the first 7 days of the menstrual cycle. Treatment should be tailored to the individual's response as assessed by measuring (i) follicle size by ultrasound and/or (ii) oestrogen secretion. A commonly used regimen commences at 75-150 IU FSH daily and is increased by 37.5 IU (up to 75 IU) at 7 or 14 day intervals if necessary, to obtain an adequate, but not excessive, response. If a patient fails to respond adequately after 5 weeks of treatment, that cycle should be abandoned.
When an optimal response is obtained, single injection of up to 10,000 IU hCG should be administered 24-48 hours after the last Gonal-F injection. The patient is recommended to have coitus on the day of, & the day following hCG administration.
If an excessive response is obtained, treatment should be stopped and hCG withheld. Treatment should recommence in the next cycle at a dosage lower than that of the previous cycle.
Women undergoing superovulation for in-vitro fertilization and other assisted reproductive technologies:
A regimen for superovulation involves the administration of 150-225 IU of Gonal-F daily, commencing on days 2 or 3 of the cycle. Treatment is continued until adequate follicular development has been achieved (as assessed by monitoring of serum oestrogen concentrations and/or ultrasound examination), with the dose adjusted according to the patient's response, to usually not higher than 450 IU daily.
A single injection of up to 10,000 IU hCG is administered 24-48 hours after the last Gonal-F injection to induce final follicular maturation.
Down-regulation with a gonadotrophin-releasing homone (GnRH) agonist is now commonly used in order to suppress the endogenous LH surge and to control tonic levels of LH. In a commonly used protocol, Gonal-F is started approxima-tely 2 weeks after the start of agonist treatment, both being continued until adequate follicular development is achieved. For example, following two-weeks treatment with an agonist 225 IU Gonal-F are administered (subcutaneous or intramuscularly) for the first 7 days. The dose is then adjusted according to the ovarian response.
Drug inter: Clinically no significant adverse drug interactions have been reported during Gonal-F therapy.
Concomitant use of Gonal-F with other agents used to stimulate ovulation may potentiate the follicular response, whereas concurrent use of GnRH agonist-induced pituitary desensitisation may increase the dosage of Gonal-F needed to elicit an adequate ovarian response.
75 i.u ampoule with solvent: 1344.07 MRP

FOLLITROPIN BETA[21,40]

❖ **PUREGON Inj. Nuvista**
Follitropin beta, the active ingredient is recombinant follicle-stimulating hormone (FSH) as freeze-dried powder in ampoule with solvent & in vial. Ampoule of 50 i.u and 100 i.u & vial of 100 i.u: injection.
Ind: Follitropin is indicated for the treatment of female infertility in the following clinical situations- anovulation (including polycystic ovarian disease, PCOD), in women who have been unresponsive to treatment with clomiphene citrate; controlled ovarian hyperstimulation to induce the developm-ent of multiple follicles in medically assisted reproduction programs (e.g in vitro fertilisation/embryo transfer (IVF/ET), gamete intra-fallopian transfer (GIFT) and intracytoplasmic sperm injection (ICSI).
C/I: Tumours of ovary, breast, uterus, pituitary or hypothalamus; pregnancy or lactation; undignosed vaginal bleeding; hypersensitivity to follitropin; primary ovarian failure; ovarian cysts or enlarged ovaries, not related to polycystic ovarian disease (PCOD); malformations of the sexual organs incompatible with pregnancy; fibroid tumours of the uterus incompatible with pregnancy.
S/E: Unwanted ovarian hyperstimulation has been observed in 5% of subjects. Characteristic symptoms of this condition- see under precautions & special warnings. There may be some local reactions at the site of injection, such as bruising, pain, redness, swelling and itching, the majority of which are mild.
Precautions: The presence of uncontrolled nongonadal endocrinopathies (e.g thyroid,

adrenal or pituitary disorders) should be excluded. The first injection of follitropin should only be given under direct medical supervision. Unwanted ovarian hyperstimulation- in the treatment of female patients ultrasonographic assessment of follicular development, and determination of estradiol levels should be performed prior to treatment & at regular intervals during treatment.
A slightly increased risk of ectopic pregnancy and multiple gestations has been seen. In rare instances, arterio-thromboembolisms may occur with follitropin/hCG therapy.
Warnings: Early ultrasound confirmation should be made whether the pregnancy is intrauterine or ectopic or multiple gestation. Since follicles of over 14mm may lead to pregnancies, multiple pre-ovulatory follicles exceeding 14mm carry the risk of multiple gestations. In that case hCG should be withheld and pregnacy should be avoided in order to prevent multiple gestations. Rates of pregnancy loss in women undergoing replacement therapy are higher than in the normal population.

Dosage: Anovulation- a sequential treatment is recommended, initially a daily dose of 75 i.u FSH activity, wihich is to be countinued for at least 7 days; if no ovarian response the daiy sose is then gradually increased until follicle growth ano/or plasma estadiol levels indicate an adequate phrmacodynamic response. The daily dose is then maintained until prevodulary conditionsare fached when there is ultrasonographic evidence of a dominant follicle of at least 18 mm in diameter and or when plasma estadiol 14 days oftreatmet is suffient to reach this state. The administration of follitro-pin is then discontinued and ovulation canbe induced by adminusteing human chorionic gonadotropin (hCG).
50 i.u vial (0.5ml): 1568.00 MRP
100 i.u vial (0.5ml): 3138.00 MRP

HUMAN CHORIONIC GONADOTROPHIN (HCG)[21,33,40]

HUMAN CHORIONIC GONADOTROPHIN: Injection

It is a preparation of a glycoprotein fraction secreted by the placenta & obtained from the urine of pregnant women having the actions of the pituitary luteinizing hormone.
Mode of action: The principal pharmacodynamic activity in women is oocyte meiosis resumption, follicular rupture (ovulation), corpus luteum formation and production of progesterone and estradiol by the corpus luteum. In women, chorionic gonadotrophin acts as a surrogate LH-surge that triggers ovulation. Chorionic gonadotrophin binds on the ovarian theca (and granulosa) cells to a transmembrane receptor shared with the luteinising hormone, the LH/CG receptor, then acts to trigger ovulation.
Ind: Chorionic gonadotrophin is indicated in the treatment of:

1. *Women undergoing superovulation prior to assisted reproductive techniques such as in vitro fertilisation (IVF):* Chorionic gonadotrophin is administered to trigger final follicular maturation and luteinistion after stimulation of follicular growth.
2. *Anovulatory or oligo-ovulatory women:* For induction of ovulation & pregnancy-chorionic gonadotrophin is administered to trigger ovulation and luteinisation in anovulatory or oligo-ovulatory patients after stimulation of follicular growth.
3. *In male:* Hypogonadotrophic hypogonadism, delayed puberty associated with insufficient gonadotrophic pituitary function & cryptorchidism (not due to anatomical obstruction).

C/I: Chorionic gonadotrophin is contraindicated for safety reasons in case of:

- Tumours of the hypothalamus and pituitary gland.
- Hypersensitivity to the active substance or to any of the excipients.
- Ovarian enlargement or cyst due to reasons other than polycystic ovarian disease.
- Gynecological haemorrhages of unknown aetiology.
- Ovarian, uterine, or mammary carcinoma.
- Extrauterine pregnancy in the previous 3 months.
- Active thrombo-embolic disorders.

Chorionic gonadotrophin must not be used when an effective response cannot be obtained, for example:

- Primary ovarian failure.
- Malformations of sexual organs incompatible with pregnancy.
- Fibroid tumours of the uterus incompatible with pregnancy.
- Postmenopausal women.

S/E: Oedema (particularly in males- reduce dose), headache, tiredness, mood changes, gynaecomastia, local reactions; sexual precocity with high doses; may aggravate ovarian hyperstimulation.
Cautions: Cardiac or renal impairment, asthma, epilepsy, migraine. Treatment requires careful monitoring to avoid the ovarian hyperstimulation syndrome & multiple pregnancy.

Dosage & admin: ***In the male:***
Hypogonadotrophic hypogonadism, 1000-2000 i.u 2 to 3 times per week for at least 3 months before any improvement in spermato-genesis can be expected. If the case is sterility, additional doses of an FSH (containing 75 i.u FSH) are to be given daily or 2 to 3 times a week. During this treatment testosterone replacement therapy should be suspended. Delayed puberty, 15000 i.u 2 to 3 times a week for at least 6 months.
Cryptorchidism: Under 2 years of age 250 i.u twice weekly for 6 weeks; under 6 years 500-1000 i.u twice weekly for 6 weeks; over 6 years 1500 i.u twice weekly for 6 weeks. If necessary this treatment can be repeated.
In female:
Induction of ovulation and pregnancy: 5000-10,000 i.u for one time. Luteal phase support, 1000-3000 i.u, may be repeated 2 to 3 times, each may be given within 9 days following ovulation or embryo transfer.
Drug inter: No clinically significant drug interactions have been reported during hCG therapy.
Note: For further informatoin, please consult manufacturer's literature.

❖ PREGNYL Inj. Nuvista
Human chorionic gonadotrophin (HCG), powder for reconstitution, 5000 i.u ampoule with solvent for i.m injection.
5000 i.u amp x 3's pack: 3854.91 MRP

❖ ❖ ❖

RECOMBINANT CHORIONIC GONADOTROPHIN[40,70]

❖ OVIDREL 250 Inj. Serono/Janata Healthcare
Ovidrel is a product of choriogonadotrophin alfa produced by recombinant DNA techniques in chinese hamster ovary cells. It shares the amino acid sequence with urinary human chorionic gonadotrophin. This choriogonadotrophin has the pharmacological actions of the pituitary luteinizing hormone.
Ovidrel is available as choriogonadotrophin alfa 250mcg powder in vial with solvent for subcutaneous injection. (Each vial contains 285mcg to ensure delivery of 250mcg dose). A dose of 250mcg is equivalent to approximately 6500 I.U.
Mode of action: The principal pharmacodynamic activity in women is oocyte meiosis resumption, follicular rupture (ovulation), corpus luteum formation and production of progesterone and estradiol by the corpus luteum. In women, chorionic gonadotrophin acts as a surrogate LH-surge that triggers ovulation. Chorionic gonadotrophin binds on the ovarian theca (and granulosa) cells to a trânsmembrane receptor shared with the luteinising hormone, the LH/CG receptor, then acts to trigger ovulation.
Ind: Recombinant chorionic gonadotrophin is indicated in the treatment of:

1 *Women undergoing superovulation prior to assisted reproductive techniques such as in vitro fertilisation (IVF):* Chorionic gonadotrophin is administered to trigger final follicular maturation and luteinisation after stimulation of follicular growth.
2 *Anovulatory or oligo-ovulatory women:* For induction of ovulation & pregnancy-chorionic gonadotrophin is administered to trigger ovulation and luteinisation in anovulatory or oligo-ovulatory patients after stimulation of follicular growth.

But, there is no clinical experience with recombinant chorionic gonadotrophin in other indications commonly treated with urine derived human chorionic gonadotrophin (hCG).
C/I: See above under the text of human chorionic gonadotrophin (hCG).
S/E; Precautions: See above under the text of human chorionic gonadotrophin (hCG), and consult manufacturer's literature.
Dosage & admin: The followig dosing regimen should be applied:

1. ***Women undergoing superovulation prior to assisted reproductive techniques such as in vitro fertilisation (IVF):*** **250mcg (1 vial) is administered 24 to 48 hours after the last**

administration of an FSH- or hMG preparation, i.e when optimal stimulation of follicular growth is achieved.

2. ***Anovulatory or oligo-ovulatory women:*** **250mcg (1 vial) is administered 24 to 48 hours after optimal stimulation of follicular growth is achieved. The patient is recommended to have coitus on the day of, and the day after, gonadotrophin injection.**

Recombinant chorionic gonadotrophin is intended for subcutaneous administration. The powder should be reconstituted immediately prior to use with the solvent provided. Treatment with recombinant chorionic gonadotrophin should be performed under the supervision of a physician experienced in the treatment of fertility problems.

Drug & other interactions: No clinically significant drug interactions have been reported during hCG therapy. Following administration, Ovidrel (choriogonadotrophin alfa) may interfere for up to ten days with the immunological determination of serum/urinary hCG, leading to a false positive pregnancy test. During Ovidrel therapy, a minor thyroid stimulation is possible of which the clinical relevance is unknown.

Note: For further information, please consult manufacturer's literature.

250mcg vial x 1's pack: 4020.50 MRP

Drugs for Growth failure

GROWTH HORMONE[21]

Growth hormone is an anterior pituitary hormone, which has several different functions, but the most physiologic role is to promote protein synthesis and thus helps in the growth of the individual.The deficiency of growth hormone leads to growth failure.

Growth hormone is used in the treatment of growth hormone deficiency (including short stature in Turner syndrome); only the human type is effective since growth hormone is species specific. The use of growth hormone of human origin (somatotrophin) devoloped a fatal neurologic disease (Creutzfeldt-Jakob disease) in several persons. So, it has been replaced by a synthetic growth hormone of human sequence (somatropin), produced by using recombinant DNA technology.

SOMATROPIN[21,33]

SOMATROPIN: Injection

It is a biosynthetic human growth hormone (r-hGH) produced by using recombinant DNA technology.

Ind: i) Long term treatment of children who have growth failure due to endogenous growth hormone deficiency; ii) short stature in Turner syndrome.

C/I: Somatropin is contraindicated in case of hypersensitivity to the active substance or to any of the excipients.

S/E: Antibody formation; local reactions (rotate subcutaneous injection sites to prevent lipo-atrophy); in Turner syndrome temporary exacerbation of lymphoedema reported.

Coautions: Only patients with open epiphyses; relative deficiencies of other pituitary hormones (notably hypothyroidism); diabetes mellitus (adjustment of antidiabetic therapy may be necessary); avoid in pregnancy (theoretical risk).

Dosage & admin: See below under individual products.

❖ **NORDITROPIN Simplex Inj. Novo Nordisk/Transcom**

Somatropin 5mg (or 15 units)/1.5ml vial: subcutaneous injection.

Ind; C/I; S/E; Cautions: See above under the text of somatropin.

Dosage & admin: 0.5-0.7 units/kg (Turner syndrome, 1 unit/kg) weekly divided into 6 or 7 doses for subcutaneous injection (may be given by intramuscular injection divided into 2 or 3 doses, but more painful).

Note: Before administration, dissolve the sterile powder in the solvent and prepare a solution for subcutaneous injection.

1.5ml (5mg or 15 units) vial x 1's pack: 10500.00 MRP

❖ **OMNITROPE LICA Inj. Sandoz/Novartis**

Somatropin 5mg (or 15 units)/1.5ml vial: subcutaneous injection.

Ind; C/I; S/E; Cautions: See above under the text of somatropin.

Dosage & admin: 0.5-0.7 units/kg (Turner syndrome, 1 unit/kg) weekly divided into 6 or 7 doses for subcutaneous injection (may be given by intramuscular injection divided into 2 or 3 doses, but more painful).

Note: Before administration, dissolve the sterile powder in the solvent and prepare a solution for subcutaneous injection.

1.5ml (5mg or 15 units) vial x 5's pack: 40,000.00 MRP

Drugs for Milk suppression

BROMOCRIPTIN MESYLATE: Tablet

Preparations: See under the chapter of CNS drugs in the section of 'drugs used in parkinsonism'

Drugs for menopausal symptoms: Hormone replacement therapy (HRT)[40,58,111(B),122]

OESTRADIOL ONLY & OESTRADIOL- NORETHISTERONE PREPN.[40,58,111(B),122]

OESTRADIOL ONLY & OESTRADIOL-NORETHISTERONE PREPN: Tablet/Patches

Hormonal drugs for replacement therapy (HRT) are prepared in three forms:

1. ***For 'oestrogen only HRT'-*** preparations containing only oestradiol in tablets or patches.
2. ***For 'regular period HRT'-*** preparations containing oestradiol only & oestradiol-norethisterone combinedly in tablets or patches.
3. ***For 'period free HRT'-*** preparations containing oestradiol-norethisterone combinedly in tablets or patches.

Mode of action: Estradiol is a naturally occuring hormone and norethisterone acetate is a synthetic derivative of 19-nortestosterone. The active hormone of replacement therapy is estradiol, the biologically most potent estrogen produced by the ovary. Its synthesis in the ovarian follicles is regulated by pituitary hormones. Estradiol is secreted at different rates during the menstrual cycle. The endometrium is highly sensitive to estradiol, which regulates endometrial proliferation during the follicular phase of the cycle and together with progesterone, induces secretory changes during the luteal phase. During the menopause estradiol secretion becomes irregular and eventually ceases altogether. The absence of estradiol is associated with menopausal symptoms (such as, vasomotor instability, sleep disturbances, depressive mood, signs of vulvovaginal and urogenital atrophy and with increased bone loss). In addition, there is growing evidence for an increased incidence in cardiovascular disease in the adsence of estrogen. Estrogen replacement therapy has been found effective in most postmenopausal women to compensate for the endogenous estrogen depletion. However, there is substantial evidence that 'the only estrogen therapy' is associated with an increase in endometrial cancer, but an adjunctive progestogen treatment protects against estrogen-induced endometrial cencer. Therefore, women with an intact uterus should receive combination estrogen-progestogen hormone replacemen therapy.

Norethisterone acetate, a progestogen hormone, when administered prevents estrogen-related endometrial proliferation and thus endometrial cancer.

Ind: Oestradiol only & oestradiol-norethisterone combined preparations are indicated for the treatment of oestrogen deficiency syndrome including prevention of bone mineral content loss as following-

'Oestrogen only HRT'- for hysterectomised women.

'Regular period HRT'- for premenopausal women.

'Period free HRT'- for post menopausal women.

Contra-indications: Known, suspected, or history of carcioma of the breast. Known or suspected oestrogen dependent neoplasia, e.g endometrial carcinoma. Acute or chronic liver disease, or history of liver disease, where liver function tests have failed to return normal. Deep venous thrombosis, thromboembolic disorders, cerebral vascular accident, or a history of these conditions, associated with previous oestrogen use. Abnormal genital bleeding of unknown aetiology. Known or suspected pregnancy. Porphyria.

Side-effects:

Hormonal drugs for 'regular period HRT':

Breast tenderness and bleeding irregularities may occur, specially during the first few months of treatment. Nausea, headache and oedema occur rarely. Symptoms are normally transient. Alopecia, skin reactions and vision abnormalities

have been reported. Missed tablets may lead to bleeding episodes. Breast and endometrial cancer, thromboembolic disorders as well as changes in hepatic function have been reported, but there is no reason to believe that the incidence is increased.

Hormonal drugs for 'period free HRT': Main side effects are irregular bleedings which occur most frequently during the first few months of treatment. Women may even bleed from an atrophic endometrium, the reasons for which are presently unknown. After the first month of treatment a gradual decrease in bleeding frequency is normally seen. Bleedings may continue in some postmenopausal women; in these cases consideration should be given to change to an alternative therapy. Missed tablets may lead to bleeding episodes. Breast tenderness, nausea, headache and oedema may occur. Symptoms are normally transient. Alopecia, skin reactions and vision abnormalities have been reported. Breast cancer and thromboembolic disorders have been reported, but there is no reason to believe that incidence is increased.

'Oestrogen (oestradiol) only HRT': During the first few months of treatment breast tenderness may occur. Nausea, headache and oedema may occur rarely. Symptoms are normally transient. Skin reactions have been reported. Missed tablets may lead to bleeding in women with an intact uterus.

Warnings: Treatment with unopposed oestrogens is known to increase the risk of endometrial cancer. The risk appears to depend on both duration of treatment and on oestrogen dose. Endometrial hyerplasia (atypical or adenomatous) often precedes endometrial cancer. Recent prospective studies suggest that an excess of endometrial hyperplasia can virtually be avoided if the endometrium is protected by a sufficient dose of progestogen for at least 10 days. Kliogest- recent studies show that an excess of endometrial hyperplasia can virtually be avoided since the endometrium is brought to an atrophic state by continuous administration of progestogen during the entire oestrogen treatment period. Long term use of oestrogen replacement therapy in high doses is associated with an increase in breast cancer risk. Use of small doses for short periods shows no measurable increase in risk. The effects of smaller doses of oestrogen for long periods are not adequately studied, but are not likely to be associated with any substantially increased risk of breast cancer.

Precautions: A physical examination and complete medical and family history should be taken prior to initiation of oestrogen therapy, especially- blood pressure, breast and abdominal examination, and a gynaecological examination. Women with an intact uterus who are or have previously been treated with unopposed oestrogens, should be examined with special care to investigate possible hyperstimulation of the endometrium before starting therapy. In general, oestrogen should not be prescribed for longer than one year without performing another physical and gynaecological examination. And the lowest dose of HRT which alleviates symptoms should be prescribed. Women in antihypertensive treatment or women with epilepsy, migraine, diabetes, asthma or cardiac failure should be monitored regularly. Thromboembolism has been reported in connection with oestrogen replacement therapy, but there is no background to believe the overall incidence is increased.

These preparations have no contraceptive effects.

Oestrogen only HRT / Regular period HRT:
If abnormal or irregular bleedings occur during or shortly after therapy, diagnostic aspiration biopsy or curettage should be performed to rule out possibility of uterine malignancy.

Period free HRT: During the first few months bleedings or spottings may occur, but are usually transient and do not require diagnostic aspiration biopsy or curettage; however, if bleedings or spottings continue or first appear at a later stage in treatment or shortly after therapy has been stopped, diagnostic aspiration biopsy or curettage should be performed to rule out possibility of uterine malignancy.

Period free HRT / Regular period HRT:
Long term prophylactic treatment of osteoporosis should be restriceted to women at increased risk of developing fractures. Factors predisposing to osteoporosis- White/Asian race, female sex, thin or petite, family history of the disease, pre- or postmenopausal oestrogen deficiency, early menopause, inadequate calcium nutrition, cigratte smoking, alcohol abuse, sedentary life-style.

Indications for immediate withdrawal of therapy:
Deep venous thrombosis, thromboembolic disorders, appearance of jaundice, emergence of migraine-type headache, sudden visual disturbances, significant increase in blood pressure. Withdrawal of treatment 4-6 weeks prior to major surgery is advised.

Preparations: Known preparations are not available in the market at this moment. May be available later on.

TIBOLONE[26,40]

TIBOLONE: Tablet

Tibolone is a synthetic steroid with tissue specific estrogenic, progestogenic and androgenic effect. It is recently introduced for the 'hormone replacement therapy (HRT)' of the menopausal symptoms & other associated post-menopausal conditions.

Mode of action: As tibolone has got a combined oestrogenic and progestogenic activity with weak androgenic activity; it suppesses the gonadotrophin levels in postmenopausal women (and inhibits ovulation in fertile women). Following oral administration tibolone is rapidly metabolized into three compounds, which contribute to the pharmacological effects of tibolone. Two of these metabolites (3 alpha-hydroxide-tibolone and 3 beta-hydroxide-tibolone) have predominantly estrogenic activity, a third metabolite (delta 4-isomer of tibolone) and the parent compound have progestogenic and androgenic activities.

It is given continuously without cyclical progestogen.

Ind: 1. Treatment of the climacteric symptoms (or vasomotor symptoms, such as- hot flushes, sweating, vaginal dryness & less elasticity, mood disorders, anxiety etc.)following natural or surgical menopause, (unsuitable for use within 12 months of the last menstrual period- may cause irregular bleeding).
2. Prevention of post-menopausal and post-oophorectomy osteoporosis and improvement of bone-mineral density in patients with established post-menopausal osteoporosis.
3. Vaginal atrophy.
4. Prevention of frequent UTI and urinary incontinence in post-menopausal women.

C/I: Pregnancy & breast-feeding; hormone-dependent tumours; history of cardiovascular or cerebrovascular disease; vaginal bleeding of unknown etiology; severe liver disorders.

S/E: Occasionaly weight changes, pretibial oedema, dizziness, seborrhoeic dermatosis, vaginal bleeding, headache, gastro-intestinal disturbances, increased facial hair, migraine, visual disturbances, chnange in liver function tests, rash and pruritus.

Cautions: Renal inpairment, epilepsy, migraine, diabetes mellitus, hypercholesterolaemia; withdraw if signs of thrombo-embolic disease, abnormal liver function tests or cholestatic jaundice.

Warnings: To avoid irregular & abnormal bleeding, tibolone should be started at least 12 months after last natural bleeding.

A higer dose than the recommended one may induce vaginal bleeding; when higher doses are used, additional administration of progestogen at regular intervals is advisable, for instance every 3 months for 10 days.

If changing from another preparation for hormone replacement therapy, the endometrium may already be stimulated, so induction of a withdrawal bleed with a progestogen is advisable. During prolonged treatment with steroids with hormonal activity, periodic medical examination is advisable.

Tibolone is not intended for contraceptive use.

Dosage & admin: Climacteric or vasomotor symptoms following natural or surgical menopause, & other post-menopausal problems: 2.5mg daily preferably at the same time. Improvement of symptoms generally occurs within a few weeks, but optimal results are obtanined when therapy is continued for at lwast 3 months.

At the recommended dosage, it may be used uniteruptedly for longer periods.

To prevent osteoporosis in post-menopa-usal women or after oophorec-tomy an uninterrupted long-term (5-10 years) therapy, at a rate of 2.5mg/day is needed.

In case of missed pill, if no more than 12 hours have passed, the pill should be taken immediately, otherwise the next dose should be continued as before.

Drug inter: Since tibolone may increase blood fibrinolytic activity, it may enhance the effect of anticoagulants. This effect has been reported with warfarin. Drugs that induce hepatic microsomal enzymes or other enzyme inducing drugs may accelerate the metabolism of tibolone and thus lower its activity.

❖ **LIVIAL Tab. Nuvista**
Tibolone 2.5mg/tablet.
28's pack: 1250.00 MRP

❖ **MENOREST Tab. Renata**
Tibolone 2.5mg/tablet.
30's pack: 560.00 MRP
❖ **TIBONE Tab. Techno Drugs**
Tibolone 2.5mg/tablet.
30's pack: 450.00 MRP
❖ **UBILON Tab. Incepta**
Tibolone INN 2.5mg/tablet.
30's pack: 600.00 MRP

Hormone prepns. for other uses

SOMATOSTATIN[21,70]

SOMATOSTATIN: Injection for i.v infusion
Somatostatin a synthetic peptide hormone, available as injection for intravenous infusion.
Ind: Severe acute haemorrhage from gastric & duodenal ulcer; bleeding from acute erosive & haemorrhagic gastritis, oesophageal varices; pancreatic, biliary & g.i fistulae, complications of postoperative pancreatitis; acute pancreatitis.
C/I: Pregnancy, puerperium & lactation period.
S/E: Nausea, flushing, g.i distress, diarrh oea & minor fluctuations in blood sugar.
Dosage & Admin: Administer at a rate of 250mcg/hour or 6mg (2 amps) in 24 hours in a continuous infusion until documented cessation of bleeidng for upto even 5 days. Duration of infusion: for bleeding, 5-120 hours; prophylaxis, 120-140 hours; fistulae, 5-15 days. Reports of continuous infusion upto 37 days without complications are available.

❖ **STILAMIN Inj. Serono/Janata**
Somatostatin (a synthetic peptide hormone) 3mg in ampoule: injection.
3mg amp x 1's pack: 4142.07 MRP

6. DRUGS AFFECTING BONE METABOLISM

1 **Calcitonin**
2 **Bisphosphonates**

Note: For detail, please see in the chapter 'drugs used in bone formation & bone disorders'

7. OTHER ENDOCRINE DRUGS

1 **Bromocriptine & other dopamine receptor stimulants- viz. Bromocriptine, Cabergoline, Quinagolide**
2 **Drugs affecting (inhibiting) gonadotrophins- viz. Cetrorelix, Danazol, Gestrinone**
3 **Metyrapone & trilostane- viz. Metyrapone, Trilostane**

Drugs affecting (inhibiting) gonadotrophins

CETRORELIX[70]

❖ **CETROTIDE Inj. Serono/Janata Traders**
Cetrorelix acetate 0.26-0.27mg equivalent to cetrorelix 0.25mg/vial: powder for injection with one pre-filled syringe containing 1ml water as solvent.
Mode of action: Cetrorelix inhibits the effects of a natural hormone, called luteinising hormone releasing hormone (LHRH). LHRH regulates the secretion of luteinising hormone (LH), which induces ovulation during the menstrual cycle. Cetrorelix inhibits premature ovulation which is undesirable during hormone treatment for ovarian stimulation as only mature egg cells are suitable for fertilisation.
Ind: Prevention of premature ovulation in patients undergoing a controlled ovarian stimulation, followed by oocyte pick-up and assisted reproductive techniques.
C/I: Hypersensitivity to cetrorelix acetate, extrinsic peptide hormones or mannitol; pregnancy and lactation; postmenopausal women; patients with moderate and severe renal and hepatic impairment.
S/E: Mild and transient reactions at the injection site, e.g erythema, itching and swelling. Occasionally systemic side effects, e.g nausea and headache have been reported. In addition, a single case of pruritus has been reported during treatment with cetrorelix.
A severe hypersensitivity reaction, associated with cough, rash and hypotension, was observed in one patient after 7 months of treatment of ovarian cancer with cetrorelix (10mg/day). The patient recovered completely within 20 minutes. A causal relationship could not be excluded.
Occasionally an ovarian hyperstimulation syndrome (OHSS) can occur which is an intrinsic risk of the stimulation procedure (see precautions & warnings for use). Symptoms like abdominal pain, tension, nausea, vomiting, diarrhoea and breathing difficulties may indicate an OHSS. Please inform the concerned doctor immediately, if the patient feels such symptoms.
If the patient notices any unwanted effect not mentioned in the list of side-effects or if she is unsure about the effect of this medicine, please inform the concerned doctor immediately.
Precautions & warnings: During or following ovarian stimulation an ovarian hyperstimulation syndrome can occur. This event must be considered as an intrinsic risk of the stimulation procedure with gonadotropins.
An ovarian hyperstimulation syndrome should be treated symptomatically, e.g with rest, intravenous electrolytes/colloids and heparin therapy. Luteal phase support should be given according to the reproductive medical centre's practice.
There is limited experience up to now with the administration of cetrorelix during a repeated ovarian stimulation procedure. Therefore, cetrorelix should be used in repeated cycles only after a careful risk/benefit evaluation.
Pregnancy & lactation: Cetrorelix is not inteneded to be used during pregnancy and lactation. Studies in animals have indicated that cetrorelix exerts dose related influence on fertility, reproductive performance and pregnancy. No teratogenic effects occured when the drug was administered during the sensitive phase of gestation.
Dosage & admin: Cetrorelix 0.25mg should only be prescribed by a specialist experienced in this field.
Cetrorelix 0.25mg is for subcutaneous injection into the lower abdominal wall. The content of 1 vial (0.25mg cetrorelix) is to be administered once daily, at 24 hours intervals, either in the morning or in the evening.
Administration in the morning: **Treatment with cetrorelix 0.25mg in the morning should commence on day 5 or 6 of ovarian stimulation (approximately 96 to 120 hours after start of ovarian stimulation) with urinary or recombinant gonadotropins and is to be continued throughout the gonadotropin treatment period including the day of ovulation induction.**
Administration in the evening: **Theratment with cetrorelix 0.25mg in the evening should commence on day 5 of ovarian stimulation (approximately 96 to 108 hours after start of ovarian stimulation) with urinary or recombinant gonadotropins and is to be continued throughout the gonadotropin treatment period until the evening prior to the day of ovulation induction.**
Cetrorelix injection can be administered by the patient herself after appropriate instructions by her doctor. (For instructions for use and handling the injection- see manufacturer's literature).
Missing a dose: **Ideally cetrorelix 0.25mg should be administered at 24 hours intervals. But if missed to administer the injection at the right time it is no problem to administer this dose at a different time of the same day. If missed to administer cetrorelix 0.25mg on one day, please contact the concerned doctor immediately and ask for advice.**
Drug inter: In vitro investigations have shown that interactions are unlikely with medications that are metabolised by cytochrome P450 or glucuronised or conjugated in some other way. However, the possibility of interactions with commonly used medicinal products cannot entirely be excluded.
0.25mg vial with water in pre-filled syringe x 7's pack: 17852.00 MRP

DANAZOL[21,85,94]

DANAZOL: Capsule
Danazol is a synthetic steroid drug derived from ethisterone.
Different studies established that the drug is neither oestrogenic nor progestational but has some weak androgenic activity, which is dose related. Danazol inhibits pituitary gonadotrophins i.e it depresses the output of both follicle-stimulating hormone (FSH) and luteinizing hormone (LH).
Ind: Endometriosis; benign (fibrocystic) breast cysts; gynaecomastia; menorrha-gia; severe cyclical mastalgia; pre-operative thining of endometrium; hereditary angioedema (of all types).
C/I: Pregnancy; breast-feeding; undiagnosed

abnormal genital bleeding; markedly impaired hepatic, renal or cardiac function; thromboembolic diseases; androgen-dependent tumours; porphyria.
S/E: Nausea, dizziness, skin reactions including rashes, photosensitivity and exfoliative dermatitis, fever, backache, nervousness, mood changes, anxiety, changes in libido, vertigo, fatigue, epigastric and pleuritic pain, headache, weight gain; menstrual disturbances, vaginal dryness and irritation, flushing and reduction in breast size; musculo-skeletal spasm, joint pain and swelling, hair loss; androgenic effects including acne, oily skin, oedema, hirsutism, voice changes and rarely clitoral hypertrophy; temporary alteration in lipoproteins and other metabolic changes, insulin resistance; thrombotic events; leucopenia, thrombocytopenia, eosinophilia, reversi-ble erythrocytosis or polycythaemia reported; headache and visual disturb-ances may indicate benign intracranial hypertension; rarely cholestatic jaundice, pancreatitis, peliosis hepatis and benign hepatic adenomata.

Cautions: Because danazol may cause some degree of fluid retention, conditions that might be influenced by this factor, such as epilepsy, migraine, cardiac or renal function, hypertension require careful observation. Elderly. Withdraw treatment if virilisation.

Warnings: As danazol is contra-indicated in pregnancy, a pregnancy test is recommended prior to starting therapy. Additionally a non-hormonal method of contraception should be used during therapy. If a patient becomes pregnant while taking danazol, therapy should be discontinued and the patient should be apprised of the potential risk of the foetus.

Dosage & admin: Drug treatment usually given in up to 4 divided doses; in women of child-hearing potential, treatment should start during menstruation, preferably on day 1.

Endometriosis: **200-800mg daily in up to 4 divided doses, adjusted to achieve amenorrhoea, usually for 6 months (up to 9 months in some cases).**

Menorrhagia: **200mg daily, usually for 3 months (but in view of its side-effects, treatment with other drugs may be preferable).**

Severe cyclical mastalgia: **100-400mg daily usually for 3-6 months.**
Benign breast cysts: **300mg daily usually for 3-6 months.**
Gynaecomastia: **400mg daily in up to 4 divided doses for 6 months (adolescents 200mg daily, increased to 400mg daily if no response after 2 months).**
Pre-operative thinning of endometrium: **400-800mg daily in up to 4 divided doses for 3-6 weeks.**
Hereditary angioedema: **start with 200mg 2 or 3 times daily. After favourable initial respone (is obtained in terms of prevention of episodes of oedematous attacks) the proper continuing dosage should be determined by decreasing the dosage by 50% or less at intervals of 1-3 months or longer if frequency of attacks prior to treatment dictates. If an attack occurs during therapy the daily dosage may be increased by up to 200mg.**

❖ **DANAMET Cap. SK+F**
Danazol 100mg & 200mg/capsule.
100mg x 18's pack: 360.00 MRP
200mg x 18's pack: 684.00 MRP
❖ **LOZANA Cap. Incepta**
Danazol 100mg & 200mg/capsule.
100mg x 20's pack: 400.00 MRP
200mg x 14's pack: 532.00 MRP

Chapter-6
CONTRACEPTIVE METHODS & PREPARATIONS

CONTRACEPTIVE METHODS

Different physicochemical contraceptive methods have been discussed in the clinical section of this book. Only hormonal contraceptive preparations (oral pills) are discussed hear in this chapter.

Oral contraceptive prepns.

COMBINED ORAL PILLS[21,40,58]

OESTROGEN + PROGESTERONE PREPN: Tablet (pill).
Oestrogen and Progesterone preparations.
Ind: Contraception; (control menopausal and menstrual symptoms- see in the early section under female sex hormones).
C/I: Pregnancy. History or presence of thrombophlebitis, thromboembolic disorders, cerebrovascular or cardiovascular diseases, sickle cell anaemia. Acute or ch. liver diseases, impaired hepatic excretory function; history of idiopathic jaundice of pregnancy. Herpes of pregnancy. Hormone-dependent carcinoma. Persistence of HCG levels after removal of hydatidiform mole. Abnormal vaginal bleeding.
S/E: Nausea, vomiting, headache, breast tenderness, changes in body weight. changes in libido, depression, chloasma, hypertension, impairment of liver function, benign hepatic tumours, reduced menstrual loss, spotting in early cycles, amenorrhoea; vaginal infection (e.g candidiasis).
Cautions: Diabetes, hypertension, cardiac or renal disease, migraine, epilepsy, depression, asthma, multiple sclerosis, wearing of contact lenses, uterine fibromyomata, lactation.
Risk of arterial thrombosis associated with oral contraception is increased with age and aggravated by smoking and obesity.
Examine blood pressure, pelvic organ and breasts before and regularly during treatment.
Dose: See under individual preparation.

❖ **CILEST-21 Tab. Cilag Ag/ Tajarat**
Norgestimate 0.25mg & ethinylestradiol 0.035mg/tablet.
Ind; C/I; S/E; Cautions: See notes at the beginning.
Dosage & admin: 1 tablet daily regularly for 21 days starting on 5th day of menstruation until 26th day. Then after an interval of 7 days start the next course.
21 tabs pack x 3 cycle box:
❖ **DESOLON Tab. Renata**
Ethinylestradiol 30mcg & desogestrel (a progestagen) 150mcg/tablet.
Ind; C/I; S/E; Cautions: See note at the beginning.
Dosage & admin: 1 tablet daily for 21 days starting on 5th day of menstruation, then after an interval of 7 days start the next course.
1 x 21's pack: 60.06 MRP
10 x 21's pack: 600.60 MRP

❖ **LYNES Tab. Nuvista**
Lynestrenol 2.5mg & Ethinyloestradiol 0.05mg/tablet.
Ind; C/I; S/E; Cautions: See notes at the beginning.
Dosage & admin: 1 tablet daily regularly for 22 days starting on 5th day of menstruation until 26th day. Then after an interval of 6 days start the next course.
22 tabs pack: 82.72 MRP

❖ **MARVELON Tab. Nuvista**
Ethinylestradiol 0.03mg & Desogestrel (a progestagen) 0.15mg/tablet.
Ind; C/I; S/E; Cautions: See note at the beginning.
Dosage & admin: 1 tablet daily for 21 days starting on 5th day of menstruation, then after an interval of 7 days start the next course.
21 tabs pack: 69.72 MRP

❖ **OVOSTAT Gold Tab. Nuvista**
Lynestrenol 1mg & Ethinyloestradiol 0.05mg ? /tablet.
Ind; C/I; S/E; Cautions: See note at the beginning.
Dosage & admin: 1 tablet daily in the evening for 22 days starting on 5th day of menstruation, then after an interval of 6 days start the next course.
22 tabs pack: 38.72 MRP

Emergency Contraceptive Pill

LEVONORGESTREL

LEVONORGESTREL: Tablet
Levonorgestrel is a synthetic progestogen hormone. It is used as an 'emergency contraceptive pill'.
Mode of action: Levonorgestrel is a progestogen. A single dose of 0.75mg levonorgestrel taken immediately after the sexual intercourse prevents conception. It acts by preventing or delaying ovulation, inhibiting fertilization or enhancing implantation depending on which part of the female cycle it is used.
Ind: Emergency oral contraception, to prevent unwanted pregnancy after unprotected intercourse (such as, usual intercourse without taking any contraceptive measure, broken condom, dislodged diaphragm, IUD loss or removal, unsuccessful withdrawal). Failure rate is only 2% in women who use it correctly. No more than 4 tablets can be taken monthly at 2-4 occasions. To females having sexual intercourses more frequently combined oral contraceptives (or other contraceptive methods) are recommended. Lactating mother can use it
C/I: Confirmed pregnancy. In case of vaginal bleeding of unknown origin, hepatic and biliary disease, history of gestational jaundice, breast, ovarian or uterine carcinoma, it should be administered after careful consideration of the risk/benefit ratio (unwanted pregnancy/aboriton).
S/E: Nausea, break-through or withdrawal bleeding may occur 2-3 days after taking the tablets which may be reduced by Rutascorbin administration.
In case of more severe bleeding gynae-cological examination is recommended before taking Postinor again.
Caution: Consult a gynecologist if necessary.
Dosage & admin: 1 tablet within 72 hours after the event of unprotected intercourse and a second one 12 hours after the first. Do not delay treatment unnecessarily. As the use of this drug is ineffective & contra-indicated in confirmed pregnancy, but its use does not interrupt an established pregnancy, and remains thereof without effect in these cases.
No more than 4 tablets are allowed to be taken per month.

❖ **EMCON Tab. Renata**
Levonorgestrel 0.75mg/tablet.
2 tabs pack: 45.00 MRP

❖ **POSTINOR-2 Tab. Gedeon Richter/ City Overseas**
Levonorgestrel 0.75mg/tablet.
2 tabs pack: 30.00 TP

Chapter-7
SYSTEMIC ANTIMICROBIAL DRUGS

ANTIMICROBIAL DRUGS

Antimicrobial drugs are classified in different ways: such as, i. according to chemical structure, ii. mechanism of action, & iii. activity against different organisms.

A. According to chemical structure:

1. β-Lactam antibiotics- such as,
   i. Penicillins
   ii. Cephalosporins
   iii. Carbapenems
   iv. Monobactams
2. Tetracyclines
3. Aminoglycosides
4. Macrolides
5. Clindamycin
6. Chloramphenicol
7. Vancomycin
8. Bacitracin
9. Rifampicin
10. Sulfonamides & Trimethoprim
11. Quinolones & Fluoroquinolones
12. Metronidazole & tinidazole

B. According to mechanism of action:

1. Inhibitors of cell wall synthesis-
   i. Lactam antibiotics (see above)
   ii. Vancomycin
   iii. Bacitracin
2. Inhibitors of protein synthesis-
   i. Tetracyclines
   ii. Aminoglycosides
   iii. Macrolides
   iv. Chloramphenicol
   v. Clindamycin
3. Inhibitors of metabolism or Folate antagonists-
   i. Sulphonamides
   ii. Trimethoprim
4. Inhibitors of nucleic acid function or synthesis-
   i. Quinolones & Fluoroquinolones
   ii. Rifampicin
5. β-Lactamase inhibitors
   i. Clavulanic acid
   ii. Sulbactam
   iii. Tazobactam

C. According to activity against different organisms:

1. Antibacterial drugs
2. Antiviral drugs / Anti-AIDS drugs
3. Antifungal drugs
4. Antiprotozoal drugs
5. Anthelmintics

1. ANTIBACTERIAL DRUGS[21]

1.12 *Metronidazole & tinidazole*
1.13 *Urinary tract anti-infectives.*

1.1 Penicillin group of drugs[21,23,105]

Penicillins are the oldest & most widely used antibiotics. Penicillin is an organic acid derived from cultures of the mold penicillium chrysogenum. In the pathway of production of penicillin, the key intermediate product is 6-aminopenicillanic acid. The newer penicillin derivatives are synthesized by chemical substitution of different side chains at the R position of 6-aminopenicillanic acid.
Structurally penicillins belong to lactam group. Addition of side chains (at R position) affects the antimicrobial spectrum, stability to stomach acid, & susceptibility to bacterial degradative enzymes (i.e lactamase or penicillinase).
Penicillins are the highly effective but least toxic drugs among the known antibiotics. The major adverse reaction of penicillin is hypersensitivity.

Classification:

1. **Benzylpenicillin & Phenoxymethyl penicillins:** such as, *Benzylpenicillin, Phenoxymethylpenicillin, Procaine penicillin.*
2. **Long acting penicillins:** such as, *Benzathine penicillin.*
3. **Penicillinase-resistant penicillins:** such as, *Cloxacillin, Dicloxacillin, Flucloxacillin, Methicillin, Nafcillin, Oxacillin, Temocillin.*
4. **Broad spectrum penicillins:** such as, *Ampicillin, Amoxyillin, Co-amoxiclav, Co-fluampicil.*
5. **Antipseudomonal penicillins:** such as, *Azlocillin & Mezlocillin, Carbenicillin, Piperacillin, Ticarcillin.*
6. **Mecillinams:** Such as, *Pivmecillinam hydrochloride.*

Mode of action: Penicillins are the bactericidal drugs that they kill the bacteria by interfering with synthesis of the cell wall. The bacterial cell wall consists of strands of a linear peptidoglycan made up of alternating building blocks of N-acetylglucosamine and N-acetylmuramic acid. The synthesis of bacterial cell wall occurs in three steps, in the first step formation of nucleotide (UDP-N -acetylmuramic acid-pentapeptide); in the second step formation of the linear peptidoglycans; in the third or final step, there is cross-linking (or transpeptidation) of these linear strands occur by an enzyme 'transpeptidase'. Penicillins (and cephalosporins) interfere with this final step of bacterial cell wall synthesis (transpeptidation or cross-linkage), that they bind to this enzyme 'transpeptidase' and act as competitive inhibitors, leading to synthesis a defective cell membrane, which is osmotically less stable. In addition, changes in the cellular shape of bacteria occur after binding of penicillins to various penicillin-binding proteins (PBPs) in the cell wall. Finally, cell lysis occurs after release of murein hydrolases present in the cell wall, which degrade performed cell wall.

Benzylpenicillin & Phenoxymethyl penicillin

PENICILLIN G[21,33]

PENICILLIN G or BENZYL PENICILLIN: Injection.
Ind: Indicated in tonsillitis, acute & chronic bronchitis, bronchopneumonia, lobar pneumonia; acute & chronic sinusitis; otitis media; scarlet fever, erysipelas, lung abscess, furunculosis, carbuncle; gonorrhoea and organisms causing gas gangrene, actinomyces, anthraces and syphilis, (for elaborate, see pharmocology section).
C/I: History of penicillin allergy; renal impairment.
S/E: Sensitivity reaction including urticaria, fever, joint pain, angioedema, anaphylactic shock in hypersensitive patient; diarrhoea after administration by mouth.
Dosage & admin: In general infection, 5 to 10 lac. units (300-600mg) slow i.v or i.m 4 times daily.
In Syphilis, total dose should not be less than 50 lac units.
In Gonorrhoea, 5 lac units 8 or 12 hourly daily.
Intrathecal injection, 10,000-20,000 units once or twice daily.
Meningitis, by slow i.v injection or by infusion 4,00,000 units/kg/day in 4 divided doses.
Child: upto 12 yrs. 10-20 mg/kg daily; Neonate, 30mg/kg daily in divided doses.

❖ **COMBIPEN 4 Lac Inj. Acme**
Procaine penicillin 3 lac + benzyl penicillin 1 lac/vial: injection
5 vials pack: 50.00 MRP
❖ **PENICILLIN-G SODIUM Inj. Renata**
Benzyl penicillin 5 lac & 10 lac units vial: injection.
5 lac x 1 vial: 6.23 MRP
10 lac x 1 vial: 9.21 MRP
❖ **PRONAPEN 4 Lac Inj. Renata**
Procaine penicillin- G 3 lac + Crystalline penicilin- G 1 lac (total 4 lac) in 1 vial: injection.
1vial pack: 6.03 MRP
❖ **PRONAPEN 8 Lac Inj. Renata**
Procaine penicillin 6 lac, Benzyl penicilin 2 lac (total 8 lac) in 1 vial: injection.
1 vial pack: 9.10 MRP

PENICILLIN V[21,33]

PENICILLIN-V Or PHENOXY-METHYL PENICILLIN: Tablet/Syrup
Ind: Oral penicillin against oropharyngeal infections, tonsillitis, bacterial pneumonia, bronchitis, Otitis media and other penicillin sensitive gm+ve infections.
C/I: History of allergy to any penicillin.
S/E: Hypersensitivity reactions.
Dosage & admin: 250-500mg every 6 hours, at least 30 minutes before food.
Child, up to 1 year 62.5mg, 1-5 years 125mg 6-12 years 250mg every 6 hours.

❖ **BIOPEN VK Tab. Bio-pharma**
Phenoxymethyl penicillin 250mg/tablet.
100's pack: 150.00 MRP
❖ **BIOPEN VK Syp. Bio-pharma**
Phenoxymethyl penicillin 125mg/5ml: syrup
50ml bot: 18.21 MRP
100ml bot: 28.80 MRP
❖ **CRYSTAPEN V Tab. GlaxoSmithKline**
Phenoxymethyl penicillin 250mg/tablet.
500's pack: 773.80 MRP
❖ **CRYSTAPEN V Syp. GlaxoSmithKline**
Penicillin V 125mg in 5 ml: Syrup.
50ml bot: 18.35 MRP
❖ **CYTAPEN-V Tab. Edruc**
Phenoxymethyl penicillin 250mg/tablet.
100's pack: 152.00 MRP
❖ **CYTAPEN-V Syp. Edruc**
Penicillin V 125mg in 5ml: syrup.
50ml bot: 18.00 MRP
❖ **ERACILLIN-K Tab. Gaco**
Phenoxymethyl penicillin 250mg/tablet.
100's pack: 148.40 MRP
❖ **ERACILLIN-K Syp. Gaco**
Phenoxymethyl penicillin 125mg/5ml: syrup
50ml bot: 18.21 MRP
❖ **G-PENICILLIN V Tab. Gonoshas**
Phenoxymethyl penicillin 250mg/tablet.
100's pack: 142.00 MRP
❖ **G-PENICILLIN V Syp. Gonoshas**
Phenoxymethyl penicillin 125mg/5ml: syrup.
50 ml bot: 17.70 MRP
❖ **H-PEN Tab. Hudson**
Phenoxymethyl penicillin 250mg/tablet.
100's pack: 135.00 MRP
❖ **OPEN Tab. Opsonin**
Phenoxymethyl penicillin 250mg/tablet.
100's pack: 125.00 MRP
❖ **OPEN Susp. Opsonin**
Phenoxymethyl penicillin 125mg/5ml: suspension
50ml bot: 18.00 MRP
❖ **ORACYN-K 250 Tab. Sanofi-aventis**
Phenoxymethyl penicillin 250mg/tablet.
250mg x 500's pack: 775.00 MRP
❖ **PACIN-V Tab. Zenith**
Phenoxymethyl penicillin 250mg/tablet
250mg x 80's pack: 125.00 MRP
250mg x 100's pack: 147.00 MRP
❖ **PENACIN K Tab. Seema**
Phenoxymethyl penicillin 250mg/tablet.
100's pack: 120.00 MRP
❖ **PENCIN-V Tab. Nipa**
Phenoxymethyl penicillin 250mg/tablet.
100's pack: 152.00 MRP
❖ **PENCI-V Tab. Skylab**
Phenoxymethyl penicillin 250mg/tablet
100's pack: 153.00 MRP
❖ **PENCI-V Syp. Skylab**
Phenoxymethyl penicillin 125mg/5ml: syrup.
50ml bot: 18.00 MRP
❖ **PENTAB Tab. Sonear**
Phenoxymethyl penicillin 250mg/tablet
100's pack: 154.00 MRP
❖ **PENVIK Tab. Square**
Phenoxymethyl penicillin 250mg/tablet
100's pack: 147.00 MRP
❖ **PENVIK DS Tab. Square**
Phenoxymethyl penicillin 500mg/tablet
100's pack: 268.00 MRP
❖ **PENVIK Syp. Square**
Phenoxymethyl penicillin 125mg/5ml: syrup.

50ml bot: 18.21 MRP
100ml bot: 28.88 MRP

❖ **PENVIK Forte Syp. Square**
Phenoxymethyl penicillin 250mg/5ml: syrup (double strength).
100ml bot: 42.06 MRP

❖ **PHARMAPEN Tab. Pharmadesh**
Phenoxymethyl penicillin 250mg/tablet.
100's pack: 172.00 MRP

❖ **PHARMAPEN Syp. Pharmadesh**
Phenoxymethyl penicillin 125mg/5ml: syrup
60ml bot: 18.21 MRP

❖ **PHENOXYMETHYL PENICILLIN Tab. A.P.C Pharma**
Phenoxymethyl penicillin 250mg/tablet.
100's pack: 150.00 MRP

Long acting penicillin

BENZATHINE PENICILLIN[21,33]

BENZATHINE PENICILLIN: Injection
Ind: Long acting penicillin, specially indicated in the long term treatment of syphilis & rheumatic fever.
C/I: History of allergy to any penicillin.
S/E: Hypersensitivity reaction.
Dose: 1 injection (12 lac) weekly or longer intervals.
Rheumatic fever, 1 vial (12 lac) deep i.m 4 weekly.

❖ **BENZAPEN Inj. Square**
Benzathine penicillin 12 lac units vial: injection.
12 lac units vial x 5's: 115.60 MRP

❖ **BUNDURAL-LA Inj. Gaco**
Benzathine penicillin 12 lac units/vial: injection.
12 lac unit x 1's pack: 23.04 MRP

❖ **DIAMINE PENICILLIN Inj. Renata**
Benzathine penicillin 12 lac units/vial: injection.
12 lac unit vial: 24.21 MRP

❖ **G-BENZATHINE PENICILLIN Inj. Gonoshas.**
Benzathine penicillin 6 lac & 12 lac units vial: injection.
6 lac x 1 vial: 14.00 MRP
12 lac x 1 vial: 22.00 MRP

Penicillinase-resistant penicillins

CLOXACILLIN[21,33]

CLOXACILLIN: Capsule/Syrup/ Injection/Drop.
Ind: Gram-positive organisms, specially streptococci, pneumococci, and virtually all staphylococci including penicillin resistant strains. Mainly used for skin & soft tissue infections.
C/I: History of penicillin allergy.
S/E: Allergic menifestations.
Dose: By mouth, 500mg 6 hourly, at least 30 minutes before food; by i.m. inj. 250mg 4-6 hourly; by i.v. inj. 500mg-1gm every 4-6 hours.
Child- Any route, 1/4-1/2 adult dose.

❖ **A- CLOX Cap. Acme**
Cloxacillin 500mg/capsule
100's pack: 594.00 MRP

❖ **A-CLOX Dry Syp. Acme**
Cloxacillin BP 125mg/5ml: Syrup
100 ml bot: 44.67 MRP

❖ **A-CLOX Inj. Acme**
Cloxacillin 250mg & 500mg/vial: injection.
250mg x 5 vials: 68.30 MRP
500mg x 5 vials: 121.00 MRP

❖ **AMBEECLOX Cap. Ambee**
Cloxacillin 500mg/capsule
100's pack: 594.00 MRP

❖ **BPCLOX Cap. Bristol**
Cloxacillin 500mg/capsule.
100's pack: 400.00 MRP

❖ **BPCLOX Syp. Bristol**
Cloxacillin 125mg/5ml: syrup
10ml bot: 44.00 MRP

❖ **CLOBEX Cap. Beximco**
Cloxacillin 500mg/capsule.
100's pack: 595.00 MRP

❖ **CLOBEX Syp. Beximco**
Cloxacillin 125mg/5ml: syrup
100 ml bot: 43.69 MRP

❖ **CLOXA-500 Cap. Apollo**
Cloxacillin 500mg/capsule
40's pack: 228.40 MRP

❖ **CLOXAPEN Cap. Skylab**
Cloxacillin 500mg/capsule
40's pack: 236.00 MRP

❖ **CLOXAPEN Syp. Skylab**
Cloxacillin 125mg/5ml: syrup.
100ml bot: 44.00 MRP

❖ **CLOXICAP Cap. Renata**
Cloxacillin 500mg/capsule
100's pack: 585.00 MRP

❖ **CLOXIMA Cap. Modern**
Cloxacillin 500mg/capsule
50's pack: 253.00 MRP

❖ **CLOXIN Cap. Opsonin**
Cloxacillin 500mg/capsule
52's pack: 273.00 MRP

❖ **CLOXIN Syp. Opsonin**
Cloxacillin 125mg/5ml: syrup
100ml bot: 43.50 MRP

❖ **CLOXIN Inj. Opsonin**
Cloxacillin 500mg/vial: injection
500mg vial 4's pack: 96.00 MRP

❖ **CLOXI-Z 500 Cap. Ziska**
Cloxacillin 500mg/capsule
100's pack: 450.00 MRP

❖ **CLOXMET Cap. Medimet**
Cloxacillin 500mg/capsule
50's pack: 287.50 MRP

❖ **CLOXPEN Cap. Drug Inter.**
Cloxacillin 500mg/capsule
40's pack: 192.00 MRP

❖ **COSLOX Cap. Cosmo Pharma**
Cloxacillin 500mg/capsule
40's pack: 218.40 MRP

❖ **CYCLOX Cap. Sonear**
Cloxacillin 500mg/capsule
40's pack: 236.00 MRP

❖ **ELICLOX Cap. Elixir**
Cloxacillin 500mg/capsule
50's pack:

❖ **FICLOX Cap. Sanofi-aventis**
Cloxacillin 500mg/capsule
100's pack: 595.00 MRP

❖ **G-CLOXACILLIN Gonoshas**
Cloxacillin 500mg: capsule
100's pack: 450.00 MRP

❖ **G-CLOXACILLIN Syp. Gonoshas**
Cloxacillin 125mg/5ml: syrup.
100ml bot: 42.48 MRP

❖ **G-CLOXACILLIN Inj. Gonoshas**
Cloxacillin 500mg vial: injection
500mg vial x 10's pack: 200.00 MRP

❖ **HI-CLOX Cap Hudson**
Cloxacillin 500mg/capsule.
40's pack: 200.00 MRP

❖ **HI-CLOX Syp. Hudson**
Cloxacillin 125mg/5ml: syrup
100ml bot: 42.00 MRP

❖ **MICLOCIN Cap. Millat**
Cloxacillin 500mg/capsule
100's pack: 580.00 MRP

❖ **MICLOCIN Syp. Millat**
Cloxacillin 250mg/5ml: syrup
100ml bot: 43.00 MRP

❖ **NAVACLOX Cap. Navana**
Cloxacillin 500mg/capsule
100's pack: 588.00 MRP

❖ **NAVACLOX Syp. Navana**
Cloxacillin 125mg/5ml: syrup.
100ml bot: 43.20 MRP

❖ **OMNICLOX Cap. Chemico**
Cloxacillin 500mg/capsule
40's pack: 200.00 MRP

❖ **OMNICLOX Syp. Chemico**
Cloxacillin 125mg/5ml: syrup.
100ml bot: 42.00 MRP

❖ **ORBALIN Cap. Seema**
Cloxacillin 500mg/capsule
40's pack: 240.00 MRP

❖ **PENCLOX Cap. CPL**
Cloxacillin 500mg/capsule
100's pack: 580.00 MRP

❖ **PENCLOX Syp. CPL**
Cloxacillin 125mg/5ml: syrup.
100ml bot: 43.00 MRP

❖ **SALCLOX Syp. Salton**
Cloxacillin 125mg/5ml: syrup.
100ml bot: 43.50 MRP

❖ **SIMPICLOX Cap. Gaco**
Cloxacillin 500mg/capsule
48's pack: 263.94 MRP
100's pack: 549.88 MRP

❖ **SIMPICLOX Syp. Gaco**
Cloxacillin 125mg/5ml: syrup.
100ml bot: 40.45 MRP

❖ **SINACLOX Cap. Ibn Sina**
Cloxacillin 500mg/capsule
48's pack: 273.12 MRP

❖ **SINACLOX Syp. Ibn Sina**
Cloxacillin 125mg/5ml: syrup.
100ml bot: 42.48 MRP

❖ **TYCLOX 500 Cap. Proteety**
Cloxacillin 500mg/capsule
40's pack: 174.00 MRP

❖ **TYCLOX Susp. Proteety**
Cloxacillin 125mg/5ml: suspension.
100ml bot: 40.00 MRP

❖ **ULTRACLOX Syp. Globe**
Cloxacillin 125mg/5ml: syrup.
100ml bot: 44.00 MRP

FLUCLOXACILLIN[21,33,45]

FLUCLOXACILLIN: Capsule/Suspension/ Injection

Flucloxacillin is an isoxazolyl penicillin. It is a bactericidal antibiotic with activity against gram-positive bacteria, particularly useful against penicillinase producing staphylococci. Flucloxacillin is available as flucloxacillin sodium BP in capsule, dry suspention, & injection form.

Mode of action: Flucloxacillin is a bactericidal antibiotic. It kills bacteria by interfering in the synthesis of the bacterial cell wall.

Ind: Infections due to penicillinase-producing staphylococci including otitis externa, adjunct in pneumonia, impetigo, cellulitis & in staphylococcal endocarditis.

C/I; S/E; Cautions: See under benzyl penicillin. Hepatitis & cholestatic jaundice may occur upto several weeks after treatment with flucloxacillin; in that situation it is advised to stop the drug. Administration for more than 2 weeks & increasing age are risk factors. Caution in porphyria.

Pregnancy & lactation: The use of flucloxacillin in second and third trimester of pregnancy may result in sensitization of the foetus. During lactation, trace quantities of penicillins can be detected in the breast milk. So, the use of flucloxacillin in pregnancy & lactation should be reserved for cases considered essential by the clinicians.

Dose: By mouth, 250mg every 6 hours, atleast 30 min. before food.
By i.m injection, 250mg every 6 hours.
By slow i.v injection or by infusion, 0.25-1 gm every 6 hours.
Doses may be doubled in severe infections.
Child: any route, under 2 yrs. quarter adult dose; 2-10 yrs. half adult dose.

Drug inter: The administration of probenecid with flucloxacillin results in higher serum peak concentrations and prolongs the time that therapeutic concentrations of flucloxacillin are achieved in serum. Physical incompatibility and/or loss of activity of flucloxacillin in solution have been reported when given with gentamycin sulphate, streptomycin sulphate, and vitamin mixture. Physical incompatibility of flucloxacillin, up to 72 hours at 15°C and/or 30°C was reported with atropine sulphate, benzylpenicillin. chlorpromazine, diazepam, hyoscine butylbromide, isosorbide dinitrate, metoclopramide, tetracycline, prochlorperazine, promethazine, etc.

❖ **ACTINASE Cap. Marksman**
Flucloxacillin 500mg/capsule
500mg x 20's pack: 160.00 MRP

❖ **ACTINASE Susp. Marksman**
Flucloxacillin 125mg/5ml: Suspension
100ml bot: 55.00 MRP

❖ **A-FLOX Cap. Acme**
Flucloxacillin 250mg & 500mg/capsule
250mg x 48's pack: 269.76 MRP
500mg x 48's pack: 504.48 MRP

❖ **A-FLOX Susp. Acme**
Flucloxacillin 125mg/5ml: Suspension
100ml bot: 61.19 MRP

❖ **A-FLOX Inj. Acme**
Flucloxacillin 250mg & 500mg/vial: injection
250mg vial x 5's pack: 125.00 MRP
500mg vial x 5's pack: 150.00 MRP

❖ **ANCOC Cap. SAPL**
Flucloxacillin 250mg & 500mg/capsule
250mg x 30's pack: 165.00 MRP
500mg x 20's pack: 200.00 MRP

❖ **ANCOC Susp. SAPL**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **AUXIL Cap. Doctor's**
Flucloxacillin 250mg & 500mg/capsule
250mg x 20's pack: 110.00 MRP
500mg x 40's pack: 377.00 MRP

❖ **AUXIL Susp. Doctor's**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 55.72 MRP

❖ **BELOX Cap. Benham**
Flucloxacillin 250mg & 500mg/capsule
250mg x 20's pack: 110.00 IP
500mg x 20's pack: 200.00 IP

❖ **BELOX Susp. Benham**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 60.00 IP

❖ **CAPFLU Cap. Alco Pharma**
Flucloxacillin 250mg & 500mg/capsule
250mg x 60's pack: 300.00 MRP
500mg x 28's pack: 280.00 MRP

❖ **CAPFLU DS Susp. Alco Pharma**
Flucloxacillin 250mg/5ml: suspension
100ml bot: 110.00 MRP

❖ **CLOXAFU Cap. Sonear**
Flucloxacillin 250mg & 500mg/capsule
250mg x 40's pack: 220.00 MRP
500mg x 20's pack: 200.00 MRP

❖ **CLOX-F Cap. Asiatic**
Flucloxacillin 250mg & 500mg/capsule
250mg x 48's pack: 240.00 MRP
500mg x 48's pack: 480.00 MRP

❖ **CLOX-F Susp. Asiatic**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **DOLOPEN Cap. Techno Drugs**
Flucloxacillin 500mg/capsule
500mg x 30's pack: 300.00 MRP

❖ **DOLOPEN Susp. Techno Drugs**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 55.00 MRP

❖ **DOLOPEN Inj. Techno Drugs**
Flucloxacillin 250mg & 500mg/vial: injection
250mg vial: 18.50 MRP
500mg vial: 30.00 MRP

❖ **E-FLU Cap. Edruc**
Flucloxacillin 250mg & 500mg/capsule
250mg x 40's pack: 220.00 IP
500mg x 20's pack: 222.00 IP

❖ **E-FLU Susp. Edruc**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 60.68 IP

❖ **EFLUCIN Cap. Jayson**
Flucloxacillin 250mg & 500mg/capsule
250mg x 20's pack: 115.00 IP
500mg x 20's pack: 200.00 IP

❖ **EFLUCIN Susp. Jayson**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 61.00 IP

❖ **EFLUCIN Inj. Jayson**
Flucloxacillin 250mg & 500mg/vial: injection
250mg x 5 vial (combi pack): 120.00 IP
500mg x 5 vial (combi pack): 175.00 IP

❖ **ELIFLU Cap. Elixir**
Flucloxacillin 250mg & 500mg/capsule
250mg x 100's pack:
500mg x 20's pack: 200.00 MRP

❖ **ENOCLOX Cap. Modern**
Flucloxacillin 500mg/capsule
500mg x 20's pack: 200.00 MRP

❖ **ENOCLOX Susp. Modern**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **FAXILIN Cap. Kumudini**
Flucloxacillin 250mg & 500mg/capsule
250mg x 48's pack: 264.00 MRP
500mg x 20's pack: 200.00 MRP

❖ **FAXILIN Susp. Kumudini**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **FCX Cap. Gaco**
Flucloxacillin 250mg & 500mg/capsule
250mg x 28's pack: 153.97 MRP
500mg x 20's pack: 200.08 MRP

❖ **FCX Susp. Gaco**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **FLAC Cap. Bristol**
Flucloxacillin 250mg & 500mg/capsule
250mg x 60's pack: 300.00 MRP
500mg x 40's pack: 400.00 MRP

❖ **FLAC Susp. Bristol**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 50.00 MRP

❖ **FLONEX-500 Cap. Decent**
Flucloxacillin 500mg/capsule
500mg x 32's pack: 288.00 MRP

❖ **FLORA Cap. Mystic**
Flucloxacillin 250mg & 500mg/capsule
250mg x 20's pack: 100.00 MRP
500mg x 20's pack: 200.00 MRP

❖ **FLORA Susp. Mystic**
Flucloxacillin 125mg/5ml: Suspension
100ml bot: 59.00 MRP

❖ **FLOX Cap. Hallmark**
Flucloxacillin 250mg & 500mg/capsule
250mg x 28's pack: 154.00 MRP
500mg x 20's pack: 200.00 MRP

❖ **FLOX Susp. Hallmark**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **FLOXAPEN Cap. General**
Flucloxacillin 250mg & 500mg/capsule
250mg x 100's pack: 550.00 MRP
500mg x 20's pack: 200.00 MRP

❖ **FLOXAPEN Susp. General**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **FLOXASON Cap. Hudson**
Flucloxacillin 250mg/capsule
250mg x 40's pack: 200.00 MRP

❖ **FLOXASON-DS Cap. Hudson**
Flucloxacillin 500mg/capsule (double strength)
500mg x 20's pack: 200.00 MRP

❖ **FLOXASON Susp. Hudson**
Flucloxacillin 125mg/5ml: suspension

100ml bot: 60.00 MRP

❖ **FLUBAC Cap. Popular**
Flucloxacillin 250mg & 500mg/capsule
250mg x 52's pack: 299.00 MRP
500mg x 32's pack: 320.00 MRP

❖ **FLUBAC Susp. Popular**
Flucloxacillin 125mg/5ml: Suspension
100ml bot: 61.00 MRP

❖ **FLUBAC DS Susp. Popular**
Flucloxacillin 250mg/5ml: suspension
100ml bot: 110.00 MRP

❖ **FLUBEX Cap. Beximco**
Flucloxacillin 250mg & 500mg/capsule
250mg x 50's pack: 275.00 IP
500mg x 30's pack: 300.00 IP

❖ **FLUBEX Susp. Beximco**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 60.00 IP

❖ **FLUBEX DS Susp. Beximco**
Flucloxacillin 250mg/5ml: suspension
100ml bot: 110.00 IP

❖ **FLUBIOTIC Cap. Navana**
Flucloxacillin 250mg & 500mg/capsule
250mg x 20's pack: 110.00 IP
500mg x 20's pack: 200.00 IP

❖ **FLUBIOTIC Susp. Navana**
Flucloxacillin 125mg/5ml: Suspension
100ml bot: 60.00 IP

❖ **FLUC 250 Cap. Proteety**
Flucloxacillin 250mg/capsule
250mg x 40's pack: 170.00 MRP

❖ **FLUC 500 Cap. Proteety**
Flucloxacillin 250mg/capsule
250mg x 20's pack: 170.00 MRP

❖ **FLUC Susp. Proteety**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 55.00 MRP

❖ **FLUCAP Cap. Chemico**
Flucloxacillin 250mg & 500mg/capsule
250mg x 60's pack: 330.00 MRP
500mg x 20's pack: 200.00 MRP

❖ **FLUCIL Cap. Cosmo**
Flucloxacillin 250mg & 500mg/capsule
250mg x 50's pack: 273.00 MRP
500mg x 20's pack: 200.00 MRP

❖ **FLUCIL Susp. Cosmo**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **FLUCILLIN Cap. Medimet**
Flucloxacillin 250mg & 500mg/capsule
250mg x 40's pack: 220.00 MRP
500mg x 20's pack: 200.00 MRP

❖ **FLUCILLIN Susp. Medimet**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **FLUCIN Cap. Millat**
Flucloxacillin 250mg & 500mg/capsule
250mg x 48's pack: 266.88 MRP
500mg x 30's pack: 303.60 MRP

❖ **FLUCIN Susp. Millat**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 61.45 MRP

❖ **FLUCIN DS Susp. Millat**
Flucloxacillin 250mg/5ml: suspension
100ml bot: 110.00 MRP

❖ **FLUCLOX Cap. ACI**
Flucloxacillin 250mg & 500mg/capsule
250mg x 100's pack: 575.00 IP
500mg x 40's pack: 420.00 IP

❖ **FLUCLOX Susp. ACI**
Flucloxacillin 125mg/5ml: Suspension
100ml bot: 61.00 IP

❖ **FLUCLOX DS Susp. ACI**
Flucloxacillin 250mg/5ml: suspension
60ml bot: 70.00 IP
100ml bot: 110.00 IP

❖ **FLUCLOX Inj. ACI**
Flucloxacillin 250mg & 500mg/vial: injection
250mg vial: 35.00 MRP
500mg vial: 45.00 MRP

❖ **FLUCLOXI Cap. Desh Pharma**
Flucloxacillin 250mg & 500mg/capsule
250mg x 50's pack: 330.00 MRP
500mg x 20's pack: 200.00 MRP

❖ **FLUCLOXI Susp. Desh Pharma**
Flucloxacillin 125mg/5ml: Suspension
100ml bot: 60.50 MRP

❖ **FLUCLOXIN Cap. SK+F**
Flucloxacillin 250mg & 500mg/capsule
250mg x 100's pack: 556.00 MRP
500mg x 30's pack: 303.00 MRP

❖ **FLUCLOXIN Susp. SK+F**
Flucloxacillin soduim 125mg/5ml: suspension
100ml bot: 61.00 MRP

❖ **FLUCOPEN Cap. Somatec**
Flucloxacillin 250mg & 500mg/capsule
250mg x 28's pack: 154.00 IP
500mg x 20's pack: 200.00 IP

❖ **FLUCOPEN Susp. Somatec**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 60.00 IP

❖ **FLU-K Susp. Chemico**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **FLUMARK Cap. Aexim**
Flucloxacillin 500mg/capsule
500mg x 20's pack: 200.00 MRP

❖ **FLUMARK Susp. Aexim**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **FLUMED Cap. Medicon**
Flucloxacillin 250mg & 500mg/capsule
250mg x 30's pack: 165.00 MRP
500mg x 20's pack: 200.00 MRP

❖ **FLUMED Susp. Medicon**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **FLUPEN Cap. Drug Inter.**
Flucloxacillin 250mg & 500mg/capsule
250mg x 60's pack: 300.00 MRP
500mg x 40's pack: 400.00 MRP

❖ **FLUPEN Susp. Drug Inter.**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **FLUSTAPH Cap. Orion**
Flucloxacillin 250mg & 500mg/capsule
250mg x 28's pack: 154.00 MRP
500mg x 28's pack: 280.00 MRP

❖ **FLUSTAPH Susp. Orion**
Flucloxacillin soduim 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **FLUSUN Cap. White Horse**
Flucloxacillin 500mg/capsule
500mg x 20's pack: 200.00 MRP

❖ **FLUSUN Susp. White Horse**
Flucloxacillin 125mg/5ml: Suspension
100ml bot: 60.00 MRP

❖ **FLUSYRUP Susp. Alco Pharma**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 55.00 MRP

❖ **FLUTEC-250 Cap. A.P.C Pharma**
Flucloxacillin 250mg/capsule
250mg x 40's pack: 230.00 IP

❖ **FLUTEC-DS Cap. A.P.C Pharma**
Flucloxacillin 500mg/capsule
500mg x 40's pack: 400.00 IP

❖ **FLUTEC Susp. A.P.C Pharma**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 60.00 IP

❖ **FLUX Cap. Opsonin**
Flucloxacillin 250mg & 500mg/capsule
250mg x 28's pack: 154.00 MRP
500mg x 28's pack: 280.00 MRP

❖ **FLUX Susp. Opsonin**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **FLUX SF Susp. Opsonin**
Flucloxacillin sodium BP 250mg/5ml: suspension (double strength)
100ml bot: 110.00 MRP

❖ **FLUX Inj. Opsonin**
Flucloxacillin 500mg/vial: injection
500mg vial x 4's: 120.00 MRP

❖ **FLUXICAP Cap. Ziska**
Flucloxacillin 250mg & 500mg/capsule
250mg x 40's pack: 184.00 MRP
500mg x 40's pack: 400.00 MRP

❖ **FLUXI Susp. Ziska**
Flucloxacillin soduim 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **FLUXIN Cap. Ambee**
Flucloxacillin 250mg & 500mg/capsule
250mg x 60's pack: 334.20 MRP
500mg x 20's pack: 200.00 MRP

❖ **FLUXIN Susp. Ambee**
Flucloxacillin soduim 125mg/5ml: suspension
100ml bot: 58.66 MRP

❖ **FLXZEN Cap. Zenith**
Flucloxacillin 250mg & 500mg/capsule
250mg x 60's pack: 300.00 MRP
500mg x 20's pack: 160.00 MRP

❖ **FLXZEN Susp. Zenith**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **FUCIL Cap. Nipa**
Flucloxacillin 250mg & 500mg/capsule
250mg x 60's pack: 330.00 MRP
500mg x 20's pack: 200.00 MRP

❖ **FUCIL Susp. Nipa**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **FULCIN Cap. Supreme**
Flucloxacillin 250mg & 500mg/capsule
250mg x 30's pack: 165.00 MRP
500mg x 24's pack: 240.00 MRP

❖ **FULCIN Susp. Supreme**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **INCLOX Cap. Incepta**
Flucloxacillin 250mg & 500mg/capsule
250mg x 50's pack: 275.00 MRP
500mg x 50's pack: 500.00 MRP

❖ **ISOCLOX Cap. Globe**
Flucloxacillin 250mg & 500mg/capsule
250mg x 20's pack: 110.00 MRP
500mg x 24's pack: 240.00 MRP

❖ **ISOCLOX Susp. Globe**
Flucloxacillin soduim 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **ISOFLU Cap. CPL**

Flucloxacillin 500mg/capsule
500mg x 40's pack: 400.00 MRP
❖ **ISOFLU Susp. CPL**
Flucloxacillin soduim 125mg/5ml: suspension
100ml bot: 60.00 MRP
❖ **LUF Cap. Apex**
Flucloxacillin 250mg & 500mg/capsule 250mg x 40's pack: 200.00 MRP
500mg x 28's pack: 252.00 MRP
❖ **LUF Susp. Apex**
Flucloxacillin soduim 125mg/5ml: suspension
100ml bot: 60.00 MRP
❖ **MONACLOX-F Cap. Amico**
Flucloxacillin 250mg & 500mg/capsule
250mg x 30's pack: 165.00 MRP
500mg x 28's pack: 280.00 MRP
❖ **MONACLOX-F Susp. Amico**
Flucloxacillin sodium 125mg/5ml: suspension
100ml bot: 60.00 MRP
❖ **MONACLOX-F DS Susp. Amico**
Flucloxacillin sodium 250mg/5ml: suspension (double strength)
100ml bot: 100.00 MRP
❖ **PENFLU Cap. Salton**
Flucloxacillin 250mg & 500mg/capsule
250mg x 60's pack: 330.00 MRP
500mg x 20's pack: 200.00 MRP
❖ **PENFLU Susp. Salton**
Flucloxacillin sodium 125mg/5ml: suspension
100ml bot: 60.00 MRP
❖ **PERPEN Cap. Rangs Pbarma**
Flucloxacillin 250mg & 500mg/capsule
250mg x 40's pack: 220.00 MRP
500mg x 28's pack: 280.00 MRP
❖ **PERPEN Susp. Rangs Pharma**
Flucloxacillin sodium 125mg/5ml: suspension
100ml bot: 60.00 MRP
❖ **PHYLOPEN Cap. Square**
Flucloxacillin sodium 250mg/capsule
50's pack: 275.00 MRP
❖ **PHYLOPEN DS Cap. Square**
Flucloxacillin sodium 500mg/capsule
30's pack: 300.00 MRP
❖ **PHYLOPEN Susp. Square**
Flucloxacillin sodium 125mg/5ml: suspension
100ml bot: 60.00 MRP
❖ **PHYLOPEN Forte Susp. Square**
Flucloxacillin sodium 250mg/5ml: suspension
100ml bot: 110.00 MRP
❖ **PHYLOPEN Inj. Square**
Flucloxacillin 500mg/vial: injection
500mg vial x 5's: 150.00 MRP
❖ **REVISTAR Cap. Bio-pharma**
Flucloxacillin 250mg & 500mg/capsule
250mg x 28's pack: 154.00 MRP
500mg x 28's pack: 280.00 MRP
❖ **REVISTAR Susp. Bio-pharma**
Flucloxacillin sodium 125mg/5ml: suspension
100ml bot: 60.00 MRP
❖ **S-FLUCLOX Cap. Seema**
Flucloxacillin sodium 250mg & 500mg/capsule
250mg x 40's pack: 220.00 MRP
500mg x 40's pack: 400.00 MRP
❖ **SILOX Cap. Silva**
Flucloxacillin sodium 250mg & 500mg/capsule
250mg x 30's pack: 173.00 MRP
500mg x 20's pack: 200.00 MRP
❖ **SILOX Susp. Silva**
Flucloxacillin sodium 125mg/5ml:suspension
100ml bot: 60.00 MRP
❖ **SINAFLOX Cap. Ibn Sina**
Flucloxacillin sodium 250mg & 500mg/capsule
250mg x 32's pack: 176.00 MRP
500mg x 28's pack: 280.00 MRP
❖ **SINAFLOX Susp. Ibn Sina**
Flucloxacillin sodium 125mg/5ml: suspension
100ml bot: 60.00 MRP
❖ **SKILOX Cap. Healthcare**
Flucloxacillin sodium 250mg & 500mg/capsule
250mg x 50's pack: 275.00 MRP
500mg x 30's pack: 300.00 MRP
❖ **SKILOX Susp. Healthcare**
Flucloxacillin sodium 125mg/5ml: suspension
100ml bot: 60.00 IP
❖ **SOFA Cap. Apollo**
Flucloxacillin sodium 250mg & 500mg/capsule
250mg x 48's pack: 252.00 IP
500mg x 24's pack: 240.00 IP
❖ **SOFA Susp. Apollo**
Flucloxacillin sodium 125mg/5ml:suspension
100ml bot: 60.00 IP
❖ **SOFTAPEN Cap. Rephco**
Flucloxacillin sodium 250mg & 500mg/capsule
250mg x 50's pack: 275.00 MRP
500mg x 50's pack: 440.00 MRP
❖ **SOFTAPEN Susp. Rephco**
Flucloxacillin sodium 125mg/5ml:suspension
100ml bot: 70.00 MRP
❖ **STAFOXIN Cap. Aristopharma**
Flucloxacillin sodium 250mg & 500mg/capsule
250mg x 48's pack: 264.00 MRP
500mg x 28's pack: 280.00 MRP
❖ **STAFOXIN Susp. Aristopharma**
Flucloxacillin sodium 125mg/5ml:suspension
100ml bot: 60.00 MRP
❖ **STAPHYLOX-500 Cap. Pharmadesh**
Flucloxacillin sodium 500mg/capsule
40's pack: 340.00 MRP
❖ **STAPHYLOX Susp. Pharmadesh**
Flucloxacillin sodium 125mg/5ml:suspension
100ml bot: 58.30 MRP
❖ **STAPKIL Cap. Pacific**
Flucloxacillin 250mg & 500mg/capsule
250mg x 50's pack: 275.00 MRP
500mg x 30's pack: 300.00 MRP
❖ **STAPKIL Susp. Pacific**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 46.00 MRP
❖ **SURGEFLOX Cap. Cosmic**
Flucloxacillin sodium 250mg & 500mg/capsule
250mg x 40's pack: 240.00 MRP
500mg x 20's pack: 200.00 MRP
❖ **SURGEFLOX Susp. Cosmic**
Flucloxacillin sodium 125mg/5ml:suspension
100ml bot: 60.00 MRP
❖ **SYFLU Cap. Syntho**
Flucloxacillin 250mg & 500mg/capsule
250mg x 50's pack: 262.50 MRP
500mg x 30's pack: 285.00 MRP
❖ **SYFLU Susp. Syntho**
Flucloxacillin 125mg/5ml: suspension
100ml bot: 60.00 MRP

Broad spectrum penicillins

AMPICILLIN[21,33]

AMPICILLIN: Capsule/Suspension/ Injection/Drop.
Ind: Broad spectrum antibiotic therapy- specially typhoid fever, Urinary tract and Respiratory tract infections, Gastrointestinal & Gonococcal infections, meningitis, otitis media.
C/I: Penicillin allergy, infectious mononucleosis.
S/E: Allergic menifestations, diarrhoea, nausia.
Dose: By mouth, 250-500mg 6 hourly, 5-7 days or more (atleast 30min. before meal).
Gonorrhoea, 2gm as a single dose with probenecid 1gm.
UTI, 500mg every 8 hourly.
By i.m. or i.v. inj. 500mg 4-6 hourly; higher doses in meningitis
Child, any route 1/2 adult dose.

❖ **ACMECILIN Cap. Acme**
Ampicillin 250mg/capsule
100's pack: 331.00 MRP
❖ **ACMECILIN Inj. Acme**
Ampicillin 250mg & 500mg /vial: injection.
250mg x 5 vials: 80.90 MRP
500mg x 5 vials: 114.00 MRP
❖ **AMPEXIN Inj. Opsonin**
Ampicillin 250mg & 500mg vial: Injection
250mg x 4 vial: 64.00 MRP
500mg x 4 vial: 90.00 MRP
❖ **AMPEXIN Drop Opsonin**
Ampicillin 125mg/1.25ml: drop.
15ml bot: 26.50 MRP
❖ **AMPICILLIN Susp. Elixir**
Ampicillin 125mg/5ml: suspension.
60ml bot:
100ml bot:
❖ **AMPIMET Cap. Medimet**
Ampicillin 250mg/capsule
250mg x100's pack: 225.00 MRP
❖ **AMPIMET Susp. Medimet**
Ampicillin 125mg/5ml: suspension.
100ml bot: 40.00 MRP
❖ **AMPIREX Dry Susp. Jayson**
Ampicillin 125mg/5ml: suspension.
100ml bot: 33.67 MRP
❖ **AMPIREX Inj. Jayson**
Ampicillin 250mg & 500mg/vial: injection.
250mg x 5 vial (combi pack): 61.65 MRP
500mg x 5 vial (combi pack): 111.65 MRP
❖ **FICILLIN Cap. Sanofi-aventis**
Ampicillin 250mg/capsule
100's pack: 337.00 MRP
❖ **FICILLIN Drop Sanofi-aventis**
Ampicillin 125mg/1.25ml: drop.
15ml bot: 28.25 MRP
❖ **KAMOCILLIN Cap. Chemico**
Ampicillin 250mg/capsule

100's pack: 250.00 MRP

❖ **KAMOCILLIN Susp. Chemico**
Ampicillin 125mg/5ml: suspension.
100ml bot: 40.00 MRP

❖ **PEN-A Cap. Renata**
Ampicillin 250mg/capsule
100's pack: 218.00 MRP

❖ **PEN-A Inj. Renata**
Ampicillin 500mg/vial: injection
500mg vial + Water: 20.36 MRP

❖ **SEEMACILLIN Susp. Seema**
Ampicillin 125mg/5ml: suspension.
100ml bot: 45.00 MRP

❖ **SEEMACILLIN Drop Seema**
Ampicillin 125mg/1.25ml: drop.
15ml bot: 17.65 MRP

❖ **SKYCILLIN Cap. Skylab**
Ampicillin 250mg/capsule
100's pack: 212.00 MRP

AMOXYCILLIN[21,33]

AMOXYCILLIN: Capsule/Syrup/ Injection
Ind: Broad spectrum antibiotics-specially respiratory tract, ear, nose & throat infections; biliary tract, urinary tract, soft tissue and skin infections; gonorrhoea and prophylaxis of bacterial endocarditis; also typhoid fever and dental prophylaxis.
C/I: Penicillin sensitive patients.
S/E: Allergic menifestations, Diarrhoea.
Dose: By mouth, 250mg (or 500mg in severe infections) every 8 hours; Child, upto 10 yrs. half adult dose, upto 2 yrs. 1/4-1/2 adult dose. Severe and recurrent purulent respiratory infection, 3 gm every 12 hourly.
Short course oral therapy-
Dental abscese, 3 gm stat and repeated after 8 hours;
UTI, 3 gm stat and repeated after 10-12 hours;
Gonorrhoea, single dose of 3 gm with probenecid 1 gm;
Otitis media, child 3-10 years, 750mg 2 times daily for 2 days.
By i.m. inj. 500mg every 8 hours; Child, 50-100 mg/kg daily in divided doses.
By i.v. inj. or infusion (in severe infections), I gm every 6 hours; Child, 50- 100mg/kg. daily in divided doses.
In bacterial endocarditis- single 3 gm dose one hour before dental procedure from which bacteraemia may arise; Child, half adult dose. Repeat 6 hours later if necessary.

❖ **ALMOXIL Cap. Aexim**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 200.00 MRP.
500mg x 50's pack: 250.00 MRP.

❖ **ALMOXIL Susp. Aexim**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.00 MRP

❖ **AMBEEXIN Cap. Ambee**
Amoxycillin 250mg/capsule
100's pack: 354.00 MRP

❖ **AMBEEXIN Susp. Ambee**
Amoxycillin 125mg/5ml: suspension
100ml bot: 46.38 MRP

❖ **AMBEEXIN Drop Ambee**
Ampicillin 125mg/1.25ml: drop.
15ml bot: 28.32 MRP

❖ **AMOCAP Cap. Sonear**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 350.00 MRP
500mg x 40's pack: 240.00 MRP

❖ **AMOCIL Cap. Syntho**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 300.00 MRP
500mg x 50's pack: 275.00 MRP

❖ **AMOCIL Susp. Syntho**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.50 MRP

❖ **AMOCIN Cap. Pacific**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 330.00 MRP
500mg x 50's pack: 335.00 MRP

❖ **AMOCIN Susp. Pacific**
Amoxycillin 125mg/5ml: suspension
100ml bot: 40.00 MRP

❖ **AMOTID Cap. Bio-pharma**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 300.00 MRP
500mg x 100's pack: 560.00 MRP

❖ **AMOTID Susp. Bio-pharma**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.00 MRP

❖ **AMOTID-F Susp. Bio-pharma**
Amoxycillin 250mg/5ml: suspension (double strength)
100ml bot: 65.00 MRP

❖ **AMOTID PD Drop Bio-pharma**
Amoxycillin 125mg/1.25ml: paediatric drop
15ml bot: 28.00 MRP

❖ **AMOX Cap. Doctor's**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 250.00 MRP
500mg x 40's pack: 227.60 MRP

❖ **AMOX Susp. Doctor's**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.00 MRP

❖ **AMOX Drop Doctor's**
Amoxycillin 125mg/1.25ml: drop
15ml bot: 26.86 MRP

❖ **AMOXI Inj. Renata**
Amoxycillin 500mg/vial: i.m/i.v injection
500mg vial + water: 25.52 MRP

❖ **AMOXIC Cap. Cosmo Pharma**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 323.00 MRP
500mg x 100's pack: 500.00 MRP

❖ **AMOXIC Susp. Cosmo Pharma**
Amoxycillin 125mg/5ml: suspension
100ml bot: 40.00 MRP

❖ **AMOXICAP Cap. Renata**
Amoxycillin 250mg/capsule
100's pack: 360.00 MRP

❖ **AMOXICON Cap. Medicon**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 350.00 MRP
500mg x 50's pack: 300.00 MRP

❖ **AMOXICON Susp. Medicon**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.00 MRP

❖ **AMOXIL Cap. GlaxoSmithKline**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 340.00 MRP
500mg x 50's pack: 300.00 MRP

❖ **AMOXIL Susp. GlaxoSmithKline**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.00 MRP

❖ **AMOXIL Forte Susp. GlaxoSmithKline**
Amoxycillin 250mg/5ml: suspension
100ml bot: 65.00 MRP

❖ **AMOXIMA Cap. Modern**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 360.00 MRP
500mg x 50's pack: 332.50 MRP

❖ **AMOXIMA Susp. Modern**
Amoxycillin 125mg/5ml: suspension
100ml bot: 44.51 MRP

❖ **AMOXIMA Drop Modern**
Amoxycillin 100mg/1ml: drop
15ml bot: 28.33 MRP

❖ **AMOXIPAN Cap. Salton**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 350.00 MRP
500mg x 50's pack: 303.50 MRP

❖ **AMOXIPAN Susp. Salton**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.00 MRP

❖ **AMOXIZEN Cap. Zenith**
Amoxycillin 250mg/capsule
250mg x 100's pack: 350.00 MRP

❖ **AMOXIZEN DS Cap. Zenith**
Amoxycillin 500mg/capsule
500mg x 50's pack: 303.50 MRP

❖ **AMOXIZEN Susp. Zenith**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.52 MRP

❖ **AMOXON Cap. Jayson**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 360.00 MRP
500mg x 50's pack: 337.00 MRP

❖ **AMOXON Susp. Jayson**
Amoxycillin 125 mg/5ml: suspension
100ml bot: 47.29 MRP

❖ **AMOXON Drop Jayson**
Amoxycillin 100mg/1ml: drop
15ml bot: 30.08 MRP

❖ **AMOXON Inj. Jayson**
Amoxyllin 250mg & 500mg/vial: injection
250mg x 5 vial (combi pack): 87.10 MRP
500mg x 5 vial (combi pack): 122.50 MRP

❖ **ANTIF Cap. Rangs Pharma**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 300.00 MRP
500mg x 50's pack: 275.00 MRP

❖ **ANTIF Susp. Rangs Pharma**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.00 MRP

❖ **ANTIF DS Susp. Rangs Pharma**
Amoxycillin 250mg/5ml: suspension (double strength)
100ml bot: 65.00 MRP

❖ **ANTIF Drop Rangs Pharma**
Amoxycillin 100mg/1ml: drop
15ml bot: 28.00 MRP

❖ **APIMOX Cap. Apollo**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 300.00 MRP
500mg x 50's pack: 300.00 MRP

❖ **APIMOX Susp. Apollo**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.00 MRP

❖ **APIMOX Drop Apollo**
Amoxycillin 100mg/1ml: drop
15ml bot: 28.00 MRP

❖ **APOXY Cap. Apex**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 300.00 MRP
500mg x 50's pack: 275.00 MRP

❖ **APOXY Susp. Apex**
Amoxycillin 125mg/5ml: suspension
100ml bot: 43.00 MRP

❖ **ARISTOMOX Cap. Aristopharma**
Amoxycillin 250mg & 500mg/capsule.
250mg x 100's pack: 350.00 MRP
500mg x 50's pack: 300.00 MRP

❖ **ARISTOMOX Susp. Aristopharma**
Amoxycillin 125mg/ml: suspension
100ml bot: 45.00 MRP

❖ **AVLOMOX Cap. ACI**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 344.00 MRP
500mg x 40's pack: 242.81 MRP

❖ **AVLOMOX Susp. ACI**
Amoxycillin 125mg/5ml: suspension
100ml bot: 46.00 MRP

❖ **AVLOMOX DS Susp. ACI**
Amoxycillin 250mg/5ml: suspension (double strength)
100ml bot: 65.00 MRP

❖ **AVLOMOX Drop ACI**
Amoxycillin 100mg/1ml: drop
15ml bot: 28.32 MRP

❖ **AVLOMOX Inj. ACI**
Amoxyllin 500mg/vial: injection
500mg vial + Water: 25.00 MRP

❖ **BACTAMOX Tah. Renata**
Amoxycillin 250mg & 500mg/tablet (f.c)
250mg x 100's pack: 338.00 MRP
500mg x 50's pack: 290.50 MRP

❖ **BACTAMOX Susp. Renata**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.52 MRP

❖ **BACTAMOX Drop Renata**
Amoxycillin 100mg/1ml: drop
15ml bot: 28.32 MRP

❖ **BACTAMOX Inj. Renata**
Amoxyllin 250mg & 500mg/vial: injection
250mg vial + Water: 18.03 MRP
500mg vial + Water: 25.52 MRP

❖ **BENOXIL Cap. Benham**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 217.00 MRP
500mg x 100's pack: 550.00 MRP

❖ **BENOXIL Susp. Benham**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.00 MRP

❖ **BENOXIL DS Susp. Benham**
Amoxycillin 250mg/5ml: suspension (double strength)
100ml bot: 67.00 MRP

❖ **BENOXIL Drop Benham**
Amoxycillin 100mg/1ml: drop
15ml bot: 27.00 MRP

❖ **BPMOX Cap. Bristol**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 225.00 MRP
500mg x 50's pack: 250.00 MRP

❖ **BPMOX Susp. Bristol**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.00 MRP

❖ **BPMOX Drop Bristol**
Amoxycillin 100mg/1ml: drop
15ml bot: 28.40 MRP

❖ **BRODAMOX Cap. Cosmic**
Amoxycillin 250mg/capsule
250mg x 100's pack: 325.00 MRP

❖ **BRODAMOX-DS Cap. Cosmic**
Amoxycillin 500mg/capsule
500mg x 50's pack: 325.00 MRP

❖ **BRODAMOX Susp. Cosmic**
Amoxycillin 125mg/5ml: suspension
100ml bot: 48.00 MRP

❖ **CEMOXIN Cap. CPL**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 340.00 MRP
500mg x 50's pack: 325.00 MRP

❖ **CEMOXIN Susp. CPL**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.00 MRP

❖ **CLAMOX Cap. Kumudini**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 350.00 MRP
500mg x 50's pack: 325.00 MRP

❖ **CLAMOX Susp. Kumudini**
Amoxycillin 125mg/5ml: suspension
100ml bot: 44.00 MRP

❖ **DEMOX Cap. Desh Pharma**
Amoxycillin 250mg/capsule
250mg x 100's pack: 320.00 MRP

❖ **DEMOX-500 Cap. Desh Pharma**
Amoxycillin 500mg/capsule
500mg x 50's pack: 275.00 MRP

❖ **DEMOX Susp. Desh Pharma**
Amoxycillin 125mg/5ml: suspension
100ml bot: 44.00 MRP

❖ **DEMOX Drop Desh Pharma**
Amoxycillin 100mg/1ml: drop
15ml bot: 28.00 MRP

❖ **DEMOXIL Cap. Drug Inter.**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 329.00 MRP
500mg x 50's pack: 303.50 MRP

❖ **DEMOXIL Susp. Drug Inter.**
Amoxycillin 125mg/5ml: suspension
100ml bot: 46.43 MRP

❖ **DEMOXIL DS Susp. Drug Inter.**
Amoxycillin 250mg/5ml: suspension (double strength)
100ml bot: 65.00 MRP

❖ **DEMOXIL Inj. Drug Inter.**
Amoxyllin 250mg, 500mg & 1gm/vial: injection
250mg vial + water: 18.96 MRP
500mg vial + water: 26.05 MRP
1gm vial + water: 45.47 MRP

❖ **DOPEN Cap. Hallmark**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 350.00 MRP
500mg x 50's pack: 325.00 MRP

❖ **DOPEN Susp. Hallmark**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.50 MRP

❖ **ELIMOX Cap. Elixir**
Amoxycillin 250mg 500mg/capsule
250mg x 100's pack: 350.00 MRP
500mg x 50's pack: 300.00 MRP

❖ **ELIMOX Susp. Elixir**
Amoxycillin 125mg/5ml: suspension
100ml bot:

❖ **E-MOX Cap. Edruc**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 339.00 MRP
500mg x 50's pack: 303.50 MRP

❖ **E-MOX Susp. Edruc**
Amoxycillin 125mg/5ml: suspension
100ml bot: 44.00 MRP

❖ **E-MOX Drop Edruc**
Amoxycillin 100mg/1ml: drop
15ml bot: 28.00 MRP

❖ **FIMOX Cap. Popular**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 360.00 MRP
500mg x 50's pack: 336.50 MRP

❖ **FIMOX Susp. Popular**
Amoxycillin 125mg/5ml: suspension
100ml bot: 47.28 MRP

❖ **FIMOX Drop Popular**
Amoxycillin 100mg/1ml: drop
15ml bot: 30.08 MRP

❖ **FIMOXYL Cap. Sanofi-aventis**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 360.00 MRP
500mg x 50's pack: 336.50 MRP

❖ **FIMOXYL Tab. Sanofi-aventis**
Amoxycillin 250mg & 500mg/tablet
250mg x 100's pack: 347.00 MRP
500mg x 50's pack: 300.00 MRP

❖ **FIMOXYL Susp. Sanofi-aventis**
Amoxycillin 125mg/5ml: suspension
100ml bot: 47.28 MRP

❖ **FIMOXYL DS Susp. Sanofi-aventis**
Amoxycillin 250mg/5ml: suspension (double strength)
100ml bot: 68.00 MRP

❖ **FIMOXYL Drop Sanofi-aventis**
Amoxycillin 100mg/1ml: drop
15ml bot: 30.08 MRP

❖ **G-AMOXYCILLIN Cap. Gonosha**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 275.00 MRP
500mg x 50's pack: 250.00 MRP

❖ **G-AMOXYCILLIN Susp. Gonoshas**
Amoxycillin 125mg/5ml: suspension
100ml bot: 40.00 MRP

❖ **G-AMOXYCILLIN Inj. Gonoshas**
Amoxyllin 500 mg/vial: Injection
500mg vial (+ Water) x 1's: 21.00 MRP

❖ **GENAMOX Cap. General**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 360.00 MRP
500mg x 50's pack: 336.50 MRP

❖ **GENAMOX Susp. General**
Amoxycillin 125mg/5ml: suspension
100ml bot: 47.28 MRP

❖ **GENAMOX Drop General**
Amoxycillin 100mg/1ml: drop
15ml bot: 30.00 MRP

❖ **HECTAMOX Cap. Millat**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 360.00 MRP
500mg x 50's pack: 300.00 MRP

❖ **HECTAMOX Susp. Millat**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.90 MRP

❖ **HECTAMOX DS Susp. Millat**
Amoxycillin 250mg/5ml: suspension (double strength)
100ml bot: 65.00 MRP

❖ **HECTAMOX Drop Millat**
Amoxycillin 100mg/1ml: drop
15ml bot: 28.32 MRP

❖ **HICONCIL Cap. Medimet**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 350.00 MRP
500mg x 50's pack: 300.00 MRP

❖ **HICONCIL Susp. Medimet**
Amoxycillin 125mg/5ml: suspension
100ml bot: 47.00 MRP

❖ **HI-MOX Cap. Hudson**

Amoxycillin 250mg/capsule
100's pack: 250.00 MRP

❖ **HI-MOX-DS Cap. Hudson**
Amoxycillin 500mg/capsule
50's pack: 275.00 MRP

❖ **HI-MOX Susp. Hudson**
Amoxycillin 125mg/5ml: suspension
100ml bot: 40.00 MRP

❖ **J-MOX Cap. Ad-din**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 286.00 MRP
500mg x 50's pack: 285.50 MRP

❖ **J-MOX Susp. Ad-din**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.00 MRP

❖ **J-MOX Drop Ad-din**
Amoxycillin 125mg/1.25ml: drop.
15ml bot: 28.32 MRP

❖ **KAMOXY Cap. Chemico**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 300.00 MRP
500mg x 80's pack: 480.00 MRP

❖ **KAMOXY Susp. Chemico**
Amoxycillin 125mg/5ml: suspension
100ml bot: 44.00 MRP

❖ **KAMOXY Drop Chemico**
Amoxycillin 125mg/1.25ml: drop.
15ml bot: 28.00 MRP

❖ **LOXYL-250 Cap. Asiatic**
Amoxycillin 250mg/capsule
100's pack: 300.00 MRP

❖ **LOXYL-500 Cap. Asiatic**
Amoxycillin 500mg/capsule
50's pack: 250.00 MRP

❖ **LOXYL Susp. Asiatic**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.50 MRP

❖ **MOCI Cap. Belsen**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 356.00 MRP
500mg x 50's pack: 275.00 MRP

❖ **MONAMOX Cap. Amico**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 300.00 MRP
500mg x 50's pack: 275.00 MRP

❖ **MONAMOX DS Susp. Amico**
Amoxycillin 250mg/5ml: suspension (double strength)
100ml bot: 60.00 MRP

❖ **MONAMOX Drop. Amico**
Amoxycillin 125mg/1.25ml: drop.
15ml bot: 28.00 MRP

❖ **MOX 250 Cap. Proteety**
Amoxycillin 250mg/capsule
250mg x 100's pack: 350.00 MRP

❖ **MOX 500 Cap. Proteety**
Amoxycillin 500mg/capsule
500mg x 50's pack: 300.00 MRP

❖ **MOX Susp. Proteety**
Amoxycillin 125mg/ml: suspension
100ml bot: 45.00 MRP

❖ **MOX Drop Proteety**
Amoxycillin 100mg/1ml: Drop.
15ml bot: 26.00 MRP

❖ **MOXA Cap. Decent**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 300.00 MRP
500mg x 50's pack: 250.00 MRP

❖ **MOXA Susp. Decent**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.00 MRP

❖ **MOXACIL Cap. Square**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 360.00 MRP
500mg x 50's pack: 337.00 MRP

❖ **MOXACIL 875 Tab. Square**
Amoxycillin 875mg/tablet
Dosage convenience: The usual dose of amoxycillin 250mg or 500mg is 6 to 8 hourly; but, the dosage schedule of amoxycillin 875 is 12 hourly.
875mg x 30's pack: 300.00 MRP

❖ **MOXACIL DT Tab. Square**
Amoxycillin 250mg/tablet (dispersible)
100's pack: 348.00 MRP

❖ **MOXACIL Susp. Square**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.52 MRP

❖ **MOXACIL Forte Susp. Square**
Amoxycillin 250mg/5ml: suspension (double strength)
100ml bot: 65.00 MRP

❖ **MOXACIL Drop. Square**
Amoxycillin 125mg/1.25ml: drop.
15ml bot: 30.00 MRP

❖ **MOXACIL Inj. Square**
Amoxycillin 500mg/vial: injection.
500mg vial x 5's pack: 125.60 MRP

❖ **MOXAPEN Cap. Nipa**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 350.00 MRP
500mg x 30's pack: 180.00 MRP

❖ **MOXAPEN Susp. Nipa**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.52 MRP

❖ **MOXAPEN Drop. Nipa**
Amoxycillin 100mg/1ml: Drop
15ml bot: 28.33 MRP

❖ **MOXATID Cap. Marksman**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 350.00 MRP
500mg x 50's pack: 300.00 MRP

❖ **MOXATID Susp. Marksman**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.00 MRP

❖ **MOXATID Drop Marksman**
Amoxycillin 100mg/1ml: Drop
15ml bot: 28.00 MRP

❖ **MOXICO Cap. Supreme**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 350.00 MRP
500mg 500's pack: 300.00 MRP

❖ **MOXICO Susp. Supreme**
Amoxycillin 125mg/5ml: suspension
100ml bot: 46.00 MRP

❖ **MOXICO DS Susp. Supreme**
Amoxycillin 250mg/5ml: suspension (double strength)
100ml bot: 65.00 MRP

❖ **MOXILIN Cap. Acme**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 360.00 MRP
500mg x 50's pack: 336.50 MRP

❖ **MOXILIN Susp. Acme**
Amoxycillin 125mg/5ml: suspension
100ml bot: 47.28 MRP

❖ **MOXILIN DS Susp. Acme**
Amoxycillin 250mg/5ml: suspension (double strength)
100ml bot: 68.00 MRP

❖ **MOXILIN Drop. Acme**
Amoxycillin 100mg/1ml: Drop.
15ml bot: 30.08 MRP

❖ **MOXILIN Inj. Acme**
Amoxycillin 250mg & 500mg/vial: injection.
250mg x 5 vials: 90.00 MRP
500mg x 5 vials: 125.00 MRP

❖ **MOXIN Cap. Opsonin**
Amoxycillin 500mg/capsule
500mg x 50's pack: 300.00 MRP

❖ **MOXIN Tab. Opsonin**
Amoxycillin 250mg/tablet
250mg x 100's pack: 325.00 MRP

❖ **MOXIN 875 Tab. Opsonin**
Amoxycillin 875mg/tablet
Dosage convenience: The usual dose of amoxycillin 250mg or 500mg is 6 to 8 hourly; but, the dosage schedule of amoxycillin 875 is 12 hourly.
875mg x 20's pack: 170.00 MRP

❖ **MOXIN Susp. Opsonin**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.00 MRP

❖ **MOXIN PR Susp. Opsonin**
Amoxycillin 250mg/5ml: suspension
100ml bot: 65.00 MRP

❖ **MOXIN Drop Opsonin**
Amoxycillin 125mg/1.25ml: drop.
15ml bot: 28.00 MRP

❖ **MOXIN Inj. Opsonin**
Amoxycillin 250mg & 500mg/vial: injection.
250mg x 4 vial: 70.00 MRP
500mg x 4 vial: 98.00 MRP

❖ **MOX-Plus Susp. Hudson**
Amoxycillin 250mg/5ml: suspension (double strength)
100ml bot: 65.00 MRP

❖ **MUMOX Cap. SAPL**
Amoxycillin 250mg & 500mg/capsule
250 x 100's pack: 175.00 MRP
500 x 50's pack: 300.00 MRP

❖ **MUMOX Susp. SAPL**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.00 MRP.

❖ **MYMOXCIL Cap. Mystic**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 350.00 MRP.
500mg x 50's pack: 300.00 MRP.

❖ **MYMOXCIL Susp. Mystic**
Amoxycillin 125 mg/5 ml: suspension
100ml bot: 45.60 MRP

❖ **NAVAMOX Cap. Navana**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 340.00 MRP.
500mg x 50's pack: 300.00 MRP.

❖ **NAVAMOX Susp. Navana**
Amoxycillin 125 mg/5 ml: suspension
100ml bot: 45.00 MRP

❖ **ORIXYL Cap. Orion**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 360.00 MRP
500mg x 50's pack: 300.00 MRP

❖ **ORIXYL Susp. Orion**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.00 MRP

❖ **ORIXYL Drop Orion**
Amoxycillin 125mg/1.25ml: drop.
15ml bot: 28.00 MRP

❖ **PAMOXIL Cap. Peoples Pharma**
Amoxycillin 250mg & 500mg/capsule

250mg x 100's pack: 350.00 MRP
500mg x 50's pack: 300.00 MRP

❖ **PAMOXIL Susp. Peoples**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.88 MRP

❖ **PANOXYL Cap. Globex**
Amoxycillin 500mg/capsule
500mg x 100's pack: 600.00 MRP

❖ **PEMOX Cap. A.P.C Pharma**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 300.00 MRP
500mg x 50's pack: 300.00 MRP

❖ **PEMOX Susp. A.P.C Pharma**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.00 MRP

❖ **PEMOX Drop A.P.C Pharma**
Amoxycillin 100mg/1ml: drop.
15ml bot: 28.00 MRP

❖ **PENMOX Cap. Techno Drugs**
Amoxycillin 500mg/capsule
500mg x 50's pack: 250.00 MRP

❖ **PENMOX Susp. Techno Drugs**
Amoxycillin 125mg/5ml: suspension
100ml bot: 40.00 MRP

❖ **PENMOX Inj. Techno Drugs**
Amoxycillin 250mg & 500mg/vial: injection.
250mg x 1 vial: 22.00 MRP
500mg x 1 vial: 26.00 MRP

❖ **PHARMOXYL Cap. Pharmadesh**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 303.00 MRP
500mg x 50's pack: 292.00 MRP

❖ **PHARMOXYL Susp. Pharmadesh**
Amoxycillin 125mg/5ml: suspension
100ml bot: 41.74 MRP

❖ **PHARMOXYL Drop Pharmadesh**
Amoxycillin 100mg/1ml: drop
15ml bot: 30.00 MRP

❖ **REMAMOX Cap. Reman**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 211.00 MRP
500mg x 40's pack: 200.00 MRP

❖ **REMAMOX Susp. Reman**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.00 MRP

❖ **ROXYL Cap. Rasa**
Amoxycillin 250mg/capsule
100's pack: 370.00 MRP

❖ **ROXYL-DS Cap. Rasa**
Amoxycillin 500mg/capsule
50's pack: 310.00 MRP

❖ **ROXYL Susp. Rasa**
Amoxycillin 125mg/5ml: suspension
100ml bot: 55.00 MRP

❖ **ROXYL Drop Rasa**
Amoxycillin 100mg/1ml: drop
15ml bot: 30.00 MRP

❖ **REMOXIN Cap. Rephco**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 270.00 MRP
500mg x 50's pack: 300.00 MRP

❖ **REMOXIN Susp. Rephco**
Amoxycillin 125mg/5ml: suspension
100ml bot: 46.00 MRP

❖ **SAPOX Cap. Alco Pharma**
Amoxycillin 250mg/capsule
100's pack: 344.00 MRP

❖ **SAPOX-DS Cap. Alco Pharma**
Amoxycillin 500mg/capsule
100's pack: 6.7.00 MRP

❖ **SAPOX Susp. Alco Pharma**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.05 MRP

❖ **SAPOX-DS Susp. Alco Pharma**
Amoxycillin 250mg/5ml: suspension (double strength)
100ml bot: 65.00 MRP

❖ **SAPOX Drop Alco Pharma**
Amoxycillin 125mg/1.25ml: drop.
15ml bot: 28.32 MRP

❖ **SEEMAXYL Cap. Seema**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 340.00 MRP
500mg x 50's pack: 295.00 MRP

❖ **SEEMAXYL Susp. Seema**
Amoxycillin 125mg/5ml: suspension
100ml bot: 44.00 MRP

❖ **SIMOX Cap. Silva**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 350.00 MRP
500mg x 50's pack: 300.00 MRP

❖ **SIMOX Susp. Silva**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.00 MRP

❖ **SIMOX DS Susp. Silva**
Amoxycillin 250mg/5ml: suspension (double strength)
100ml bot: 65.00 MRP

❖ **SIMOX Drop Silva**
Amoxycillin 100mg/1ml: drop
15ml bot: 27.00 MRP

❖ **SINAMOX Cap. Ibn Sina**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 356.00 MRP
500mg x 50's pack: 336.00 MRP

❖ **SINAMOX Susp. Ibn Sina**
Amoxycillin 125mg/5ml: suspension
100ml bot: 47.00 MRP

❖ **SINAMOX-DS Susp. Ibn Sina**
Amoxycillin 250mg/5ml: suspension
100ml bot: 68.00 MRP

❖ **SINAMOX Drop Ibn Sina**
Amoxycillin 100mg/1ml: drop
15ml bot: 29.00 MRP

❖ **SK-MOX Cap. SK+F**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 354.00 MRP
500mg x 48's pack: 291.36 MRP

❖ **SK-MOX Susp. SK+F**
Amoxycillin 125mg/5ml: suspension
100ml bot: 46.40 MRP

❖ **SK-MOX DS Susp. SK+F**
Amoxycillin 250mg/5ml: suspension (double strength)
100ml bot: 65.00 MRP

❖ **SK-MOX Drop SK+F**
Amoxycillin 125mg/1.25ml: drop
15ml bot: 28.32 MRP

❖ **SKYMOXIN Cap. Skylab**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 350.00 MRP
500mg x 50's pack: 300.00 MRP

❖ **SKYMOXIN Susp. Skylab**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.50 MRP

❖ **SKYMOXIN Drop Skylab**
Amoxycillin 125mg/1.25ml: drop.
15ml bot: 28.32 MRP

❖ **TYCIL Cap. Beximco**
Amoxycillin 500mg/capsule
500mg x 50's pack: 337.00 MRP

❖ **TYCIL Susp. Beximco**
Amoxycillin 125mg/5ml: suspension
100ml bot: 46.43 MRP

❖ **TYCIL DS Susp. Beximco**
Amoxycillin 250mg/5ml: suspension (double strength)
100ml bot: 65.00 IP

❖ **TYCIL Drop. Beximco**
Amoxycillin 125mg/1.25ml: drop.
15ml bot: 30.14 MRP

❖ **TYMOX Cap. Somatec**
Amoxycillin 250mg & 500mg/capsule

250mg x 100's pack: 340.00 MRP
500mg x 50's pack: 300.00 MRP

❖ **TYMOX Susp. Somatec**
Amoxycillin 125mg/5ml: suspension
100ml bot: 44.50 MRP

❖ **TYMOX Drop Somatec**
Amoxycillin 125mg/1.25ml: drop
15ml bot: 30.00 MRP

❖ **ULTRAMOX Cap. Globe**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 350.00 MRP
500mg x 50's pack: 303.50 MRP

❖ **ULTRAMOX Susp. Globe**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.00 MRP

❖ **UNIMOX Cap. Gaco**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 343.18 MRP
500mg x 20's pack: 120.00 MRP

❖ **UNIMOX Susp. Gaco**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.00 MRP

❖ **UNIMOX Drop Gaco**
Amoxycillin 125mg/1.25ml: drop
15ml bot: 28.32 MRP

❖ **UNIMOX Inj. Gaco**
Amoxycillin 500mg/vial: injection.
500mg x 1 vial: 24.22 MRP

❖ **ZIMOXYL Cap. Ziska**
Amoxycillin 250mg & 500mg/capsule
250mg x 100's pack: 310.00 MRP
500mg x 50's pack: 300.00 MRP

❖ **ZIMOXYL Susp. Ziska**
Amoxycillin 125mg/5ml: suspension
100ml bot: 45.00 MRP

CO-AMOXICLAV[21,33]

CO-AMOXICLAV: Tablet/Syrup
Comp: Co-amoxiclav is a mixture of amoxycillin and clavulanic acid; proportions of ratio are expressed in the form x/y respectively; thus the usual combinations are 250/125 or 500/125 in milligrams. Calvulanic acid is a beta-lactamase inhibitor. It itself has no significant antibacterial role, but by inactivating penicillinases, it makes the combination active against penicillinase-producing bacteria that are resistant to amoxycillin. These include most staph. aureus, 50% of E. coli strains, and up to 15% of H. influenzae strains, as well as many bacteroides and klebisiella spp.
Ind: As amoxycillin + penicillinase-producing bacteria as mentioned above.
C/I; S/E: Same as amoxycillin.
Caution: hepatic impairment; in renal impairment dosage frequency should be 12 hourly; patients on anticoagulant therapy.
Warnings: use in pregnancy is not recommended if not considered essential.
Dosage: By mouth, adults and children over 12 years, the usual dose is amoxycillin 250mg (or co-amoxiclav 375mg) 8 hourly taken with or before meals; for severe infections, amoxycillin 500mg (or co-amoxiclav 625mg) may be given. For children below 12 years 5ml to 10ml of suspension 8 hourly according to age and severity of infection.
By injection, adult, amoxycillin 1gm (or co-amoxiclav 1.2gm) 8 hourly by i.v injection over 3-4 minutes or slowly by i.v infusion; in case of more serious infections, may be given 6 hourly instead of 8 hourly.
Infants to age 3 months, amoxycillin 25mg/kg 8 hourly (or 12 hourly during perinatal period or in case of premature infants); 3 months to 12 years, 25mg/kg 8 hourly; in case of more serious infections, may be given 6 hourly instead of 8 hourly.
In all cases, duration of treatment should be as that of amoxycillin therapy.

❖ **AMOCLAV 375 Tab. Techno Drugs**
Co-amoxiclav 250/125 (amoxycillin trihydrate 250mg + clavulanic acid 125mg as potassium salt) per tablet.
375mg x 20's pack: 300.00 MRP

❖ **AMOCLAV 625 Tab. Techno Drugs**
Co-amoxiclav 500/125 (amoxycillin trihydrate 500mg + clavulanic acid125mg as potassium salt) per tablet.
625mg x 18's pack: 360.00 MRP

❖ **AMOCLAV 1gm Tab. Techno Drugs**
Co-amoxiclav 875/125 (amoxycillin trihydrate 875mg + clavulanic acid125mg as potassium salt) per tablet.
Dosage convenience: The usual dose of co-amoxiclav 375mg or 625mg is 8 yourly; but, dosage schedule of co-amoxiclav 1gm is 12 hourly.
6's pack: 138.00 MRP

❖ **AMOCLAV Susp. Techno Drugs**
Co-amoxiclav 125/31 (amoxycillin trihydrate 125mg + clavulanic acid 31.25mg as potassium salt)/5ml: suspension.
60ml bot: 130.00 MRP
100ml bot: 190.00 MRP

❖ **AMOCLAV FORTE Susp. Techno Drugs**
Co-amoxiclav 400/57 (amoxycillin trihydrate 400mg + clavulanic acid 57.50mg as potassium salt)/5ml: suspension.
35ml bot: 83.00 MRP

❖ **AMOCLAV 600 I.V Inj. Techno Drugs**
Co-amoxiclav 600mg powder for reconstitution, at a proportion of 500/100 (amoxycillin 500mg as sodium salt + clavulanic acid 100mg as potassium salt)/vial: i.v injection
600mg vial x 1's pack: 110.00 MRP

❖ **AMOCLAV 1200 I.V Inj. Techno Drugs**
Co-amoxiclav 1200mg powder for reconstitution, at a proportion of 1000/200 (amoxycillin 1000mg as sodium salt + clavulanic acid 200mg as potassium salt)/vial: i.v injection
1200mg vial x 1's pack: 200.00 MRP

❖ **DEMOXIL-PLUS 375 Tab. Drug Inter.**
Co-amoxiclav 250/125 (amoxycillin trihydrate 250mg + clavulanic acid125mg as potassium salt)/tablet.
20's pack: 320.00 MRP

❖ **DEMOXIL-PLUS 625 Tab. Drug Inter.**
Co-amoxiclav 500/125 (amoxycillin trihydrate 500mg + clavulanic acid125mg as potassium salt) per tablet.
625mg x 20's pack: 480.00 MRP

❖ **DEMOXIL-PLUS Susp. Drug Inter.**
Co-amoxiclav 125/31 (amoxycillin trihydrate 125mg + clavulanic acid 31mg as potassium salt) /5ml: suspension.
100ml bot: 150.00 MRP

❖ **DEMOXIL FORTE Susp. Drug Inter.**
Co-amoxiclav 400/57 (amoxycillin trihydrate 400mg + clavulanic acid 57.50mg as potassium salt)/5ml: suspension.
35ml bot: 90.00 MRP

❖ **FIMOXYCLAV 375 Tab. Sanofi-aventis**
Co-amoxiclav 250/125 (amoxycillin trihydrate 250mg + clavulanic acid 125mg as potassium salt) per tablet.
375mg x 30's pack: 720.00 MRP

❖ **FIMOXYCLAV 625 Tab. Sanofi-aventis**
Co-amoxiclav 500/125 (amoxycillin trihydrate 500mg + clavulanic acid125mg as potassium salt) per tablet
625mg x 30's pack: 900.00 MRP

❖ **FIMOXYCLAV Susp. Sanofi-aventis**
Co-amoxiclav 125/31 (amoxycillin trihydrate 125mg + clavulanic acid 31.25mg as potassium salt)/5ml: suspension.
100ml bot: 220.00 MRP

❖ **FIMOXYCLAV 600 I.V Inj. Sanofi-aventis**
Co-amoxiclav 600mg powder for reconstitution, at a proportion of 500/100 (amoxycillin 500mg as sodium salt + clavulanic acid 100mg as potassium salt)/vial: i.v injection
600mg x 1 combipack: 140.00 MRP

❖ **FIMOXYCLAV 1200 I.V Inj. Sanofi-aventis**
Co-amoxiclav 1200mg powder for reconstitution, at a proportion of 1000/200 (amoxycillin 1000mg as sodium salt + clavulanic acid 200mg as potassium salt)/vial: i.v injection
1200mg x 1 combipack: 275.00 MRP

❖ **MOXACLAV 375 Tab. Square**
Co-amoxiclav 250/125 (amoxycillin trihydrate 250mg + clavulanic acid125mg as potassium salt) per tablet.
18's pack: 297.00 MRP

❖ **MOXACLAV 1gm Tab. Square**
Co-amoxiclav 875/125 (amoxycillin trihydrate 875mg + clavulanic acid125mg as potassium salt) per tablet.
Dosage convenience: The usual dose of co-amoxiclav 375mg or 625mg is 8 yourly; but, dosage schedule of co-amoxiclav 1gm is 12 hourly.
12's pack: 300.00 MRP

❖ **MOXACLAV 625 Tab. Square**
Co-amoxiclav 500/125 (amoxycillin trihydrate 250mg + clavulanic acid125mg as potassium salt) per tablet.
18's pack: 360.00 MRP

❖ **MOXACLAV Susp. Square**
Co-amoxiclav 125/31 (amoxycillin trihydrate 125mg + clavulanic acid 31.25mg as potassium

salt)/5ml: suspension.
60ml bot: 135.00 MRP
100ml bot: 150.00 MRP

❖ **MOXACLAV Forte Susp. Square**
Co-amoxiclav 400/57 (amoxycillin trihydrate 400mg + clavulanic acid 57.50mg as potassium salt)/5ml: suspension.
35ml bot: 90.00 MRP

Mecillinams

PIVMECILLINAM[21,33]

PIVMECILLINAM HCl: Tablet/ Injection
Ind: Urinary tract infections, acute cystitis; salmonellosis, shigellosis, enteropathic E. coli diarrhoea; Gram-negative septicaemia; biliary infections; yersiniosis.
C/I: Hypersensitivity to penicillins or cephalosporins.
S/E; Cautions: See under benzyl penicillin; also monitor liver & kidney functions in long term use.
Dosage & admin: Adult: U.T.I- Acute cystitis, initially 400mg then 200mg 6-8 hourly daily to a total of 2gms (i.e 3 days); in complicated UTI usual treatment time is 1-2 weeks. Recurrent bacteriuria- 400 mg 6-8 hourly. Salmonellosis-1.2 to 2.4 gm daily for 14 days. All doses are taken with or immediately after meal.
Child: UTI- under 40kg, 20-40mg/kg daily in 6 or 8 hourly, divided doses; over 40 kg. same as adult, usually for 3 days. Salmonellosis- under 40 kg, 30-60 mg/kg daily in 6 or 8 hourly divided doses; over 40 kg, same as adult. All for 14 days.

❖ **ALEXID Tab. Aristopharma**
Pivmecillinam hydrochloride 200mg/tablet.
50's pack: 600.00 MRP

❖ **BACILEX Tab. Pharmadesh**
Pivmecillinam hydrochloride 200mg/tablet.
20's pack: 302.20 MRP

❖ **DYSEDIN Tab. Medicon**
Pivmecillinam hydrochloride 200mg/tablet.
20's pack: 240.00 MRP

❖ **EMCIL Tab. Square**
Pivmecillinam hydrochloride 200mg/tablet.
30's pack: 360.00 MRP

❖ **LEXIPEN Tab. Techno Drugs**
Pivmecillinam hydrochloride 200mg/tablet.
30's pack: 300.00 MRP

❖ **PINAM Tab. Chemico**
Pivmecillinam hydrochloride 200mg/tablet.
30's pack: 360.00 MRP

❖ **PIVICIL Tab. General**
Pivmecillinam hydrochloride 200mg/tablet.
20's pack: 240.00 MRP

❖ **PIVCILIN Tab. Rangs**
Pivmecillinam hydrochloride 200mg/tablet.
20's pack: 240.00 MRP

❖ **RELEXID Tab. Renata**
Pivmecillinam hydrochloride 200mg/tablet.
30's pack: 360.00 MRP

❖ **SELEXID Tab. Leo Pharma/ Kapricorn**
Pivmecillinam hydrochlor. 200mg/tablet.
100's pack: 2348.00 MRP

❖ **SELEXID Inj. Leo Pharma/ Kapricorn**
Pivmecillinam hydrochlor. 400mg/vial: injection
1 vial pack: 186.56 MRP

1.2 Cephalosporins & Cephamycins

Cephalosporins are the broad-spectrum antibiotics of lactam group. Most cephalosporins are produced semisynthetically by the chemical attachment of side chains to 7-aminocephalosporanic acid.

Classification:

1. **First generation cephalosporins:** Such as, ***cephalexin, cephradine, cefadroxil, cefazolin.***
2. **Second generation cephalosporins:** Such as, *cefaclor; cefamandole, cefprozil, cefoxitin, cefuroxime & cefuroxime axetil.*
3. **Third generation cephalosporins:** Such as, *cefdinir, cefetamet, cefixime, cefotaxime, cefpodoxime, ceftazidime, ceftibuten, ceftriaxone, moxalactam.*
4. **Fourth generation cephalosporins:** Such as, *Cefepime, Cefpirome*

First generation

CEPHALEXIN[21,33]

CEPHALEXIN: Capsule/Suspension
Cephalexin is the orally active 'first generation' cephalosporin with broad-spectrum activity.
Mode of action: Cephalosporins have the same mode of action as the penicillins. They are bactericidal in action. They interfere with the last step of bacterial cell wall synthesis (transpeptidation or cross-linkage). The synthesis of bacterial cell wall occurs in three steps- i. in the first step formation of nucleotides (UDP-N - acetylmuramic acid-pentapeptide); ii. in second step formation of the linear peptidoglycans; iii. in the third or final step there is cross-linking (or transpeptidation) of these linear strands occur by an enzyme 'transpeptidase'. Penicillins and cephalosporins bind to this enzyme in the final step and act as competitive inhibitors, leading to synthesis a defective cell membrane, which is osmotically less stable. Finally, cell lysis occurs after release of murein hydrolases present in the cell wall, which degrade performed cell wall.
Ind: Broadspectrum antibiotic, and active against all common gram+ve cocci- pneumococci, staphylococci (including penicillinase producing strains), beta-haemolytic strep. cocci & strep. viridens. Gram-ve bacilli such as, E. coli, klebsiella & proteus mirabilis are also susceptible. Thus infection of resp. tract, urinary tract, g. i tract, skin and of soft tissues are best treated.
C/I: History of hypersensitivity to cephalosporins or penicillins; meningitis, rheumatic fever prophylaxis, and anaerobic infections.
S/E: Allergic reactions; nausea, vomiting, abdominal pain, dyspepsia; fever, arthralgia, transient hepatitis, and cholestatic jaundice, reversible interstitial nephritis, hyperactivity, nervousness, sleep disturbance, confusion, hypertonia and dizziness.
Cautions: Penicillin sensitivity; renal impairment; pregnancy and breast-feeding (but appropriate to use); false positive urinary glucose and false positive Coomb's test (if done).
Dose: 250-500 mg every 6 hours;
Child, 25-50 mg/kg daily in divided doses.

❖ **ACELEX Cap. Acme**
Cephalexin 250mg & 500mg/capsule
250mg x 20's pack: 132.00 MRP
500mg x 20's pack: 250.00 MRP

❖ **ACELEX Susp. Acme**
Cephalexin 125mg/5ml: suspension
100ml bot: 77.00 MRP

❖ **ALEXIN Cap. Renata**
Cephalexin 250mg & 500mg/capsule.
250mg x 50's pack: 278.00 MRP
500mg x 50's pack: 569.00 MRP

❖ **ALSPORIN Tab. Renata**
Cephalexin 250mg & 500mg/tablet.
250mg x 100's pack: 658.00 MRP
500mg x 50's pack: 607.00 MRP

❖ **ALSPORIN Susp. Renata**
Cephalexin 125mg/5ml: suspension
100ml bot: 81.93 MRP

❖ **CEFALEX Cap. Drug Inter.**
Cephalexin 500mg/capsule
50's pack: 412.50 MRP

❖ **CEFALEX Susp. Drug Inter.**
Cephalexin 125mg/5ml: suspension
100ml bot: 81.00 MRP

❖ **CEPA Cap. Globe**
Cephalexin 250mg & 500mg/capsule
250mg x 100's pack: 500.00 MRP
500mg x 30's pack: 240.00 MRP

❖ **CEPA Susp. Globe**
Cephalexin 125mg/5ml: suspension
100ml bot: 65.00 MRP

❖ **CEPHALEN Cap. Beximco**
Cephalexin 250mg & 500mg/capsule
250mg x 100's : 670.00 IP
500mg x 50's: 627.50 IP

❖ **CEPHALEN Susp. Beximco**
Cephalexin 125mg/5ml: suspension
100ml bot: 81.50 IP

❖ **CEPHAROL Cap. Skylab**
Cephalexin 250mg/capsule
250mg x 100's pack: 678.00 MRP

❖ **CEPHAROL Susp. Skylab**
Cephalexin 125mg/5ml: suspension
100ml bot: 81.50 MRP

❖ **CEPHAXIN Cap. Pharmadesh**
Cephalexin 500mg/Capsule
500mg x 20's pack: 210.00 MRP

❖ **CEPHAXIN Susp. Pharmadesh**
Cephalexin 125 mg/5 ml: Suspension
100ml bot: 72.00 MRP

❖ **CEPORAL Cap. Medimet**
Cephalexin 250mg & 500mg/capsule
250mg x 40's pack: 220.00 MRP
500mg x 20's pack: 200.00 MRP

❖ **CEPORAL Susp. Medimet**
Cephalexin 125mg/ 5ml: suspension
100ml bot: 78.00 MRP

❖ **CEPOREX Cap. GlaxoSmithKline**
Cephalexin 250mg & 500mg/Capsule
250mg x 100's pack: 686.00 MRP
500mg x 50's pack: 632.00 MRP

❖ **CEPOREX Susp. GlaxoSmithKline**
Cephalexin 125mg/5ml: suspension
100ml bot: 83.95 MRP
❖ **CYPOR Cap. CPL**
Cephalexin 250mg & 500mg/capsule
250mg x 50's pack: 300.00 MRP
500mg x 50's pack: 580.00 MRP
❖ **CYPOR Susp. CPL**
Cephalexin 125mg/5ml: suspension
100ml bot: 77.00 MRP
❖ **EDICEF Cap. Edruc**
Cephalexin 500mg/capsule
500mg x 30's pack: 364.00 IP
❖ **EDICEF Susp. Edruc**
Cephalexin 125mg/5ml: suspension
100ml bot: 77.00 IP
❖ **G-CEFALEXIN Cap. Gonoshas.**
Cephalexin 250mg/capsule
50's pack: 200.00 MRP
❖ **G-CEFALEXIN Susp. Gonoshas.**
Cephalexin 125mg/5ml: suspension
100ml bot: 75.00 MRP
❖ **HI-CEF Cap. Hudson**
Cephalexin 500mg/capsule
50's pack: 525.00 MRP
❖ **HI-CEF Susp. Hudson**
Cephalexin 125mg/5ml: suspension
100ml bot: 70.00 MRP
❖ **KEFLIN Cap. Opsonin**
Cephalexin 500mg/capsule
500mg x 30's pack: 330.00 MRP
❖ **KEPLEX Cap. Sonear**
Cephalexin 250mg & 500mg/capsule
250mg x 20's pack: 130.00 MRP
500mg x 16's pack: 192.00 MRP
❖ **NAVALEXIN Cap. Navana**
Cephalexin 250mg & 500mg: Capsule
250mg x 100's pack: 500.00 IP
500mg x 50's pack: 450.00 IP
❖ **NAVALEXIN Susp. Navana**
Cephalexin 125mg/5ml: suspension.
100ml bot: 80.00 IP
❖ **NEOREX Cap. SK+F**
Cephalexin 250mg & 500mg/capsule
250mg x 100's pack: 660.00 MRP
500mg x 48's pack: 625.00 MRP
❖ **NEOREX Susp. SK+F**
Cephalexin 125mg/5ml: suspension.
100ml bot: 83.50 MRP
❖ **NUFEX Cap. General**
Cephalexin 500mg/capsule
500mg x 20's pack: 180.00 MRP
❖ **SEEMACEPH Cap. Seema**
Cephalexin 500mg/capsule.
500mg x 50's pack: 620.00 MRP
❖ **SEEMACEPH Susp. Seema**
Cephalexin 125mg/5ml: suspension
100ml bot: 77.00 MRP
❖ **SUPRALEX Cap. Bio-pharma**
Cephalexin 250mg & 500mg/capsule.
250mg x 30's pack: 195.00 MRP
500mg x 30's pack: 360.00 MRP
❖ **SUPRALEX Susp. Bio-pharma**
Cephalexin 125mg/5ml: suspension.
100ml bot: 77.00 MRP

CEFADROXIL[21,26]

CEFADROXIL: Capsule/Suspension/ Drop
Cefadroxil is an acid-stable semi-synthetic broad-spectrum oral antibiotic of cephalosporin group.
Mode of action: See above under the text of 'cephalexin'.
Ind: Cefadroxil is indicated in the treatment of patients with infection caused by susceptible strains of the designated organisms in the following diseases:
Upper respiratory tract infections caused by Streptococcus pyogenes (Group A haemolytic streptococci) and Streptococcus pneumoniae; urinary tract infections caused by E. coli, Proteus mirabilis, and Klebsiella species; skin and soft tissue infections caused by Staphylococci (including penicillinase producing strains) and Streptococci.
C/I: History of hypersensitivity to cephalosporins or penicillins; meningitis, rheumatic fever prophylaxis, and anaerobic infections.
S/E: Allergic reactions; nausea, vomiting, abdominal pain, dyspepsia; fever, arthralgia, transient hepatitis, and cholestatic jaundice, reversible interstitial nephritis, hyperactivity, nervousness, sleep disturbance, confusion, hypertonia and dizziness.
Cautions: Penicillin sensitivity; renal impairment; pregnancy and breast-feeding (but appropriate to use); false positive urinary glucose and false positive Coomb's test (if done).
Dosage & Admin: Upper respiratory tract infections: Adults, 1 gm per day in single or divided doses (b.i.d.) for 10 days; children, 30mg/kg/day in a single or in divided doses every 12 hours for 10 days. Urinary tract infections: for uncomplicated infections 1 or 2gm per day in single or divided doses (b.i.d); for all other UTIs 2gm per day in divided doses (b.i.d); children, 30mg/kg/day in divided doses every 12 hours. Skin & soft tissue infections: 1gm per day in single or divided doses (b.i.d); children, 30mg/kg/day in divided doses every 12 hours.
Effects & absorption of cefadroxil are not affected by foods, so if it is administered with food, may be helpful in diminishing potential gastrointestinal complaints associated with oral cephalosporin therapy.
Patients with renal impairment: The dosage of Cefadroxil should be adjusted according to creatinine clearance rates to prevent drug accumulation. The following schedule is suggested. In adults, the initial dose is 1000mg and the maintenance dose (based on the creatinine clearance rate (ml/min/1.73m2) is 500mg at the time intervals listed bellow:
Creatinine clearance: 0-10ml/min, dosage interval- 36 hours.
Creatinine clearance: 10-25ml/min, dosage interval- 24 hours.
Creatinine clearance: 25-50ml/min, dosage interval- 12 hours.
Creatinine clearance: >50ml/min, dosage interval- no adjustment.
Overdosage: If amounts >250mg/kg is ingested, gastric lavage or inducing vomiting is appropriate. Cefadroxil monohydrate can be removed from the body by haemodialysis.
Drug interaction: There is no known clinically important drug interactions with cefadroxil

❖ **ADOCEF-500 Cap. Ziska**
Cefadroxil monohydrate USP 500mg/capsule
500mg x 20's: 240.00 MRP
❖ **ADOCEF Susp. Ziska**
Cefadroxil monohydrate 125mg/5ml: suspension
100ml bot: 70.00 MRP
❖ **ADOCIL-500 Cap. Chemico**
Cefadroxil monohydrate USP 500mg/capsule
500mg x 20's: 240.00 MRP
❖ **ADOCIL Susp. Chemico**
Cefadroxil monohydrate USP 125mg/5ml: suspension
100ml bot: 70.00 MRP
❖ **ADORA Cap. Incepta**
Cefadroxil monohydrate USP 500mg/capsule
500mg x 20's: 240.00 MRP
❖ **ADORA Susp. Incepta**
Cefadroxil monohydrate 125mg/5ml: suspension
60ml bot: 50.00 MRP
100ml bot: 70.00 MRP
❖ **ADORA Drop Incepta**
Cefadroxil monohydrate 100mg/1ml: drop
15ml bot: 50.00 MRP
❖ **AROCEF Cap. SK+F**
Cefadroxil monohydrate USP 500mg/capsule
500mg x 24's: 288.00 MRP
❖ **AROCEF Susp. SK+F**
Cefadroxil monohydrate 125mg/5ml: suspension
100ml bot: 70.00 MRP
❖ **AROCEF Drop SK+F**
Cefadroxil monohydrate 100mg/1ml: drop
15ml bot: 50.00 MRP
❖ **CEDRIL Cap. ACI**
Cefadroxil monohydrate USP 500mg/capsule
500mg x 30's: 360.00 MRP
❖ **CEDRIL Susp. ACI**
Cefadroxil monohydrate 125mg/5ml: suspension
100ml bot: 70.00 MRP
❖ **CEFADOR Cap. Somatec**
Cefadroxil monohydrate USP 500mg/capsule
500mg x 20's: 240.00 IP
❖ **CEFADOR Susp. Somatec**
Cefadroxil monohydrate 125mg/5ml: suspension
100ml bot: 70.00 IP
❖ **DROXIL 500 Cap. Rangs Pharma**
Cefadroxil monohydrate USP 500mg/capsule
500mg x 20's: 240.00 MRP
❖ **DROXIL Susp. Rangs Pharma**
Cefadroxil monohydrate 125mg/5ml: suspension
100ml bot: 70.00 MRP
❖ **DROXIL Drop Rangs Pharma**
Cefadroxil monohydrate 100mg/1ml: drop
15ml bot: 50.00 MRP
❖ **FICEF Cap. UniHealth**
Cefadroxil monohydrate USP 500mg/capsule
500mg x 20's: 240.00 MRP
❖ **FICEF Susp. UniHealth**
Cefadroxil monohydrate 125mg/5ml: suspension
100ml bot: 70.00 MRP
❖ **FICEF Drop UniHealth**
Cefadroxil monohydrate 100mg/1ml: drop
15ml bot: 50.00 MRP
❖ **LICEF Cap. Asiatic**
Cefadroxil monohydrate USP 500mg/capsule
500mg x 24's: 335.04 MRP
❖ **LICEF Susp. Asiatic**
Cefadroxil monohydrate 125mg/5ml: suspension
100ml bot: 70.00 MRP
❖ **SEFADOL Susp. Techno Drugs**
Cefadroxil monohydrate 125mg/5ml: suspension
100ml bot: 65.00 MRP

❖ **SEFANID Cap. Drug Inter.**
Cefadroxil monohydrate USP 500mg/capsule
500mg x 50's: 600.00 MRP
❖ **SEFANID Susp. Drug Inter.**
Cefadroxil monohydrate 125mg/5ml: suspension
100ml bot: 70.00 MRP
❖ **TRUBID Cap. Opsonin**
Cefadroxil monohydrate USP 500mg/capsule
500mg x 24's: 288.00 MRP
❖ **TRUBID Susp. Opsonin**
Cefadroxil monohydrate 125mg/5ml: suspension
60ml bot: 50.00 MRP
100ml bot: 70.00 MRP
❖ **TRUBID DS Susp. Opsonin**
Cefadroxil monohydrate 250mg/5ml: suspension (double strength)
100ml bot: 120.00 MRP
❖ **TRUBID Drop Opsonin**
Cefadroxil monohydrate USP 100mg/1ml: drop
15ml bot: 50.00 MRP
❖ **TWICEF Cap. Acme**
Cefadroxil monohydrate USP 500mg/capsule
500mg x 20's: 240.00 MRP
❖ **TWICEF Susp. Acme**
Cefadroxil monohydrate 125mg/5ml: suspension
100ml bot: 70.00 MRP

CEPHRADINE[21,33]

CEPHRADINE: Capsule/Suspension/Drop/ Injection
Ind: Broadspectrum antibiotic, and active against all common gram+ve cocci- pneumococci, staphylococci (including penicillinase producing strains), beta-haemolytic strep. cocci & strep. viridens. Gram-ve bacilli such as, E. coli, klebsiella & proteus mirabilis are also susceptible. Thus infection of resp. tract, urinary tract, g.i tract, skin and of soft tissues are best treated.
C/I; S/E; Caution: See above under Cefadroxil.
Dose: by mouth, 250-500 mg every 6 hours; Child, 25-50 mg/kg daily in divided doses . By i. m or i. v injection, 0.5-1 gm every 6 hours; Child, 50-100 mg/kg daily in 6 hourly divided doses.

❖ **ABAC-500 Cap. Chemist**
Cephradine 500mg/capsule.
500mg x 20's pack: 252.80 MRP
❖ **ABAC Susp. Chemist**
Cephradine 125mg/5ml: suspension
100ml bot: 81.92 MRP
❖ **ABAC Drop Chemist**
Cephradine 100mg/ml: drop
15ml bot: 50.00 MRP
❖ **ACEFRA Cap. Apollo**
Cephradine 500mg/capsule.
500mg x 20's pack: 240.00 IP
❖ **ACEFRA Susp. Apollo**
Cephradine 125mg/5ml: suspension
100ml bot: 78.00 IP
❖ **ADECEF Cap. Supreme**
Cephradine 500mg/capsule.
500mg x 24's pack: 300.00 MRP
❖ **ADECEF Susp. Supreme**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 MRP
❖ **ADECEF DS Susp. Supreme**
Cephradine 250mg/5ml: suspension (double strength)
100ml bot: 110.00 MRP
❖ **ANCEF Cap. UniHealth**
Cephradine 250mg & 500mg/capsule.
250mg x 20's pack: 130.00 MRP
500mg x 20's pack: 250.00 MRP
❖ **ANCEF Susp. UniHealth**
Cephradine 125mg/5ml: suspension
100ml bot: 85.00 MRP
❖ **ANCEF Forte Susp. UniHealth**
Cephradine 250mg/5ml: suspension (double strength)
100ml bot: 120.00 MRP
❖ **ANCEF Drop UniHealth**
Cephradine 100mg/ml: drop
15ml bot: 50.00 MRP
❖ **APHRIN Cap. Apex**
Cephradine 500mg/capsule.
500mg x 20's pack: 200.00 MRP
❖ **APHRIN Susp. Apex**
Cephradine 125mg/5ml: suspension
100ml bot: 75.00 MRP
❖ **APHRIN Inj. Apex**
Cephradine 500mg & 1gm/vial: i.m/i.v injection.
500mg vial x 1's pack: 45.00 MRP
1gm vial x 1's pack: 80.00 MRP
❖ **AVLOSEF Cap. ACI**
Cephradine 250mg & 500mg/capsule.
250mg x 20's pack: 208.00 IP
500mg x 32's pack: 400.00 IP
❖ **AVLOSEF Susp. ACI**
Cephradine 125mg/5ml: suspension
100ml bot: 82.00 MRP
❖ **AVLOSEF DS Susp. ACI**
Cephradine 250mg/5ml: suspension (double strength)
100ml bot: 120.00 MRP
❖ **AVLOSEF Drop ACI**
Cephradine 100mg/ml: drop
15ml bot: 50.00 MRP
❖ **AVLOSEF Inj. ACI**
Cephradine 500mg & 1gm/vial: i.m/i.v injection.
500mg vial x 1's pack: 56.00 MRP
1gm vial x 1's pack: 80.00 MRP
❖ **BELOCEF Cap. Amico**
Cephradine 250mg & 500mg/capsule.
250mg x 20's pack: 130.00 MRP
500mg x 20's pack: 250.00 MRP
❖ **BELOCEF Susp. Amico**
Cephradine 125mg/5ml: suspension
100ml bot: 78.02 MRP
❖ **BELOCEF DS Susp. Amico**
Cephradine 250mg/5ml: suspension (double strength)
100ml bot: 110.00 MRP
❖ **BELOCEF Drop Amico**
Cephradine 100mg/ml: drop
15ml bot: 50.00 MRP
❖ **BENOCEF Cap. Benham**
Cephradine 250mg & 500mg/capsule.
250mg x 20's pack: 131.20 IP
500mg x 20's pack: 250.00 IP
❖ **BENOCEF Susp. Benham**
Cephradine 125mg/5ml: suspension
100ml bot: 79.00 MRP
❖ **BENOCEF DS Susp. Benham**
Cephradine 250mg/5ml: suspension
100ml bot: 120.00 MRP
❖ **BETASEF Cap. Alco Pharma**
Cephradine 250mg & 500mg/capsule.
250mg x 20's pack: 132.00 MRP
500mg x 20's pack: 253.00 MRP
❖ **BETASEF Susp. Alco Pharma**
Cephradine 125mg/5ml: suspension
100ml bot: 79.00 MRP
❖ **BETASEF DS Susp. Alco Pharma**
Cephradine 250mg/5ml: suspension (double strength)
100ml bot: 120.00 MRP
❖ **BETASEF Drop Alco Pharma**
Cephradine 100mg/ml: drop
15ml bot: 51.00 MRP
❖ **BRACE Cap. Hallmark**
Cephradine 250mg & 500mg/capsule
250mg x 28's pack: 182.00 MRP
500mg x 20's pack: 240.00 MRP
❖ **BRACE Susp. Hallmark**
Cephradine 125mg/5ml: suspension
100ml bot: 78.00 MRP
❖ **CEFAD Cap. Mystic**
Cephradine 500mg/capsule
500mg x 20's pack: 235.00 MRP
❖ **CEFAD Susp. Mystic**
Cephradine 125mg/5ml: suspension
100ml bot: 86.00 MRP
❖ **CEFADIN 500 Cap. Ziska**
Cephradine 500mg/capsule
500mg x 28's pack: 336.00 MRP
❖ **CEFADIN Susp. Ziska**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 MRP
❖ **CEFASIA Cap. Pharmasia**
Cephradine 500mg/capsule
500mg x 20's pack: 250.00 IP
❖ **CEFASIA Susp. Pharmasia**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 IP
❖ **CEFLIN Cap. Nipa**
Cephradine 500mg/capsule
500mg x 20's pack: 253.20 MRP
❖ **CEFLIN Susp. Nipa**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 MRP
❖ **CEFLIN Drop Nipa**
Cephradine 100mg/ml: drop
15ml bot: 50.00 MRP
❖ **CEFRAMED Cap. Medimet**
Cephradine 250mg & 500mg/capsule
250mg x 50's pack: 425.00 MRP
500mg x 20's pack: 280.00 MRP
❖ **CEFRAMED Susp. Medimet**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 MRP
❖ **CEFRAMED Drop Medimet**
Cephradine 100mg/ml: drop
15ml bot: 50.00 MRP
❖ **CEFRAMED Inj. Medimet**
Cephradine 250mg, 500mg & 1gm/vial: i.m/i.v injection.
250mg vial x 1's pack: 33.00 MRP
500mg vial x 1's pack: 46.50 MRP
1gm vial x 1's pack: 75.00 MRP
❖ **CEFRASYN Cap. Syntho**
Cephradine 500mg/capsule
500mg x 20's pack: 240.00 MRP
❖ **CEFRASYN Susp. Syntho**
Cephradine 125mg/5ml : suspension
100ml bot: 78.00 MRP
❖ **CEODIN Cap. CPL**
Cephradine 250mg & 500mg/capsule.
250mg x 28's pack: 182.00 MRP

500mg x 20's pack: 250.00 MRP

❖ **CEODIN Susp. CPL**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 MRP

❖ **CEPHID Cap. Zenith**
Cephradine 250mg & 500mg/capsule
250mg x 30's pack: 195.00 MRP
500mg x 20's pack: 250.00 MRP

❖ **CEPHID Susp. Zenith**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 MRP

❖ **CEPHRADEX-500 Cap. SAPL**
Cephradine 500mg/capsule
500mg x 20's pack: 250.00 MRP

❖ **CEPHRADEX Susp. SAPL**
Cephradine 125mg/5ml: suspension
100ml bot: 85.00 MRP

❖ **CEPHRAN Cap. Opsonin**
Cephradine 500mg/capsule
500mg x 30's pack: 375.00 MRP

❖ **CEPHRAN Susp. Opsonin**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 MRP

❖ **CEPHRAN PR Susp. Opsonin**
Cephradine 250mg/5ml: suspension
100ml bot: 120.00 MRP

❖ **CEPHRAN Drop Opsonin**
Cephradine 100mg/ml: drop
15ml bot: 50.00 MRP

❖ **CEPHRAN Inj. Opsonin**
Cephradine 500mg, 1gm/vial: i.m/i.v injection.
500mg vial x 4's pack: 216.00 MRP
1gm vial x 4's pack: 80.00 MRP

❖ **CEPROVAL Cap. Peoples**
Cephradine 500mg/capsule
500mg x 20's pack: 250.00 MRP

❖ **CEPROVAL Susp. Peoples**
Cephradine 125mg/5ml: suspension
100ml bot: 85.00 MRP

❖ **COSCEF Cap. Cosmo Pharma**
Cephradine 500mg/capsule
500mg x 20's pack: 240.00 MRP

❖ **COSCEF Susp. Cosmo Pharma**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 MRP

❖ **CUSEF Cap. Delta**
Cephradine 250mg & 500mg/capsule
250mg x 20's pack: 130.01 MRP
500mg x 24's pack: 300.01 MRP

❖ **CUSEF Susp. Delta**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 MRP

❖ **CUSEF DS Susp. Delta**
Cephradine 250mg/5ml: suspension (double strength)
100ml bot: 120.01 MRP

❖ **CUSEF Drop Delta**
Cephradine 100mg/ml: drop
15ml bot: 50.01 MRP

❖ **DICEF Cap. Drug Inter.**
Cephradine 250mg & 500mg/capsule
250mg x 50's pack: 350.00 MRP
500mg x 50's pack: 625.00 MRP

❖ **DICEF Susp. Drug Inter.**
Cephradine 125mg/5ml: suspension
100ml bot: 81.00 MRP

❖ **DICEF Forte Susp. Drug Inter.**
Cephradine 250mg/5ml: suspension (double strength)
100ml bot: 120.00 MRP

❖ **DICEF Drop Drug Inter.**
Cephradine 100mg/ml: drop
15ml bot: 50.00 MRP

❖ **DICEF Inj. Drug Inter.**
Cephradine 250mg, 500mg & 1gm/vial: i.m/i.v injection.
250mg vial x 1's pack: 30.00 MRP
500mg vial x 1's pack: 45.00 MRP
1gm vial x 1's pack: 85.00 MRP

❖ **DOLOCEF Cap. Techno Drugs**
Cephradine 250mg & 500mg/capsule
250mg x 18's pack: 108.00 MRP
500mg x 18's pack: 180.00 MRP

❖ **DOLOCEF Susp. Techno Drugs**
Cephradine 125mg/5ml: suspension
100ml bot: 70.00 MRP

❖ **DOLOCEF Inj. Techno Drugs**
Cephradine 500mg & 1gm/vial: i.m/i.v injection.
500mg vial x 1's pack: 45.00 MRP
1gm vial x 1's pack: 70.00 MRP

❖ **E-CEPRA Cap. Elixir**
Cephradine 500mg/capsule
500mg x 20's pack: 240.00 MRP

❖ **E-CEPRA Susp. Elixir**
Cephradine 125mg/5ml: suspension
100ml bot:

❖ **EDIN Cap. Millat**
Cephradine 250mg & 500mg/capsule
250mg x 30's pack: 195.00 MRP
500mg x 20's pack: 250.00 MRP

❖ **EDIN Susp. Millat**
Cephradine 125mg/5ml: suspension
100ml bot: 86.00 MRP

❖ **EDIN DS Susp. Millat**
Cephradine 250mg/5ml: suspension (double strength)
100ml bot: 120.00 MRP

❖ **EDIN Drop Millat**
Cephradine 100mg/ml: drop
15ml bot: 50.00 MRP

❖ **EFRAD Cap. Edruc**
Cephradine 250mg & 500mg/capsule
250mg x 20's pack: 130.00 IP
500mg x 20's pack: 250.00 IP

❖ **EFRAD Susp. Edruc**
Cephradine 125mg/5ml: suspension
100ml bot: 82.00 IP

❖ **EUSEF Cap. Globe**
Cephradine 500mg/capsule
500mg x 30's pack: 360.00 MRP

❖ **EUSEF Susp. Globe**
Cephradine 125mg/5ml: suspension
100ml bot: 75.00 MRP

❖ **EUSEF-DS Susp. Globe**
Cephradine 250mg/5ml: suspension
100ml bot: 120.00 MRP

❖ **EUSEF Drop Globe**
Cephradine 100mg/ml: pediatric drop
15ml bot: 50.00 MRP

❖ **EUSEF Inj Globe**
Cephradine 500mg & 1gm/vial: i.m/i.v injection.
500mg amp x 1's pack: 50.00 MRP
1gm amp x 1's pack: 80.00 MRP

❖ **EXTRACEF Cap. Aristopharma**
Cephradine 250mg & 500mg/capsule.
250mg x 30's pack: 195.00 MRP
500mg x 28's pack: 350.00 MRP

❖ **EXTRACEF Susp. Aristopharma**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 MRP

❖ **EXTRACEF DS Susp. Aristopharma**
Cephradine 250mg/5ml: suspension (double strength)
100ml bot: 120.00 MRP

❖ **EXTRACEF Drop Aristopharma**
Cephradine 100mg/ml: pediatric drop
15ml bot: 50.00 MRP

❖ **EXTRACEF Inj. Aristopharma**
Cephradine 250mg, 500mg & 1gm/vial: i.m/i.v injection.
250mg vial x 5's pack: 175.00 MRP
500mg vial x 5's pack: 250.00 MRP
1gm vial x 1's pack: 80.00 MRP

❖ **G-CEFRADINE Cap. Gonoshas**
Cephradine 500mg/capsule
500mg x 20's pack: 210.00 MRP

❖ **G-CEFRADINE Susp. Gonoshas**
Cephradine 125mg/5ml: suspension
100ml bot: 65.00 MRP

❖ **G-CEFRADINE Drop Gonoshas**
Cephradine 100mg/ml: drop
15ml bot: 40.00 MRP

❖ **G-CEFRADINE Inj. Gonoshas**
Cephradine 500mg/vial: i.m/i.v injection.
500mg vial x 1's pack: 40.00 MRP

❖ **GIGACEF Cap. Pacific**
Cephradine 500mg/capsule
500mg x 20's pack: 254.00 MRP

❖ **GIGACEF Susp. Pacific**
Cephradine 125mg/5ml: suspension
100ml bot: 64.00 MRP

❖ **GIGACEF Drop Pacific**
Cephradine 100mg/ml: drop
15ml bot: 46.00 MRP

❖ **INTRACEF Cap. Beximco**
Cephradine 250mg & 500mg/capsule
250mg x 50's pack: 325.00 IP
500mg x 40's pack: 500.00 IP

❖ **INTRACEF Susp. Beximco**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 IP

❖ **INTRACEF DS Susp. Beximco**
Cephradine 250mg/5ml: suspension (double strength)
100ml bot: 120.00 IP

❖ **INTRACEF Drop Beximco**
Cephradine 100mg/ml: drop
15ml bot: 50.00 IP

❖ **INTRACEF Inj. Beximco**
Cephradine 250mg & 500mg/vial: i.m/i.v injection.
250mg x 10 vials: 350.00 MRP
500mg x 10 vials: 500.00 MRP

❖ **JEDINE Cap. Ad-din**
Cephradine 500mg/capsule
500mg x 18's pack: 225.00 MRP

❖ **JEDINE Susp. Ad-din**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 MRP

❖ **JEDINE Drop Ad-din**
Cephradine 100mg/ml: drop
15ml bot: 46.00 MRP

❖ **KEFDRIN Cap. GlaxoSmithKline**
Cephradine 250mg & 500mg/capsule
250mg x 20's pack: 141.80 MRP
500mg x 20's pack: 271.00 MRP

❖ **KEFDRIN Susp. GlaxoSmithKline**
Cephradine 125mg/5ml: suspension
100ml bot: 85.98 MRP

❖ **KEPRAD Cap. Sonear**

Cephradine 250mg & 500mg/capsule.
250mg x 40's pack: 320.00 MRP
500mg x 20's pack: 300.00 MRP

❖ **LEBAC Cap. Square**
Cephradine 250mg & 500mg/capsule
250mg x 18's pack: 117.00 MRP
500mg x 18's pack: 375.00 MRP

❖ **LEBAC Susp. Square**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 MRP

❖ **LEBAC Forte Susp. Square**
Cephradine 250mg/5ml: suspension
100ml bot: 120.00 MRP

❖ **LEBAC Drop Square**
Cephradine 100mg/ml: drop
15ml bot: 50.00 MRP

❖ **LEBAC Inj. Square**
Cephradine 500mg & 1gm/vial: i.m/i.v injection.
500mg vial x 5's pack: 250.00 MRP
1gm vial x 1's pack: 80.00 MRP

❖ **LIBRADIN-500 Cap. Libra**
Cephradine 500mg/capsule
500mg x 28's pack: 350.00 IP

❖ **LIBRADIN Susp. Libra**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 IP

❖ **LINDEX Cap. Rangs Pharma**
Cephradine 250mg & 500mg/capsule
250mg x 20's pack: 130.00 MRP
500mg x 20's pack: 250.00 MRP

❖ **LINDEX Susp. Rangs Pharma**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 MRP

❖ **LINDEX Drop Rangs Pharma**
Cephradine 100mg/ml: drop
15ml bot: 50.00 MRP

❖ **LINDEX Inj. Rangs Pharma**
Cephradine 500mg & 1gm/vial: i.m/i.v injection.
500mg vial x 5's pack: 250.00 MRP
1gm vial x 1's pack: 80.00 MRP

❖ **MEDICEF Cap. Medicon**
Cephradine 500mg/capsule
500mg x 20's pack: 250.00 MRP

❖ **MEDICEF Susp. Medicon**
Cephradine 125mg/5ml: Suspension
100ml bot: 80.00 MRP

❖ **MEFRAD Cap. Modern**
Cephradine 500mg/capsule
500mg x 40's pack: 251.00 MRP

❖ **MEFRAD Susp. Modern**
Cephradine 125mg/5ml: Suspension
100ml bot: 81.00 MRP

❖ **MEFRAD Drop Modern**
Cephradine 100mg/ml: drop
15ml bot: 50.00 MRP

❖ **MEGA-CEF Cap. Hudson**
Cephradine 500mg/capsule
500mg x 30's pack: 357.00 MRP

❖ **MEGA-CEF Susp. Hudson**
Cephradine 125mg/5ml: suspension
100ml bot: 81.00 MRP

❖ **MEGACIN Cap. Sandoz/Novartis**
Cephradine 250mg & 500mg/capsule
250mg x 20's pack: 130.00 MRP
500mg x 20's pack: 250.00 MRP

❖ **MULTICEF Cap. Desh**
Cephradine 250mg & 500mg/capsule
250mg x 30's pack: 210.00 MRP
500mg x 20's pack: 260.00 MRP

❖ **MULTICEF Susp. Desh**
Cephradine 125mg/5ml: suspension
100ml bot: 75.00 MRP

❖ **MULTICEF Drop Desh**
Cephradine 100mg/ml: drop
15ml bot: 55.00 MRP

❖ **MYCEF Cap. Ambee**
Cephradine 500mg/capsule
500mg x 40's pack: 250.00 MRP

❖ **MYCEF Susp. Ambee**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 MRP

❖ **MYCEF Drop Ambee**
Cephradine 100mg/ml: drop
15ml bot: 50.00 MRP

❖ **NOVADIN Cap. Aexim**
Cephradine 500mg/capsule
500mg x 20's pack: 240.00 MRP

❖ **NOVADIN Susp. Aexim**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 MRP

❖ **P-CEF Cap. Pharmadesh**
Cephradine 500mg/capsule
500mg x 20's pack: 240.00 MRP

❖ **P-CEF Susp. Pharmadesh**
Cephradine 125mg/5ml: suspension
100ml bot: 75.00 MRP

❖ **P-CEF Drop Pharmadesh**
Cephradine 100mg/ml: drop
15ml bot: 50.00 MRP

❖ **POLYCEF Cap. Renata**
Cephradine 250mg & 500mg/capsule
250mg x 20's pack: 130.00 MRP
500mg x 20's pack: 250.00 MRP

❖ **POLYCEF Susp. Renata**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 MRP

❖ **POLYCEF DS Susp. Renata**
Cephradine 250mg/5ml: suspension (double strength)
60ml bot: 80.00 MRP
100ml bot: 120.00 MRP

❖ **POLYCEF Drop Renata**
Cephradine 100mg/ml: drop
15ml bot: 50.57 MRP

❖ **POLYCEF Inj. Renata**
Cephradine 250mg, 500mg & 1gm/vial: i.m/i.v injection.
250mg vial + Water: 37.96 MRP
500mg vial + Water: 56.31 MRP
1gm vial + Water: 78.00 MRP

❖ **PROCEF Cap. Incepta**
Cephradine 250mg & 500mg/capsule.
250mg x 20's pack: 130.00 MRP
500mg x 20's pack: 250.00 MRP

❖ **PROCEF Susp. Incepta**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 MRP

❖ **PROCEF Fort Susp. Incepta**
Cephradine 250mg/5ml: suspension
100ml bot: 120.00 MRP

❖ **PROCEF Drop Incepta**
Cephradine 100mg/ml: drop
15ml bot: 50.00 MRP

❖ **PROCEF Inj. Incepta**
Cephradine 250mg, 500mg & 1gm/vial: i.m/i.v injection.
250mg vial x 4's pack: 120.00 MRP
500mg vial x 4's pack: 200.00 MRP
1gm vial x 1's pack: 80.00 MRP

❖ **RAD-500 Cap. Decent**
Cephradine 500mg/capsule
500mg x 32's pack: 408.00 MRP

❖ **RAD Susp. Decent**
Cephradine 125mg/5ml: suspension
100ml bot: 78.00 MRP

❖ **RECEF-500 Cap. Reman**
Cephradine 500mg/capsule
500mg x 20's pack: 250.00 MRP

❖ **RECEF Susp. Reman**
Cephradine 125mg/5ml: suspension
100ml bot: 85.00 MRP

❖ **RECEF Drop Reman**
Cephradine 100mg/ml: drop
15ml bot: 55.00 MRP

❖ **REOCEF-500 Cap. Rephco**
Cephradine 500mg/capsule
500mg x 40's pack: 560.00 MRP

❖ **REOCEF Susp. Rephco**
Cephradine 125mg/5ml: suspension
100ml bot: 81.00 MRP

❖ **REVOC Cap. Novo Healthcare**
Cephradine 500mg/capsule
500mg x 24's pack: 288.00 MRP

❖ **REVOC Susp. Novo Healthcare**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 MRP

❖ **REVOC DS Susp. Novo Healthcare**
Cephradine 250mg/5ml: suspension (double strength)
100ml bot: 120.00 MRP

❖ **ROCEF Cap. Healthcare**
Cephradine 250mg & 500mg/capsule.
250mg x 30's pack: 195.00 MRP
500mg x 24's pack: 300.00 MRP

❖ **ROCEF Susp. Healthcare**
Cephradine 125mg/5ml: suspension
100ml bot: 75.00 MRP

❖ **ROCEF Forte Susp. Healthcare**
Cephradine 250mg/5ml: suspension
100ml bot: 120.00 MRP

❖ **ROXICEF Cap. Popular**
Cephradine 500mg/capsule.
500mg x 20's pack: 250.00 IP

❖ **ROXICEF Susp. Popular**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 IP

❖ **ROXICEF DS Susp. Popular**
Cephradine 250mg/5ml: suspension
100ml bot: 120.00 IP

❖ **ROXICEF Drop Popular**
Cephradine 100mg/ml: drop
15ml bot: 50.00 IP

❖ **ROXICEF Inj. Popular**
Cephradine 500mg & 1gm/vial: i.m/i.v injection.
500mg vial x 1's pack: 50.00 IP
1gm vial x 1's pack: 80.00 IP

❖ **SEFACIN Cap. Kumudini**
Cephradine 250mg & 500mg: capsule.
250mg x 20's pack: 160.00 MRP
500mg x 20's pack: 255.00 MRP

❖ **SEFACIN Susp. Kumudini**
Cephradine 125mg/5ml : suspension
100ml bot: 86.00 MRP

❖ **SEFACIN Drop Kumudini**
Cephradine 100mg/ml: drop
15ml bot: 50.00 MRP

❖ **SEFDIN-500 Cap. Skylab**
Cephradine 500mg/capsule
500mg x 20's pack: 300.00 MRP

❖ **SEFIN Cap. Orion**

Cephradine 250mg & 500mg: capsule.
250mg x 20's pack: 130.00 MRP
500mg x 20's pack: 250.00 MRP

❖ **SEFIN Susp. Orion**
Cephradine 125mg/5ml : suspension
100ml bot: 80.00 MRP

❖ **SEFIN DS Susp. Orion**
Cephradine 250mg/5ml : suspension
50ml bot: 60.00 MRP
100ml bot: 120.00 MRP

❖ **SEFIN Drop Orion**
Cephradine 100mg/ml: drop
15ml bot: 50.00 MRP

❖ **SEFIN Inj. Orion**
Cephradine 250mg, 500mg & 1gm/vial: i.m/i.v injection.
250mg vial x 1's pack: 35.00 MRP
500mg vial x 1's pack: 50.00 MRP
1gm vial x 1's pack: 80.00 MRP

❖ **SEFNIN Cap. MonicoPharma**
Cephradine 250mg & 500mg/capsule.
250mg x 50's pack: 325.00 MRP
500mg x 24's pack: 300.00 MRP

❖ **SEFNIN Susp. MonicoPharma**
Cephradine 125mg/5ml: Suspension
100ml bot: 80.00 MRP

❖ **SEFRATE Drop Bristol**
Cephradine 100mg/ml: drop
15ml bot: 50.00 MRP

❖ **SEFRIL Cap. Acme**
Cephradine 250mg & 500mg: capsule.
250mg x 20's pack: 130.00 MRP
500mg x 20's pack: 250.00 MRP

❖ **SEFRIL Susp. Acme**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 MRP

❖ **SEFRIL DS Susp. Acme**
Cephradine 250mg/5ml: suspension
100ml bot: 120.00 IP

❖ **SEFRIL Inj. Acme**
Cephradine 500mg & 1gm/vial: i.m/i.v injection.
500mg vial x 5's pack: 250.00 IP
1gm vial x 1's pack: 80.00 IP

❖ **SEFRIL Drop Acme**
Cephradine 100mg/ml: drop
15ml bot: 50.00 MRP

❖ **SEFRO Cap. Navana**
Cephradine 250mg & 500mg/capsule
250mg x 20's pack: 130.00 IP
500mg x 20's pack: 250.00 IP

❖ **SEFRO Susp. Navana**
Cephradine 125mg/5ml: suspension

❖ **SEFTY Drop Proteety**
Cephradine 100mg/ml: drop
15ml bot: 45.00 MRP

❖ **SEPHAR Cap. RAK Pharma**
Cephradine 500mg/capsule.
500mg x 30's pack: 375.00 MRP

❖ **SEPHAR DS Susp. RAK Pharma**
Cephradine 250mg/5ml: suspension
100ml bot: 120.00 MRP

❖ **SEPRA-S Cap. Seema**
Cephradine 500mg/capsule.
500mg x 24's pack: 250.00 MRP

❖ **SEPRA-S Susp. Seema**
Cephradine 125mg/5ml: suspension
100ml bot: 82.00 MRP

❖ **SEPTA 500 Cap. Doctor's**
Cephradine 500mg/capsule.
500mg x 20's pack: 140.00 MRP

❖ **SEPTA Susp. Doctor's**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 MRP

❖ **SEPTA Drop Doctor's**
Cephradine 100mg/ml: drop
15ml bot: 48.90 MRP

❖ **SICEF Cap. Silva**
Cephradine 500mg/capsule.

❖ **SEFRAD Cap. Sanofi-aventis**
Cephradine 250mg & 500mg/capsule.
250mg x 20's pack: 161.80 MRP
500mg x 20's pack: 303.40 MRP

❖ **SEFRAD Susp. Sanofi-aventis**
Cephradine 125mg/5ml: Suspension
100ml bot: 86.99 MRP

❖ **SEFRAD DS Susp. Sanofi-aventis**
Cephradine 250mg/5ml: Suspension (double strength)
100ml bot: 120.00 MRP

❖ **SEFRAD Drop Sanofi-aventis**
Cephradine 100mg/ml: drop
15ml bot: 60.67 MRP

❖ **SEFRAD Inj. Sanofi-aventis**
Cephradine 250mg, 500mg & 1gm/vial: i.m/i.v injection.
250mg vial combipack x 1's pack: 35.00 MRP
500mg vial combipack x 1's pack: 50.00 MRP
1gm vial combipack x 1's pack: 90.00 MRP

❖ **SEFRATE 500 Cap. Bristol**
Cephradine 500mg/capsule.
500mg x 20's pack: 250.00 MRP

❖ **SEFRATE Susp. Bristol**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 MRP

❖ **SEFRO HS Susp. Navana**
Cephradine 250mg/5ml: suspension (higher strength)
100ml bot: 120.00 IP

❖ **SEFRO Drop Navana**
Cephradine 100mg/ml: drop
15ml bot: 50.00 IP

❖ **SEFRO Inj. Navana**
Cephradine 500mg & 1gm/vial: i.m/i.v injection.
500mg vial x 1's pack: 45.00 MRP
1gm vial x 1's pack: 75.00 MRP

❖ **SEFTEC Susp. A.P.C Pharma**
Cephradine 125mg/5ml: suspension
100ml bot: 86.00 IP

❖ **SEFTEC Drop A.P.C Pharma**
Cephradine 100mg/ml: drop
15ml bot: 50.00 IP

❖ **SEFTY Cap. Proteety**
Cephradine 250mg & 500mg/capsule.
250mg x 20's pack: 140.00 MRP
500mg x 20's pack: 240.00 MRP

❖ **SEFTY Susp. Proteety**
Cephradine 125mg/5ml: suspension
100ml bot: 85.00 MRP

500mg x 20's pack: 240.00 MRP

❖ **SICEF Susp. Silva**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 MRP

❖ **SICEF DS Susp. Silva**
Cephradine 250mg/5ml: suspension (double strength)
60ml bot: 70.00 MRP
100ml bot: 120.00 MRP

❖ **SICEF Drop Silva**
Cephradine 100mg/ml: drop
15ml bot: 45.00 MRP

❖ **SINACEPH Cap. Ibn Sina**
Cephradine 250mg & 500mg/capsule.
250mg x 20's pack: 135.60 IP
500mg x 20's pack: 254.20 IP

❖ **SINACEPH Susp. Ibn Sina**
Cephradine 125mg/5ml: suspension
100ml bot: 82.52 IP

❖ **SINACEPH-DS Susp. Ibn Sina**
Cephradine 250mg/5ml: suspension
100ml bot: 120.00 IP

❖ **SINACEPH Drop Ibn Sina**
Cephradine 100mg/ml: drop
15ml bot: 50.61 IP

❖ **SINACEPH Inj. Ibn Sina**
Cephradine 500mg & 1gm/vial: i.m/i.v injection.
500mg vial x 1's pack: 50.00 IP
1gm vial x 1's pack: 80.00 IP

❖ **SK-CEF Cap. SK+F**
Cephradine 250mg & 500mg/capsule.
250mg x 48's pack: 315.36 MRP
500mg x 48's pack: 624.00 MRP

❖ **SK-CEF Susp. SK+F**
Cephradine 125mg/5ml: suspension
100ml bot: 82.00 MRP

❖ **SK-CEF DS Susp. SK+F**
Cephradine 250mg/5ml: suspension
60ml bot: 80.00 MRP
100ml bot: 140.00 MRP

❖ **SK-CEF Drop SK+F**
Cephradine 100mg/ml: drop
15ml bot: 51.00 MRP

❖ **SK-CEF Inj. SK+F**
Cephradine 500mg & 1gm/vial: i.m/i.v injection.
500mg vial x 1's pack: 50.00 MRP
1gm vial x 1's pack: 80.00 MRP

❖ **SPORIN 500 Cap. Marksman**
Cephradine 500mg/capsule.
500mg x 20's pack: 240.00 MRP

❖ **SPORIN Susp. Marksman**
Cephradine125mg/5ml: suspension
100ml bot: 80.00 MRP

❖ **SPORIN Drop Marksman**
Cephradine 100mg/ml: drop
15ml bot: 60.00 MRP

❖ **SUPRACEF Cap. Bio-pharma**
Cephradine 250mg & 500mg/capsule
250mg x 28's pack: 187.60 MRP
500mg x 28's pack: 350.00 MRP

❖ **SUPRACEF Susp. Bio-pharma**
Cephradine 125mg/5ml: suspension
100ml bot: 80.00 MRP

❖ **SUPRACEF F Susp. Bio-pharma**
Cephradine 250mg/5ml: suspension (double strength)
100ml bot: 120.00 MRP

❖ **SUPRACEF Drop Bio-pharma**
Cephradine 100mg/ml: drop
15ml bot: 50.00 MRP

❖ **SUPRACEF Inj. Bio-pharma**
Cephradine 250mg, 500mg & 1gm/vial: i.m/i.v injection.
250mg vial x 1's pack: 34.00 MRP
500mg vial x 1's pack: 49.00 MRP
1gm vial x 1's pack: 74.00 MRP

❖ **TYDIN Cap. Somatec**
Cephradine 250mg & 500mg/capsule.
250mg x 20's pack: 129.00 IP
500mg x 20's pack: 249.00 IP

❖ **TYDIN Susp. Somatec**
Cephradine125mg/5ml: suspension
100ml bot: 78.00 IP

❖ **TYDIN Drop Somatec**
Cephradine 100mg/ml: drop
15ml bot: 48.00 IP

❖ **ULTRASEF Cap. Jayson**
Cephradine 250mg & 500mg: capsule
250mg x 20's pack: 135.40 IP
500mg x 20's pack: 250.00 IP

❖ **ULTRASEF Susp. Jayson**
Cephradine125mg/5ml: suspension.
100ml bot: 80.00 IP

❖ **ULTRASEF Drop Jayson**
Cephradine 100mg/ml: drop
15ml bot: 50.00 IP

❖ **VECEF Cap. Asiatic**
Cephradine 500mg/capsule
500mg x 24's pack: 300.00 MRP

❖ **VECEF Susp. Asiatic**
Cephradine125mg/5ml: suspension.
100ml bot: 80.00 MRP

❖ **VELOGEN Cap. General**
Cephradine 250mg & 500mg/capsule
250mg x 30's pack: 195.00 MRP
500mg x 20's pack: 250.00 MRP

❖ **VELOGEN Susp. General**
Cephradine125mg/5ml: suspension
100ml bot: 80.00 MRP

❖ **VELOGEN Drop General**
Cephradine 100mg/ml: drop
15ml bot: 50.00 MRP

❖ **VELOX Cap. Chemico**
Cephradine 250mg & 500mg/capsule.
250mg x 30's pack: 195.00 MRP
500mg x 20's pack: 260.00 MRP

❖ **VELOX Susp. Chemico Lab.**
Cephradine125mg/5ml: suspension
100ml bot: 80.00 MRP

❖ **VELOX Drop Chmico**
Cephradine 100mg/ml: drop
15ml bot: 50.00 MRP

❖ **WINCEF Cap. White Horse**
Cephradine 250mg & 500mg/capsule.
250mg x 20's pack: 130.00 MRP
500mg x 20's pack: 250.00 MRP

❖ **WINCEF Susp. White Horse**
Cephradine125mg/5ml: suspension
100ml bot: 80.00 MRP

❖ **ZECEF-500 Cap. Gaco**
Cephradine 500mg/capsule.
20's pack: 242.74 MRP

❖ **ZECEF Susp. Gaco**
Cephradine125mg/5ml: suspension
100ml bot: 80.00 MRP

❖ **ZECEF Drop Gaco**
Cephradine 100mg/ml: drop
15ml bot: 50.01 MRP

❖ **ZECEF Inj. Gaco**
Cephradine 500mg /vial: i.m/i.v injection.
500mg vial x 1's pack: 50.58 MRP

❖ **ZENAF Cap. Cosmic**
Cephradine 250mg & 500mg/capsule.
250mg x 30's pack: 195.00 MRP
500mg x 20's pack: 260.00 MRP

❖ **ZENAF Susp. Cosmic**
Cephradine125mg/5ml: suspension
100ml bot: 80.00 MRP

❖ **ZENAF Drop Cosmic**
Cephradine 100mg/ml: drop
15ml bot: 55.00 MRP

Second generation

CEFACLOR[21,33]

CEFACLOR: Capsule/Tablet/Suspen.
Cefaclor is the orally active 'second generation' cephalosporin.

Ind: Infections due to sensitive gram-positve & gram-negative bacteria. It is useful for UTI which do not respond to other drugs; infections which occur in pregnancy, respiratory-tract infections, otitis media, sinusitis and skin & soft-tissue infections. Cepaclor has good activity against H. influenzae, but it is associated with protracted skin reactions specially in children.
C/I: Cephalosporin hypersensitivity; porphyria.
S/E: Diarrhoea & rarely colitis, nausea & vomiting, abdominal discomfort, headache; allergic reactions including urticaria, rashes, pruritus, serun sickness-like reactions with rashes, fever and arthraliga, and anaphylaxis; erythema multiforme, toxic epidermal necrolysis reported; disturbances in liver enzymes, transient hepatitis and cholestatic jaundice; other side effects reported include eosinophilia and blood disorders; reversible interstitial nephritis, hyperac-tiviy, nervousness, sleep disturbances, confusion, hypertonia, and dizziness.
Cautions: Penicillin sensitivity; renal impairment; pregnancy and breast-feeding (but appropriate to use); false positive urinary glucose and false positive Coomb's test (if done).
Dosage & admin: Adult- 250mg 8-hourly; in severe infections, double the dose, maximum 4gm daily.
Child- over 1 month 20mg/kg daily in 3 divided doses; in severe infections, double the dose, maximum 1gm daily. Or, 1 month-1 year, 62.5mg 8-hourly; 1-5 years, 125mg; over 5 years, 250mg; in all cases doses doubled for severe infections.
Dosage schedule for 375mg CD/ER preparation: This CD (convenient dose) or ER (extended release) preparation of 375mg is considered as a suitable dose for the patients to be given 12 hourly, if the concerned physician desires.

❖ **B-CLOR Cap. Benham**
Cefaclor monohydrate USP 500mg/capsule
500mg x 12's pack: 461.16 MRP

❖ **BIOCEF Cap. Sandoz/Novartis**
Cefaclor monohydrate 250mg & 500mg/capsule
250mg x 20's pack: 485.40 MRP
500mg x 20's pack: 910.40 MRP

❖ **BIOCEF Susp. Sandoz/Novartis**
Cefaclor monohydrate 125mg/5ml:suspension
100ml bot: 288.26 MRP

❖ **CEFLON Cap. SK+F**
Cefaclor monohydrate 250mg & 500mg/capsule
250mg x 16's pack: 256.00 MRP
500mg x 8's pack: 240.00 MRP

❖ **CEFLON Susp. SK+F**
Cefaclor monohydrate 125mg/5ml:suspension
100ml bot: 200.00 MRP

❖ **CEFLON Drop SK+F**
Cefaclor monohydrate 100mg/1ml: drop.
15ml bot: 125.00 MRP

❖ **CEFTICLOR Cap. Renata**
Cefaclor monohydrate 250mg & 500mg/capsule
250mg x 12's pack: 252.00 MRP
500mg x 12's pack: 456.00 MRP
❖ **CEFTICLOR 375 ER Tab. Renata**
Cefaclor monohydrate 375mg/tablet (extended release)
375mg x 12's pack: 360.00 MRP
❖ **CEFTICLOR Susp. Renata**
Cefaclor monohydrate 125mg/5ml:suspension
100ml bot: 190.00 MRP
❖ **CEFTICLOR Drop Renata**
Cefaclor monohydrate 100mg/1ml: drop.
15ml bot: 125.00 MRP
❖ **CLOBAC Susp. Opsonin**
Cefaclor monohydrate 125mg/5ml:suspension
100ml bot: 180.00 MRP
❖ **CLOBAC Drop Opsonin**
Cefaclor monohydrate 100mg/1ml: drop.
15ml bot: 125.00 MRP
❖ **CLOCEF Susp. Amico**
Cefaclor monohydrate 125mg/5ml:suspension
100ml bot: 175.00 MRP
❖ **E-CLOR Cap. Elixir**
Cefaclor monohydrate 500mg/capsule
500mg x 20's pack:
❖ **E-CLOR Susp. Elixir**
Cefaclor monohydrate 125mg/5ml:suspension
100ml bot:
❖ **LORACEF Cap. Square**
Cefaclor monohydrate 500mg/capsule
500mg x 6's pack: 228.00 MRP
❖ **LORACEF Susp. Square**
Cefaclor monohydrate 125mg/5ml:suspension
100ml bot: 190.00 MRP
❖ **LORACEF Drop Square**
Cefaclor monohydrate 100mg/1ml: drop.
15ml bot: 125.00 MRP
❖ **NAVACEF Cap. Navana**
Cefaclor monohydrate 250mg & 500mg/capsule
250mg x 20's pack: 420.00 IP
500mg x 12's pack: 480.00 IP
❖ **NAVACEF Susp. Navana**
Cefaclor monohydrate 125mg/5ml:suspension
100ml bot: 190.00 MRP
❖ **NAVACEF Drop Navana**
Cefaclor monohydrate 125mg/1.25ml: drop.
15ml bot: 125.00 IP
❖ **OTICLOR Cap. Incepta**
Cefaclor monohydrate 250mg & 500mg/capsule
250mg x 20's pack: 420.00 MRP
500mg x 12's pack: 480.00 MRP
❖ **OTICLOR Susp. Incepta**
Cefaclor monohydrate 125mg/5ml:suspension
100ml bot: 180.00 MRP
❖ **OTICLOR Drop Incepta**
Cefaclor monohydrate 100mg/1ml: drop.
15ml bot: 125.00 MRP
❖ **SEFALOR Cap. Techno Drugs**
Cefaclor monohydrate 500mg/capsule
500mg x 12's pack: 360.00 MRP
❖ **SEFALOR Susp. Techno Drugs**
Cefaclor monohydrate 125mg/5ml:suspension
100ml bot: 180.00 MRP

CEFPROZIL[42,133]

CEFPROZIL: Tablet/Suspension
Cefprozil is a semi-synthetic broad-spectrum second-generation cephalosporin antibiotic. It possesses activity against a broad range of gram-positive and gram-negative bacteria. It is available as tablet & dry powder for suspension; currently presented strengths are cefprozil USP 250mg & 500mg tablet & cefprozil USP 250mg/5ml suspension. Following oral administration of cefprozil to fasting subjects, approximately 95% of the dose is absorbed. The average plasma half-life in normal subjects is 1.3 hours.
Mode of action: The bactericidal action of cefprozil results from inhibition of bacterial cell wall synthesis.
Ind: Cefprozil is indicated for the treatment of patients with mild to moderate infections of the following organs & systems of the body:
1. Skin and skin structure infections.
2. Upper respiratory tract infections including pharyngitis, tonsillitis, otitis media, acute sinusitis.
3. Lower respiratory tract infections including secondary bacterial infection of acute bronchitis, acute bacterial exacerbation of chronic bronchitis, pneumonia.
4. Acute uncomplicated urinary tract infections.
C/I: Cefprozil is contraindicated in patients with known hypersensitivity to the cephalosporins or to any of the ingredients of the preparations.
S/E: Cefprozil was usually well tolerated in clinical trials. The most common adverse effects observed are: Gastrointestinal- diarrhea, nausea, vomiting and abdominal pain. Hepatobiliary- elevations of AST (SGOT), ALT (SGPT), alkaline phosphatases and bilirubin values, cholestatic jaundice has been reported rarely.
Hypersensitivity- rash, urticaria (such reactions have been reported more frequently in children than in adults; signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. CNS- dizziness, hyperactivity, headache, nervousness, insomnia, confusion and somnolence have been reported rarely; all were reversible.
Hematopoietic- decreased leukocyte count, eosinophilia. Renal- elevated BUN, serum creatinine. Other- diaper rash and superinfection, genital pruritus and vaginitis. The following adverse events, regardless of established causal relationship to Cefprozil, have been rarely reported: Anaphylaxis, angioedema, colitis (including pseudomembranous colitis), erythema multiforme, fever, serum-sickness like reactions, Stevens-Johnson syndrome and thrombocytopenia.
Pregnancy & lactation: Cefprozil is not expected to be harmful to the fetus. Still during pregnancy the drug should be used if it is clearly needed.
Dosage & admin: Cefprozil is administered orally.
Infants & children (6 months - 12 years):
Upper respiratory tract infections*: Otitis media, 15mg/kg 12 hourly for 10 days; Acute sinusitis, 7.5mg/kg or 15mg/kg 12 hourly for 10 days, (for moderate to severe infections the higher dose should be used).
Children (2 years - 12 years):
Upper respiratory tract infections*: Pharyngitis/Tonsillitis , 7.5mg/kg 12 hourly for 10 days.
Skin structure infections*: Uncomplicated skin and skin structure infections, 20mg/kg daily for 10 days.
Adults (13 years & Older):
Upper respiratory tract infections: Pharyngitis/Tonsillitis , 500mg daily for 10 days; Acute sinusitis, 250mg or 500mg 12 hourly for 10 days, (for moderate to severe infections the higher dose should be used).
Lower respiratory tract infections: Secondary bacterial infection of acute bronchitis & acute bacterial exacerbation of chronic bronchitis, 500mg 12 hourly for 10 days.
Skin & skin structure infections: Uncomplicated skin and skin structure infections, 250mg 12 hourly or 500mg daily or 500mg 12 hourly for 10 days.
*** In the treatment of infections due to streptococcus pyogenes, cefprozil should be administered for at least 10 days.**
Renal impairment: Cefprozil may be administered to patients with impaired renal function. In that case, the following dosage schedule should be used:
Creatinine clearance, 30-100ml/min- standard dose schedule may be followed.
Creatinine clearance, 0-29ml/min- 50% of standard dose should be given in standard dose interval.
Cefprozil is partly removed by hemodialysis; therefore, cefprozil should be administered after the completion of hemodialysis.
Hepatic impairment: No dosage adjustment is necessary for patients with impaired hepatic function.
Drug inter: Nephrotoxicity has been reported following concomitant administration of aminoglycoside antibiotics and cephalosporin antibiotics. Concomitant administration of probenecid doubles the AUC for cefprozil. The bioavailability of the capsule formulation of cefprozil is not affected when administered 5 minutes following an antacid.

❖ **CEFOZIL Tab. Popular**
Cefprozil 250mg & 500mg/tablet
250mg x 10's pack: 300.00 MRP
500mg x 8's pack: 440.00 MRP
❖ **CEFOZIL Susp. Popular**
Cefprozil 125mg/5ml: suspension
50ml bot: 230.00 MRP
❖ **ZILAPRO Susp. Beximco**
Cefprozil 250mg/5ml: suspension
50ml bot: 275.00 MRP

CEFUROXIME[21,47]

CEFUROXIME: Tablet/Suspension/Injection
Cefuroxime is a 'second generation' cephalosporim. 'Cefuroxine axetil' is an ester of 'cefuroxime' but has the same antibacterial spectrum.
Ind: See under cefaclor; surgical prophylaxis; more active against influenza & Neisseria gonorrhoeae.
C/I; S/E; Caution: See above under Cefaclor.
Does: By mouth - 250mg twice daily, doubled in bronchitis and pneumonia.
UTI, 125mg twice daily, doubled in pyelonephritis. Gonorrhoea, I gm as a single dose.

Child- over 5 years, 125 mg twice daily, if necessary doubled in otitis media.
By i.m. or i.v. injection or infusion, 750 mg every 6-8 hours; 1.5gm every 6-8 hours in severe infections; single doses over 750 mg i.v. route only.
Child, 30-100mg/kg daily in 3-4 divided doses (2-3 divided doses in neonates)
Gonorrhoea, 1.5gm as a single dose by i.m. injection (divided between 2 sites).
Surgical prophylaxis, 1.5 g by i.v. injection at induction; may be supplemented with 750mg i.m. 8 & 16 hours later (abdominal, pelvic, and orthopaedic operations) or followed by 750 mg i.m. every 8 hours for further 24-48 hours (cardiac, pulmonary, oesophageal, and vascular operations).
Meningitis- 3gm i.v. every 8 hours; Child, 200-240mg/kg daily (in 3-4 divided doses) reduced to 100mg/kg daily after 3 days or on clinical improvement; Neonate, 100mg/kg daily reduced to 50mg/kg daily.

❖ **ADROX Susp. Ad-din**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 181.00 MRP

❖ **AXET Tab. Orion**
Cefuroxime axetil 125mg, 250mg & 500mg/tablet (f.c).
125mg x 20's pack: 300.00 MRP
250mg x 20's pack: 500.00 MRP
500mg x 12's pack: 540.00 MRP

❖ **AXET Susp. Orion**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 215.00 MRP

❖ **AXET IM/IV Inj. Orion**
Cefuroxime (as sodium salt) 250mg & 750mg/vial (powder for reconstitution):i.m/i.v injection
250mg vial x 1's pack: 60.00 MRP
750mg vial x 1's pack: 125.00 MRP

❖ **AXETIL Tab. Alco Pharma**
Cefuroxime axetil 125mg, 250mg & 500mg/tablet (f.c).
125mg x 12's pack: 144.00 MRP
250mg x 8's pack: 176.00 MRP
500mg x 8's pack: 320.00 MRP

❖ **AXETIL Susp. Alco Pharma**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 190.00 MRP

❖ **AXIM Tab. Aristopharma**
Cefuroxime axetil 125mg, 250mg & 500mg/tablet (f.c).
125mg x 10's pack: 150.00 MRP
250mg x 20's pack: 500.00 MRP
500mg x 10's pack: 450.00 MRP

❖ **AXIM Susp. Aristopharma**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 198.00 MRP

❖ **AXIM IM/IV Inj. Aristopharma**
Cefuroxime (as sodium salt) 750mg/vial (powder for reconstitution): i.m/i.v injection
1 vial pack: 125.00 MRP

❖ **CEBAC-A Tab. Seema**
Cefuroxime axetil 125mg/tablet (f.c).
125mg x 8's pack: 120.00 MRP

❖ **CEFOBAC Tab. Popular**
Cefuroxime axetil 250mg & 500mg/tablet (f.c).
250mg x 10's pack: 180.00 MRP
500mg x 8's pack: 280.00 MRP

❖ **CEFOBAC 750 IM/IV Inj. Popular**
Cefuroxime (as sodium salt) 750mg/vial (powder for reconstitution): i.m/i.v injection
1 vial pack: 125.00 MRP

❖ **CEFOBAC 1.5 IV Inj. Popular**
Cefuroxime (as sodium salt) 1.5gm/vial (powder for reconstitution): i.v injection
1 vial pack: 200.00 MRP

❖ **CEFOTIL Tab. Square**
Cefuroxime axetil 125mg, 250mg & 500mg/tablet (f.c).
125mg x 20's pack: 300.00 MRP
250mg x 20's pack: 500.00 MRP
500mg x 6's pack: 270.00 MRP

❖ **CEFOTIL Susp. Square**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 198.00 MRP

❖ **CEFOTIL 750 IM/IV Inj. Square**
Cefuroxime (as sodium salt) 750mg/vial (powder for reconstitution): i.m/i.v injection
750mg vial x 1's pack: 125.00 MRP

❖ **CEFOTIL 1.5 IV Inj. Square**
Cefuroxime (as sodium salt) 1.5gm/vial (powder for reconstitution): i.v injection
1.5gm vial x 1's pack: 200.00 MRP

❖ **CEFROXIL 250 Tab. Hallmark**
Cefuroxime axetil 250mg/tablet (f.c).
250mg x 8's pack: 176.00 MRP

❖ **CEFROXIL Susp. Hallmark**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 195.00 MRP

❖ **CEFU-M Inj. Medimet**
Cefuroxime (as sodium salt) 750mg/vial (powder for reconstitution): i.m/i.v injection
750mg vial x 1's pack: 125.00 MRP

❖ **CEFURIM Tab. Somatec**
Cefuroxime axetil 250mg & 500mg/tablet (f.c).
250mg x 12's pack: 300.00 MRP
500mg x 8's pack: 360.00 MRP

❖ **CEFURIM Susp. Somatec**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 190.00 MRP

❖ **CEROX-A Tab. ACI**
Cefuroxime axetil 125mg, 250mg & 500mg/tablet (f.c).
125mg x 10's pack: 150.00 MRP
250mg x 16's pack: 400.00 MRP
500mg x 8's pack: 360.00 IP

❖ **CEROX-A Susp. ACI**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 198.00 IP

❖ **CEROX-A IM/IV Inj. ACI**
Cefuroxime (as sodium salt) 250mg/vial & 750mg/vial (powder for reconstitution): i.m/i.v injection
250mg x 1 vial combipack: 55.00 IP
750mg x 1 vial combipack: 125.00 IP

❖ **CEROXIME Tab. Asiatic**
Cefuroxime axetil 250mg & 500mg/tablet (f.c).
250mg x 8's pack: 200.00 MRP
500mg x 8's pack: 360.00 MRP

❖ **CEROXIME Susp. Asiatic**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 198.00 MRP

❖ **CEXITIL Tab. Medicon**
Cefuroxime axetil 500mg/tablet (f.c).
500mg x 8's pack: 300.00 MRP

❖ **CEXITIL Susp. Medicon**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 195.00 MRP

❖ **ELIROXIME Tab. Elixir**
Cefuroxime axetil 250mg/tablet (f.c).
250mg x 12's pack:

❖ **ELIROXIME Susp. Elixir**
Cefuroxime axetil 125mg/5ml: suspension
100ml bot:

❖ **FAMICEF Susp. Acme**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 198.00 MRP

❖ **FAMICEF DS Susp. Acme**
Cefuroxime axetil 250mg/5ml: suspension (double strength)
35ml bot: 185.00 MRP

❖ **FAMICEF Inj. Acme**
Cefuroxime (as sodium salt) 750mg/vial (powder for reconstitution): i.m/i.v injection
750mg x 1 vial pack: 120.00 MRP

❖ **FUREX Tab. Drug Inter.**
Cefuroxime axetil 250mg & 500mg/tablet (f.c).
250mg x 20's pack: 500.00 MRP
500mg x 8's pack: 320.00 MRP

❖ **FUREX Susp. Drug Inter.**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 225.00 MRP

❖ **FUREX Inj. Drug Inter.**
Cefuroxime (as sodium salt) 250mg & 750mg/vial (powder for reconstitution):i.m/i.v injection
250mg x 1 vial pack: 50.00 MRP
750mg x 1 vial pack: 125.00 MRP

❖ **FUROCEF Tab. Renata**
Cefuroxime axetil 125mg, 250mg & 500mg/tablet (f.c).
125mg x 10's pack: 150.00 MRP
250mg x 16's pack: 400.00 MRP
500mg x 12's pack: 540.00 MRP

❖ **FUROCEF Susp. Renata**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 198.00 MRP

❖ **FUROCEF IM/IV Inj. Renata**
Cefuroxime (as sodium salt) 250mg & 750mg/vial (powder for reconstitution): i.m/i.v injection
250mg x 1 vial pack: 55.00 MRP
750mg x 1 vial pack: 125.00 MRP

❖ **FUROCEF IV Inj. Renata**

Cefuroxime (as sodium salt) 1.5gm/vial (powder for reconstitution): i.v injection
1.5gm x 1 vial pack: 230.00 MRP

❖ **FUROTEC-500 Tab. A.P.C Pharma**
Cefuroxime axetil 500mg/tablet (f.c).
500mg x 20's pack: 800.00 IP

❖ **KILBAC Tab. Incepta**
Cefuroxime axetil 125mg, 250mg & 500mg/tablet (f.c).
125mg x 20's pack: 300.00 MRP
250mg x 16's pack: 400.00 MRP
500mg x 8's pack: 360.00 MRP

❖ **KILBAC Susp. Incepta**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 198.00 MRP

❖ **KILBAC DS Susp. Incepta**
Cefuroxime axetil 250mg/5ml: suspension (double strength)
50ml bot: 250.00 MRP

❖ **KILBAC Inj. Incepta**
Cefuroxime (as sodium salt) 250mg/vial & 750mg/vial (powder for reconstitution): i.m/i.v injection
250mg x 1 vial combipack: 55.00 MRP
750mg x 1 vial combipack: 125.00 MRP

❖ **KILBAC IV Inj. Incepta**
Cefuroxime (as sodium salt) 1.5gm/vial (powder for reconstitution): i.v injection
1.5gm x 1 vial combipack: 200.00 MRP

❖ **KILMAX Tab. SK+F**
Cefuroxime axetil 125mg, 250mg & 500mg/tablet (f.c).
125mg x 14's pack: 180.00 MRP
250mg x 14's pack: 350.00 MRP
500mg x 7's pack: 315.00 MRP

❖ **KILMAX Susp. SK+F**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 198.00 MRP

❖ **KILMAX Inj. SK+F**
Cefuroxime (as sodium salt) 250mg/vial & 750mg/vial (powder for reconstitution): i.m/i.v injection
250mg x 1 vial pack: 55.00 MRP
750mg x 1 vial pack: 125.00 MRP

❖ **LEPATH Tab. Amico**
Cefuroxime axetil 250mg/tablet (f.c).
250mg x 10's pack: 220.00 MRP

❖ **LIBOTIL Susp. Libra**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 198.00 IP

❖ **MENAT Tab. Mystic**
Cefuroxime axetil 125mg & 250mg/tablet (f.c).
125mg x 8's pack: 120.00 MRP
250mg x 8's pack: 200.00 MRP

❖ **MENAT Susp. Mystic**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 198.00 MRP

❖ **MEROCEF Tab. Ibn Sina**
Cefuroxime axetil 250mg & 500mg/tablet (f.c).
250mg x 8's pack: 200.00 MRP
500mg x 8's pack: 360.00 MRP

❖ **MEROCEF Susp. Ibn Sina**
Cefuroxime axetil 125mg/5ml; suspension
70ml bot: 198.00 MRP

❖ **MEXTIL Tab. Bio-pharma**
Cefuroxime axetil 125mg, 250mg & 500mg/tablet (f.c).
125mg x 20's pack: 300.00 MRP
250mg x 20's pack: 500.00 MRP
500mg x 12's pack: 540.00 MRP

❖ **MEXTIL Susp. Bio-pharma**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 200.00 MRP

❖ **MEXTIL DS Susp. Bio-pharma**
Cefuroxime axetil 250mg/5ml: suspension (double strength)
50ml bot: 250.00 MRP

❖ **PRIMOCEF Tab. Novo Healthcare**
Cefuroxime axetil 250mg & 500mg/tablet (f.c).
250mg x 12's pack: 300.00 MRP
500mg x 8's pack: 360.00 MRP

❖ **PRIMOCEF Susp. Novo Healthcare**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 198.00 MRP

❖ **PROBAC Tab. Silva**
Cefuroxime axetil 250mg & 500mg/tablet (f.c).
250mg x 16's pack: 400.00 MRP
500mg x 8's pack: 360.00 MRP

❖ **PROBAC Susp. Silva**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 198.00 MRP

❖ **RECOFAST Tab. Rangs**
Cefuroxime axetil 125mg, 250mg & 500mg/tablet (f.c).
125mg x 8's pack: 120.00 MRP
250mg x 12's pack: 300.00 MRP
500mg x 8's pack: 360.00 MRP

❖ **RECOFAST Susp. Rangs**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 198.00 MRP

❖ **RECOFAST IM/IV Inj. Rangs**
Cefuroxime (as sodium salt) 750mg/vial (powder for reconstitution):i.m/i.v injection
750mg vial x 1's pack: 125.00 MRP

❖ **ROFUROX Tab. Radiant**
Cefuroxime axetil 250mg & 500mg/tablet (f.c).
250mg x 10's pack: 300.00 MRP
500mg x 8's pack: 400.00 MRP

❖ **ROFUROX Susp. Radiant**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 250.00 MRP

❖ **SEFATIL Tab. Pacific**
Cefuroxime axetil 125mg, 250mg & 500mg/ tablet (f.c).
125mg x 20's pack: 300.00 MRP
250mg x 20's pack: 500.00 MRP
500mg x 12's pack: 540.00 MRP

❖ **SEFATIL Susp. Pacific**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 150.00 MRP

❖ **SEFUR Tab. Opsonin**
Cefuroxime axetil 125mg, 250mg & 500mg/tablet (f.c).
125mg x 12's pack: 180.00 MRP
250mg x 12's pack: 300.00 MRP
500mg x 6's pack: 270.00 MRP

❖ **SEFUR Susp. Opsonin**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 198.00 MRP

❖ **SEFUR DS Susp. Opsonin**
Cefuroxime axetil 250mg/5ml: suspension (double strength)
50ml bot: 250.00 MRP

❖ **SEFUR Inj. Opsonin**
Cefuroxime (as sodium salt) 750mg/vial (powder for reconstitution): i.m/i.v injection
1 vial combipack: 125.00 MRP

❖ **SEFUR I.V Inj. Opsonin**
Cefuroxime (as sodium salt) 1.5gm/vial (powder for reconstitution): i.v injection
1.5gm vial x 1 combipack: 200.00 MRP

❖ **SEFUROX Tab. Sanofi-aventis**
Cefuroxime axetil 125mg, 250mg & 500mg/tablet (f.c).
125mg x 10's pack: 150.00 MRP
250mg x 10's pack: 250.00 MRP
500mg x 10's pack: 450.00 MRP

❖ **SEFUROX Susp. Sanofi-aventis**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 198.00 MRP

❖ **SEFUROX Inj. Sanofi-aventis**
Cefuroxime (as sodium salt) 750mg/vial (powder for reconstitution): injection
1 vial combipack: 125.00 MRP

❖ **STAXIM Tab. Delta**
Cefuroxime axetil 250mg & 500mg/tablet (f.c).
250mg x 6's pack: 132.00 MRP
500mg x 6's pack: 240.00 MRP

❖ **STAXIM Susp. Delta**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 170.00 MRP

❖ **TIL Tab. Apex**
Cefuroxime axetil 125mg & 250mg/tablet.
125mg x 8's pack: 120.00 MRP
250mg x 8's pack: 200.00 MRP

❖ **TIL Susp. Apex**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 175.00 MRP

❖ **XIMETIL Tab. Globe**
Cefuroxime axetil 125mg, 250mg & 500mg/tablet (f.c).
125mg x 20's pack: 300.00 MRP
250mg x 16's pack: 400.00 MRP
500mg x 12's pack: 540.00 MRP

❖ **XIMETIL Inj. Globe**
Cefuroxime (as sodium salt) 750mg/vial (powder for reconstitution): i.m/i.v injection
1 vial pack: 125.00 MRP

❖ **XITIL Tab. Ziska**
Cefuroxime axetil 250mg/tablet.
250mg x 14's pack: 350.00 MRP

❖ **XITIL Susp. Ziska**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 190.00 MRP

❖ **XTIL Tab. Syntho**
Cefuroxime axetil 250mg/tablet.
250mg x 20's pack: 480.00 MRP

❖ **ZINACEF Inj. GlaxoSmithKline**
Cefuroxime (as sodium salt) 750mg/vial (powder for reconstitution): i.m/i.v injection
1 vial combipack: 250.00 MRP

❖ **ZINNAT Tab. GlaxoSmithKline**
Cefuroxime axetil 125mg, 250mg & 500mg/tablet.
125mg x 14's pack: 252.00 MRP
250mg x 14's pack: 490.00 MRP
500mg x 14's pack: 840.00 MRP

❖ **ZINNAT Susp. GlaxoSmithKline**
Cefuroxime axetil 125mg/5ml: suspension
70ml bot: 360.00 MRP

Third generation

CEFDINIR[42]

CEFDINIR: Capsule
Cefdinir is a third generation semisynthetic cephalosporin antibiotic. It has a broad spectrum bactericidal activity against a wide range of common pathogens, including b-lactamase producing strains. Cefdinir has good stability to bacterial b-lactamase and consequently is active against many ampicillin-resistant and amoxycillin-resitant strains.
Cefdinir is available as capsule of cefdinir INN 300mg and as dry powder suspension containing cefdinir INN125mg/5ml; 60ml bottle.
Mode of action: See above under the text of 'cephalexin'.
Ind: Cefdinir is indicated for the treatment of- i. community acquired pneumonia, ii. acute exacerbation of chronic bronchitis, iii. acute maxillary sinusitis, iv. pharyngitis, & tonsillitis, v. uncomplicated skin & skin structure infection.
C/I: Known hypersensitivity to the cephalosporin group of antibiotics.
S/E: In clinical trials, most adverse events were found mild and self-limiting; about 3% of patients discontinued medication due to adverse events thought to be due to cefdinir therapy, the adverse effects were primarily gastrointestinal disturbances, usually diarrhea or nausea; about 0.4% patients discontinued the therapy due to rash, thought to be related to cefdinir administration.
Precautions: As with other broad spectrum antibiotics, prolonged treatment with cefdinir may result in the possible emergence and overgrowth of resistant organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate alternative antibiotic should be administered.
As with other broad spectrum antibiotics, cefdinir should be prescribed with caution in individuals with a history of colitis.
In patients with transient or persistent renal insufficiency (creatinine clearance <30ml/min), the total daily dose of cefdinir should be reduced.
Pregnancy & lactation: Cefdinir was not found teratogenic in animal studies. But, there are no adequate and well-controlled studies available in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.
Dosage & admin: Adults and adolescents (13 years and older): The recommended total daily dose for all infections is 600mg. 600mg once-daily dosing or 300mg twice-daily dosing for 10 days is equally effective in all cases. The dosage and duration of treatment for different infections in adults and adolescents are given as following:
i. Community acquired pneumonia- 300mg 12 hourly for 10 days; ii. Acute exacerbation of chronic bronchitis- 300mg 12 hourly for 5-10 days or 600mg once-daily for 10 days; iii. Acute maxillary sinusitis- 300mg 12 hourly for 10 days or 600mg once-daily for 10 days; iv. Pharyngitis/tonsillitis- 300mg 12 hourly for 5-10 days or 600mg once-daily for 10 days; v. Uncomplicated skin and skin structure infections- 300mg 12 hourly for 10 days. Pediatric patients (6 months through 12 years): i. Acute bacterial otitis media- 7mg/kg 12 hourly for 5-10 days or 14mg/kg once-daily for 10 days; ii. Acute maxillary sinusitis- 7mg/kg 12 hourly for 10 days or 14mg/kg once-daily for 10 days; iii. Pharyngitis/tonsillitis- 7mg/kg 12 hourly for 5-10 days or 14mg/kg once-daily for 10 days; iv. Uncomplicated skin and skin structure infections- 7mg/kg 12 hourly for 10 days. Cefdinir may be taken without regard to meals.

❖ **ADINIR Cap. Acme**
Cefdinir INN 300mg/capsule
300mg x 8's pack: 360.00 MRP
❖ **ADINIR Susp. Acme**
Cefdinir INN 125mg/5ml: dry suspension
60ml bot: 175.00 MRP
❖ **CEDNIR Cap. SK+F**
Cefdinir INN 300mg/capsule
300mg x 4's pack: 160.00 MRP
❖ **CEDNIR DS Susp. SK+F**
Cefdinir INN 250mg/5ml: suspension (double strength)
30ml bot: 160.00 MRP
❖ **CEFIDA Cap. Beximco**
Cefdinir INN 300mg/capsule
300mg x 8's pack: 360.00 IP
❖ **CEFIDA Susp. Beximco**
Cefdinir INN 125mg/5ml: dry suspension
60ml bot: 150.00 IP
❖ **EFDINIR Cap. Incepta**
Cefdinir INN 300mg/capsule
300mg x 8's pack: 360.00 MRP
❖ **EFDINIR Susp. Incepta**
Cefdinir INN 125mg/5ml: dry suspension
60ml bot: 175.00 MRP
❖ **PALCEF Cap. Renata**
Cefdinir INN 300mg/capsule
300mg x 10's pack: 450.00 MRP
❖ **PALCEF Susp. Renata**
Cefdinir INN 125mg/5ml: dry suspension
60ml bot: 175.00 MRP
❖ **PALCEF DS Susp. Renata**
Cefdinir INN 250mg/5ml: dry suspension (double strength)
30ml bot: 160.00 MRP

CEFETAMET[26]

CEFETAMET PIVOXIL HCl: Tablet
Cefetamet pivoxil is a third-generation cephalosporin antibiotic which is hydrolyzed to form the active ingredient. It is available as cefetamet pivoxil hydrochloride 250mg & 500mg tablet for oral use.
Mode of action: Cefetamet as a cephalosporin antibiotic, it is bactericidal in action and kills bacteria by interfering with bacterial cell wall synthesis due to inhibition of transpeptidase enzyme. Cefetamet has excellent in vitro activity against the major respiratory pathogens- *Streptococcus pneunoniae, Haemophilus influenzae, Moraxella catarrhalis and group A haemolytic streptococci.* It is also active against -lactamase- producing strains of *H. influenzae and M. catarrhalis.* Cefetamet has marked activity against *Neisseria gonorrhoeae* and possesses a broad spectrum of activity against Enterobacteriaceae.
Ind: Cefetamet pivoxil is indicated for the treatment of infections caused by sensitive microorganisms and in particular: 1. Otolaryngeal infections: Otitis media, Sinusitis, Tonsillo-pharyngitis. 2. Infections of the lower respiratory tract: Tracheo-bronchitis, Bronchitis, Pneumonia. 3. Infections of the complicated & uncomplicated urinary tract: Acute pyelonephritis, Acute gonorrhea, Urethritis.
C/I: Cefetamet is contraindicated in patients with hypersensitivity to cefetamet, any other cephalosporin or penicillins or any other ingredient of this formulation.
S/E: Most common gastrointestinal side effects may include- diarrhea, nausea & vomiting. Like other wider spectrum antibiotics, in the course of treatment with cefetamet internal colonization from difficult clostridium can be observed. In some cases, this microorganism or its toxin has been indentified; in rare cases this reply has been accompanied from diarrhea. Very rarely cefetamet may cause gastralgia, flatulence, pyrosis, increase in bilirubin level, transitory increase of the transaminases, pruritus, urticaria, localized edema, rash, weakness, fatigue, vertigo, transitory leukopenia, eosinophilia, gingivitis, proctitis, vaginitis, tendinitis, conjunctivitis, and fever.
Precautions: Cefetamet should be administered with caution to the patients who have previously manifested allergy phenomena or gastrointestinal problems. An anaphylactic reaction demands an emergency treatment. Like with other antibiotics, cefetamet can cause the opportunistic development of non-sensitive germs (Candida, Enterococci, and difficile Clostridiun), in such cases, a suitable therapy should be given. Discontinuation of the antibiotic helps to restore the normal microflora and the internal functions. In presence of difficile clostridium cases, the treatment of choice is vancomycin for oral use and the inhibiting drug of the peristalsis are contraindicated.
Pregnancy & lactation: The main preclinical studies carried out with cefetamet have not evidenced teratogenic effects. There are no available data regarding safe use of cefetamet during pregnancy & lactation. Therefore, it should be used during pregnancy & lactation

only if the potential benefit justifies the potential risk to the fetus.
Dosage & admin: For better absorption Cefetamet pivoxil should be taken one hour before or after a meal.
Adults & children over 12 years: 500mg twice daily.
Children under 12 years: Usual dosage is 10mg/kg twice daily. <15 kg (approximately 6 months- 3 years), 125mg twice daily; 16-30 kg (approximately 3-9 years), 250mg twice daily; 31-40 kg (approximately 9-12 years), 375mg twice daily; >40 kg (approximately over 12 years), 500mg twice daily.
Uncomplicated gonorrhea, acute urethritis, uncomplicated cystitis: Single dose of 1500-2000mg.
In elderly patients, dosage adjustment is not necessary.
In the patients with renal insufficiency, dosage modification is as following:
In patients with hepatic insufficiency, dosage adjustment is not necessary.
Drug inter: The antacids, and/or the H2-blockers do not alter the pharmacokinetic profile of cefetamet; therefore, it can be administered in combination with these drugs. Concomitant administration with diuretic (e.g frusemide) does not reduce renal function.

❖ **TENAFET Tab. Incepta**
Cefetamet pivoxil hydrochloride INN 250mg & 500mg/tablet
250mg x 12's pack: 240.00 MRP
500mg x 12's pack: 420.00 MRP

CEFIXIME[42,63]

CEFIXIME: Capsule/Suspension
Cefixime is a third generation oral cephalosporin. It has a longer duration of action than the other oral cephalosporins, & usually given once daily dose, or in two divided dosage.
Ind: Upper & lower respiratory tract infections; UTI, gonococcal urethritis; otitis media, sinusitis; skin and soft-tissue infections.
C/I; S/E; Caution: See above under Cefetamet.
Dosage & admin: Adult & child over 10 yeras, 200-400mg daily according to the severity of infection, given either in a single or 2 divided doses. Elderly patients may be given the same dose as recommended for adults. Renal function should be assessed and dosage should be adjusted in severe renal impairment. Child over 6 months 8mg/kg daily in single or 2 divided doses. Or as a general guide of dosage, may be given as following- 6 months to 1 year 75mg daily; 1-4 years 100mg daily; 5-10 years 200mg daily. In typhoid dosage should be 10mg/kg/day for 14 days.
The usual course of treatment is 7 days. This may be continued for up to 14 days as in typhoid or in any severe infection if the physicians desire.
Dosage in Renal impairment: Cefixime may be administered in the presence of impaired renal function. Normal dose and schedule may be maintained in patients with creatinine clearances of 20ml/min or greater. In patients whose creatinine clearance is less than 20ml/min, it is recommended that a dose of 200mg once daily should not be exce-eded. The dose and regimen for patients who are maintained on chronic ambula-tory peritoneal dialysis or haemodialysis should follow the same recommendation as that for patients with creatinine clearances of less than 20ml/min.

❖ **ADEXIM Cap. Supreme**
Cefixime trihydrate 200mg/capsule.
200mg x 6's pack: I50.00 MRP
❖ **ADEXIM Susp. Supreme**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: I55.00 MRP
❖ **AFIX Cap. Aristopharma**
Cefixime trihydrate 200mg/capsule.
200mg x 8's pack: 240.00 MRP
❖ **AFIX-400 Cap. Aristopharma**
Cefixime trihydrate 400mg/capsule.
400mg x 4's pack: 200.00 MRP
❖ **AFIX Susp. Aristopharma**
Cefixime trihydrate 100mg/5ml: suspension.
30ml bot: 120.00 MRP
50ml bot: 195.00 MRP
❖ **AFIXIME Cap. Asiatic**
Cefixime trihydrate 200mg/capsule.
200mg x 8's pack: 200.00 MRP
❖ **AFIXIME Susp. Asiatic**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 160.00 MRP
❖ **ANTIMA Cap. Jayson**
Cefixime trihydrate 200mg/capsule.
200mg x 4's pack: 100.00 IP
❖ **ANTIMA Susp. Jayson**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 160.00 IP
❖ **BESTCEF Cap. Bio-pharma**
Cefixime trihydrate 200mg & 400mg/capsule.
200mg x I0's pack: 300.00 MRP
400mg x 8's pack: 360.00 MRP
❖ **BESTCEF Susp. Bio-pharma**
Cefixime trihydrate 100mg/5ml: suspension.
37.5ml bot: 130.00 MRP
50ml bot: 160.00 MRP
❖ **CEBEX Cap. Novo Healthcare**
Cefixime trihydrate 200mg & 400mg/capsule.
200mg x 8's pack: 200.00 MRP
400mg x 4's pack: 180.00 MRP
❖ **CEBEX Susp. Novo Healthcare**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 160.00 MRP
❖ **CEF-3 Cap. Square**
Cefixime trihydrate 200mg/capsule.
200mg x 12's pack: 360.00 MRP
❖ **CEF-3 DS Cap. Square**
Cefixime trihydrate 400mg/capsule.
400mg x 6's pack: 300.00 MRP
❖ **CEF-3 Susp. Square**
Cefixime trihydrate I00mg/5ml: suspension.
30ml bot: 120.00 MRP
40ml bot: I50.00 MRP
50ml bot: 195.00 MRP
❖ **CEFADYL Cap. Kumudini**
Cefixime trihydrate 200mg/capsule.
200mg x 6's pack: I50.00 MRP
❖ **CEFADYL Susp. Kumudini**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 160.00 MRP
❖ **CEFERON-3 Cap. Aexim**
Cefixime trihydrate 200mg/capsule.
200mg x 6's pack: I50.00 MRP
❖ **CEFERON-3 Susp. Aexim**
Cefixime trihydrate 100mg/5ml: suspension.
37.5ml bot: 130.00 MRP
50ml bot: 160.00 MRP
❖ **CEFIM-3 Cap. ACI**
Cefixime trihydrate 200mg/capsule.
200mg x 12's pack: 300.00 IP
❖ **CEFIM-3 Susp. ACI**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 160.00 IP
❖ **CEFIX Cap. Globe**
Cefixime trihydrate 200mg & 400mg/capsule.
200mg x 12's pack: 300.00 MRP
400mg x 4's pack: 180.00 MRP
❖ **CEFIX Susp. Globe**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 160.00 MRP
❖ **CEFIXIM Cap. Ibn Sina**
Cefixime trihydrate 200mg/capsule.
200mg x 8's pack: 240.00 MRP
❖ **CEFIXIM Susp. Ibn Sina**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 175.00 MRP
❖ **CEFIXIME-A Cap. Ad-din**
Cefixime trihydrate 200mg/capsule.
200mg x 5's pack: 150.00 MRP
❖ **CEFIXIME-A Susp. Ad-din**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 194.00 MRP
❖ **CEFMIX Susp. MonicoPharma**
Cefixime trihydrate USP 100mg/5ml: suspension.
50ml bot: 160.00 MRP
❖ **CEFOCEF Cap. Pharmadesh**
Cefixime trihydrate 200mg/capsule.
200mg x 8's pack: 200.00 MRP
❖ **CEFOCEF Susp. Pharmadesh**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: I50.00 MRP
❖ **CEF-PLUS Cap. Hudson**
Cefixime trihydrate 200mg/capsule.
200mg x 12's pack: 360.00 MRP
❖ **CEF-PLUS Susp. Hudson**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 180.00 MRP
❖ **CEFTID Cap. Opsonin**
Cefixime trihydrate 200mg & 400mg/capsule.
200mg x 12's pack: 300.00 MRP
400mg x 6's pack: 270.00 MRP
❖ **CEFTID Susp. Opsonin**
Cefixime trihydrate I00mg/5ml: suspension.
37.5ml bot: 130.00 MRP
50ml bot: 160.00 MRP

❖ **CEMIX-3 Cap. Seema**
Cefixime trihydrate 200mg/capsule.
200mg x 8's pack: 240.00 MRP

❖ **CEMIX-3 Susp. Seema**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 195.00 MRP

❖ **DEFIM-3 Cap. Decent**
Cefixime trihydrate 200mg/capsule.
200mg x 8's pack: 224.00 MRP

❖ **DEFIM-3 Susp. Decent**
Cefixime trihydrate 100mg/5ml: suspension.
60ml bot: 156.00 MRP

❖ **DENVAR Cap. Healthcare**
Cefixime trihydrate 200mg & 400mg/capsule.
200mg x 6's pack: 180.00 MRP
200mg x 12's pack: 360.00 MRP
400mg x 6's pack: 300.00 MRP

❖ **DENVAR Susp. Healthcare**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 195.00 MRP

❖ **D-FIX Cap. Desh Pharma**
Cefixime trihydrate 200mg/capsule.
200mg x 6's pack: 180.00 MRP

❖ **D-FIX Susp. Desh Pharma**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 180.00 MRP

❖ **DURACEF Cap. Navana**
Cefixime trihydrate 200mg/capsule.
200mg x 8's pack: 200.00 IP

❖ **DURACEF Susp. Navana**
Cefixime trihydrate 100mg/5ml: suspension.
30ml bot: 120.00 MRP
50ml bot: 160.00 MRP

❖ **ELEXIME Cap. Elixir**
Cefixime trihydrate 200mg/capsule.
200mg x 8's pack: 224.00 MRP

❖ **ELEXIME Susp. Elixir**
Cefixime trihydrate 100mg/5ml: suspension.
60ml bot:

❖ **EMIXEF Cap. Incepta**
Cefixime trihydrate 200mg & 400mg/capsule.
200mg x 12's pack: 300.00 MRP
400mg x 4's pack: 180.00 MRP

❖ **EMIXEF Susp. Incepta**
Cefixime trihydrate 100mg/5ml: suspension.
30ml bot: 100.00 MRP
40ml bot: 130.00 MRP
50ml bot: 160.00 MRP

❖ **EXCEF Cap. Chemist**
Cefixime trihydrate 200mg/capsule.
200mg x 8's pack: 360.00 MRP

❖ **EXCEF Susp. Chemist**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 228.00 MRP

❖ **EXIBEN-200 Cap. Benham**
Cefixime trihydrate USP 200mg/capsule.
200mg x 4's pack: 116.00 MRP

❖ **EXIBEN Susp. Benham**
Cefixime trihydrate USP 100mg/5ml: suspension.
50ml bot: 160.00 MRP

❖ **FIX-A Cap. Acme**
Cefixime trihydrate 200mg/capsule.
200mg x 4's pack: 120.00 IP

❖ **FIX-A DS Cap. Acme**
Cefixime trihydrate 400mg/capsule.
400mg x 8's pack: 400.00 IP

❖ **FIX-A Susp. Acme**
Cefixime trihydrate 100mg/5ml: suspension.
37.5ml bot: 130.00 IP
50ml bot: 175.00 IP

❖ **FIXBAC Cap. RAK Pharma**
Cefixime trihydrate 200mg/capsule.
200mg x 12's pack: 360.00 MRP

❖ **FIXBAC Susp. RAK Pharma**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 195.00 MRP

❖ **FIXIM Cap. Reman**
Cefixime trihydrate 200mg/capsule.
200mg x 4's pack: 160.00 MRP

❖ **GEN-3 Cap. Amico**
Cefixime trihydrate 200mg/capsule.
200mg x 5's pack: 110.00 MRP

❖ **GEN-3 Susp. Amico**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 155.00 MRP

❖ **G-FIX Cap. Gaco**
Cefixime trihydrate 200mg/capsule.
200mg x 4's pack: 100.00 MRP

❖ **G-FIX Susp. Gaco**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 160.00 MRP

❖ **HYXIM-200 Cap. Millat**
Cefixime trihydrate 200mg/capsule.
200mg x 6's pack: 150.00 MRP

❖ **HYXIM Susp. Millat**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 160.00 MRP

❖ **KEFIM Cap. Chemico**
Cefixime trihydrate 200mg/capsule.
200mg x 4's pack: 100.00 MRP
200mg x 8's pack: 200.00 MRP

❖ **KEFIM Susp. Chemico**
Cefixime trihydrate 100mg/5ml: suspension.
37.5ml bot: 130.00 MRP
50ml bot: 160.00 MRP

❖ **KEOR-200 Cap. Rephco**
Cefixime trihydrate 200mg/capsule.
200mg x 5's pack: 125.00 MRP

❖ **KEOR Susp. Rephco**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 160.00 MRP

❖ **KURACEF Tab. Sanofi-aventis**
Cefixime trihydrate 200mg & 400mg/tablet
200mg x 12's pack: 300.00 MRP
400mg x 8's pack: 384.00 MRP

❖ **KURACEF Susp. Sanofi-aventis**
Cefixime trihydrate 100mg/5ml: suspension.
30ml bot: 120.00 MRP
50ml bot: 160.00 MRP

❖ **LOXIM Tab. Techno Drugs**
Cefixime trihydrate 200mg/tablet.
200mg x 10's pack: 300.00 MRP

❖ **LOXIM DS Tab. Techno Drugs**
Cefixime trihydrate 400mg/tablet (double strength).
400mg x 6's pack: 270.00 MRP

❖ **LOXIM Susp. Techno Drugs**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 190.00 MRP

❖ **NEOFEXIM Cap. Doctor's**
Cefixime trihydrate 200mg/capsule.
200mg x 8's pack: 200.00 MRP

❖ **NEOFEXIM Susp. Doctor's**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 155.00 MRP

❖ **NEOFIX Cap. Modern**
Cefixime trihydrate 200mg/capsule.
200mg x 4's pack: 100.00 MRP

❖ **NEOFIX Susp. Modern**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 160.00 MRP

❖ **NGCEF Cap. Rangs**
Cefixime trihydrate 200mg/capsule.
200mg x 12's pack: 168.00 MRP

❖ **NGCEF Susp. Rangs**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 160.00 MRP

❖ **ODACEF Cap. UniHealth**
Cefixime trihydrate 200mg/capsule.
200mg x 4's pack: 120.00 MRP

❖ **ODACEF Susp. UniHealth**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 195.00 MRP

❖ **OFEX Cap. Delta**
Cefixime trihydrate 200mg & 400mg/tablet (f.c).
200mg x 12's pack: 240.00 MRP
400mg x 4's pack: 159.99 MRP

❖ **OFEX Susp. Delta**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 140.00 MRP

❖ **ORCEF Tab. Renata**
Cefixime trihydrate 200mg & 400mg/tablet (f.c).
200mg x 6's pack: 180.00 MRP
200mg x 12's pack: 360.00 MRP
400mg x 6's pack: 300.00 MRP

❖ **ORCEF Cap. Renata**
Cefixime trihydrate 200mg/capsule.
200mg x 16's pack: 480.00 MRP

❖ **ORCEF Susp. Renata**
Cefixime trihydrate 100mg/5ml: suspension.
30ml bot: 135.00 MRP
40ml bot: 155.00 MRP
50ml bot: 195.00 MRP

❖ **ORFIX-200 Cap. Mystic**
Cefixime trihydrate 200mg/capsule
200mg x 4's pack: 100.00 MRP

❖ **ORFIX Susp. Mystic**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 160.00 MRP

❖ **PREXIM Cap. Ziska**
Cefixime trihydrate 200mg/capsule.
200mg x 12's pack: 300.00 MRP

❖ **PREXIM Susp. Ziska**
Cefixime trihydrate 100mg/5ml: suspension.
30ml bot: 100.00 MRP
50ml bot: 160.00 MRP

❖ **PROFIX Cap. Medicon**
Cefixime trihydrate 200mg/capsule.
200mg x 4's pack: 100.00 MRP

❖ **PROFIX Susp. Medicon**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 260.00 MRP

❖ **RESCURE Cap. Marksman**
Cefixime trihydrate 200mg/capsule.
200mg x 6's pack: 180.00 MRP

❖ **RESCURE Susp. Marksman**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 165.00 MRP

❖ **ROFIXIM Cap. Radiant**
Cefixime trihydrate 200mg & 400mg/capsule.
200mg x 8's pack: 240.00 MRP
400mg x 8's pack: 400.00 MRP

❖ **ROFIXIM Susp. Radiant**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 195.00 MRP

❖ **ROXIM Cap. SK+F**
Cefixime trihydrate 200mg & 400mg/capsule.
200mg x 12's pack: 360.00 MRP
400mg x 6's pack: 300.00 MRP

❖ **ROXIM Susp. SK+F**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 195.00 MRP

❖ **SAVER Cap. Alco Pharma**
Cefixime trihydrate 200mg/capsule.
200mg x 8's pack: 200.00 MRP

❖ **SAVER Susp. Alco Pharma**
Cefixime trihydrate 100mg/5ml: suspension.
30ml bot: 110.00 MRP
50ml bot: 150.00 MRP

❖ **SETIC Cap. Sandoz/Novartis**
Cefixime trihydrate 200mg & 400mg/capsule.
200mg x 14's pack: 420.00 MRP
400mg x 14's pack: 700.00 MRP

❖ **SETIC Susp. Sandoz/Novartis**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 195.00 MRP

❖ **SUFFIX-200 Cap. SAPL**
Cefixime trihydrate 200mg/capsule.
200mg x 6's pack: 150.00 MRP
200mg x 12's pack: 300.00 MRP

❖ **SUFFIX Susp. SAPL**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 160.00 MRP

❖ **SUPRAX Cap. Cosmic**
Cefixime trihydrate 200mg/capsule.
200mg x 6's pack: 244.00 MRP

❖ **SUPRAX Susp. Cosmic**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 150.00 MRP

❖ **SUPRAXIM Cap. Silva**
Cefixime trihydrate 200mg/capsule.
200mg x 6's pack: 150.00 MRP

❖ **SUPRAXIM Susp. Silva**
Cefixime trihydrate 100mg/5ml: suspension.
30ml bot: 135.00 MRP
50ml bot: 160.00 MRP

❖ **T-CEF Cap. Drug Inter.**
Cefixime trihydrate 200mg & 400mg/capsule.
200mg x 8's pack: 200.00 MRP
400mg x 8's pack: 400.00 MRP

❖ **T-CEF Susp. Drug Inter.**
Cefixime trihydrate 100mg/5ml: suspension.
30ml bot: 150.00 MRP
50ml bot: 160.00 MRP

❖ **TEXIT-200 Cap. Apex**
Cefixime trihydrate 200mg/capsule.
200mg x 8's pack: 200.00 MRP

❖ **TEXIT Susp. Apex**
Cefixime trihydrate
100mg/5ml: suspension.
50ml bot: 160.00 MRP

❖ **TGOCEF Cap. Somatec**
Cefixime trihydrate 200mg & 400mg/capsule.
200mg x 8's pack: 200.00 MRP
400mg x 4's pack: 180.00 MRP

❖ **TGOCEF Susp. Somatec**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 150.00 MRP

❖ **TOCEF Cap. General**
Cefixime trihydrate 200mg & 400mg/capsule.
200mg x 8's pack: 240.00 MRP
400mg x 8's pack: 400.00 MRP

❖ **TOCEF Susp. General**
Cefixime trihydrate 100mg/5ml: suspension.
37.5ml bot: 130.00 MRP
50ml bot: 195.00 MRP

❖ **TRICEF Cap. Ambee**
Cefixime trihydrate 200mg/capsule.
200mg x 4's pack: 100.00 MRP

❖ **TRICEF Susp. Ambee**
Cefixime trihydrate 100mg/5ml: suspension
50ml bot: 160.00 MRP

❖ **TRIFIX Cap. Pacific**
Cefixime trihydrate 200mg/capsule.
200mg x 6's pack: 168.00 MRP

❖ **TRIFIX Susp. Pacific**
Cefixime trihydrate 100mg/5ml: suspension
50ml bot: 150.00 MRP

❖ **TRIOCEF-200 Cap. Nipa**
Cefixime trihydrate 200mg/capsule.
200mg x 8's pack: 240.00 MRP

❖ **TRIOCEF Susp. Nipa**
Cefixime trihydrate 100mg/5ml: suspension.
37.5ml bot: 135.00 MRP
50ml bot: 195.00 MRP

❖ **TRIOCIM Cap. Beximco**
Cefixime trihydrate 200mg/capsule.
200mg x 16's pack: 480.00 MRP

❖ **TRIOCIM Susp. Beximco**
Cefixime trihydrate 125mg/5ml: suspension.
50ml bot: 195.00 MRP

❖ **TRUSO Cap. Orion**
Cefixime trihydrate 200mg & 400mg/tablet.
200mg x 8's pack: 200.00 MRP
400mg x 8's pack: 360.00 MRP

❖ **TRUSO Susp. Orion**
Cefixime trihydrate 125mg/5ml: suspension.
37.5ml bot: 130.00 MRP
50ml bot: 160.00 MRP

❖ **TYFAX-3 Cap. White Horse**
Cefixime trihydrate USP 200mg/capsule.
200mg x 4's pack: 100.00 MRP

❖ **TYFAX-3 DS Cap. White Horse**
Cefixime trihydrate USP 400mg/capsule (double strength).
400mg x 4's pack: 180.00 MRP

❖ **TYFAX-3 Susp. White Horse**
Cefixime trihydrate 100mg/5ml: suspension.
100ml bot: 295.00 MRP

❖ **UNIFIX Cap. Syntho**
Cefixime trihydrate 200mg/capsule.
200mg x 4's pack: 100.00 MRP

❖ **UNIFIX Susp. Syntho**
Cefixime trihydrate 125mg/5ml: suspension.
50ml bot: 150.00 MRP

❖ **VELOFIX Cap. Pharmasia**
Cefixime trihydrate 200mg/capsule.
200mg x 6's pack: 150.00 IP

❖ **VELOFIX Susp. Pharmasia**
Cefixime trihydrate 125mg/5ml: suspension.
50ml bot: 160.00 IP

❖ **XIFIM Cap. Bristol**
Cefixime trihydrate 200mg/capsule.
200mg x 4's pack: 100.00 MRP

❖ **XIFIM Susp. Bristol**
Cefixime trihydrate 125mg/5ml: suspension.
50ml bot: 160.00 MRP

❖ **XIMBAC Cap. Proteety**
Cefixime trihydrate 200mg/capsule.
200mg x 8's pack: 200.00 MRP

❖ **XIMBAC Susp. Proteety**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 150.00 MRP

❖ **XYLOCEF-200 Cap. Libra**
Cefixime trihydrate 200mg/capsule.
200mg x 8's pack: 200.00 IP

❖ **XYLOCEF Susp. Libra**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 160.00 IP

❖ **ZEMICEF Cap. Popular**
Cefixime trihydrate 200mg & 400mg/capsule.
200mg x 8's pack: 240.00 MRP
400mg x 8's pack: 400.00 MRP

❖ **ZEMICEF Susp. Popular**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 195.00 MRP

❖ **ZENICEF Cap. Zenith**
Cefixime trihydrate 200mg/capsule.
200mg x 4's pack: 100.00 MRP

❖ **ZENICEF Susp. Zenith**
Cefixime trihydrate 100mg/5ml: suspension.
50ml bot: 160.00 MRP

❖ **3-C Cap. Edruc**
Cefixime trihydrate 200mg/capsule.
200mg x 4's pack: 100.00 MRP

❖ **3-C Susp. Edruc**
Cefixime trihydrate 125mg/5ml: suspension.
50ml bot: 160.00 MRP

❖ **3-GEOCEF Cap. Hallmark**
Cefixime trihydrate 200mg/capsule.
200mg x 4's pack: 100.00 MRP

❖ **3-GEOCEF Susp. Hallmark**
Cefixime trihydrate 125mg/5ml: suspension.
50ml bot: 150.00 MRP

❖ **3RD-CEF Tab. Medimet**
Cefixime trihydrate 200mg & 400mg/tablet (f.c).
200mg x 4's pack: 108.00 MRP
400mg x 4's pack: 200.00 MRP

❖ **3RD-CEF Susp. Medimet**
Cefixime trihydrate 100mg/5ml: suspension.
37.5ml bot: 130.00 MRP
50ml bot: 190.00 MRP

CEFOTAXIME[21,42]

CEFOTAXIME: Injection

Cefotaxime is a broad spectrum bactericidal cephalosporin antibiotic. Cefotaxime is exceptionally active in-vitro against gram-negative organisms sensitive or resistant to first or second generation cephalosporins. It is similar to other cephalosporins in activity against gram-positive organisms.

Ind: Respiratory infections- such as acute or chronic bronchitis, bacterial pneumonia, infected bronchiectasis, lung abscess and post operative chest infections.Urinary tract infections- such as acute and chronic pyelonephritis, cystitis and asymptomatic bacteriuria. Soft-tissue infections - such as cellulitis, peritonitis and wound infections. Bone and joint infections- such as osteomyelitis, septic arthritis. Obstetric and gynaecological infections- -such as pelvic inflammatory disease. Gonorrhoea, particularly when penicillin has failed or is unsuitable. Other bacterial infections, such as meningitis and other sensitive infections suitable for parenteral antibiotic therapy.

Prophylaxis- the administration of cefotaxime prophylactically may reduce the incidence of certain post operative infections in patients undergoing surgical procedures that are classified as contaminated or potentially contaminated or in clean operation where infection would have serious effects.

C/I; S/E; Cautions: See above under Cefetamet. Pregnancy & lactation: Although studies in animals have not shown any adverse effect on the developing foetus, the safety of cefotaxime in human pregnancy has not been established. Consequently, cefotaxime should not be administered during pregnancy specially during first trimester, without carefully weighing the expected benefit against possible risks. Cefotaxime is excreted in the milk.

Dosage & admin: Adults- in mild to moderate infection, 1gm every 12 hourly; in severe infection dosage may be increased up to 12gm daily given in 3 or 4 divided doses. For infections caused by sensitive Pseudomonus spp. daily dosage of greater than 6gm is usually required. Children- the usual dosage range is 100-150mg/kg/day in 2 to 4 divided doses; in very severe infections dosage of upto 200mg/kg/day may be required. Neonates- the recommended dosage is 50mg/kg/day in 2 to 4 divided doses; in severe infections 150-200mg/kg/day in divided doses may be given. Dosage in gonorrhoea- a single injection of 1gm may be administered i.m or i.v. Dosage in renal impairment- because of extra-renal elimination, it is only necessary to reduce the dosage of cefotaxime in severe renal failure (GFR<5 ml/min = serum creatinine approximately 751 micromol/litre). After an initial loading dose of 1gm, daily dose should be halved without change in the frequency of dosing. In all other patients, dosage may require further adjustment according to the course of infection and general condition of the patient.

Drug inter: Increased nephrotoxicity has been reported following concomitant administration of cephalosporins and aminoglycoside antibiotics.

❖ **CEFOTAX Inj. Renata**
Cefotaxime sodium USP 250mg, 500mg & 1gm/vial (powder for reconstitution): i.m/i.v injection.
250mg vial x 1's pack: 50.00 MRP
500mg vial x 1's pack: 76.00 MRP
1gm vial x 1's pack: 132.00 MRP

❖ **MAXCEF Inj. Square**
Cefotaxime sodium USP 250mg, 500mg & 1gm/vial (powder for reconstitution): i.m/i.v injection.
250mg vial x 1's pack: 50.00 MRP
500mg vial x 1's pack: 76.00 MRP
1gm vial x 1's pack: 132.20 MRP

❖ **TAXIM Inj. Acme**
Cefotaxime sodium USP 250mg, 500mg & 1gm/vial (powder for reconstitution): i.m/i.v injection.
250mg vial x 1's pack: 50.00 MRP
500mg vial x 1's pack: 76.00 MRP
1gm vial x 1's pack: 131.50 MRP

❖ **TORPED Inj. Orion**
Cefotaxime sodium USP 250mg, 500mg & 1gm/vial (powder for reconstitution): i.m/i.v injection.
250mg vial x 1's pack: 50.00 MRP
500mg vial x 1's pack: 75.00 MRP
1gm vial x 1's pack: 130.00 MRP

CEFPODOXIME[26,36]

CEFPODOXIME: Capsule/Suspension

Cefpodoxime proxetil, a new 3rd generation oral cephalosporin. It is a prodrug that is de-esterified in the intestinal wall to release Cefpodoxime. It acts against a wide range of gram-positive & gram-negative pathogens including good activity against some clinically significant gram-positive pathogens like Staph aureus, Strep pneumoniae and S. saprophyticus.

Mode of action: Cefpodoxime is bactericidal and kills bacteria by interfering with the synthesis of the bacterial cell wall. Cefpodoxime binds with high affinity to penicillin-binding proteins in the bacterial cell wall, thus interfering in peptidoglycan synthesis that provides the cell wall with mechanical stability. Cefpodoxime inhibits the transpe-ptidase enzyme that performs the final stage in the synthesis of peptidoglycan. As a result the bacterial cell wall is weakened and the cell swells and then ruptures.

Ind: Cefpodoxime is indicated in the following diseases: 1. Lower respiratory tract infection- Acute community-acquired pneumonia, Acute bacterial exacerbation of chronic bronchitis; 2. Upper respiratory tract infection- Acute otitis media, Acute maxillary sinusitis, Pharyngitis, Tonsillitis; 3. Sexually transmitted diseases- Acute uncomplicated urethral & cervical gonorrhoea, Acute ano-rectal infection in women caused by N. gonorrhoeae; 4. Uncomplicated urinary tract infection- Cystitis, Pyuria; 5. Skin & soft tissue infections- Furuncle, Cellulitis, Subcutaneous abscess, Infectious atheroma, Periproctal abscess.

C/I: Known hypersensitivity to cefpodoxime proxetil or to cephalosporin group of antibiotic or any ingredient of the product.

S/E: Diarrhoea and rarely antibiotic-related colitis, nausea and vomiting, abdominal discomfort, headache; allergic reactions including rashes, pruritus, urticaria, serum sickness-like reactions with rashes, fever and arthralgia, and anaphylaxis, erythema multiform, toxic epidermal necrolysis reported; disturbances in liver enzymes, transient hepatitis and cholestatic jaundice, etc. Other side effects reported includeeos-inophilia and blood disorders, reversible interstitial nephritis, hyperactivity, nervousness, sleep disturbances, confusion, hypertonia and dizziness etc.

Precautions: In patients with transient or persistent reduction in urinary output due to renal insufficiency, the total daily dose of cefpodoxime should be reduced because high and prolonged serum antibiotic concentration can occur in such individuals following usual doses. Cefpodoxime should be administered with caution to patients receiving concurrent treatment with potent diuretics. As with other antibiotics, prolonged use of cefpodoxime may result in overgrowth of nonsusceptible organisms. If superin fection occurs during therapy, appropriate measures should be taken.

Pregnancy & lactation: There are no adequate and well-controlled studies on cefpodoxime proxetil use in pregnant woman, but it was found neither teratognic nor embryocidal in animal trial. However, the drug should be used during pregnancy only if clearly needed. In nursing mother, cefpodoxime is excreted in breast milk & there is potential risk of serious reactions in nursing infants, so a decision should be made whether to discontinue breast feeding or to disocontinue the drug.

Dosage & admin: Cefpodoxime capsule should be administered orally with food to enhance absorption, & suspension may be given without regard to food.

The recommended doses, duration of treatment, applicable patient population are as below:

Adults (13 years & older):

Acute community- acquired pneumonia- 200mg 12 hourly for 14 days.

Acute bacterial exacerbation of chronic bronchitis- 200mg 12 hourly for 10 days.

Uncomplicated gonorrhea (men/women)- 200mg single dose.

Rectal gonococcal infection in women- 200mg single dose.

Skin & soft tissue infection- 400mg 12 hourly for 7 to 14 days.

Pharyngitis and/or Tonsillitis- 100mg 12 hourly for 5 to 10 days.

Uncomplicated urinary tract infection- 100mg 12 hourly for 7 days.

Acute maxillary sinusitis- 200mg 12 hourly for 10 days.

Infants & children: 15 days - 6 months, 4mg/kg every 12 hours; 6 months - 2 years, 40mg every 12 hours; 3-8 years, 80mg every 12 hours; Over 9 years, 100mg every 12 hours.

Patients with severe renal impairment (creatinine clearance <30ml/min) the dosing intervals shoud be increased to 24 hourly; in patients with transient or persistent reduction

in urinary output due to renal insufficiency, the total daily dose should be reduced. In cirrhotic patients, phamacokinetics of Cefpodoxime are similar to those in healthy subjects, so the dose adjustment is not necessary.

Drug inter: Antacids: oncomitant administration of high doses of antacids (sodium bicarbonate and aluminium hydroxide) or H2 blockers reduce peak levels by 24% to 42% and the extent of absorption by 27% to 32% respectively, though the rate of absorption is not altered by these concomitant medications. Oral anticholinergics delay peak plasma levels, but do not affect the extent of absorption. Probenecid: probenecid inhibits the excretion of cefpodoxime. Nephrotoxic drugs: although nephrotoxicity has not been noted when cefpodoxime was given alone, close monitoring of renal functionis advised when cefpodoxime is administ-ered concomitantly with compounds of known nephrotoxic potential.

❖ **CEDOFAX Cap. White Horse**
Cefpodoxime proxetil USP 100mg & 200mg/capsule.
100mg x 12's pack: 264.00 MRP
200mg x 6's pack: 252.00 MRP

❖ **CEFDOX Cap. ACI**
Cefpodoxime proxetil INN 100mg/capsule.
6's pack: 132.00 MRP

❖ **CEFDOX Tab. ACI**
Cefpodoxime proxetil INN 200mg/tablet.
12's pack: 504.00 MRP

❖ **CEFDOX Susp. ACI**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 98.00 MRP

❖ **CEFOBID Cap. UniHealth/UniMed**
Cefpodoxime proxetil INN 100mg/capsule.
20's pack: 440.00 MRP

❖ **CEFOBID Susp. UniHealth/UniMed**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 98.00 MRP

❖ **CEFODIM Cap. Pacific**
Cefpodoxime proxetil INN 100mg & 200mg/capsule.
100mg x 20's pack: 440.00 MRP
200mg x 10's pack: 400.00 MRP

❖ **CEFODIM Susp. Pacific**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 80.00 MRP

❖ **CEFODOX Cap. Bristol**
Cefpodoxime proxetil INN 100mg/capsule.
4's pack: 88.00 MRP

❖ **CEFODOX Susp. Bristol**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 95.00 MRP

❖ **CEFOMIN Tab. Popular**
Cefpodoxime proxetil INN 100mg & 200mg /tablet.
100mg x 10's pack: 200.00 MRP
200mg x 10's pack: 380.00 MRP

❖ **CEFOMIN Susp. Popular**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 96.00 MRP

❖ **CEFORAN Cap. Drug Inter.**
Cefpodoxime proxetil INN 100mg & 200mg/capsule.
100mg x 16's pack: 192.00 MRP
200mg x 16's pack: 400.00 MRP

❖ **CEFORAN Susp. Drug Inter.**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 75.00 MRP
100ml bot: 120.00 MRP

❖ **CEPDOXIM Cap. Alco Pharma**
Cefpodoxime proxetil INN 100mg & 200mg/capsule.
100mg x 16's pack: 320.00 MRP
200mg x 16's pack: 480.00 MRP

❖ **CEPDOXIM Susp. Alco Pharma**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 90.00 MRP
100ml bot: 175.00 MRP

❖ **CEPOXID Susp. Apex**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 80.00 MRP

❖ **CP Tab. Acme**
Cefpodoxime proxetil INN 200mg/tablet.
200mg x 8's pack: 336.00 MRP

❖ **CP Susp. Acme**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 98.00 MRP

❖ **CP Drop Acme**
Cefpodoxime proxetil INN 20mg/ml: drop
15ml bot: 60.00 IP

❖ **DESBAC Cap. General**
Cefpodoxime proxetil INN 100mg/capsule.
12's pack: 240.00 MRP

❖ **DESBAC Susp. General**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 98.00 MRP

❖ **DOFIXIM Cap. Ibn Sina**
Cefpodoxime proxetil INN 100mg/capsule.
100mg x 8's pack: 160.00 MRP

❖ **DOFIXIM Tab. Ibn Sina**
Cefpodoxime proxetil INN 200mg/tablet.
200mg x 12's pack: 480.00 MRP

❖ **DOFIXIM Susp. Ibn Sina**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 95.00 MRP
100ml bot: 160.00 MRP

❖ **E-POD Cap. Edruc**
Cefpodoxime proxetil INN 200mg/capsule.
200mg x 12's pack: 480.00 IP

❖ **E-POD Susp. Edruc**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 96.00 IP

❖ **E-POD-DS Susp. Edruc**
Cefpodoxime proxetil INN 80mg/5ml: suspension
50ml bot: 165.00 IP

❖ **EPOXIM Tab. Peoples**
Cefpodoxime proxetil INN 100mg & 200mg/tablet.
100mg x 12's pack: 240.00 MRP
200mg x 8's pack: 280.00 MRP

❖ **EPOXIM Susp. Peoples**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 98.00 MRP
100ml bot: 180.00 MRP

❖ **METOXIM Tab. Sandoz/Novartis**
Cefpodoxime proxetil INN 100mg & 200mg/tablet.
100mg x 14's pack: 350.00 MRP
200mg x 14's pack: 630.00 MRP

❖ **METOXIM Susp. Sandoz/Novartis**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 100.00 MRP

❖ **NEOPROX Cap. Somatec**
Cefpodoxime proxetil INN 100mg/capsule.
100mg x 20's pack: 440.00 MRP

❖ **NEOPROX Susp. Somatec**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 98.00 MRP

❖ **NEOPROX DS Susp. Somatec**
Cefpodoxime proxetil INN 80mg/5ml: suspension
50ml bot: 175.00 MRP

❖ **NEOPROX Drop Somatec**
Cefpodoxime proxetil INN 20mg/ml: drop
15ml bot: 60.00 MRP

❖ **PEDICEF Susp. Orion**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 98.00 MRP

❖ **PEDICEF DS Susp. Orion**
Cefpodoxime proxetil INN 80mg/5ml: suspension
50ml bot: 175.00 MRP

❖ **PEDICEF Drop Orion**
Cefpodoxime proxetil INN 20mg/ml: drop
15ml bot: 60.00 MRP

❖ **PODO-100 Tab. Chemico**
Cefpodoxime proxetil INN 100mg/tablet.
10's pack: 220.00 MRP

❖ **PODO Susp. Chemico**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 98.00 MRP
100ml bot: 190.00 MRP

❖ **PODOXI Cap. Chemist**
Cefpodoxime proxetil INN 100mg/capsule.
100mg x 8's pack: 160.00 MRP

❖ **PODOXI Susp. Chemist**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 80.00 MRP

❖ **PROCTIL Susp. Medicon**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 98.00 MRP

❖ **ROVANTIN Tab. Opsonin**
Cefpodoxime proxetil INN 100mg & 200mg/tablet.
100mg x 10's pack: 220.00 MRP
200mg x 10's pack: 420.00 MRP

❖ **ROVANTIN Susp. Opsonin**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 98.00 MRP

❖ **ROVANTIN DS Susp. Opsonin**
Cefpodoxime proxetil INN 80mg/5ml: suspension (double strength).
50ml bot: 175.00 MRP

❖ **ROVANTIN Drop Opsonin**
Cefpodoxime proxetil INN 20mg/ml: drop
15ml bot: 60.00 MRP

❖ **ROXETIL Cap. Healthcare**
Cefpodoxime proxetil INN 100mg & 200mg/capsule.
100mg x 16's pack: 352.00 MRP
200mg x 12's pack: 504.00 MRP

❖ **ROXETIL Susp. Healthcare**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 95.00 IP

❖ **SEFOX Cap. Navana**
Cefpodoxime proxetil INN 100mg/capsule.
12's pack: 240.00 MRP

❖ **SEFOX Susp. Navana**

Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 90.00 MRP

❖ **SEFOX-DS Susp. Navana**
Cefpodoxime proxetil INN 80mg/5ml: suspension (double strength).
50ml bot: 170.00 MRP

❖ **STARIN Cap. SK+F**
Cefpodoxime proxetil INN 100mg & 200mg/capsule.
100mg x 16's pack: 352.00 MRP
200mg x 8's pack: 320.00 MRP

❖ **STARIN Susp. SK+F**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 98.00 MRP

❖ **STARIN DS Susp. SK+F**
Cefpodoxime proxetil INN 80mg/5ml: suspension
50ml bot: 150.00 MRP

❖ **STARIN Drop SK+F**
Cefpodoxime proxetil INN 20mg/ml: drop
15ml bot: 60.00 MRP

❖ **TAXETIL Cap. Aristopharma**
Cefpodoxime proxetil INN 100mg & 200mg/capsule.
100mg x 18's pack: 396.00 MRP
200mg x 8's pack: 320.00 MRP

❖ **TAXETIL Susp. Aristopharma**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 98.00 MRP
100ml bot: 195.00 MRP

❖ **TAXETIL DS Susp. Aristopharma**
Cefpodoxime proxetil INN 80mg/5ml: suspension
50ml bot: 175.00 MRP

❖ **TAXETIL Drop Aristopharma**
Cefpodoxime proxetil INN 20mg/ml: drop
15ml bot: 60.00 MRP

❖ **TORAXIM Susp. Delta**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 98.00 MRP

❖ **TORAXIM Drop Delta**
Cefpodoxime proxetil INN 20mg/ml: drop
15ml bot: 60.00 MRP

❖ **TRUCEF Tab. Renata**
Cefpodoxime proxetil INN 100mg & 200mg/tablet.
100mg x 10's pack: 220.00 MRP
200mg x 10's pack: 420.00 MRP

❖ **TRUCEF Susp. Renata**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 98.00 MRP
100ml bot: 190.00 MRP

❖ **TRUCEF DS Susp. Renata**
Cefpodoxime proxetil INN 80mg/5ml: suspension
50ml bot: 175.00 MRP

❖ **TRUCEF Drop Renata**
Cefpodoxime proxetil INN 20mg/1ml: suspension
15ml bot: 60.00 MRP

❖ **VANPROX Cap. Square**
Cefpodoxime proxetil INN 100mg & 200mg/capsule
100mg x 12's pack: 264.00 MRP
200mg x 6's pack: 252.00 MRP

❖ **VANPROX Susp. Square**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 98.00 MRP

❖ **VANPROX Forte Susp. Square**
Cefpodoxime proxetil INN 80mg/5ml: suspension (double strength).
50ml bot: 175.00 MRP

❖ **VANPROX Drop Square**
Cefpodoxime proxetil INN 20mg/1ml: suspension
15ml bot: 60.00 MRP

❖ **VERCEF Susp. Beximco**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 98.00 IP
100ml bot: 195.00 IP

❖ **VERCEF DS Susp. Beximco**
Cefpodoxime proxetil INN 80mg/5ml: suspension (double strength).
50ml bot: 175.00 IP

❖ **VERCEF Drop Beximco**
Cefpodoxime proxetil INN 20mg/1ml: suspension
15ml bot: 60.00 MRP

❖ **VICTORIN Cap. Novo Healthcare**
Cefpodoxime proxetil INN 200mg/capsule.
200mg x 8's pack: 320.00 MRP

❖ **VICTORIN Susp. Novo Healthcare**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 98.00 MRP

❖ **VICTORIN Drop Novo Healthcare**
Cefpodoxime proxetil INN 20mg/1ml: suspension
15ml bot: 60.00 MRP

❖ **XEPODOX Susp. Rangs**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 98.00 MRP

❖ **XEPODOX Drop Rangs**
Cefpodoxime proxetil INN 20mg/1ml: suspension
15ml bot: 60.00 MRP

❖ **XIMEPROX Tab. Incepta**
Cefpodoxime proxetil INN 100mg & 200mg/tablet.
100mg x 20's pack: 440.00 MRP
200mg x 12's pack: 504.00 MRP

❖ **XIMEPROX Susp. Incepta**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 98.00 MRP
100ml bot: 195.00 MRP

❖ **XIMEPROX DS Susp. Incepta**
Cefpodoxime proxetil INN 80mg/5ml: suspension (double strength).
50ml bot: 175.00 MRP

❖ **XIMEPROX Drop Incepta**
Cefpodoxime proxetil INN 20mg/1ml: suspension
15ml bot: 60.00 MRP

❖ **XIMOCEF 200 Cap. Kumudini**
Cefpodoxime proxetil INN 200mg/capsule.
200mg x 8's pack: 320.00 MRP

❖ **XIMOCEF Susp. Kumudini**
Cefpodoxime proxetil INN 40mg/5ml: suspension
50ml bot: 95.00 MRP

❖ **XIMOCEF Drop Kumudini**
Cefpodoxime proxetil INN 20mg/1ml: suspension
50ml bot: 150.00 MRP

CEFTAZIDIME[21,47]

CEFTAZIDIME: Injection
Ceftazidime pentahydrate, a 3rd generation broad spectrum cephalosporin using parenteral route.
Ind: Broad spectrum antibiotic with greater activity aganist certain gm-ve bacteria such as pseudomonas and also other gm-ve bacteria. However they are less active than 'second generation' cephalosporins (e.g cefuroxime) against gram-positive bacteria.
C/I; S/E; Cautions: See above under Cefetamet.
Dose: By deep i.m injection or i.v injection or infusion, Igm every 8 hours or 2gm every 12 hours; 2gm every 8-12 hours in severe infections; single doses over 1gm intravenous route only; elderly usual max. 3gm daily; Child, up to 2 months 25-60 mg/kg daily in 2 divided doses, over 2 months 30-100 mg/kg daily in 2-3 divided doses; up to 150mg/kg daily if immunocompromised or meningitis; intravenous route recommended for children. Urinary tract and less serious infections, 0.5-1gm every 12 hours.
Pseudomonal lung infection in cystic fibrosis-adult with normal renal function 100-150mg/kg daily; in 3 divided doses; child up to 150mg/kg daily; intravenous route recommended for children.

❖ **CEFAZID Inj. Renata**
Ceftazidime pentahydrate 250mg, 500mg & 1gm vial: i.m/i.v injection.
250mg vial: 70.00 MRP
500mg vial: 115.00 MRP
1gm vial: 215.00 MRP

❖ **CEFTAZIM Inj. Aristopharma**
Ceftazidime pentahydrate 250mg, 500mg & 1gm vial: i.m/i.v injection.
250mg vial: 70.00 MRP
500mg vial: 115.00 MRP
1gm vial: 215.00 MRP

❖ **MAXBAC Inj. Rangs Pharma**
Ceftazidime pentahydrate 250mg, 500mg & 1gm vial: i.m/i.v injection.
250mg vial: 70.00 MRP
500mg vial: 115.00 MRP
1gm vial: 215.00 MRP

❖ **SEROZID Inj. Opsonin**
Ceftazidime pentahydrate 250mg, 500mg, 1gm & 2gm vial: i.m/i.v injection.
250mg vial: 70.00 MRP
500mg vial: 115.00 MRP
1gm vial: 215.00 MRP
2gm vial: 410.00 MRP

❖ **SIDOBAC Inj. Incepta**
Ceftazidime pentahydrate 250mg, 500mg & 1gm vial: i.m/i.v injection.
250mg vial: 70.00 MRP
500mg vial: 115.00 MRP
1gm vial: 215.00 MRP

❖ **TAZID Inj. Square**
Ceftazidime pentahydrate 250mg, 500mg & 1gm vial: i.m/i.v injection.
250mg vial: 70.00 MRP
500mg vial: 115.00 MRP
1gm vial: 215.00 MRP

❖ **TRIZIDIM Inj. Acme**
Ceftazidime pentahydrate 250mg, 500mg & 1gm vial: i.m/i.v injection.
250mg vial: 70.00 MRP
500mg vial: 115.00 MRP
1gm vial: 215.00 MRP

❖ **TRUM 3 Inj. Drug Inter.**
Ceftazidime pentahydrate 250mg, 500mg & 1gm vial: i.m/i.v injection.
250mg vial: 70.00 MRP
500mg vial: 120.00 MRP
1gm vial: 210.00 MRP

❖ **ZIDICEF I.M/I.V Inj. Popular**
Ceftazidime pentahydrate 250mg, 500mg & 1gm vial: i.m/i.v injection.
250mg vial: 70.00 MRP
500mg vial: 115.00 MRP
1gm vial: 215.00 MRP

❖ **ZIDICEF I.V Inj. Popular**
Ceftazidime pentahydrate 2gm vial: i.v injection.

2gm vial: 360.00 MRP

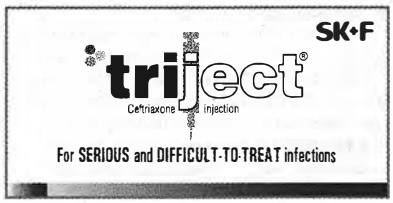
❖ **ZIDIM Inj. Orion**
Ceftazidime pentahydrate 250mg, 500mg & 1gm vial: i.m/i.v injection.
250mg vial: 70.00 MRP
500mg vial: 115.00 MRP
1gm vial: 215.00 MRP

❖ **ZITUM Inj. ACI**
Ceftazidime pentahydrate 250mg, 500mg & 1gm vial: i.m/i.v injection.
250mg vial: i.m/i.v 70.00 MRP
500mg vial: i.m/i.v 115.00 MRP
1gm vial: 225.00 MRP

CEFTRIAXONE[21,50]

CEFTRIAXONE: I.M/I.V Injection
Ceftriaxone is a third generation broad spectrum cephalosporin using parenteral route. It may be given in intramuscular or intravascular route, but intramuscular injection is very painful, so, in case of i.m injection lidocaine is used as solvent.
Ind: Sepsis; meningitis; abdomial infections; infections of the bones, joints, soft tissue, skin and of wounds; infections in patients with impaired defence mechanisms; renal and urinary tract infections; respiratory tract infections, particularly pneumonia, and ear, nose and throat infections; genital infections, including gonorrhoea. Perioperative prophylaxis of infections.
C/I: Known hypersenitivity to cephalosporins. Neonates with jaundice, hypoalbuminaemia, acidosis or impaired bilirubin binding.
S/E: See under Cefetamet; calcium ceftriaxone precipitates in urine or in gall bladder (discontinue if symptomatic).
Cautions: Pregnancy (particularly in the first trimester unless absolutely necessary; premature neonates. Hypersensitivity to penicillin (possibility of allergic cross-reactions), anaphylactic shock. Severe renal impairment; hepatic impairment if accompanied by renal impairment.
Dosage & admin: Usual dosage for adults and children over 12 yrs, 1-2gm once daily (every 24 hours). In severecases or infections caused by moderatiely sensitive organisms. the dousage may be raised to 4gm administer3d once daily.
Neonates (up to 2 weeks): 20- 50mg/kg daily (onces daily), not to exceed
50mg/kg. on account of the immaturity of the infant's enzyme systems. It is not necessary to differentiate between premature and infants born at term.
Infants and children (3 weeks to 12 yrs): A daily dose of 20-80mg/kg.
I.v. doses of 50mg or more per kg shoul be given by infusion over at least 30 mins.
Meningitis: infants and children- treatment begins with dose of 100mg/kg (not to exceed 4 gm.) once daily. The best result have been found with the following duration of therapy-

N. meningitidis	-	**4 days.**
H. influenzae	-	**6 days.**
S. pneumoniae	-	**7 dsys.**
Enterobacteriaceae	-	**10-14days.**



❖ **ACIPHIN I.M Inj. ACI**
Ceftriaxone 250mg, 500mg & 1gm vial: i.m injection.
250mg vial with lidocaine: 90.00 IP
500mg vial with lidocaine: 125.00 IP
1gm vial with lidocaine: 195.00 IP

❖ **ACIPHIN I.V Inj. ACI**
Ceftriaxone 250mg, 500mg & 1gm vial: i.v injection.
250mg vial with water: 90.00 MRP
500mg vial with water: 125.00 MRP
1gm vial with water: 195.00 MRP
2gm vial with water: 300.00 MRP

❖ **ARIXON I.M Inj. Beximco**
Ceftriaxone 250mg, 500mg & 1gm vial: i.m injection.
250mg vial with lidocaine: 90.00 IP
500mg vial with lidocaine: 125.00 IP
1gm vial with lidocaine: 185.00 IP

❖ **ARIXON I.V Inj. Beximco**
Ceftriaxone 250mg, 500mg & 1gm vial: i.v injection.
250mg vial with water: 90.00 IP
500mg vial with water: 125.00 IP
1gm vial with water: 185.00 IP

❖ **AXON I.M Inj. Aristopharma**
Ceftriaxone 250mg, 500mg & 1gm vial: i.m injection.
250mg vial with lidocaine: 100.00 MRP
500mg vial with lidocaine: 145.00 MRP
1gm vial with lidocaine: 195.00 MRP

❖ **AXON I.V Inj. Aristopharma**
Ceftriaxone 250mg, 500mg, 1gm & 2gm vial: i.v injection.
250mg vial with water: 100.00 MRP
500mg vial with water: 145.00 MRP
1gm vial with water: 195.00 MRP
2gm vial with water: 350.00 MRP

❖ **AXOSIN I.M Inj. Ibn Sina**
Ceftriaxone 250mg, 500mg & 1gm vial: i.m injection.
250mg vial with lidocaine: 90.00 MRP
500mg vial with lidocaine: 120.00 MRP
1gm vial with lidocaine: 160.00 MRP

❖ **AXOSIN I.V Inj. Ibn Sina**
Ceftriaxone 250mg, 500mg, 1gm & 2gm vial: i.v injection.
250mg vial with water: 90.00 MRP
500mg vial with water: 120.00 MRP
1gm vial with water: 160.00 MRP
2gm vial with water: 280.00 MRP

❖ **CEFIXON I.M Inj. Techno Drugs**
Ceftriaxone 250mg, 500mg & 1gm vial with lidocaine: i.m injection
250mg vial with lidocaine: 80.00 MRP
500mg vial with lidocaine: 120.00 MRP
1gm vial with lidocaine: 160.00 MRP

❖ **CEFIXON I.V Inj. Techno Drugs**
Ceftriaxone 250mg, 500mg & 1gm vial with water: i.v Injection
250mg vial with water: 80.00 MRP
500mg vial with water: 120.00 MRP
1gm vial with water: 160.00 MRP
2gm vial with water: 250.00 MRP

❖ **CEFTIZONE I.M Inj. Renata**
Ceftriaxone 250mg, 500mg & 1gm. vial: i.m injection.
250mg vial with lidocaine: 100.00 MRP
500mg vial with lidocaine: 140.00 MRP
1gm vial with lidocaine: 190.00 MRP

❖ **CEFTIZONE I.V Inj. Renata**
Ceftriaxone 250mg, 500mg, 1gm & 2gm vial: i.v injection.
250mg vial with water: 100.00 MRP
500mg vial with water: 140.00 MRP
1gm vial with water: 190.00 MRP
2gm vial with water: 340.00 MRP

❖ **CEFTRIX I.M Inj. Novo Healthcare**
Ceftriaxone 250mg & 500mg vial with lidocaine: i.m injection
250mg vial with lidocaine: 100.00 MRP
500mg vial with lidocaine: 140.00 MRP

❖ **CEFTRIX I.V Inj. Novo Healthcare**
Ceftriaxone 1gm vial with water: i.v Injection
1gm vial with water: 190.00 MRP

❖ **CEFTRON I.M Inj. Square**
Ceftriaxone 250mg, 500mg & 1gm vial with lidocaine: i.m injection
250mg vial with lidocaine: 100.00 MRP
500mg vial with lidocaine: 145.00 MRP
1gm vial with lidocaine: 195.00 MRP

❖ **CEFTRON I.V Inj. Square**
Ceftriaxone 250mg, 500mg 1gm & 2gm vial with water: i.v Injection
250mg vial with water: 100.00 MRP
500mg vial with water: 145.00 MRP
1gm vial with water: 195.00 MRP
2gm vial with water: 350.00 MRP

❖ **DICEPHIN I.M Inj. Drug Inter.**
Ceftriaxone 250mg, 500mg & 1gm vial with lidocaine: i.m injection
250mg vial with lidocaine: 90.00 MRP
500mg vial with lidocaine: 120.00 MRP
1gm vial with lidocaine: 160.00 MRP

❖ **DICEPHIN I.V Inj. Drug Inter.**
Ceftriaxone 250mg, 500mg & 1gm vial with

water: i.v Injection
250mg vial with water: 90.00 MRP
500mg vial with water: 120.00 MRP
1gm vial with water: 160.00 MRP
2gm vial with water: 260.00 MRP

❖ **ENOCEF I.M Inj. Sanofi-aventis**
Ceftriaxone 250mg, 500mg & 1gm vial with lidocaine: i.m injection.
250mg vial with lidocaine: 100.00 MRP
500mg vial with lidocaine: 150.00 MRP
1gm vial with lidocaine: 200.00 MRP

❖ **ENOCEF I.V Inj. Sanofi-aventis**
Ceftriaxone 250mg, 500mg & 1gm vial with water: i.v injection.
250mg vial with water: 100.00 MRP
500mg vial with water: 150.00 MRP
1gm vial with water: 200.00 MRP

❖ **ERACEF I.M Inj. Popular**
Ceftriaxone 250mg, 500mg & 1gm vial with lidocaine: i.m injection.
250mg vial with lidocaine: 85.00 MRP
500mg vial with lidocaine: 120.00 MRP
1gm vial with lidocaine: 180.00 MRP

❖ **ERACEF I.V Inj. Popular**
Ceftriaxone 250mg, 500mg, 1gm & 2gm vial with water: i.v injection.
250mg vial with water: 85.00 MRP
500mg vial with water: 120.00 MRP
1gm vial with water: 180.00 MRP
1gm vial with water x 10's pack: 1800.00 MRP
2gm vial with water: 300.00 MRP

❖ **EXEPHIN I.M Inj. Incepta**
Ceftriaxone 250mg, 500mg & 1gm vial with lidocaine: i.m injection.
250mg vial with lidocaine: 90.00 MRP
500mg vial with lidocaine: 120.00 MRP

❖ **EXEPHIN I.V Inj. Incepta**
Ceftriaxone 250mg, 500mg, 1gm & 2gm vial with water: i.v injection.
250mg vial with water: 90.00 MRP
500mg vial with water: 120.00 MRP
1gm vial with water: 160.00 MRP
2gm vial with water: 300.00 MRP

❖ **G-CEFTRIAX I.M Inj. Gonoshastha**
Ceftriaxone 250mg, 500mg & 1gm vial with lidocaine: i.m injection
250mg vial with lidocaine: 75.00 MRP
500mg vial with lidocaine: 120.00 MRP
1gm vial with lidocaine: 150.00 MRP

❖ **G-CEFTRIAX I.V Inj. Gonoshastha**
Ceftriaxone 250mg, 500mg & 1gm vial: i.v injection.
250mg vial with water: 75.00 MRP
500mg vial with water: 120.00 MRP
1gm vial with water: 150.00 MRP

❖ **IMACEF I.M Inj. General**
Ceftriaxone 250mg, 500mg & 1gm vial with lidocaine: i.m injection
250mg vial with lidocaine: 90.00 MRP
500mg vial with lidocaine: 120.00 MRP
1gm vial with lidocaine: 160.00 MRP

❖ **IMACEF I.V Inj. General**
Ceftriaxone 250mg, 500mg & 1gm vial with water: i.v Injection
250mg vial with water: 90.00 MRP
500mg vial with water: 120.00 MRP
1gm vial with water: 160.00 MRP

❖ **INOXON I.M Inj. Rephco**
Ceftriaxone 250mg, 500mg & 1gm. vial: i.m injection.
250mg vial with lidocaine: 80.00 MRP
500mg vial with lidocaine: 120.00 MRP
1gm vial with lidocaine: 160.00 MRP

❖ **INOXON I.V Inj. Rephco**
Ceftriaxone 250mg, 500mg & 1gm. vial: i.v injection.
250mg vial with water: 80.00 MRP
500mg vial with water: 120.00 MRP
1gm vial with water: 160.00 MRP

❖ **KEPTRIX I.M Inj. Apex**
Ceftriaxone 250mg, 500mg & 1gm. vial: i.m injection.
250mg vial with lidocaine: 90.00 MRP
500mg vial with lidocaine: 120.00 MRP
1gm vial with lidocaine: 160.00 MRP

❖ **KEPTRIX I.V Inj. Apex**
Ceftriaxone 250mg, 500mg & 1gm. vial: i.v injection.
250mg vial with water: 90.00 MRP
500mg vial with water: 120.00 MRP
1gm vial with water: 160.00 MRP

❖ **MEGION I.M Inj. Sandoz/Novartis**
Ceftriaxone 250mg, 500mg & 1gm vial with lidocaine: i.m injection
250mg vial with lidocaine: 100.00 MRP
500mg vial with lidocaine: 140.00 MRP
1gm vial with lidocaine: 190.00 MRP

❖ **MEGION I.V Inj. Sandoz/Novartis**
Ceftriaxone 250mg, 500mg & 1gm vial with water: i.v Injection
250mg vial with water: 100.00 MRP
500mg vial with water: 140.00 MRP
1gm vial with water: 190.00 MRP

❖ **ORICEF I.M Inj. Healthcare**
Ceftriaxone,250mg, 500mg & 1gm. vial: i.m injection.
250mg vial with lidocaine: 130.00 MRP
500mg vial with lidocaine: 200.00 MRP
1gm vial with lidocaine: 320.00 MRP

❖ **ORICEF I.V Inj. Healthcare**
Ceftriaxone 250mg, 500mg & 1gm. vial: i.v injection.
250mg vial with water: 130.00 MRP
500mg vial with water: 200.00 MRP
1gm vial with water: 320.00 MRP

❖ **ORYX I.M Inj. Rangs**
Ceftriaxone 250mg, 500mg & 1gm vial: i.m injection.
250mg vial with lidocaine: 80.00 MRP
500mg vial with lidocaine: 150.00 MRP
1gm vial with lidocaine: 200.00 MRP

❖ **ORYX I.V Inj. Rangs**
Ceftriaxone 250mg, 500mg & 1gm vial: i.v injection.
250mg vial with water: 80.00 MRP
500mg vial with water: 150.00 MRP
1gm vial with water: 200.00 MRP
1gm vial with water x 10's pack: 1000.00 MRP
2gm vial with water: 350.00 MRP

❖ **PARCEF I.M Inj. Jayson**
Ceftriaxone 250mg, 500mg & 1gm vial: i.m injection.
250mg vial with lidocaine: 90.00 MRP
500mg vial with lidocaine: 125.00 MRP
1gm vial with lidocaine: 189.00 MRP

❖ **PARCEF I.V Inj. Jayson**
Ceftriaxone 250mg, 500mg & 1gm vial: i.v injection.
250mg vial with water: 90.00 IP
500mg vial with water: 125.00 IP
1gm vial with water: 189.00 IP

❖ **RIT I.M Inj. Chemico**
Ceftriaxone 250mg, 500mg & 1gm vial: i.m injection.
250mg vial with lidocaine: 85.00 MRP
500mg vial with lidocaine: 120.00 MRP
1gm vial with lidocaine: 180.00 MRP

❖ **RIT I.V Inj. Chemico**
Ceftriaxone 250mg, 500mg & 1gm/vial with water: i.v injection
250mg vial with water: 85.00 MRP
500mg vial with water: 120.00 MRP
1gm vial with water: 180.00 MRP

❖ **ROFECIN I.M Inj. Radiant**
Ceftriaxone 250mg, 500mg & 1gm vial: i.m injection.
250mg vial with lidocaine: 170.00 MRP
500mg vial with lidocaine: 250.00 MRP
1gm vial with lidocaine: 415.00 MRP

❖ **ROFECIN I.V Inj. Radiant**
Ceftriaxone 250mg & 500mg/vial with water: i.v injection
250mg vial with water: 170.00 MRP
500mg vial with water: 250.00 MRP

❖ **TOPCEF I.M Inj. Navana**
Ceftriaxone 250mg, 500mg & 1gm vial with 1% lidocaine: i.m injection
250mg vial with lidocoine: 90.00 MRP
500mg vial with lidocaine: 130.00 MRP
1gm vial with lidocaine: 185.00 MRP

❖ **TOPCEF I.V Inj. Navana**
Ceftriaxone 250mg, 500mg & 1gm vial with water: i.v injection
250mg vial with water: 90.00 MRP
500mg vial with water: 130.00 MRP
1gm vial with water: 185.00 MRP
2gm vial with water: 300.00 MRP

❖ **TRAX I.M Inj. Medimet**
Ceftriaxone 250mg, 500mg & 1gm vial with 1% lidocaine: i.m injection
250mg vial with lidocoine: 90.00 MRP
500mg vial with lidocaine: 120.00 MRP
1gm vial with lidocaine: 160.00 MRP

❖ **TRAX I.V Inj. Medimet**
Ceftriaxone 250mg, 500mg & 1gm/vial with water: i.v injection
250mg vial with water: 90.00 MRP
500mg vial with water: 120.00 MRP
1gm vial with water: 160.00 MRP

❖ **TRAXON I.M Inj. Opsonin**
Ceftriaxone 250mg, 500mg & 1gm vial with 1% lidocaine: i.m injection
250mg vial with lidocoine: 90.00 MRP
500mg vial with lidocaine: 120.00 MRP
1gm vial with lidocaine: 160.00 MRP

❖ **TRAXON I.V Inj. Opsonin**
Ceftriaxone 250mg, 500mg 1gm & 2gm/vial with water: i.v injection
250mg vial with water: 90.00 MRP
500mg vial with water: 120.00 MRP
1gm vial with water: 160.00 MRP
2gm vial with water: 300.00 MRP

❖ **TRIBAC I.M Inj. Globe**
Ceftriaxone 250mg, 500mg & 1gm vial with 1% lidocaine: i.m injection
250mg vial with lidocoine: 90.00 MRP
500mg vial with lidocaine: 120.00 MRP
1gm vial with lidocaine: 160.00 MRP

❖ **TRIBAC I.V Inj. Globe**
Ceftriaxone 250mg, 500mg 1gm & 2gm/vial with water: i.v injection
250mg vial with water: 90.00 MRP
500mg vial with water: 120.00 MRP
1gm vial with water: 160.00 MRP
2gm vial with water: 300.00 MRP

❖ **TRIJECT I.M Inj. SK+F**
Ceftriaxone 250mg, 500mg & 1gm vial with 1% lidocaine: i.m injection
250mg vial with lidocoine: 100.00 MRP
500mg vial with lidocaine: 140.00 MRP
1gm vial with lidocaine: 190.00 MRP

❖ **TRIJECT I.V Inj. SK+F**
Ceftriaxone 250mg, 500mg & 1gm/vial with water: i.v injection
250mg vial with water: 100.00 MRP
500mg vial with water: 140.00 MRP
1gm vial with water: 190.00 MRP

❖ **TRIPHIN I.M Inj. Ziska**
Ceftriaxone 250mg, 500mg & 1gm vial with 1% lidocaine: i.m injection
250mg vial with lidocoine: 80.00 MRP
500mg vial with lidocaine: 120.00 MRP
1gm vial with lidocaine: 160.00 MRP

❖ **TRIPHIN I.V Inj. Ziska**
Ceftriaxone 250mg, 500mg & 1gm vial with water: i.v injection
250mg vial with water: 80.00 MRP
500mg vial with water: 120.00 MRP
1gm vial with water: 160.00 MRP
2gm vial with water: 250.00 MRP

❖ **TRIZON I.M Inj. Acme**
Ceftriaxone 250mg, 500mg, & 1gm vial with 1% lidocaine: i.m injection
250mg vial with lidocoine: 90.00 MRP
500mg vial with lidocaine: 120.00 MRP
1gm vial with lidocaine: 160.00 MRP

❖ **TRIZON I.V Inj. Acme**
Ceftriaxone 250mg, 500mg & 1gm vial with water: i.v injection
250mg vial with water: 90.00 MRP
500mg vial with water: 120.00 MRP
1gm vial with water: 160.00 MRP
2gm vial with water: 260.00 MRP

❖ **VERTEX I.M Inj. Orion**
Ceftriaxone 250mg, 500mg, & 1gm vial with 1% lidocaine: i.m injection
250mg vial with lidocoine: 90.00 MRP
500mg vial with lidocaine: 120.00 MRP
1gm vial with lidocaine: 160.00 MRP

❖ **VERTEX I.V Inj. Orion**
Ceftriaxone 250mg, 500mg & 1gm vial with water: i.v injection
250mg vial with water: 90.00 MRP
500mg vial with water: 120.00 MRP
1gm vial with water: 160.00 MRP
2gm vial with water: 230.00 MRP

❖ **WINNER I.M Inj. Bio-pharma**
Ceftriaxone 250mg, 500mg, & 1gm vial with 1% lidocaine: i.m injection
250mg vial with lidocoine: 90.00 MRP
500mg vial with lidocaine: 120.00 MRP
1gm vial with lidocaine: 180.00 MRP

❖ **WINNER I.V Inj. Bio-pharma**
Ceftriaxone 250mg, 500mg & 1gm vial with water: i.v injection
250mg vial with water: 90.00 MRP
500mg vial with water: 120.00 MRP
1gm vial with water: 180.00 MRP

❖ **XYLIB I.M Inj. Libra**
Ceftriaxone 250mg, 500mg & 1gm vial with 1% lidocaine: i.m injection
250mg vial with lidocoine: 90.00 IP
500mg vial with lidocaine: 120.00 IP
1gm vial with lidocaine: 160.00 IP

❖ **XYLIB I.V Inj. Libra**
Ceftriaxone 250mg, 500mg & 1gm/vial with water: i.v injection
250mg vial with water: 90.00 IP
500mg vial with water: 120.00 IP
1gm vial with water: 160.00 IP

Fourth generation

CEFEPIME[26,62]

CEFEPIME HCl: Injection
Cefepime hydrochloride is a semi-synthetic fourth generation broad-spectrum cephalosporin antibiotic for parenteral administration. It is available as cefepime hydrochloride USP 500mg vial and 1gm vial with L-arginine sterile powder for i.m & i.v injection.
Mode of action: See above under the text of cephalosporins.
Ind: Cefepime is indicated in the treatment of the following infections:
i. Pneumonia (moderate to severe);
ii. Uncomplicated and complicated urinary tract infections (including pyelonephritis);
iii. Uncomplicated skin and skin structure infections; iv. Complicated intra-abdominal infections; v. Empiric therapy for febrile neutropenic patients.
Cefepime has been shown to be active against most strains of the gram-positive Staphylococcus and Streptococcus microorganisms and most of the gram-negative microorganisms, and also active against some of the anaerobes such as clostridium perfringens and mobiluncus spp.
C/I: Cefepime is contraindicated in patients who have shown hypersensitivity reactions to the cephalosporin class of antibiotics, penicillins or other beta-lactam antibiotics & any component of the formulation.
S/E: Generally cefepime is well tolerated. However, few side-effects including rash, pruritus, urticaria, fever, headache, nausea, vomiting, diarrhea, dizziness, oral moniliasis may occur.
Precautions: In patients with impaired renal function (creatinine clearance ?60ml/min), the dose of cefepime should be adjusted. Cefepime should be advised with caution in individuals with a history of gastrointestinal diseases, particularly colitis.
Pregnancy & lactation: There are no adequate and well-controlled studies of cefepime use in pregnant women, so it should be used during pregnancy only if clearly needed.
Cefepime is excreted in human breast milk in very low concentrations, so caution should be exercised if it is administered to a nursing woman.

Dosage & admin:
Recommended dosage schedule for adults with normal renal function:
Moderate to severe pneumonia: **1gm to 2gm i.v 12 hourly for 10 days;**
Mild to moderate uncomplicated or complicated urinary tract infections (including pyelonephritis): **0.5gm to 1gm i.v or i.m 12 hourly for 7-10 days;**
Severe uncomplicated or complicated urinary tract infections (including pyelonephritis): **2gm i.v 12 hourly for10 days;**
Moderate to severe uncomplicated skin and skin structure infections: **2gm i.v 12 hourly for 10 days;**
Complicated intra-abdominal infections: **2gm i.v 12 hourly for 7-10 days;**
Empiric therapy for febrile neutropenic patients: **2gm i.v 8 hourly for 7 days;**
Septicaemia: **2gm i.v 12 hourly for 7-10 days.**
Pediatric patients (2 months up to 16 years; in weight up to 40kg):
The maximum dose for pediatric patients should not exceed the recommended adult dose.
Pneumonia: **50mg/kg i.v or i.m 12 hourly for 10 days;**
Bacterial meningitis: **50mg/kg i.v or i.m 8 hourly for 7-10 days;**
Uncomplicated or complicated urinary tract infections (including pyelonephritis): **50mg/kg i.v or i.m 12 hourly for 7-10 days;**
Uncomplicated skin & skin structure infections: **50mg/kg i.v or i.m 12 hourly for 10 days;**
Febrile neutropenic patients: **50mg/kg i.v or i.m 8 hourly for 7 days;**

Impaired hepatic function:
No adjustment is necessary for patients with impaired hepatic function.

Impaired renal function:
In patients with impaired renal function (creatinine clearance ? 60ml/min), the dose of cefepime should be adjusted. The recommended initial dose of cefepime should be the same as in patients with normal renal function except in patients undergoing hemodialysis.
Drug inter: Renal function should be monitored carefully if high doses of aminoglycosides are to be administered with cefepime because of the increased potential of nephrotoxicity and ototoxicity of aminoglycoside antibiotics. Nephrotoxicity has been reported following concomitant administration of other cephalosporins with potent diuretics such as frusemide.

❖ **CEFTIPIME IM/IV Inj. Renata**
Cefepime hydrochloride 500mg & 1gm vial with water: i.m/i.v injection.
500mg vial with water: 300.00 MRP
1gm vial with water: 550.00 MRP
❖ **CEFTIPIME 2gm IV Inj. Renata**
Cefepime hydrochloride 2gm vial with water: i.v injection.
2gm vial with water: 1100.00 MRP
❖ **EFEPIME IM/IV Inj. Ziska**
Cefepime hydrochloride 500mg & 1gm vial with water: i.m/i.v injection.
500mg vial with water: 225.00 MRP
1gm vial with water: 400.00 MRP
❖ **EFEPIME 2gm IV Inj. Ziska**
Cefepime hydrochloride 2gm vial with water: i.v injection.
2gm vial with water: 800.00 MRP
❖ **GEN 4 IM/IV Inj. Ibn Sina**
Cefepime hydrochloride 500mg & 1gm vial with water: i.m/i.v injection.
500mg vial with water: 300.00 MRP
1gm vial with water: 550.00 MRP.
❖ **GEN 4 IV Inj. Ibn Sina**
Cefepime hydrochloride 2gm vial with water: i.v injection.
2gm vial with water: 1000.00 MRP
❖ **PIME-4 IM/IV Inj. ACI**
Cefepime hydrochloride 500mg & 1gm vial with water: i.m/i.v injection.
500mg vial with water: 300.00 IP
1gm vial with water: 550.00 IP
❖ **PIME-4 2gm IV Inj. ACI**
Cefepime hydrochloride 2gm vial with water: i.v injection.
2gm vial with water: 1100.00 IP
❖ **ULTRAPIME Inj. Incepta**
Cefepime hydrochloride 500mg & 1gm vial with water: i.m/i.v injection.
500mg vial with water: 300.00 MRP
1gm vial with water: 550.00 MRP
❖ **UNIPIM Inj. Drug Inter.**
Cefepime hydrochloride 1gm vial with water: i.m/i.v injection.
500mg vial with water: 225.00 MRP
1gm vial with water: 400.00 MRP
❖ **XENIM Inj. Opsonin**
Cefepime hydrochloride 500mg & 1gm vial with water: i.m/i.v injection.
500mg vial with water: 300.00 MRP
1gm vial with water: 550.00 MRP
❖ **XIMEPIME IM/IV Inj. Globe**
Cefepime hydrochloride 500mg & 1gm vial with water: i.m/i.v injection.
500mg vial with water: 300.00 MRP
1gm vial with water: 550.00 MRP

CEFPIROME[42]

CEFPIROME: I.V Injection
Cefpirome is a fourth generation cephalosporin antibiotic that has an extended spectrum of activity to include pseudomonas aeruginosa and gram-positive organisms including methicillin-sensitive staphylococcus aureus, coagulase-negative staphylococci and enterococcus faecalis. Cefpirome is available as cefpirome sulphate INN equivalent to 1gm of cefpirome in vial for intravenous injection.
Mode of action: See above under the text of cephalosporins.
Ind: 1. Severe infection, such as septicemia, bacteremia and infections in immunosuppressed neutropenic patients with hematological malignancies.
2. Lower respiratory tract infections including pneumonia.
3. Severe urinary tract infections including pyelonephritis.
4. Skin and soft tissue infections.
5. Bone and joint infections.
6. Infections in immunocompromised patients.
7. Other infections.
C/I: Known hypersensitivity to the cephalosporin group of antibiotics.
S/E: Cefpirome is generally well tolerated. There are no predictable life threatening effects of cefpirome. Adverse gastrointestinal reactions include- diarrhea, nausea, vomiting, pseudomembraneous colitis, abdominal pain, have been reported in 3.86% of the patients. Superficial phlebitis, thrombophlebitis and infection site reaction have been noted in 2.31% of patients receiving intravenous cefpirome.
Precaution: There are no special precautions for its use in the elderly provided dosage is adjusted accordingly to renal function.
Pregnancy & lactation: The safety of cefpirome has not been established in pregnancy and as with all agents it should be administered with caution, specially during the early months of pregnancy. As cefpirome is excreted in human breast milk, either cefpirome treatment should be discontinued or breast feeding ceased.
Dosage & admin: Cefpirome is administered only through the parenteral route. The dosage is dependent upon the severity and site of infection, the susceptibility of the infecting microorganisms and age, weight and renal function of the patient. The drug is administered through intravenous injection or infusion.
The following dosages are recommended for moderate to severe infections in adult patients with normal renal function:
1. Complicated upper & lower urinary tract infections- 1gm 12 hourly twice daily; 2. Skin & soft tissue infections- 1gm 12 hourly twice daily; 3. Lower respiratory tract infections- 1 to 2gm 12 hourly twice daily;
4. Bacteremia/septicemia and severe infections- 2gm 12 hourly twice daily;
5. Infections in neutropenic patients- 2gm 12 hourly twice daily.
Dose reduction is necessary in patients with markedly reduced renal function. After an initial dose of 0.5-2gm to establish a high serum concentration, the dose should be reduced by 50% for clearances of 49-21ml in min-1 or 75% for clearances of 20ml in min-1. In end-stage renal disease, a supplementary dose equal to 50% of the recommended daily dose should be administered after each hemodialysis treatment.
The duration of treatment depends on the patient's clinical and bacteriological response.
Drug inter: There are no significant drug interactions have been observed with cefpirome.
Storage: Cefpirome vial should be stored below 25°C protected from light. Freshly reconstituted solution is always recommended. Reconstituted solution can be stored for up to 6 hours at room temperature and 24 hours in refrigerator (at 2-8°C) when prepared in water for injection BP.

❖ **FORCE Inj. Square**
Cefpirome sulphate INN equivalent to 1gm of cefpirome in vial with water: i.v injection
1gm vial with water: 400.00 MRP

Other beta-lactam Antibiotics

CARBAPENEMS

Carbapenems: Carbapenem antibiotics belong to other beta-lactam antibiotics. The important carbapenem antibiotics currently available for therapeutic use are- Imipenem & Meropenem. Both of the imipenem & meropenem are active against an unusually broad spectrum of pathogens, which include the majority of clinically significant gram-positive and gram-negative, aerobic and anaerobic strains of bacteria. This broad spectrum antibacterial activity makes these antibiotics particularly useful in the treatment of polymicrobic mixed infections, as well as initial therapy prior to the identification of the causative organisms. The important difference in pharmacokinetics of these two products is that, imipenem is inactivated in the kidney by an enzymatic activity, that is why, a specific renal enzyme inhibitor- cilastatin is added with imipenem to make it stable to the renal enzyme. But, unlike imipenem, meropenem is not inactivated in the kidney by enzymatic activity, so, meropenem is given without

cilastatin.
Mode of action: Like other beat-lactam antibiotics, carbapenems are also bactericidal and act by interfering the synthesis of bacterial cell wall.
Ind: See below under the text of individual products.
C/I: Patients with history of hypersensitivity to carbapenems or other beta-lactam antibiotics.
S/E: See below under the text of individual products
Precautions: If an allergic reaction to imipenem/ meropenem occurs, the drug should be discontinued and appropriate measures to be taken. Monitor transaminase and bilirubin levels when used in hepatic disease. Monitor for over growth of non-susceptible organisms as with other antibiotics. Caution in individuals with a history of gastro-intestinal complaints, particularly colitis. In patients who develop diarrhoea, consider diagnosis of pseudomembranous colitis. Caution, if to be co-administered with potentially nephrotoxic drugs. Carbapenem therapy may reduce serum valproic acid levels, sub-therapeutic levels may occur. As with other antibiotics, caution may be required in using meropenem as monotherapy in critically ill patients with known or suspected Pseudomonas aeruginosa lower respiratory tract infection. Regular sensitivity testing is recommended when treating Pseudomonas aeruginosa infection.
Pregnancy & lactation: Safety in pregnancy and breast-feeding mothers not established.
Dosage & admin: See below under the text of individual products.

IMIPENEM + CILASTATIN[134]

IMIPENEM + CILASTATIN: I.V Injection
Imipenem, chemically referred to as N-formimidoyl thienamycin monohydrate, is a semi-synthetic derivative of thienamycin, the parent compound produced by the filamentous bacterium streptomyces catteleya. Imipenem is one of the widest spectrum of the beta-lactam antibiotics. It is active against nearly all common bacterial species, including those resistant to aminoglycosides and newer cephalosporins. As imipenem is inactivated in the kidney by an enzyme activity, a specific renal enzyme inhibitor- cilastatin is added with imipenem to make it stable to the renal enzyme. That is why, imipenem injection is produced as a combined preparation with cilastatin. The available combined preparation is 500mg of imipenem equivalent & 500mg of cilastatin equivalent as white dry powder in vials.
Ind: The activity of imipenem against a widest spectrum of pethogens makes it particularly useful in the treatment of polymicrobic mixed aerobic/anaerobic infections as well as initial therapy prior to the identification of the causative organisms. Imipenem is used as empirical monotherapy in intensive care unit (ICU) patients with nosocomial infections.
Imipenem is indicated for the treatment of the following infections due to susceptible organisms: 1. Intra-abdominal infections, 2. Lower respiratory tract infections, 3. Gynaecological infections, 4. Septicaemia, 5. Genitourinary tract infections, 6. Bone & joint infections, 7. Skin & soft tissue infections, 8. Endocarditis.
C/I: Patients with history of hypersensitivity to carbapenems or other beta-lactam antibiotics.
S/E: Please consult the manufacturer's literature.
Precautions: See under the text of carbapenems. Pregnancy & lactation: Safety in pregnancy and breast-feeding mothers not established.
Dosage & admin: The dosage recommendations for imipenem + cilastatin (for intravenous use only) represent the quantity of imipenem to be administered. An enquivalent amount of cilastatin is also present. The total daily dosage of imipenem bases on the type or severity of infection & is given in equally divided doses based on consideration of degree of susceptibility of the pathogens, renal function & body weight.
Adult dosage schedule for patients with normal renal function:
Doses based on a patient with normal renal function (creatinine clearance >70ml/min/1.73m2) & a body weight >70kg. A reduction in doses must be made for a patient with a creatinine clearance <70ml/min/1.73m2 & /or a body weight <70kg. The reduction of doses for body weight is specially important for patients with much lower body weights and/or moderate/severe renal insufficiency. In most infections due to less susceptible organisms, the daily dose of 1-2gm should be administered in 3-4 divided doses. For the treatment of moderate infection, 1gm b.i.d dosage regimen may also be used. In infections due to less susceptible organisms, the daily dosage of imipenem may be increased to a maximum of 4gm/day or 50mg/kg/day, whichever is lower. Each dose of imipenem <500mg should be given by i.v infusion over 20-30 minutes. Each dose >500mg should be infused over 40-60 minutes. In patients who develop nausea during the infusion, the rate of infusion may be slowed.
Paediatric dosing schedule (3 months or older):
For children & infants, the following schedule is recommended: a) Children >40kg body weight should receive adult doses; b) Children and infants <40kg body weight should receive 15mg/kg at six-hour intervals. The total daily dose should not exceed 2gm. Clinical data are insufficient to recommend dosing for children less than 3 months of age, or paediatric patients with impaired renal function (serum creatinine >2mg/dl). Imipenem is not recommended for the therapy of meningitis. If meningitis is suspected, an appropriate antibiotic should be used. Imipenem may be used in children with sepsis as long as they are not suspected of having meningitis.
Reconstitution of the injection vial: **Imipenem injection vial is supplied as a white sterile dry powder containing 500mg imipenem equivalent & 500mg cilastatin equivalent. This combination is buffered with sodium bicarbonate to provide solutions in the pH range of 6.5 to 8.5.There is no significant change in pH when solutions are prepared & used as directed. This combination contains 37.5mg of sodium (1.6mEq). The injection vial should be reconstituted with the given solvent. It should be shaken until a clear solution is obtained. Variations of colour from colourless to yellow do not affect the potency of the product. The reconstituted vial content should then be diluted with the selected infusion solutions. This combined product is chemically incompatible with lacate & should not be reconstituted in diluents containing lacate. But however, this product can be administered into an i.v system through which a lacate solution is being infused. This combined product should not be mixed with or physically added to other antibiotics**
Drug inter: Please consult manufacturer's literature.
Storage: Store the dry powder vial at room tempeture (15-250C).
Note: For further information, please consult manufacturer's literature.

❖ **IMBAC 500 I.V Inj. Popular**
Imipenem 500mg + cilastatin 500mg/vial; powder for reconstitution: i.v injection.
500mg vial x 1's pack: 1195.00 MRP
❖ **IMINEM 500 I.V Inj. ACI**
Imipenem 500mg + cilastatin 500mg/vial; powder for reconstitution: i.v injection.
500mg vial x 1's pack: 1195.00 IP
❖ **IMIPEN 500 I.V Inj. Techno Drugs**
Imipenem 500mg + cilastatin 500mg/vial; powder for reconstitution: i.v injection.
500mg vial x 1's pack: 1195.00 MRP
❖ **IROPEN 500 I.V Inj. Renata**
Imipenem 500mg + Cilastatin 500mg/vial; powder for reconstitution: i.v injection.
500mg vial x 1's pack: 1195.00 MRP

MEROPENEM[95]

MEROPENEM: I.V Injection
Meropenem, a carbapenem group, initially identified as olivanic acid, which is a beta-lactamase inhibitor. Meropenem as a beta-lactam antibiotic, its antibacterial spectrum (broad spectrum) includes the majority of clinically significant gram-positive & gram-negative, aerobic & anaerobic strains of bacteria. Unlike imipenem, meropenem is not inactivated in the kidney by enzymatic activity, that is why, it is stable to the renal enzyme (which inactivates imipenem) and therefore can be given without cilastatin (a specific renal enzyme inhibitor). Meropenem has less seizure-inducing potential, & good tolerability at high doses, which makes it particularly useful for the treatment of meningitis & other CNS infections.
Mode of action: Like other beat-lactam antibiotics, it is a bactericidal antibiotic and acts by interfering the synthesis of bacterial cell wall.
Ind: Pneumonias including nosocomial pneumonias. Urinary tract infections. Intra-abdominal infections. Gynaecological infections such as endometritis and pelvic inflammatory disease. Skin and soft tissue infections. Meningitis. Septicaemia.
Besides, empiric treatment for presumed infections in adult patients with febrile neutropenia used as monotherapy or in combination with anti-viral or anti-fungal agents.

There is no experience in paediatric patients with neutropenia or primary or secondary immunodeficiency.
C/I: Patients with history of hypersensitivity to carbapenems or other beta-lactam antibiotics.
S/E: Meropenem i.v therapy is generally well tolerated. Local injection site reactions- inflammation, thrombophlebitis, pain at the site of injection. Skin reactions- rash, pruritus, urticaria. Gastrointestinal- abdominal pain, nausea, vomiting, diarrhoea, pseudomembranous colitis. Blood- reversible thrombocythaemia, eosinophilia, thrombocytopenia and neutropenia. Positive Coombs test. Reduction in partial thromboplastin time. Rarely systemic allergic reactions (hypersensitivity), which may include- angioedema and manifestations of anaphylaxis. Liver function- reversible increases in serum bilirubin, transaminases, alkaline phosphatase & lactic dehydrogenase. CNS- headache, paraesthesia and infrequently convulsions (although no casual relationship has been established). Other- oral and vaginal candidosis.
Precautions: See under the text of carbapenems.
Pregnancy & Lactation: Safety in pregnancy and breast-feeding mothers not established.
Dosage & Admin: Adults: The dosage and duration of therapy should be established depending on the type and severity of infection and the condition of the patient. The recommended daily dosage is as follows: Pneumonia, urinary tract infections, gynaecological infections such as endometritis, skin and skin structure infections- 500mg i.v every 8 hours. Nosocomial pneumonias, peritonitis, presumed infections in neutropenic patients and septicaemia- 1gm i.v every 8 hours. Meningitis- 2gm i.v every 8 hours.
Hepatic impairment: No dosage adjustment is necessary in patients with hepatic insufficiency.
Elderly patients: No dosage adjustment is required for the elderly with normal renal function or creatinine clearance values above 50ml/min.
Renal impairment: Dosage should be reduced in patients with creatinine clearance less than 51ml/min, as scheduled below.

Creatinine clearance (ml/min)	Dose (based on unit doses of 500mg, 1gm, 2gm)	Frequency
26-50	One unit dose	Every 12 hours
10 - 25	One-half unit dose	Every 12 hours
< 10	One-half unit dose	Every 24 hours

Children: 0-3 months- not recommended; 3 months-12 years- 10-20mg/kg i.v every 8 hours depending on type and severity of infection, susceptibility of the pathogens and the condition of the patient. Children over 50kg weight- adult dosage.
Meningitis- 40mg/kg i. v every 8 hours. There is no experience in children with hepatic or renal impairment.
Administration: Following reconstitution (5ml per 250mg) meropenem should be given as an intravenous bolus injection over approx. 5 minutes or by intravenous infusion (dilution in 50-200ml) over approx. 15 to 30 minutes.
Drug inter: Probenecid competes with meropenem for active tubular secretion and thus inhibits the renal excretion, with the effect of increasing the elimination half-life and plasma concentration of meropenem. As the potency and duration of action of meropenem dosed without probenecid are adequate, the co-administration of probenecid with meropenem is not recommended. However, no specific drug interaction data are available.

❖ **ARONEM I.V Inj. ACI**
Meropenem trihydrate 500mg & 1gm vial; powder for reconstitution: i.v injection.
500mg vial x 1's pack: 650.01 IP
1gm vial x 1's pack: 1200.00 IP

❖ **I-PENAM I.V Inj. Incepta**
Meropenem trihydrate 500mg & 1gm vial; powder for reconstitution: i.v injection.
500mg vial x 1's pack: 700.00 MRP
1gm vial x 1's pack: 1300.00 MRP

❖ **MEROBAC I.V Inj. Popular**
Meropenem trihydrate 500mg & 1gm vial; powder for reconstitution: i.v injection.
500mg vial x 1's pack: 995.00 MRP
1gm vial x 1's pack: 1950.00 MRP

❖ **MEROM I.V Inj. Techno Drugs**
Meropenem trihydrate 500mg & 1gm vial; powder for reconstitution: i.v injection.
500mg vial x 1's pack: 950.00 MRP
1gm vial x 1's pack: 1800.00 MRP

❖ **MEROPEN I.V Inj. Renata**
Meropenem trihydrate 500mg & 1gm vial; powder for reconstitution: i.v injection.
500mg vial x 1's pack: 995.00 MRP
1gm vial x 1's pack: 1950.00 MRP

❖ **RONEM I.V Inj. Opsonin**
Meropenem trihydrate 500mg & 1gm vial; powder for reconstitution: i.v injection.
500mg vial x 1's pack: 995.00 MRP
1gm vial x 1's pack: 1950.00 MRP

❖ **ROPENEM I.V Inj. Drug Inter.**
Meropenem trihydrate 500mg & 1gm vial; powder for reconstitution: i.v injection.
500mg vial x 1's pack: 1000.00 MRP
1gm vial x 1's pack: 1800.00 MRP

❖ **SPECBAC I.V Inj. Square**
Meropenem trihydrate 500mg & 1gm vial; powder for reconstitution: i.v injection.
500mg vial x 1's pack: 995.00 MRP
1gm vial x 1's pack: 1950.00 MRP

Monobactams

AZTREONAM[21,51]

AZTREONAM: I.M/I.V Injection
It is a monocyclic beta-lactam (monobactam) antibiotic with an antibacterial spectrum limited to gm-negative aerobic bacteria.
Mode of action: Like other beat-lactam antibiotics, it is a bactericidal antibiotic and acts by interfering the synthesis of bacterial cell wall.
Ind: Gram-negative infections including Pseudomonas aeruginosa, Haemophilus influenzae, N. meningitidis. It is also effective against N. gonorrhoeae.
Aztreonam should not be used alone for 'blind' treatment since it is not active against Gram-positive organisms.
C/I: Aztreonam hypersensitivity. Pregnancy and breast-feeding.
S/E: Nausea, vomiting, diarrhoea, abdominal cramps; mouth ulcers, altered taste; jaundice and hepatitis; blood disorders (including thrombocytopenia and neutropenia); urticaria and rashes.
Cautions: Hypersensitivity to beta-lactam antibiotics; hepatic impairment; reduce dose in renal impairment.
Dose: By i.m injection or i.v injection or infusion, 1gm every 8 hours or 2gm every 12 hours; 2gm every 6-8 hours for severe infections (including systemic Pseudomonas aeruginosa and lung infections in cystic fibrosis); single doses over 1gm i.v route only. Child- over 1 week, by i.v injection or infusion, 30mg/kg every 6-8 hours increased in severe infections; for child of 2 years or older to 50mg/kg every 6-8 hours; max. 8gm daily. Urinary-tract infections, 0.5-1gm every 8-12 hrs. Gonorrhoea/cystitis, by i.m injection, 1gm as a single dose.

❖ **AZACTAM Inj. Squibb/Kapricorn**
Aztreonam 500mg & 1gm/vial: injection
500mg vial: 261.99 MRP
1gm vial: 409.96 MRP

1.3 Tetracycline Group of Drugs

TETRACYCLINE[21,33]

TETRACYCLINE: Capsule/ Syrup/ Injection
Ind: Broad spectrum antibiotic i. e. infections due to gram+ve and gram-ve bacteria, brucella, chlamydia, mycoplasma, rickettsiae, spirochetes & large viruses; severe acne vulgaris, resistant malaria.
C/I: Hypersensitivity to any tetracycline; renal failure; pregnancy; infants & young children under 12 yrs. of age; SLE.
S/E: Gastro-intestinal tract discomforts; overgrowth of commensal organisms, superinfection with resistant organisms; staining of bone & teeth; rarely allergic reactions; nausea, vomiting, diarrhoea.
Cautions: Incompatible with penicillins & other bactericidal antimicrobial agents; renal impairment; pregnancy & childhood.
Dosage & admin: By mouth, 250-500mg every 6 hrs; By i.m. inj, 100-200mg every 6-8 hrs; By i. v. infusion, 500mg every 12 hrs.
Early Syphilis, 500mg every 6 hrs. for 15 days. Non gonococcal urethritis, 500mg every 6 hours for 7-21 days.

❖ **A-TETRA Cap. Acme**
Tetracycline 500mg/capsule
100's pack: 228.00 MRP
❖ **A-TETRA Tab. Acme**
Tetracycline 500mg/tablet
100's pack: 166.00 MRP
❖ **BACTOCYCLINE Cap. Medicon**
Tetracycline 250mg/capsule
100's pack: 130.00 MRP
❖ **BPTETRA Cap. Bristol**
Tetracycline 250mg/capsule
100's pack: 100.00 MRP
❖ **CAPTA Cap. Chemico**
Tetracycline 250mg/capsule
100's pack: 100.00 MRP
❖ **G-TETRACYCLINE Cap. Gonoshas.**
Tetracycline 250mg/capsule
100's pack: 121.00 MRP
❖ **JMYCIN Cap. Jayson**
Tetracycline 250mg/capsule
100's: pack: 130.00 MRP
❖ **OMNIMYCIN Cap. Desh Pharma**
Tetracycline 500mg/capsule
100's pack: 215.00 MRP
❖ **RANDAMYCIN Cap. Desh**
Tetracycline 250mg/capsule.
60's pack: 72.00 MRP
❖ **TETCLIN Cap. Pacific**
Tetracycline 250mg/capsule
100's pack: 100.00 MRP
❖ **TETRACLINE Cap. Seema**
Tetracycline 250mg/capsule
100's pack: 126.00 MRP
❖ **TETRACYCLINE Cap. A.P.C Pharma**
Tetracycline 250mg/capsule
100's pack: 100.00 MRP
❖ **TETRACYCLINE Cap. Elixir**
Tetracycline 250mg & 500mg/capsule
250mg x 100's pack:
500mg x 100's pack:
❖ **TETRACYCLINE Cap. Pharmadesh**
Tetracycline 250mg/capsule
100's pack: 100.00 MRP
❖ **TETRACYCLINE Cap. Skylab**
Tetracycline 250mg/capsule
100's pack: 75.00 MRP
❖ **TETRACYCLINE-H Cap. Hudson**
Tetracycline 250mg/capsule
100's pack: 100.00 MRP
❖ **TETRACYN Cap. Renata**
Tetracycline 250mg & 500mg/capsule
250mg x 100's pack: 122.00 MRP
500mg x 100's pack: 202.00 MRP
❖ **TETRAGEN Cap. General**
Tetracycline 250mg/capsule
100's pack: 135.00 MRP
❖ **TETRAICIN Cap. Ziska**
Tetracycline 250mg/capsule
100's pack: 100.00 MRP
❖ **TETRALIN Cap. Belsen**
Tetracycline 250mg/capsule
100's pack: 75.00 MRP
❖ **TETRAM Cap. Modern**
Tetracycline 250mg/capsule
100's pack: 132.00 MRP
❖ **TETRAMET Cap. Medimet**
Tetracycline 250mg/capsule
100's pack: 132.00 MRP
❖ **TETRAMIN Cap. Aexim**
Tetracycline 250mg/capsule
100's pack: 75.00 MRP
❖ **TETRAMYCIN Cap. Asiatic**
Tetracycline 250mg/capsule
100's pack: 130.00 MRP
❖ **TETRASINA Cap. Ibn Sina**
Tetracycline 250mg & 500mg/capsule
250mg x 100's pack: 126.00 MRP
500mg x 50's pack: 91.00 MRP
❖ **TETRAX Cap. Square**
Tetracycline 500mg/capsule
500mg x 100's pack: 228.00 MRP
❖ **TETRAZEN Cap. Zenith**
Tetracycline 250mg/capsule
250mg x 100's pack: 100.00 MRP
❖ **TITACIN Cap. Supreme**
Tetracycline 250mg & 500mg/capsule
250mg x 100's pack: 130.00 MRP
500mg x 100's pack: 200.00 MRP

OXYTETRACYCLINE[21,33]

OXYTETRACYCLINE: Capsule/ Syrup/Injection
Ind: Broad spectrum antibiotic i. e. infections due to gram+ve and gram-ve bacteria, brucella, chlamydia, mycoplasma, rickettsiae, spirochetes & large viruses; severe acne vulgaris, resistant malaria.
C/I; S/E; Caution: See above under tetracycline.
Dosage & admin: By mouth, 250-500 mg every 6 hours. BY i. m injection, 100 mg every 8-12 hours. By slow i. v injection, 250-500 mg every 12 hours.

❖ **CHEMOMYCIN Cap. Salton**
Oxytetracycline 250mg/capsule
100's pack: 110.00 MRP
❖ **ORAMYCIN Cap. Desh Pharma**
Oxytetracycline 250mg & 500mg/capsule
250mg x 60's pack: 72.00 MRP
500mg x 100's pack: 215.00 MRP
❖ **OXACIN Cap. Doctor's**
Oxytetracycline 250mg/capsule
100's pack: 85.00 MRP
❖ **OXECYLIN Cap. Acme**
Oxytetracycline 250mg/capsule
100's pack: 122.00 MRP
❖ **OXYTETRACYCLINE Cap. Elixir**
Oxytetracycline 250mg/capsule
100's box:
❖ **RENAMYCIN Cap. Renata**
Oxytetracycline 250mg/capsule
100's pack: 122.00 MRP
❖ **RENAMYCIN Inj. Renata**
Oxytetracycline 50mg/ml: injection.
10ml vial: 16.12 MRP

DOXYCYCLINE[21,33]

DOXYCYCLINE: Capsule/Injection
Ind: Broad spectrum antibiotic i.e infections due to gram+ve and gram-ve bacteria, brucella, chlamydia, mycoplasma, rickettsiae, spirochetes & large viruses; severe acne vulgaris, resistant malaria; and also chronic prostatitis and sinusitis.
C/I; S/E & Caution: See above under tetracycline, but may be used in renal impairment; avoid in porphyria.
Dosage & admin: 200 mg on 1st day, then 100 mg (1 cap) daily (twice in severe infections including chronic UTI).
Acne, 50mg daily for 6-12 weeks or longer

❖ **APDOX Cap. Apex**
Doxycycline 100mg/capsule
100's pack: 125.00 MRP
❖ **ASIDOX Cap. Asiatic**
Doxycycline 100mg/capsule
100's pack: 200.00 MRP
❖ **BPDOX Cap. Bristol**
Doxycycline 100mg/capsule
100's pack: 150.00 MRP
❖ **COSDOX Cap. Cosmo Pharma**
Doxycycline 100mg/capsule
100's pack: 200.00 MRP
❖ **DELACIN Cap. Aexim**
Doxycycline 100mg/capsule
100's pack: 100.00 MRP
❖ **DOPAC Cap. Pacific**
Doxycycline 100mg/capsule
100's pack: 200.00 MRP
❖ **DOXA-100 Cap. Apollo**
Doxycycline 100mg/capsule
50's pack: 101.00 IP
100's pack: 202.00 IP
❖ **DOXACIL Cap. Square**
Doxycycline 100mg/capsule
100's pack: 200.00 MRP
❖ **DOXACIN Cap. Desh Phar ma**
Doxycycline 100mg/capsule
100's pack: 215.00 MRP
❖ **DOXCLINE Cap. Alco Pharma**
Doxycycline 100mg/capsule
100's pack: 200.00 MRP
❖ **DOXICAP Cap. Renata**
Doxycycline 50mg & 100mg/capsule
50mg x 50's pack: 71.00 MRP
100mg x 100's pack: 219.00 MRP
❖ **DOXICEN Cap. CPL**
Doxycycline 100mg/capsule
100's pack: 200.00 MRP
❖ **DOXYCIN Cap. Cosmic**
Doxycycline 100mg/capsule
100's pack: 210.00 MRP
❖ **DOXICLINE Cap. Ziska**
Doxycycline 100mg/capsule
100's pack: 200.00 MRP
❖ **DOXICO Cap. Supreme**
Doxycycline 100mg/capsule
100's pack: 215.00 MRP
❖ **DOXICON Cap. Medicon**
Doxycycline 100mg/capsule
100's pack: 220.00 MRP
❖ **DOXIGEN Cap. General**
Doxycycline 100mg/capsule
100's pack: 215.00 MRP
❖ **DOXIKEM Cap. Chemico**
Doxycycline 100mg/capsule
100's pack: 200.00 MRP
❖ **DOXILIN Cap. Ambee**
Doxycycline 100mg/capsule
100's pack: 212.00 MRP
❖ **DOXIMET Cap. Medimet**
Doxycycline 100mg/capsule
100's pack: 220.00 MRP
❖ **DOXIN Cap. Opsonin**
Doxycycline 100mg/capsule
100's pack: 200.00 MRP
❖ **DOXIPAN Cap. Salton**
Doxycycline 100mg/capsule

100's pack: 200.00 MRP

❖ **DOXISYN Cap. Syntho**
Doxycycline 100mg/capsule
100's pack: 200.00 MRP

❖ **DOXIZEN Cap. Zenith**
Doxycycline 100mg/capsule
100's pack: 215.00 MRP

❖ **DOX P Cap. Proteety**
Doxycycline 100mg/capsule
100's pack: 128.00 MRP

❖ **DOXSEEM Cap. Seema**
Doxycycline 100mg/capsule
100's pack: 200.00 MRP

❖ **DOXY-A Cap. Acme**
Doxycycline 100mg/capsule
100's pack: 210.00 MRP

❖ **DOXYLIN Cap. Skylab**
Doxycycline 100mg/capsule
100's pack: 217.00 MRP

❖ **DOXYSINA Cap. Ibn Sina**
Doxycycline 100mg/capsule
100's pack: 202.00 IP

❖ **DOXYSON Cap. Hudson**
Doxycycline 100mg/capsule
100's pack: 140.00 MRP

❖ **E-DOXY Cap. Edruc**
Doxycycline 100mg/capsule
100's pack: 200.00 MRP

❖ **ELIDOX Cap. Elixir**
Doxycycline 100mg/capsule
100's pack:

❖ **FARDOX Cap. Pharmadesh**
Doxycycline 100mg/capsule
100's pack: 157.00 MRP

❖ **IMPEDOX Cap. ACI**
Doxycycline 100mg/capsule
100's pack: 215.00 MRP

❖ **MARDOX Cap. Marksman**
Doxycycline 100mg/capsule
100's pack: 200.00 MRP

❖ **MEGADOX Cap. Beximco**
Doxycycline 100mg/capsule
100's pack: 215.00 IP

❖ **MONADOX Cap. Amico**
Doxycycline 100mg/capsule
100's pack: 150.00 MRP

❖ **MYDOX Cap. Mystic**
Doxycycline 100mg/capsule
100's pack: 200.00 MRP

❖ **ORIODOX Cap. Orion**
Doxycycline 100mg/capsule
100's pack: 210.00 MRP

❖ **PEDOX Cap. A.P.C Pharma**
Doxycycline 100mg/capsule
100's pack: 150.00 MRP

❖ **SUBRAMYCIN Cap. Gaco**
Doxycycline 100mg/capsule
50's pack: 103.44 MRP

❖ **UNIDOX Cap. Globe**
Doxycycline 100mg/capsule
100's pack: 122.00 MRP

❖ **VIB Cap. Modern**
Doxycycline 100mg/capsule
100's pack: 200.00 MRP

❖ **VIDOX Cap. Jayson**
Doxycycline 100mg/capsule
50's pack: 88.50 IP

❖ **VITROCIN Cap. Nipa**
Doxycycline 100mg/capsule
100's pack: 200.00 MRP

1.4 Aminoglycosides

Aminoglycosides that are used as bactericidal antibiotics include[21]-
Amikacin, Gentamicin, Kanamycin, Neomycin, Netilmicin, Tobramycin.

AMIKACIN[52]

AMIKACIN: Injection
Amikacin is a semi-synthetic aminoglycosidic antibiotic.
Ind: Amikacin is indicated in the short-term treatment of serious infections due to susceptible strains of Gram-negative bacteria. It is effective in bacterial septicemia (including neonatal sepsis); in serious infections of the respiratory tract, bones and joints, central nervous system (including meningitis) and skin and soft tissue; intra-abdominal infections (including peritonitis); and in burns and post-operative infections (including post-vascular surgery). Amikacin is also effective in serious complicated and recurrent urinary tract infections due to susceptible Gram-negative organisms. Amikacin may be considered as initial therapy in suspected Gram-negative infections & therapy may be started before obtaining the results of susceptibility. Amikacin is also e ffective in infections caused by Gentamycin and/or Tobramycin resistant strains of Gram-negative organisms. Amikacin has also been shown to be effective in Staphylococcal infection and may be considered as initial therapy under certain condition in the treatment of known suspected Staphylococcal disease such as, severe infections where the causative organism may either a Gram-negative bacterium or Staphylococcus infection due to susceptible strains of Staphylococcal/Gram-negative infections. In certain severe infections such as neonatal sepsis, concomitant therapy with a penicillin type drug may be indicated because of the possibility of infections due to Gram-positive organism such as Streptococci or Pneumococci.
C/I: A history of hypersensitivity or serious toxic reaction to aminoglycosides is contraindicated. Pregnancy & lactation: The safety of Amikacin in pregnancy & lactation has not yet been established.
S/E: When the recommended precautions & dosages are followed the incidence of toxic reactions, such as tinnitus, vertigo, and partial reversible or irreversible deafness, skin rash, drug fever, heada-che, paraesthesia, nausea and vomiting is low. Urinary signs of renal irritation, azo-taemia and oliguria have been reported.
Dosage & admin: Adults & children: 15mg/kg/day in two equally divided doses (equivalent to 500mg bid in adults). Use of the 100mg/2ml strength is recommended for children for the accurate measurement of the appropriate dose.
Neonates & premature children: **An initial loading dose of 10mg/kg followed by 15mg/kg/day in two equally divided doses.**
Elderly: **Doses should be adjusted under impaired renal function in elderly.**
Life-threatening infections and/or those caused by pseudomonas: **The adult dose may be increased to 500mg every eight hours but shouldneither exceed 1.5gm/day nor be administered for a period longer than 10 day. A maximum total adult dose of 15gm should not be exceeded.**
Urinary tract infections (other than pseudomonal infections): **7.5mg/kg/day in two equally divided doses (equivalent to 250mg b.i.d in adulls).**
Inpaired renal function: **In patient with impaired renal function the daily dose should be reduced and/or the intervals between doses increased to avoid accumulation of the drug.**
Simple doses schedule for renal impairment is given below-
Mild impairment- 500mg every 18 hours.
Moderate impairment- 500mg every 24 hours.
Severe impairment- 250mg every 24 hours.
Administration: **In most infections the intramuscular route is preferred, but in life-threatening infections, or in patients in whom intramuscular injection route is not feasible the intravenous route may be used.**
Intraperitoneal use- Amikacin may be used as an irrigant after recovery from anaesthesia in concentration of 0.25%.
Other route of administration: **Amikacin in concentration of 0.25% may be used satisfactorily as irrigation solution in abscess cavities, the pleural space, the peritoneum and the cerebral ventricles.**
Overdose: In the event of overdose or toxic reaction, peritoneal dialysis or haemodialysis will aid in the removal of Amikacin from the blood.
Phamaceutical precautions: Amikacin should be stored in a cool dry place, protected from light.

❖ **AMIBAC Inj. Popular**
Amikacin sulphate USP 100mg/2ml ampoule & 500mg/2ml ampoule: i.m/i.v injection.
100mg (2ml) amp x 10's pack: 160.00 MRP
500mg (2ml) amp x 10's pack: 480.00 MRP

❖ **CINAMAK Inj. Techno Drugs**
Amikacin sulphate USP 250mg/2ml ampoule & 500mg/2ml ampoule: i.m/i.v injection.
250mg (2ml) amp x 10's pack: 120.00 MRP
500mg (2ml) amp x 10's pack: 210.00 MRP

❖ **KACIN Inj. ACI**
Amikacin sulphate USP 100mg/2ml ampoule & 500mg/2ml ampoule: i.m/i.v injection.
100mg (2ml) amp x 10's pack: 160.00 MRP
500mg (2ml) amp x 10's pack: 480.00 MRP

❖ **PSUDONIL Inj. Drug Inter.**
Amikacin sulphate USP 250mg/ampoule & 500mg/ampoule: i.m/i.v injection.
250mg amp x 5's pack: 150.00 MRP
500mg amp x 5's pack: 225.00 MRP

GENTAMICIN[21,33]

GENTAMICIN: Injection/Powder
Ind: Septicaemia & neonatal sepsis; meningitis and other CNS infections; chest infections; biliary tract infections; acute pyelonephritis or prostatitis; endocarditis caused by Strep. viridens or faecalis (with a penicillin); wound infection & burns; gonorrhoea & persistant strains of both gram+ve & gram-ve organisms.

C/I: Hypersensitivity to gentamycin; pregnancy; pre-existing neurogenic disorder of the ear, myasthenia gravis.
S/E: Nephrotoxicity, Ototoxicity.
Cautions: Renal impairment, early pregnancy, premature infants & neonates.
Dosage & admin: By i.m. or slow i.v. injection or infusion: severe infections, 5mg/kg daily in divided doses at 6 or 8 hourly; other systemic infections 2-5mg/kg daily at divided doses. In renal impairment the interval between successive doses should be increased to 12 hours when creatinine clearence is 30-70 ml/min. 24 hours for 10-30 ml/min. 48 hours for 5-10 ml/min. 3-4 days after dialysis for less than 5ml/min.
Gonorrhoea, 240 mg as a single dose.
Child, up to 2 wks. 3 mg/kg 12 hourly; 2 wks to 12 yrs, 2 mg/kg every 8 hours.
***By intrathecal injection:* 1 mg daily, with 2-4 mg/kg daily by i. m injection in divided doses every 8 hours.**

❖ **EGEN Inj. Edruc**
Gentamicin 80mg/2ml ampoule: injection
5 amps pack: 47.50 MRP
❖ **GENACYN Inj. Square**
Gentamicin 80mg/2ml ampoule: injection
10 amps pack: 101.10 MRP
❖ **GENACYN Paed. Inj. Square**
Gentamicin 20mg/2ml ampoule: injection
10 amps pack: 60.70 MRP
❖ **GENTABAC Inj. Popular**
Gentamicin sulph. 20mg & 80mg/2ml ampoule: injection
20mg (2ml) x 10 amps pack: 60.50 MRP
80mg (2ml) x 10 amps pack: 101.10 MRP
❖ **GENTASOL Inj. Techno Drugs**
Gentamicin 80mg/2ml ampoule: injection
10 amps pack: 95.00 MRP
❖ **GENTIN Inj. Opsonin**
Gentamicin sulph. 20mg & 80mg/2ml ampoule: injection
20mg (2ml) x 25 amps: 150.00 MRP
80mg (2ml) x 25 amps: 250.00 MRP
❖ **G-GENTAMICIN Inj. Gonoshas**
Gentamicin sulph. 40mg & 80mg/2ml ampoule: injection
40mg (2ml) x 25 amps pack: 150.00 MRP
80mg (2ml) x 25 amps pack: 278.25 MRP
❖ **INTAMYCIN Inj. Incepta**
Gentamicin sulph. 20mg & 80mg/2ml ampoule: injection
20mg (2ml) x 10 amps pack: 60.00 MRP
80mg (2ml) x 10 amps pack: 100.00 MRP
❖ **INVIGEN Inf. Beximco**
Gentamicin sulph. 80mg/100ml (i.e 0.08% w/v): i.v infusion.
100ml bot for i.v infusion: 47.03 MRP
❖ **OPTIMYCIN Inj. Aristopharma**
Gentamicin sulph. 80mg/2ml ampoule: injection
80mg (2ml) x 10 amps pack: 100.00 MRP

NETILMICIN[21,71]

❖ **NETROMYCIN Inj. Schering Plough/Janata Health Care**
Netilmicin sulphate 50mg/1ml ampoule & 200mg/2ml ampoule: Injection
Ind: Serious gram-negative infections resistant to gentamicin
C/I; S/E; Cautions: See under gentamicin
Dose: By i.m injection or by i.v injection over 3-5 minutes or by i.v infusion, 4-6mg/kg daily, as a single daily does or in divided doses every 8 or 12 hours; in severe infections, up to 7.5 mg/kg daily in divided doses every 8 hours (reduced as soon as clinically indicated, usually within 48 hours). Neonate up to 1 week, 3mg/kg every 12 hours. Infant over 1 week 2.5-3mg/kg every 8 hours.
Child 2-2.5mg/kg every 8 hours.
Urinary-tract infection, 150mg as a single daily dose for 5 days. Gonorrhoea, 300mg as a single dose.
50mg (1ml) amp x 1's pack: 309.59 MRP
200mg (2ml) amp x 1's pack: 846.48 MRP

STREPTOMYCIN

STREPTOMYCIN: Streptomycin now a day almost entirely reserved for the treatment of tuberculosis so, this has been discussed under the group of anti-tubercular drugs.

1.5 Macrolides

Macrolides include-
Azithromycin, Clarithromycin, Erythromycin, Roxithromycin, Spiramycin.

ERYTHROMYCIN[21,33]

ERYTHROMYCIN: Tablet/Syrup/ Injection
Ind: An alternative to penicillin in hypersensitive patients (such as in streptococcal, pneumococcal- as in resp. tract infections, staphylococcal, treponemal & gonorrhoeal infections; sinusitis; an alternative to tetracycline, in mycoplasma pneumoniae infection; also recommended for diphtheria, pertusis and clostridial infections.
C/I: Pre-existing hepatic disorder; history of hypersensitivity.
S/E: Nausea, vomiting, abdominal discomfort, diarrhoea (antibiotic-associated colitis reported); urticaria, rashes and other allergic reactions; reversible hearing loss reported after large doses; cholestatic jaundice and cardiac effects (including chest pain and arrhythmias) repored.
Cautions: Hepatic and renal impairment; prolongation of QT interval (ventricular tachycardia reported); porphyria; pregn-ancy (not known to be harmful) and breast feeding (only small amounts in milk).
Arrhythmias: avoid concomitant administration with astemizole, terfenadine or cisapride.
Dosage & admin: By mouth: Adult, 250-500mg every 6 hours; serious infections, upto 4 gm daily. Child, upto 2 years 125mg every 6 hours, 2-8 years 250mg every 6 hours.
Acne, 250mg twice daily; maintenance, 250mg once daily.
Early syphilis, 500mg 4 times daily for 14 days.
By i.m or i.v. injection: Adult-100 mg every 4 to 8 hours. Child-25-50 mg/kg body-wt. i.m or i.v daily in divided doses.

❖ **A-MYCIN Tab. Aristopharma**
Erythromycin 250mg & 500mg/tablet
250mg x 100's pack: 425.00 MRP
500mg x 50's pack: 400.00 MRP
❖ **A-MYCIN Susp. Aristopharma**
Erythromycin 125mg/5ml: suspension
100ml bot: 60.00 MRP
❖ **A-MYCIN DS Susp. Aristopharma**
Erythromycin 250mg/5ml: suspension
100ml bot: 103.00 MRP
❖ **A-MYCIN Paediatric Susp. Aristopharma**
Erythromycin 200mg/5ml: suspension
60ml bot: 60.00 MRP
❖ **ARIGRAM Susp. CPL**
Erythromycin 125mg/5ml: suspension
100ml bot: 60.00 MRP
❖ **E-BAC Susp. Popular**
Erythromycin 125mg/5ml: suspension
100ml bot: 56.00 IP
❖ **ECIN-DS Tab. Gaco**
Erythromycin 500mg/tablet.
500mg x 28's pack: 224.08 MRP
❖ **ECIN Susp. Gaco**
Erythromycin 125mg/5ml: suspension
100ml bot: 60.00 MRP
❖ **EDRY Susp. Edruc**
Erythromycin 125mg/5ml: suspension
100ml bot: 55.00 MRP
❖ **E-LID Susp. Syntho**
Erythromycin 125mg/5ml: suspension
100ml bot: 54.00 MRP
❖ **EM-500 Tab. Modern**
Erythromycin 500mg/tablet
20's pack: 160.00 MRP
❖ **EM Susp. Modern**
Erythromycin 125mg/5ml: suspension
100ml bot: 60.00 MRP
❖ **EMYCIN Tab. Medimet**
Erythromycin 250mg/tablet.
50's pack: 243.00 MRP
❖ **EMYCIN Susp. Medimet**
Erythromycin 125mg/5ml: suspension
100ml bot: 60.94 MRP
❖ **ERIXIN Susp. Amico**
Erythromycin 125mg/5ml: suspension
100ml bot: 57.00 MRP
❖ **ERIXIN Drop Amico**
Erythromycin 200mg/5ml: drop
60ml drop: 60.00 MRP
❖ **ERMAC Susp. Opsonin**
Erythromycin 125mg/5ml: suspension
100ml bot: 56.64 MRP
❖ **ERO Susp. Hudson**
Erythromycin 125mg/5ml: suspension
100ml bot: 56.00 MRP
❖ **EROCIN Tab. Acme**
Erythromycin 250mg & 500mg/tablet
250mg x 50's pack: 242.00 MRP
500mg x 30's pack: 258.00 MRP
❖ **EROCIN Susp. Acme**
Erythromycin 125mg/5ml: suspension

100ml bot: 56.64 MRP

❖ **EROM Tab. Chemico**
Erythromycin 250mg & 500mg/tablet
250mg x 100's pack: 485.00 MRP
500mg x 50's pack: 430.00 MRP

❖ **EROM Susp. Chemico**
Erythromycin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **EROMAC Susp. General**
Erythromycin 125mg/5ml: suspension
100ml bot: 61.00 MRP

❖ **EROMED Susp. Aexim**
Erythromycin 125mg/5ml: suspension
100ml bot: 55.00 MRP

❖ **EROMYCIN Tab. Square**
Erythromycin 250mg/tablet
50's pack: 217.50 MRP

❖ **EROMYCIN DS Tab. Square**
Erythromycin 500mg/tablet
30's pack: 242.70 MRP

❖ **EROMYCIN Susp. Square**
Erythromycin 125mg/5ml: suspension
100ml bot: 56.64 MRP

❖ **EROMYCIN Drop Square**
Erythromycin 200mg/5ml: drop
60ml drop: 60.00 MRP

❖ **ERONA 500 Tab. Delta**
Erythromycin 500mg/tablet
50's pack: 400.02 MRP

❖ **ERONA Susp. Delta**
Erythromycin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **ERONIX Susp. Ziska**
Erythromycin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **EROSA Tab. Bio-pharma**
Erythromycin 250mg & 500mg/tablet
250mg x 100's pack: 400.00 MRP
500mg x 50's pack: 400.00 MRP

❖ **EROSA Susp. Bio-pharma**
Erythromycin 125mg/5ml: suspension
100ml bot: 55.00 MRP

❖ **E-ROX 500 Tab. Desh Pharma**
Erythromycin 500mg/tablet
50's pack: 350.00 MRP

❖ **E-ROX Susp. Desh Pharma**
Erythromycin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **ERRIN Susp. Radiant**
Erythromycin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **ERY-250 Tab. Alco Pharma**
Erythromycin 250mg/tablet
50's pack: 200.00 MRP

❖ **ERY-500 Tab. Alco Pharma**
Erythromycin 500mg/tablet
50's pack: 350.00 MRP

❖ **ERY Susp. Alco Pharma**
Erythromycin 125mg/5ml: suspension
100ml bot: 50.00 MRP

❖ **ERYBAC Tab. Drug Inter.**
Erythromycin 250mg/tablet
50's pack: 200.00 MRP

❖ **ERYBAC Susp. Drug Inter.**
Erythromycin 125mg/5ml: suspension
100ml bot: 55.00 MRP

❖ **ERYCIN Tab. Somatec**
Erythromycin 250mg & 500mg/tablet
250mg x 50's pack: 215.00 MRP
500mg x 30's pack: 240.00 MRP

❖ **ERYCIN Susp. Somatec**
Erythromycin 125mg/5ml: suspension
100ml bot: 56.00 MRP

❖ **ERYLIN Susp. Cosmic**
Erythromycin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **ERYMEX Tab. Ibn Sina**
Erythromycin 500mg/tablet
30's pack: 240.00 MRP

❖ **ERYMEX Susp. Ibn Sina**
Erythromycin 125mg/5ml: suspension
100ml bot: 55.00 MRP

❖ **ERYNET Susp. Bristol**
Erythromycin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **ERYPED Susp. UniHealth**
Erythromycin 124mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **ERYROX Tab. Navana**
Erythromycin 500mg/tablet
30's pack: 240.00 MRP

❖ **ERYROX Susp. Navana**
Erythromycin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **ERYSEEM-500 Tab. Seema**
Erythromycin 500mg/tablet
20's pack: 160.00 MRP

❖ **ERYSEEM Susp. Seema**
Erythromycin 125mg/5ml: suspension
100ml bot: 56.00 MRP

❖ **ERYTH Susp. Marksman**
Erythromycin 125mg/5ml: suspension
100ml bot: 55.00 MRP

❖ **ERYTHIN Tab. ACI**
Erythromycin 500mg/tablet
30's pack: 240.00 MRP

❖ **ERYTHIN Susp. ACI**
Erythromycin 125mg/5ml: suspension
100ml bot: 61.06 MRP

❖ **ERYTHRO 500 Tab. Medicon**
Erythromycin 500mg/tablet
500mg x 30's pack: 240.00 MRP

❖ **ERYTHRO Susp. Medicon**
Erythromycin 125mg/5ml: suspension
100ml bot: 56.00 MRP

❖ **ERYTHROMYCIN-A Susp. Ad-din**
Erythromycin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **ERYTHROX Tab. Renata**
Erythromycin 250mg & 500mg/tablet
250mg x 50's pack: 242.50 MRP
500mg x 50's pack: 429.50 MRP

❖ **ERYTHROX Susp. Renata**
Erythromycin 125mg/5ml: suspension
100ml bot: 61.07 MRP

❖ **ERYZEN Tab. Zenith**
Erythromycin 250mg & 500mg/tablet
250mg x 60's pack: 261.00 MRP
500mg x 20's pack: 172.00 MRP

❖ **ERYZEN Susp. Zenith**
Erythromycin 125mg/5ml: suspension
100ml bot: 56.64 MRP

❖ **ETHRO Susp. Pharmadesh**
Erythromycin 125mg/5ml: suspension
100ml bot: 55.00 MRP

❖ **ETHROLEX 500 Tab. Mystic**
Erythromycin 500mg/tablet
30's pack: 217.50 MRP

❖ **ETHROLEX Susp. Mystic**
Erythromycin 125mg/5ml: suspension
100ml bot: 54.50 MRP

❖ **ETROCIN Tab. Beximco**
Erythromycin 250mg & 500mg/tablet
250mg x 100's pack: 455.00 MRP
500mg x 50's pack: 430.00 MRP

❖ **ETROCIN Susp. Beximco**
Erythromycin 125mg/5ml: suspension
100ml bot: 60.18 MRP

❖ **EURO Tab. Nipa**
Erythromycin 250mg & 500mg/tablet
250mg x 50's pack: 200.00 MRP
500mg x 30's pack: 225.00 MRP

❖ **EURO Susp. Nipa**
Erythromycin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **FIRMAC Tab. Incepta**
Erythromycin 250mg & 500mg/tablet
250mg x 50's pack: 225.00 MRP
500mg x 30's pack: 258.00 MRP

❖ **FIRMAC Susp. Incepta**
Erythromycin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **ILOCIN Tab. Doctor's**
Erythromycin 500mg/tablet
20's pack: 160.00 MRP

❖ **ILOCIN Susp. Doctor's**
Erythromycin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **KUMUCIN Susp. Kumudini**
Erythromycin 125mg/5ml: suspension
100ml bot: 55.00 MRP

❖ **MAC Susp. Orion**
Erythromycin 125mg/5ml: suspension
100ml bot: 60.00 MRP

❖ **MAC DS Susp. Orion**
Erythromycin 250mg/5ml: suspension
70ml bot: 74.00 MRP
100ml bot: 103.00 MRP

❖ **MACAS Tab. Asiatic**
Erythromycin 500mg/tablet
24's pack: 192.00 MRP

❖ **MACAS Susp. Asiatic**
Erythromycin 125 mg/5ml: suspension
100ml bot: 56.00 MRP

❖ **MACERY Tab. Pacific**
Erythromycin 250mg & 500mg/tablet
250mg x 50's pack: 225.00 MRP
500mg x 30's pack: 246.00 MRP

❖ **MACERY Susp. Pacific**
Erythromycin 125mg/5ml: suspension.
100ml bot: 46.00 MRP

❖ **MACIN Susp. Hallmark**
Erythromycin 125 mg/5ml: suspension
100ml bot: 55.00 MRP

❖ **MACRO E Susp. Proteety**
Erythromycin 125mg/5ml: suspension.
100ml bot: 60.00 MRP

❖ **MAKCIN Susp. Techno Drugs**
Erythromycin 125mg/5ml: suspension.
100ml bot: 50.00 MRP

❖ **MITROCIN Tab. Millat**
Erythromycin 250mg & 500mg/tablet
250mg x 30's pack: 136.50 MRP
500mg x 20's pack: 161.20 MRP

❖ **MITROCIN Susp. Millat**
Erythromycin 125mg/5ml: suspension.
100ml bot: 60.00 MRP

❖ **MITROCIN DS Susp. Millat**
Erythromycin 250mg/5ml: suspension
100ml bot: 103.00 MRP

❖ **MYCIN Tab.Ambee**
Erythromycin 500mg/tablet
500mg x 50's pack: 400.00 MRP
❖ **MYCIN Susp. Ambee**
Erythromycin 125mg/5ml: suspension.
100ml bot: 60.00 MRP
❖ **PEDICIN Susp. Rangs**
Erythromycin 125mg/5ml: suspension.
100ml bot: 60.00 MRP
❖ **PRIOCIN Tab. SK+F**
Erythromycin 500mg/tablet
500mg x 40's pack: 280.00 MRP
❖ **PRIOCIN Susp. SK+F**
Erythromycin 125mg/5ml: suspension.
100ml bot: 60.00 MRP
❖ **RHYTHM Susp. Apex**
Erythromycin 125mg/5ml: suspension.
100ml bot: 52.00 MRP
❖ **THROCIN Tab. Globe**
Erythromycin 250mg & 500mg/tablet.
250mg x 100's: 430.00 MRP
500mg x 50's: 400.00 MRP
❖ **THROCIN Susp. Globe**
Erythromycin 125mg/5ml: suspension.
100ml bot: 56.00 MRP
❖ **ZEROBAC Susp. Chemist**
Erythromycin 125mg/5ml: suspension.
100ml bot: 55.00 MRP
❖ **ZURACIN Susp. Rephco**
Erythromycin 125mg/5ml: suspension.
100ml bot: 61.07 MRP

AZITHROMYCIN[21,26,33]

AZITHROMYCIN: Capsule/ Suspension/ Injection
Azithromycin is an azalide antibiotic, a subclass of macrolide antibiotic.
Mode of action: Azithromycin acts by binding to the 50s ribosomal subunit of susceptible microorganisms and thus interfering with microbial protein synthesis. It is a broad-spectrum antibiotic and has been shown to be active against most strains of the following microorganisms.
Gram-positive: *Staphylococcus aureus, Streptococcus agalactiae, Streptococcus pneumoniae, Streptococcus pyogenes.*
Gram-negative: *Haemophilus ducreyi, Haemophilus influenzae, Moraxella catarrhalis, Neisseria gonorrhoeae, Escherichia coli.*
Others: *Chlamydia pneumoniae, Chlamydia trachomatis, Mycoplasma pneumoniae, Bacteroides fragilis, Legionella pneumophila, Toxoplasma gondii.*
Ind: Respiratory tract infections; otitis media; skin and soft-tissue infections; non-gonococcal urethritis and cervicitis due to Chlamydia trachomatis; gonococcal urethritis and cervicitis due to Neisseria gonorrhoeae; Genital ulcer disease in men due to Haemophilus ducreyi (chancroid); Cholera; Shigellosis; Typhoid.
C/I: Hepatic impairment.
S/E; Cautions: See under erythromycin; mild neutropenia reported.
Pregnancy & lactation: Exercise caution in pregnancy & breast feeding.
Dosage & admin: ***By mouth:*** **Adult: For respiratory tract infections, otitis media and skin & soft tissue infections: 500mg once daily for 3 days. For sexually transmitted diseases like genital ulcer, non-gonococcal urethritis and cervicitis due to Chlamydia trachomatis: a single 1gm (1000mg) dose. For the treatment of urethritis and cervicitis due to Neisseria gonorrhoeae: a single 2gm (2000mg) dose. In typhoid, 500mg once daily for 7 days. In Cholera, a single 1gm (1000mg) dose. In Shigellosis, 500mg once on first day, followed by 250mg once daily for next 4 days.**
Children: Over 6 months, 10mg/kg once daily for 3 days; or body-weight 15-25 kg, 200mg once daily for 3 days; body-weight 26-35 kg, 300mg once daily for 3 days; body-weight 36-45 kg, 400mg once daily for 3 days.
Azithromycin tablet can be taken with or without food; suspension should be taken at least 1 hour before or 2 hours after meal.
Injection:
Adults: Community-acquired pneumonia: 500mg as a single daily dose by i.v route for at least two days. I.V therapy should be followed by oral therapy at a single, daily dose of 500mg tablet to complete a 7 t0 10-day course. Pelvic inflammatory disease: 500mg as a single daily dose by i.v route for one or two days. I.V therapy should be followed by oral therapy at a single, daily dose of 250mg to complete a 7-day course.
Children: Use of azithromycin by i.v route althugh not yet approved by the FDA, the i.v preparation has been studied in children using a dose of 10mg/kg administered over 1 hour once daily. I.V therapy should be followed by oral therapy as desired, in accordance with clinical response.
Drug inter: Avoid concomitant administration with astemizole or terfenadine.

❖ **AR-500 Tab. Ultra Pharma**
Azithromycin 500mg/tablet
3's pack: 90.00 MRP
❖ **ASIZITH Tab. Asiatic**
Azithromycin 250mg & 500mg/tablet
250mg x 6's pack: 120.00 MRP
500mg x 6's pack: 180.00 MRP
❖ **ASIZITH Susp. Asiatic**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP
❖ **AVALON 500 Tab. Techno Drugs**
Azithromycin USP 500mg/tablet
6's pack: 180.00 MRP
❖ **AVALON Susp. Techno Drugs**
Azithromycin USP 200mg/5ml: suspension.
15ml bot: 85.00 MR
30ml bot: 130.00 MRP
❖ **AVALON I.V Inj. Techno Drugs**
Azithromycin dihydrate USP 500mg/5ml vial (powder for reconstitution): i.v injection.
500mg (5ml vial) x 1's pack: 240.00 MRP
❖ **AZ-250 Cap. Aristopharma**
Azithromycin 250mg/capsule
250mg x 10's pack: 200.00 MRP
❖ **AZ-500 Cap. Aristopharma**
Azithromycin 500mg/capsule
500mg x 6's pack: 180.00 MRP
❖ **AZ Susp. Aristopharma**
Azithromycin 200mg/5ml: suspension.
20ml bot: 95.00 MRP
❖ **AZALID Cap. Orion**
Azithromycin 250mg & 500mg/capsule
250mg x 6's pack: 120.00 MRP
500mg x 8's pack: 240.00 MRP
❖ **AZALID Susp. Orion**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP
35ml bot: 130.00 MRP
❖ **AZICIN Cap. Opsonin**
Azithromycin 250mg & 500mg/capsule
250mg x 6's pack: 120.00 MRP
500mg x 6's pack: 180.00 MRP
❖ **AZICIN Susp. Opsonin**
Azithromycin 200mg/5ml: suspension.
20ml bot: 85.00 MRP
35ml bot: 130.00 MRP
❖ **AZILIT-500 Tab. Desh Pharma**
Azithromycin 500mg/tablet
3's pack: 90.00 MRP
❖ **AZILIT Susp. Desh Pharma**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP
❖ **AZIMETE Susp. Medimet**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP
❖ **AZIMEX Tab. Drug Inter.**
Azithromycin 250mg & 500mg/tablet
250mg x 20's pack: 360.00 MRP
500mg x 9's pack: 234.00 MRP
❖ **AZIMEX Susp. Drug Inter.**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP
30ml bot: 120.00 MRP
❖ **AZIMON 500 Tab. MonicoPharma**
Azithromycin USP 500mg/tablet
8's pack: 240.00 MRP
❖ **AZIN Cap. Acme**
Azithromycin 250mg/capsule
6's pack: 120.00 MRP
❖ **AZIN Tab. Acme**
Azithromycin 500mg/tablet
3's pack: 90.00 MRP
❖ **AZIN Susp. Acme**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 IP
30ml bot: 130.00 IP
❖ **AZINIL Tab. Apex**
Azithromycin 250mg & 500mg/tablet
250mg x 6's pack: 96.00 MRP
500mg x 6's pack: 144.00 MRP
❖ **AZINIL Susp. Apex**
Azithromycin 200mg/5ml: suspension.
20ml bot: 80.00 MRP
❖ **AZIROX Tab. Navana**
Azithromycin 500mg/tablet
6's pack: 180.00 MRP
❖ **AZIROX Susp. Navana**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP
30ml bot: 130.00 MRP
❖ **AZI-S 500 Tab. Seema**
Azithromycin 500mg/tablet

500mg x 6's pack: 180.00 MRP

❖ **AZI-S Susp. Seema**
Azithromycin 200mg/5ml: suspension.
30ml bot: 180.00 MRP

❖ **AZITEL-500 Cap. Cosmic**
Azithromycin 500mg/capsule
500mg x 4's pack: 100.00 MRP

❖ **AZITEL Susp. Cosmic**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP

❖ **AZITHIN Cap. Chemist**
Azithromycin 500mg/capsule
500mg x 3's pack: 90.00 MRP

❖ **AZITHIN Susp. Chemist**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP

❖ **AZITHROCIN Cap. Beximco**
Azithromycin 250mg/capsule
10's pack: 200.00 MRP

❖ **AZITHROCIN Tab. Beximco**
Azithromycin 500mg/tablet
9's pack: 270.00 MRP

❖ **AZITHROCIN Susp. Beximco**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP
30ml bot: 130.00 MRP

❖ **AZITHROMAX 500 Tab. Ziska**
Azithromycin 500mg/tablet
5's pack: 150.00 MRP

❖ **AZITHROMAX Susp. Ziska**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP
35ml bot: 125.00 MRP

❖ **AZITOR 500 Tab. CPL**
Azithromycin 500mg/tablet
5's pack: 150.00 MRP

❖ **AZITRA 500 Tab. Syntho**
Azithromycin 500mg/tablet
3's pack: 75.00 MRP

❖ **AZIX Tab. Amico**
Azithromycin 500mg/tablet
3's pack: 90.00 MRP

❖ **AZIX Susp. Amico**
Azithromycin 200mg/5ml: suspension.
15ml bot: 80.00 MRP

❖ **AZMIN Cap. Modern**
Azithromycin 500mg/capsule
4's pack: 112.00 MRP
8's pack: 224.00 MRP

❖ **AZO 500 Tab. Delta**
Azithromycin 500mg/tablet
6's pack: 180.00 MRP

❖ **AZO Susp. Delta**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP
30ml bot: 130.00 MRP

❖ **AZOMAC 500 Tab. General**
Azithromycin 500mg/tablet
6's pack: 180.00 MRP

❖ **AZOMAC Susp. General**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP
35ml bot: 130.00 MRP

❖ **AZYTH Tab. Sandoz/Novartis**
Azithromycin 500mg/tablet
6's pack: 303.42 MRP

❖ **AZYTH Susp. Sandoz/Novartis**
Azithromycin 200mg/5ml: suspension.
15ml bot: 96.09 MRP
30ml bot: 130.00 MRP

❖ **BENZITH Cap. Benham**
Azithromycin USP 500mg/capsule
500mg x 8's pack: 240.00 MRP

❖ **BENZITH Susp. Benham**
Azithromycin USP 200mg/5ml: suspension.
15ml bot: 90.00 MRP

❖ **BP-Z Cap. Bristol**
Azithromycin 500mg/capsule
500mg x 4's pack: 120.00 MRP

❖ **BP-Z Susp. Bristol**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP

❖ **CINALID Tab. Jayson**
Azithromycin 500mg/tablet
500mg x 3's pack: 75.00 IP

❖ **CINALID Susp. Jayson**
Azithromycin 200mg/5ml: suspension.
15ml bot: 75.00 IP

❖ **DEMACRO-500 Tab. Decent**
Azithromycin 500mg/tablet
4's pack: 120.00 MRP

❖ **DEMACRO Susp. Decent**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP

❖ **EZITH Tab. Edruc**
Azithromycin 500mg/tablet
3's pack: 90.00 IP

❖ **EZITH Susp. Edruc**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 IP

❖ **FIZYTH Tab. Peoples**
Azithromycin 500mg/tablet
8's pack: 240.00 MRP

❖ **HYZITH-500 Tab. Millat**
Azithromycin 500mg/tablet
3's pack: 90.00 MRP

❖ **HYZITH Susp. Millat**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP

❖ **ILOZIN Tab. Doctor's**
Azithromycin 500mg/tablet
6's pack: 180.00 MRP

❖ **ILOZIN Susp. Doctor's**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP

❖ **MACAZI Tab. Pacific**
Azithromycin 500mg/tablet
3's pack: 89.40 MRP

❖ **MACAZI Susp. Pacific**
Azithromycin 200mg/5ml: suspension.
15ml bot: 64.00 MRP
35ml bot: 118.00 MRP

❖ **MACROZITH Cap. Silva**
Azithromycin 250mg/capsule
250mg x 6's pack: 120.00 MRP

❖ **MACROZITH Tab. Silva**
Azithromycin 500mg/tablet
500mg x 6's pack: 180.00 MRP

❖ **MACROZITH Susp. Silva**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP
25ml bot: 115.00 MRP

❖ **MACZITH Tab. Bio-pharma**
Azithromycin 250mg & 500mg/tablet
250mg x 6's pack: 120.00 MRP
500mg x 6's pack: 180.00 MRP

❖ **MACZITH Susp. Bio-pharma**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP
35ml bot: 130.00 MRP

❖ **MAZITH 500 Tab. Hallmark**
Azithromycin 500mg/tablet
500mg x 5's pack: 130.00 MRP

❖ **MAZITH Susp. Hallmark**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP
25ml bot: 110.00 MRP

❖ **NEOZITH 500 Tab. Marksman**
Azithromycin 500mg/tablet
500mg x 3's pack: 75.00 MRP

❖ **NEOZITH Susp. Marksman**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP

❖ **ODAZ-500 Tab. UniHealth**
Azithromycin 500mg/tablet
500mg x 3's pack: 90.00 MRP

❖ **ODAZ Susp. UniHealth**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP

❖ **ODAZYTH 250 Cap. ACI**
Azithromycin 250mg/capsule
250mg x 6's pack: 120.00 MRP

❖ **ODAZYTH Tab. ACI**
Azithromycin 500mg/tablet
6's pack: 180.00 MRP

❖ **ODAZYTH Susp. ACI**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP
30ml bot: 130.00 IP

❖ **ODAZYTH IV Inj. ACI**
Azithromycin dihydrate USP 500mg/5ml vial (powder for reconstitution): i.v injection.
500mg (5ml vial) x 1's pack: 250.00 IP

❖ **PENALOX Cap. Rephco**
Azithromycin 500mg/capsule
500mg x 3's pack: 90.00 MRP

❖ **PENALOX Susp. Rephco**
Azithromycin 200mg/5ml: suspension.
15ml bot: 95.00 MRP

❖ **PHAGOCIN-500 Tab. SAPL**
Azithromycin 500mg/tablet
8's pack: 240.00 MRP

❖ **PHAGOCIN Susp. SAPL**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP

❖ **RANZITH Cap. Rangs Pharma**
Azithromycin 250mg/capsule
250mg x 6's pack: 120.00 MRP

❖ **RANZITH Susp. Rangs Pharma**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP

❖ **RESPAZIT Cap. Somatec**
Azithromycin 250mg/capsule
250mg x 6's pack: 120.00 MRP

❖ **RESPAZIT Tab. Somatec**
Azithromycin 500mg/tablet
500mg x 3's pack: 84.00 MRP
500mg x 6's pack: 168.00 MRP

❖ **RESPAZIT Susp. Somatec**
Azithromycin 200mg/5ml: suspension.
15ml bot: 80.00 MRP
30ml bot: 130.00 MRP

❖ **ROMYCIN Cap. Ibn Sina**
Azithromycin 250mg/capsule
250mg x 8's pack: 160.00 IP

❖ **ROMYCIN Tab. Ibn Sina**
Azithromycin 500mg/tablet
500mg x 8's pack: 240.00 IP
❖ **ROMYCIN Susp. Ibn Sina**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 IP
35ml bot: 130.00 IP
❖ **ROZITH Tab. Healthcare**
Azithromycin 250mg & 500mg/tablet
250mg x 6's pack: 120.00 MRP
500mg x 3's pack: 90.00 MRP
500mg x 6's pack: 180.00 MRP
❖ **ROZITH Susp. Healthcare**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP
22.5ml bot: 90.00 MRP
35ml bot: 130.00 MRP
❖ **SIMPLI-3 Tab. Beacon**
Azithromycin 500mg/tablet
500mg x 8's pack: 240.00 MRP
❖ **SIMPLI-3 Susp. Beacon**
Azithromycin 125mg/5ml: suspension.
35ml bot: 130.00 MRP
❖ **SIMPLI-3 Inj. Beacon**
Azithromycin dihydrate USP 500mg/5ml vial (powder for reconstitution): i.v injection.
500mg (5ml vial) x 1's pack: 250.00 MRP
❖ **SOTO Tab. Hudson**
Azithromycin USP 500mg/tablet
500mg x 8's pack: 240.00 MRP
❖ **SOTO Susp. Hudson**
Azithromycin USP 200mg/5ml: suspension.
15ml bot: 85.00 MRP
❖ **THIZA Tab. Kumudini**
Azithromycin 500mg/tablet
500mg x 8's pack: 240.00 MRP
❖ **THIZA Susp. Kumudini**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP
❖ **THROMAX Tab. Novo Healthcare**
Azithromycin 250mg & 500mg/tablet
250mg x 6's pack: 120.00 MRP
500mg x 3's pack: 90.00 MRP
❖ **THROMAX Susp. Novo Healthcare**
Azithromycin 200mg/5ml: suspension.
15ml bot: 90.00 MRP
35ml bot: 130.00 MRP
❖ **TRIDOSIL Tab. Incepta**
Azithromycin 250mg & 500mg/tablet
250mg x 6's pack: 120.00 MRP
500mg x 6's pack: 180.00 MRP
❖ **TRIDOSIL Susp. Incepta**
Azithromycin 200mg/5ml: suspension.
20ml bot: 85.00 MRP
35ml bot: 130.00 MRP
❖ **TRIDOSIL I.V Inj. Incepta**
Azithromycin dihydrate USP 500mg/5ml vial (powder for reconstitution): i.v injection.
500mg (5ml vial) x 1's pack: 250.00 MRP
❖ **TRUZITH Tab. White Horse**
Azithromycin USP 250mg & 500mg/tablet
250mg x 8's pack: 160.00 MRP
500mg x 4's pack: 120.00 MRP
❖ **TRUZITH Susp. White Horse**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP
❖ **TYZITH Susp. Proteety**
Azithromycin 200mg/5ml: suspension.
15ml bot: 75.00 MRP
❖ **XOLIDE Cap. Radiant**
Azithromycin 250mg & 500mg/capsule
250mg x 6's pack: 150.00 MRP
500mg x 6's pack: 210.00 MRP
❖ **XOLIDE Susp. Radiant**
Azithromycin 200mg/5ml: suspension.
30ml bot: 130.00 MRP
❖ **ZEMYCIN Tab. Gaco**
Azithromycin 500mg/tablet
3's pack: 89.99 MRP
❖ **ZEMYCIN Susp. Gaco**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP
❖ **ZEOCIN-500 Tab. A.P.C Pharma**
Azithromycin 500mg/tablet
3's pack: 90.00 IP
❖ **ZIBAC Tab. Popular**
Azithromycin 250mg & 500mg/tablet
250mg x 8's pack: 160.00 MRP
500mg x 6's pack: 180.00 MRP
❖ **ZIBAC Susp. Popular**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP
35ml bot: 130.00 MRP
❖ **ZIBAC I.V Inj. Popular**
Azithromycin dihydrate USP 500mg/5ml vial (powder for reconstitution): i.v injection.
500mg (5ml vial) x 1's pack: 250.00 MRP
❖ **ZIMAX Cap. Square**
Azithromycin 250mg/capsule
6's pack: 120.00 MRP
❖ **ZIMAX Tab. Square**
Azithromycin 500mg/tablet
6's pack: 180.00 MRP
❖ **ZIMAX Susp. Square**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP
❖ **ZINEX Cap. Alco Pharma**
Azithromycin 250mg & 500mg/capsule
250mg x 6's pack: 90.00 MRP
500mg x 8's pack: 200.00 MRP
❖ **ZINEX Susp. Alco Pharma**
Azithromycin 200mg/5ml: suspension.
15ml bot: 75.00 MRP
30ml bot: 130.00 MRP
❖ **ZITA-500 Tab. Chemico**
Azithromycin 500mg/tablet
3's pack: 90.00 MRP
6's pack: 180.00 MRP
❖ **ZITA Susp. Chemico**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.00 MRP
30ml bot: 130.00 MRP
❖ **ZITHRIN Tab. Renata**
Azithromycin 250mg & 500mg/tablet
250mg x 6's pack: 108.00 MRP
500mg x 12's pack: 360.00 MRP
❖ **ZITHRIN Cap. Renata**
Azithromycin 250mg/capsule
6's pack: 120.00 MRP
❖ **ZITHRIN Susp. Renata**
Azithromycin 200mg/5ml: suspension.
15ml bot: 80.00 MRP
20ml bot: 85.00 MRP
35ml bot: 130.00 MRP
❖ **ZITHRO Cap. Pharmadesh**
Azithromycin 250mg & 500mg/capsule
250mg x 6's pack: 120.00 MRP
500mg x 3's pack: 90.00 MRP
❖ **ZITHRO Susp. Pharmadesh**
Azithromycin 200mg/5ml: suspension.
15ml bot: 85.80 MRP
30ml bot: 125.00 MRP
❖ **ZITHROLEX Tab. Mystic**
Azithromycin 250mg & 500mg/tablet
250mg x 6's pack: 114.00 MRP
500mg x 3's pack: 84.00 MRP
❖ **ZITHROLEX Susp. Mystic**
Azithromycin 200mg/5ml: suspension.
15ml bot: 84.00 MRP
❖ **ZITHROX Tab. SK+F**
Azithromycin 250mg & 500mg/tablet
250mg x 6's pack: 120.00 MRP
500mg x 6's pack: 182.00 MRP
❖ **ZITHROX Susp. SK+F**
Azithromycin 200mg/5ml: suspension.
15ml bot: 96.00 MRP
30ml bot: 130.00 MRP
❖ **ZITREX 500 Tab. Medicon**
Azithromycin 500mg/tablet
500mg x 4's pack: 120.00 MRP
❖ **ZITREX Susp. Medicon**
Azithromycin 125mg/5ml: suspension.
15ml bot: 80.00 MRP
❖ **ZYCIN-500 Tab. Globe**
Azithromycin 500mg/tablet
12's pack: 360.00 MRP
❖ **ZYCIN Susp. Globe**
Azithromycin 200mg/5ml: suspension.
15ml bot: 80.00 MRP
30ml bot: 120.00 MRP

CLARITHROMYCIN[21,49]

CLARITHROMYCIN: Tablet/ Suspension/Infusion
Ind: Respiratory tract infections (acute & chronic bronchitis, pneumonia); sinusitis, pharyngitis; otits media; skin & soft tissue infections. Eeradication of H. pylori for the treatment of duodenal ulcers.
C/I: Hypersensitivity to clarithromycin or any other macrolide antibiotics.
S/E; Cautions: See under Erythromycin; reduce dose in renal impairment; caution in heapatic impairment, pregnancy and breast feeding; also reported, headache, taste disturbances, stomatitis, glossitis, cholestasis, jaundice, hepatitis and Stevens-Johnson syndrome; on i.v infusion, local tenderness, phlebitis.
Arrhythmias- avoid concomitant administration with astemizole, terfenadine or cisapride.
Dosage & admin: By mouth, 250mg every 12 hours for 7 days, increased in severe

infections to 500mg every 12 hours for up to 14 days.
Child- body weight under 8kg, 7.5mg/kg twice daily; 8-11 kg (1-2 years), 62.5mg twice daily; 12-19 kg (3-6 years), 125mg twice daily; 20-29 kg (7-9 years), 187.5mg twice daily; 30-40kg (10-12 years), 250mg twice daily.
Eradication of H. pylori- 500mg twice daily for 7 days in combination with other preparations of the recomme-nded regimens.
By i.v infusion into larger proximal vein, 500mg twice daily; Child not recommended.

❖ **BINOCLAR Tab. Sandoz/Novartis**
Clarithromycin 500mg/tablet
500mg x 14's pack: 920.36 MRP
❖ **BINOCLAR SR Tab. Sandoz/Novartis**
Clarithromycin 500mg/tablet (sustained release)
500mg x 10's pack: 780.00 MRP
❖ **BINOCLAR Susp. Sandoz/Novartis**
Clarithromycin 125mg/5ml: suspension
60ml bot: 340.00 MRP
❖ **CLACIN Tab. Medimet**
Clarithromycin 500mg/tablet
500mg x 4's pack: 160.00 MRP
❖ **CLARICIN Tab. Acme**
Clarithromycin 250mg & 500mg/tablet
250mg x 8's pack: 200.00 MRP
500mg x 8's pack: 320.00 MRP
❖ **CLARIN Tab. Drug Inter**
Clarithromycin 250mg & 500mg/tablet
250mg x 10's pack: 320.00 MRP
500mg x 10's pack: 350.00 MRP
❖ **CLARISON Tab. Hudson**
Clarithromycin 500mg/tablet
500mg x 10's pack: 450.00 MRP
❖ **KLARICID XL Tab. Abbott/UniHealth**
Clarithromycin 500mg/tablet (extended release)
500mg x 5's pack: 498.93 MRP
❖ **KLARICID Susp. Abbott/UniHealth**
Clarithromycin 125mg/5ml: suspension
60ml bot: 516.28 MRP
❖ **KLARICID I.V Inj. Abbott/UniHealth**
Clarithromycin lactobionate 500mg/vial: i.v injection
1 vial pack: 464.15 MRP
❖ **MACLAR Tab. Techno Drugs**
Clarithromycin 250mg & 500mg/tablet
250mg x 6's pack: 180.00 MRP
500mg x 6's pack: 240.00 MRP
❖ **MACLAR Susp. Techno Drugs**
Clarithromycin 125mg/5ml: suspension
60ml bot: 300.00 MRP
❖ **MACLAR I.V Inj. Techno Drugs**
Clarithromycin lactobionate 500mg/vial: i.v injection
1 vial pack: 300.00 MRP
❖ **MACROBID Tab. General**
Clarithromycin 500mg/tablet
500mg x 4's pack: 200.00 MRP
❖ **REMAC Tab. Square**
Clarithromycin 500mg/tablet
500mg x 6's pack: 240.00 MRP
❖ **ROLACIN Tab. Beximco**
Clarithromycin 250mg & 500mg/tablet
250mg x 20's pack: 500.00 IP
500mg x 10's pack: 400.00 IP

ROXITHROMYCIN[21,26]

ROXITHROMYCIN: Tablet/Suspension
Roxithromycin is a macrolide with antibacterial properties similar to erythromycin. It is a broad spectrum antibiotic and effective against a good range of gram positive & gram negative bacteria including atypical pathogens like mycoplasma and chlamydia. It is well-tolerated by adults and children.
Roxithromycin is well absorbed on oral administration. It has a mean plasma half-life of 9-16 hours and once or twice daily dosing is sufficient to maintain adequate bactericidal activity in plasma and tissues. It is metabolized in the liver; excretion occurs mainly through faeces and also through respiratory tract & urine.
Ind: Roxithromycin is indicated in the treatment of infections caused by susceptible microorganisms:
Respiratory infections like pneumonia, acute and chronic bronchitis, bronchopneumonia; ENT infections like tonsillitis, pharyngitis, sinusitis and otitis media; Skin infections like folliculitis, furuncles, cellulitis, carbuncles, pyoderma, impetigo and infected dermatitis; Genital infections like urethritis, prostatitis, cervicitis and salpingitis specially if produced by chlamydia trachomatis.
C/I: History of hypersensitivity to the drug.
S/E: Roxithromycin is well-tolerated by patients of all age groups. Less than 4% of treated patients complain of side-effects mainly nausea, abdominal pain, diarrhoea and hypersensitivity rash. Other side-effects reported include vomiting, dizziness, headache, pruritus, dyspepsia, flatulence, tinnitus, vertigo and constipation. These are in general minor and do not necessitate withdrawal of therapy.
Precautions: In patients with hepatic diseases the dose of roxithromycin should not exceed 150mg twice a day. The safety of roxithromycin in pregnancy has not been established. It appears in breast milk in small amounts and does not produce adverse effects in the breast fed infant. Accumulation does not occur in patients with compromised renal function and dosage adjustment is not necessary. Roxithromycin should not be administered simultaneously with ergotamine or its derivatives as it may provoke arterial spasm and severe ischaemia.
Dosage & admin: Adult dose- 300mg once daily or 150mg twice daily for at least two days after resolution of symptoms; a normal course of therapy is between 5 and 10 days. In severe hepatic impairment the dose is 150mg once daily. Roxithromycin is best administered on empty stomach.
Children: 2.5-5mg/kg body weight twice a day. The following general guidelines can be followed- 6-11kg, 25mg 12 hourly; 12-23kg, 50mg 12 hourly; 24-40kg, 100mg 12 hourly. A normal course of therapy is between 5 and 10 days.
Drug Inter: Roxithromycin shows mild interaction with theophylline though this has not been found to produce clinically relevant effects. Antacids, H2-receptor antagonists and food has no effect on the absorption of roxithromycin.

❖ **A-ROX Tab. Ambee**
Roxithromycin BP 150mg & 300mg/tablet
150mg x 30's pack: 195.00 MRP
300mg x 20's pack: 220.00 MRP
❖ **A-ROX Susp. Ambee**
Roxithromycin BP 50mg/5ml: suspension
50ml bot: 45.00 MRP
❖ **PEDILID Tab. Incepta**
Roxithromycin BP 150mg & 300mg/tablet
150mg x 50's pack: 350.00 MRP
300mg x 30's pack: 420.00 MRP
❖ **PEDILID Susp. Incepta**
Roxithromycin BP 50mg/5ml: suspension
50ml bot: 50.00 MRP
❖ **ROCKY Susp. Amico**
Roxithromycin BP 50mg/5ml: suspension
50ml bot: 40.00 MRP
❖ **ROLID Tab. Globe**
Roxithromycin BP 150mg & 300mg/tablet
150mg x 50's pack: 350.00 MRP
300mg x 30's pack: 420.00 MRP
❖ **ROLID Susp. Globe**
Roxithromycin BP 50mg/5ml: suspension
50ml bot: 45.00 MRP
❖ **ROXCIN Tab. Alco Pharma**
Roxithromycin BP 150mg & 300mg/tablet
150mg x 20's pack: 120.00 MRP
300mg x 20's pack: 240.00 MRP
❖ **ROXCIN Susp. Alco Pharma**
Roxithromycin BP 50mg/5ml: suspension
50ml bot: 45.00 MRP
❖ **RYTH Tab. Navana**
Roxithromycin BP 150mg & 300mg/tablet
150mg x 18's pack: 126.00 IP
300mg x 18's pack: 252.00 IP
❖ **RYTH Susp. Navana**
Roxithromycin BP 50mg/5ml: suspension
50ml bot: 50.00 IP

SPIRAMYCIN[21,35]

❖ **ROVAMYCINE Tab. Sanofi-aventis**
Spiramycin 1.5 MIU & 3 MIU/tablet
Ind: Species usually sensitive- streptococcus, pneumococcus (as in resp. tract infections), meningococcus, gonococcus, bordetella pertussis, c.diphtheriae, listeria monocytogenes, clostridium, mycoplasma pneumoniae, chlamydia trachomatis, legionella pneumophilia, treponema, leptospira, campylobacter, toxoplasma gondii.
Species inconsistently sensitive-
h. influenzae, vibrio cholerae, staph. aureus.
Infections due to organisms mentioned above to be sensitive, particularly in the following clinical situations:
E.N.T, bronchopulmonary, dermatolo-gical, genital (following prostatic) and bone infections.
Prophylaxis of meningo-coccal meningitis in contact subjects. Chemoprophylaxis of recurrence of rheumatic fever.
Toxoplasmosis in pregnant women and in immunodepressed subjects.
C/I: Known hypersensitivity to macrolides.
S/E: Gastro-intestinal effects- nausea, vomiting, diarrhoea, sometimes leading to withdrawal of treatment. Allergic skin reactions.
Precautions & warnings: The dosage does not need to be modified in patients with renal inpairment, because of the absence of renal excretion of the active molecule.
As spiramycin passes into the maternal milk, using a milk substitute, or should not be given during breast-feeding if there is alternative

antimicrobial is available.
In pregnancy spiramycin can safely be prescribed.
Dosage & Admin: Adults- 6 to 9 MIU/day to be divided in 2 or 3 doses.
Children- weight more than 20kg, 1.5 MIU per 10kg of body weight per day, to be divided in 2 or 3 doses.
Prophylaxis of meningococcal meningitis- adults, 3 MIU/12 hours for 5 days; children, 75,000 IU/12 hours for 5 days.
3 MIU x 20's pack: 400.00 MRP

1.6 Clindamycin

CLINDAMYCIN

CLINDAMYCIN HCl: Tablet/Injection
Clindamycin is a semi-synthetic antibiotic produced by chlorosubstitution of the hydroxylgroup of the parent compound lincomycin.
Mode of action: Clindamycin may be either bactericidal or bacteriostatic depending on the sensitivity of the micro-organism & the concentration of the antibiotic at the site of action.
Ind: Clindamycin has been found active against- Gram-positive cocci including penicillin-resistant Staphylo cocci, Streptococci (except S. faecalis), Pneumoccoci; also many anaerobes specially Bacteroides fragilis.
Clindamycin is indicated in the following infections caused by the susceptible strains of above bacteria.
1. Upper respiratory infections & lower respiratory infections including bronchitis. pneumonia, empyema. and lung abscess.
2. Skin and soft tissue infections including acne.
3. Bone adn joint infections including osteomyelitis and septic arthritis.
4. Gynaecological infections including pelvic inflammatory diseases when given in conjunction with an antibiotic of appropriate garm-negative spectrum.
5. Intra-abdominal infections including peritonitis and abdominal abscess given with an appropriate gram-negative aerobic antibiotic.
6. Septicemia and endocarditis.
7. Dental infections such as periodontal abscess and periodontitis, etc.

C/I: Previously found to be sensitive to clindamycin or lincomycin. Diarrhoeal diseases.
S/E: Abdominal pain, nausea, vomiting, diarrhoea, pseudo-membranous colitis; jaundice & abnormalities in liver function tests; hypersensitivity reactions such as, maculopapular rash and urticaria, generalized mild to moderate morbilliform-like skin rashes; transient neutropenia and eosinophilia, agranulocytosis and thrombocytopenia have been reported.
Cautions: Discontinue immediately if diarrhoea or colitis develops; impaired hepatic or renal functions.
Pregnancy & lactation: Safety of clindamycin for use in pregnancy has not been established. It also appears in the breast milk from 0.7 to 3.8mcg/ml.
Dosage & admin: By mouth: The usual adult dosage for patients with serious infections is 150-300mg every 6 hours. For more severe infections 300-450mg every 6 hours is advised. For acute pharyngitis/tonsillitis, the recommended dosage is 300mg every 12 hours for 10 days. To avoid the possibility of esophageal irritation, capsules should be taken with a full glass of water.
By injection: The usual adult daily dosage for infections of the intra-abdominal area, female pelvis and other complicated or serious infections is 2400-2700mg/day given divided in 2, 3 or 4 equal doses. Less complicated infections due to more susceptible microorganisms may respond to lower doses such as 1200mg/day given divided in 3 or 4 equal doses.
For children over 1 month of age, the dosage is 20-40mg/kg/day divided in 3 or 4 equal dose. In neonates (under 1 month of age), the dose is 15-20mg/kg/day divided in 2, 3 or 4 equal doses. Single intramuscular doses of greater than 600mg are not recommended. The concentration of clindamycin in diluent for infusion should not exceed 18mg per ml and infusion rates should not exceed 30mg per minute. Administration of more than 1200mg in a single infusion is not recommended. If significant diarrhea occurs during therapy, this antibiotic should be discontinued. For certain indications, parenteral therapy may be changed to oral when the condition warrants and at the discretion of the physician.
Drug inter: Antagonism has been demonstrated between clindamycin and erythromycin.

❖ **CLINDACIN Cap. Incepta**
Clindamycin hydrochloride 150mg & 300mg/capsule.
150mg x 30's pack: 240.00 MRP
300mg x 30's pack: 450.00 MRP
❖ **CLINDACIN 300 Inj. Incepta**
Clindamycin phosphate BP equivalent to clindamycin 300mg/2ml ampoule: i.m/i.v injection.
300mg (2ml) amp x 5's pack: 200.00 MRP
❖ **CLINDACIN 600 Inj. Incepta**
Clindamycin phosphate BP equivalent to clindamycin 600mg/4ml ampoule: i.m/i.v injection.
600mg (4ml) amp x 5's pack: 350.00 MRP
❖ **CLINDAX Cap. Opsonin**
Clindamycin hydrochloride 150mg & 300mg/capsule.
150mg x 30's pack: 240.00 MRP
300mg x 30's pack: 450.00 MRP
❖ **CLINDAX 300 Inj. Opsonin**
Clindamycin phosphate BP equivalent to clindamycin 300mg/2ml ampoule: i.m/i.v injection.
300mg (2ml) amp x 5's pack: 200.00 MRP
❖ **CLINDAX 600 Inj. Opsonin**
Clindamycin phosphate BP equivalent to clindamycin 600mg/4ml ampoule: i.m/i.v injection.
600mg (4ml) amp x 5's pack: 350.00 MRP
❖ **DALACIN C Cap. Pharmacia-Pfizer/Janata**
Clindamycin hydrochloride 300mg/capsule.
300mg x 16's pack: 768.16 MRP

1.7 Misc. Antibiotics

Drugs discussed under miscellaneous groups are- Chloramphenicol, Fusidic acid, Oxazolidinone group (Linezolid), Polymyxins, Spectinomycin, Vancomycin & Teicoplanin.

CHLORAMPHENICOL[21,33]

CHLORAMPHENICOL: Capsule/ Syrup/ Injection.
Ind: Broad spectrum antibiotic, is a potent & potentially toxic, which should be reserved for the treatment of life threatening infections, particularly those caused by haemophylus influenzae or klebsiella penumoniae & also for typhoid fever (salmonella group).
S/E: Leucopenia, thrombocytopenia, irreversible aplastic anaemia, peripheral neuritis, optic neuritis, erythema multiforme; nausea, vomiting, diarrhoea.
Cautions: Avoid repeated courses & prolonged treatment; reduce doses in hepatic & renal impairment; periodic blood counts required; interferes with development of immunity; caution in neonates (may cause grey daby syndrome).
Dosage & admin: By mouth, 250-500mg every 6 hours, or 50 mg/kg/day in divided doses.
By i.v. or i.m. injection 1 gm every 6-8 hours.
Child, pyogenic meningitis, 50-100mg/kg daily in divided doses every 6 hours.
Neoborn & premature infants, 25mg/kg body-wt.

❖ **CHLORAMPHENICOL Cap. Hudson**
Chloramphenicol 250mg/capsule.
100's pack: 220.00 MRP
❖ **CHLOROOL Cap. Seema**
Chloramphenicol 250mg/capsule.
100's pack: 300.00 MRP
❖ **CHLOROOL Susp. Seema**
Chloramphenicol 125mg/5ml: suspension
60ml bot: 20.00 MRP
❖ **CHLORPHEN Cap. Nipa**
Chloramphenicol 250mg/capsule
100's pack: 200.00 MRP
❖ **EDRUMYCETIN Cap. Edruc**
Chloramphenicol 250mg/capsule.
100's pack: 250.00 MRP
❖ **OPSOMYCETIN Susp. Opsonin**
Chloramphenicol 125mg/5ml: suspension
60ml bot: 16.00 MRP
❖ **RAMICOL Cap. Skylab**
Chloramphenicol 250mg/capsule.
100's pack: 295.00 MRP
❖ **RAMICOL Susp. Skylab**
Chloramphenicol 125mg/5ml: suspension
60ml bot: 23.00 MRP

FUSIDIC ACID[21,73]

❖ **FUCIDIN Tab. Leo Pharma/ Kapricorn**
Sodium fusidate 250mg/tablet
Ind: Infections caused by penicillin resistant staphylococci (specially osteomyelitis, as they are well concentrated in bone; a second anti-staphylococcal antibiotic is usually required.)
S/E: Nausea, vomiting, rashes, jaundice,

reversible change in liver function.
Cautions: Hepatic insufficiency.
Dosage & admin: 250-500mg evevy 8 hourly.
20's pack: 1878.40 MRP

Oxazolidinones[2.62,120]

Oxazolidinone is a new class of antibiotics belonging to the miscellaneous antimicrobials. The drugs of this group are organically synthesised and absorbed excellently by oral administration. The mechanism of action of this class of antibiotics differs from that of existing antimicrobial agents. Therefore, cross resistance to other antimicrobials is less likely and has been shown to date. There is only one preparation of this group, currently available for clinical use- ***Linezolid.***

LINEZOLID[62,120]

LINEZOLID: Tablet
Linezolid is the first and only product of oxazolidinone group currently available for clinical use. It is active against a wide range of gram-positive bacteria including methicillin-resistant staphylococcus aureus (MRSA), vancomycin-resistant enterococci (VRE) and penicillin-resistant pneumococci, but not against any gram negative pathogens.
Mode of action: Linezolid is a bacteriostatic antibiotic. It selectively inhibits bacterial protein synthesis by binding to a site on the bacterial ribosome and preventing the formation of the functional complex which is an essential component of the translation process.
Ind: Linezolid is indicated for the treatment of severe infections of different organs and systems of the body caused by most gram-positive bacteria, viz. vancomycin-resistant enterococcus faecium infections, nosocomial or community acquired pneumonia and uncomplicated or complicated skin and skin structure infections.
C/I: Known case of hypersensitivity to linezolid or any of the other product components.
S/E: Linezolid is well tolerated. The most common adverse events in patients treated with linezolid are- diarrhoea, headache and nausea. Other adverse events reported are- insomnia, constipation, dizziness, oral moniliasis, vaginal moniliasis, hypertension, dyspepsia, localised abdominal pain, rash, pruritus, tongue discolouration, pseudomembranous colitis and myelosuppression.
Precautions: If superinfection occurs during therapy, appropriate measures should be taken. Linezolid has not been studied in patients with uncontrolled hypertension, pheochromocytoma, carcinoid syndrome or untreated hyperthyroidism. The safety and efficacy of linezolid formulations given for longer than 28 days have not been evaluated in controlled clinical trials. Platelet counts should be monitored in patients who are at increased risk of bleeding, who have pre-existing thrombocytopenia, who receive concomitant medications that may decrease platelet count or function or who may require longer than 2 weeks of linezolid therapy.
Pregnancy & lactation: Linezolid is not teratogenic and still like all other drugs it should be used during pregnancy only if the potential benefit justifies the potential risk to the foetus. Although it is known not to be excreted in breast milk, caution should be exercised when linezolid is administered to a nursing woman.
Dosage & admin: Adult: The usual adult dose of linezolid is 400-600mg 12 hourly regardless of meals for 7-28 days depending on the type and severity of the infection and the patients clinical response. The recommended dosage for specific indications are as below: Vancomycin-resistant enterococcus faecium infection including concurrent bacteremia: 600mg 12 hourly for 14 to 28 days. Nosocomial pneumonia, community-acquired pneumonia including concurrent bacteremia and complicated skin and skin structure infection: 600mg 12 hourly for 10 to 14 days. Uncomplicated skin and skin structure infection: 400mg 12 hourly for 10 to 14 days. Elderly patients: No dose adjustment is required for elderly patients. Children: Studies using doses higher than 10mg/kg/dose every 12 hours have not been conducted in paediatric patients. Not studied in infants below 3 months of age.
Overdose: In the event of overdosage, supportive care is advised with maintenance of glomerular filtration. Haemodialysis may facilitate more rapid elimination of linezolid.
Drug inter: Linezolid is a reversible, nonselective inhibitor of monoamine oxidase. Therefore, linezolid has the potential for interaction with adrenergic and serotonergic agents. Patients receiving linezolid need to avoid consuming large amounts of foods or beverages with high tyramine content. A reversible enhancement of the pressor response of either pseudoephedrine hydrochloride or phenylpropanolamine hydrochloride is observed when linezolid is administered to healthy normotensive.

❖ **ARLIN-600 Tab. Beximco**
Linezolid INN 600mg/tablet (film coated).
600mg x 20's pack: 1700.00 IP
❖ **ARLIN Susp. Beximco**
Linezolid INN 100mg/5ml: suspension.
100ml bot: 280.00 IP
❖ **LINEZ Tab. Renata**
Linezolid INN 400mg & 600mg/tablet (f.c).
400mg x 10's pack: 600.00 MRP
600mg x 10's pack: 850.00 MRP
❖ **LINEZ Susp. Renata**
Linezolid INN 100mg/5ml: suspension.
60ml bot: 175.00 MRP
100ml bot: 280.00 MRP
150ml bot: 420.00 MRP
❖ **LIZEN Tab. Zenith**
Linezolid INN 600mg/tablet (film coated).
600mg x 30's pack: 2550.00 MRP
❖ **LIZEN Susp. Zenith**
Linezolid INN 100mg/5ml: suspension.
100ml bot: 280.00 MRP

SPECTINOMYCIN[21,60]

SPECTINOMYCIN: Injection
Spectinomycin is an antibiotic belonging to the miscellaneous antimicrobials. It is available as 2gm vial for intramuscular injection.
Ind: Acute gonorrhoeal urethritis, cervicitis and proctitis.
C/I: Pregnancy & brest-feeding; children below two years.
S/E: Nausea, dizziness, urticaria, fever.
Dose: Male- single 2gm dose (5ml); Female- single 4gm dose (10ml) i.m deep in the buttock.
Children: Not recommended; but, if no alternative, 40mg/kg over 2 years of age.

❖ **TINOBAC Inj. Incepta**
Spectinomycin 2gm vial: injection.
2gm vial: 250.00 MRP

VANCOMYCIN[121]

VANCOMYCIN: Injection.
Vancomycin is an amphoteric glycopeptide antimicrobial substance produced by the growth of certain strains of *Nocardia orientalis*. It is bactericidal aganist many gram positive organisms including staphylococci, streptococci, corynebacterium and clostridium, including clostridium difficile. Gram negative bacteria, mycobacteria and fungi are resistant.
Vancomycin is available as vancomycin hydrochloride 500mg vial injection for i.v infusion.
Mode of action: Vancomycin is bactericidal against many gram positive organisms. It appears to act by inhibiting the production of bacterial cell wall mucopeptide. Gram-negative bacteria, mycobacteria and fungi are found resistant to vancomycin.
Ind: Potentially life-threatening infections which cannot be treated with another effective, less toxic antimicrobial drug, including the penicillins and cephalosporins.
Vancomycin injection is useful in therapy of severe staphylococcal (including methicillin resistant staphylococcal) infections.
Vancomycin injection is effective alone or in combination with an aminoglycoside for endocarditis caused by Strep. viridans or Strep. bovis. For endocarditis caused by enterococci (e.g Strep. faecalis), Vancomycin is effective only in combination with an aminoglycoside.
Vancomycin is effective for the treatment of diptheroid endocarditis. Vancomycin injection is used in combination with rifampicin, an aminoglycoside, or both in early onset prosthetic valve endocarditis caused by staph. epidermidis or diphtheroids.
Vancomycin injection should be administered orally for the treatment of staphylococcal enterocolitis and antibiotic associated pseudomembranous colitis (produced by Cl. difficile). For oral administration the parenteral formulation may be used.
C/I: Known hypersensitivity to this drug.
Adverse reactions:
Infusion related events: During or soon after infusion of vancomycin injection, patients may develop anaphylactoid reactions including hypotension, palpitations, substernal pressure, tachycardia, wheezing, dyspnoea, urticaria, or pruritus. Rapid infusion may cause flushing of

the upper body ("red neck") or pain and muscle spasm of the chest and back. These reactions usually resolve within 20 minutes, but may persist for sveral hours.

Auditory & Vestibular: Sensorineural deafness which may be accompanied by tinnitus may occur but the incidence is low. Vertigo and dizziness have also been reported.

Cardiovascular: Hypotension, palpitations, substernal pressure, tachycardia (see infusion related events).

Gastrointestinal: Oral doses are extremely unpalatable. In leukaemic patients, oral dosing regimens are associated with frequent nausea, diarrhoea and occasional vomiting.

Haematological: Eosinophilia, thrombocytopenia and neutropenia.

Immunological: Hypersensitivity reacitons with chills, nausea, urticaria, macular rash, fever and rigors. Anaphylactoid reactions have been reported infrequently.

Renal: Cases of interstitial nephritis and renal failure have been reported.

Precautions: Vancomycin i.v should be administered in a dilute solution at a rate not exceeding 500mg/hour to avoid rapid-inusion-related reactions.
Because of its ototoxicity and nephroto-xicity, vancomycin should be used with care in patients with renal insufficiency.
The use of vancomycin may result in overgrowth of nonsusceptible organisms. In rare instances there have been reports of pseudomembranous colitis due to C. difficile.
Since vancomycin is irritating to tissue and causes drug fever, pain and possibly necrosis it should never be injected I.M; it must be administered I.V. Pain and thrombophlebitis occur in many patients receiving vancomycin and are occasionally severe. The frequency and severity of thrombophlebitis can be minimised if the drug is administered in a volume of at least 200ml of glucose or saline solution and if the injection sites are rotated.
Patients taking oral vancomycin should be warned of its offensive taste.
Pregnancy & lactation: As there is little information on the use of vancomycin in pregnancy, the drug should not be used in pregnant women or those likely to become pregnant unless the expected benefits outweigh any potential risk. Vancomycin is excreted in breast milk, but not known whether harmful to the newborn. Therefore, it is not recommended for nursing mothers unless the expected benefits outweigh any potential risk.

Dosage & admin: ***Adults:*** **The usual i.v dose is 500mg for every 6 hours or 1gm every 12 hours. A 500mg dose of vancomycin should be infused over a period of at least 50 minutes, whereas a 1gm dose should be administered over a period of at least 2 hours.**
Adults with impaired renal function and the elderly: **Dose adjustment must be made in patients with impaired renal function. For most patients with renal impairment or the elderly, the dosage calculations may be made by using the following table.**

Vancomycin injection: Dosage in patients with impaired renal function:

Creatinine clearance ml/min.	Vancomycin dose mg/24 hours
100	1545
90	1390
80	1235
70	1080
60	925
50	770
40	620
30	465
20	310
10	155

Loaing dose: **The initial dose should be not less than 15mg/kg, even in patients with mild to moderate renal insufficiency.**

Anephric patients:
The table is not valid for functionally anephric patients.
The majority of patients with infections caused by organisms susceptible to the antibiotic show a therapeutic response by 48-72 hours. The total duration of therapy is determined by the type and severity of the infection and the clinical response of the patient. In staphylococcal endocarditis, therapy for 3 weeks or longer is recommended.
Children: **The paediatric dosage of vancomycin is calculated on the basis of 10mg/kg body weight every 6 hours after an initial loading dose of 15mg/kg. Each dose should be administered over a period of at least 60 minutes.**
Infants & Neonates: **In neonates and young infants, the total daily i.v dosage may be lower. An initial dose of 15mg/kg is suggested, followed by 10mg/kg every 12 hours in the first week of life and every eight hours there-after until one month of age. Close monitoring of serum vancomycin concentrations is mandatory in these patients.**
Oral administration: **The usual adult total daily dosage for antibiotic associated pseudomembranous colitis produced by C. difficile is 500mg to 2gm given in 3 or 4 divided doses for 7 to 10 days. The total daily dosage in children is 40mg/kg body-weight in 3 or 4 divided doses. The total daily dosage should not exceed 2gm.**
The contents of 1 vial (500mg or 500,000 i.u) may be diluted in 30ml of distilled or deionised water and given to the patient to drink, or the diluted material may be administered via nasogastric tube. Common flavouring syrups may be added to the solution to improve the taste for a oral administration.
Preparation of solution for injection: At the time of use, the 500mg (or 500,000 i.u) vials should be reconstituted with 10ml of water for injection. The resulting solution contains vancomycin 50mg/ml. The 1gm (1,000,000 i.u) vial should be reconsituted with 20ml of water for injection. The resulting solution contains vancomycin 50mg/ml. The reconstituted solution must be further diluted with Sodium chloride i.v infusion 0.9% or Glucose i.v infusion 5% to a concentration of not more than 10mg/ml. The resulting solution should be infused over a period of at least 60 minutes when 500mg of vancomycin is to be administered, or at least 2 hours when 1gm of vancomycin is to be given.
Stability of reconstituted solution: Solutions of vancomycin 50mg/ml (50,000 i.u/ml) in water for injection do not show significant loss of potency when stored at 2°C-8°C for 96 hours.
When diluted to a concentration of either 10mg/ml or 1mg/ml with Sodium chloride i.v infusion 0.9% or Glucose i.v infusion 5% vancomycin was chemically stable for 24 hours at 25°C and 28 days at 2-8°C.
However to avoid microbial contamination all solutions should be used as soon as practicable after reconstituted and within 24 hours of preparation.
Drug inter: Careful monitoring is required for the following: Streptomycin, neomycin, gentamicin, kanamycin, amikacin, polymyxin b, colistin, ethacrynic acid, frusemide & cholestyramine.

❖ **VANCARD Inj. Techno Drugs**
Vancomycin hydrochloride USP 500mg/vial & 1gm/vial: injection for i.v infusion.
500mg vial x 1's pack: 245.00 MRP
1gm vial x 1's pack: 460.00 MRP
❖ **VANCOMIN Inj. Opsonin**
Vancomycin hydrochloride USP 500mg/vial & 1gm/vial: injection for i.v infusion.
500mg vial x 1's pack: 250.00 MRP
1gm vial x 1's pack: 480.00 MRP
❖ **VANCOMYCIN HCl Inj. DBL/Globex**
Vancomycin hydrochloride 500mg/vial: injection for i.v infusion.
500mg vial x 1's pack: 525.00 MRP
❖ **VANMYCIN Inj. Incepta**
Vancomycin hydrochloride USP 500mg/vial & 1gm/vial: injection for i.v infusion.
500mg vial x 1's pack: 250.00 MRP
1gm vial x 1's pack: 480.00 MRP

TEICOPLANIN[26]

TEICOPLANIN: Injection
Teicoplanin is a glycopeptide bactericidal antibiotic, which is active against both anaerobic and aerobic gram-positive organisms. It is available as teicoplanin INN 200mg lyophilized powder in vial for i.m or i.v injection.
Mode of action: Teicoplanin inhibits the growth of susceptible organisms by interfering with cell-wall bisynthesis at a site different from that affected by beta-lactams. It is active against staphylococci (including those resistant to methicillin and other beta-lactam antibiotics), streptococci, enterococci, listeria monocytogenes, micrococci, group J/K corynebacteria and gram-positive anaerobes including clostridium difficile and peptococci.
C/I: Known hypersensitivity to teicoplanin or its any ingredients.
S/E: Teicoplanin is generally well tolerated. Serious side-effects are rare. General side-effects are gastrointestinal like nausea, vomiting, diarrhea; CNS associated with urticaria, rash, anaphylactic shock as well as hearing problems like vertigo, tinnitus and vestibular disorder may occur.
Precautions: Teicoplanin should be administered with caution in patients with renal insufficiency, patients who require concurrent use of drugs

which have ototoxic &/or nephrotoxic properties.
Pregnancy & lactation: There are no adequate and well-controlled studies of teicoplanin in pregnant women, therefore, this drug should be used during pregnancy only if clearly needed. Information about the excretion of teicoplanin in milk is not known.
Dosage & admin: 3ml water for injection from the accompanying diluent water ampoule should be added slowly down the side wall of the vial of teicoplanin 200mg. The vial should be rolled gently between the palms until the powder is completely dissolved. During the rolling, we have to be cautious about the solution that it does not become foamy. The solution must not be shaken. If foam formed then it should be allowed to stand for 15 minutes for the foam to be subsided. The entire contents from the vial should be withdrawn slowly into a syringe.
The reconstituted solution can be administered either by i.m or i.v route. I.V injection may be administered by rapid injection over 3-5 minutes, or slowly over a 30 minutes infusion by diluting with 0.9% sodium chloride or Hartmann's solution or 5% dextrose etc. An i.m injection of teicoplanin should not exceed 3ml at a single site.
Patients with renal impairment: **For patients with impaired renal function, reduction of dosage is not required until the fourth day of teicoplanin treatment. From the fourth day of treatment-** ***in mild renal insufficiency-*** **teicoplanin dose should be halved either by administering the initial unit dose every two days, or by administering half of this dose once a day when creatinine clearance is 40-60ml/min;** ***in severe renal insufficiency-*** **teicoplanin dose should be 1/3 the normal either by administering the initial unit dose every third day or by administering 1/3 of the dose once a day when creatinine clearance is <40ml/min and in haemodialysed patients. Teicoplanin is not removed by dialysis.**
Drug inter: Teicoplanin should be administered with caution in patients receiving concurrent nephrotoxic or ototoxic drugs such as aminoglycosides, amphotericin B, cyclosporine and frusemide.

❖ **TERGOCIN Inj. Incepta**
Teicoplanin INN 200mg lyophilized powder in vial for i.m or i.v injection.
200mg vial x 1's pack: 1600.00 MRP

1.8 Sulphonamides & Trimethoprim

SULPHADIAZINE[21]

SULPHADIAZINE: Tablet/Injection
Ind: Meningococcal meningitis.
C/I: Pregnancy, infants under 6 wks; renal & hepatic failure, Jaundice & blood disorder.
S/E: Nausea, vomiting, rashes, eosinophilia, agranulocytosis, granulocytopenia, purpura, leukopenia.
Cautions: Blood counts in prolonged treatment; maintain adequate fluid intake; renal impairment.
Dose: By deep i.m inj. or i.v infusion 2gm initially then 1gm every 6 hours for 2 days, followed by oral treatment for a further 5 days. If injection is not available, by mouth, 2gm (4 tab) on the first time there after 1gm (2 tab) 4-6 hourly for 7 days.
Preparation: May not be available

SULPHADIMIDINE[21]

SULPHADIMIDINE: Tablet/Injection
Ind: Specially for urinary tract infections.
C/I; S/E; Cautions: Same as sulphadiazine.
Dose: By mouth, initially 2gm (4 tabs.) then 4gm daily in divided doses. By i.m or i.v injection, 2gm initially, then 0.5-1gm every 6-8 hours.
Preparation: May not be available

SULPHASALAZINE[21,60]

SULPHASALAZINE: Tablet
Ind: Ulcerative colitis, Crohn's disease, rheumatoid arthritis.
S/E: Nausia, headache, rash, fever, loss of appetite.
Cautions: Impaired renal or hepatic function. Regular blood check and livar function test should be done.
Dosage & admin: Adults: 2-4 tablets 4 times daily; maintenance, 4 tablets daily in divided doses.
Rheumatoid arthritis- initially 1 tablet daily for one week increasing by one each week to maximum 6 daily in divided doses.
Children: Under 2 years not recommended. Over 2 years 40-60mg/kg daily; maintenance, 20-30 mg/kg daily.
Preparations: See under the 'drugs for chronic inflammatory bowel disease' in the Chapter-1 of Gastro-intestinal drugs.

CO-TRIMOXAZOLE[21,33]

CO-TRIMOXAZOLE: Tablet/Suspn/ Injection
A mixture preparation of trimethoprim & sulphamethoxazole in the proportions of 1 parts to 5 parts (i.e 1: 5; such as, trimethoprim 80mg & sulphamethoxazole 400mg or 160mg & 800mg respectively).
Ind: Broad spectrum chemotherapeutic agent specially in typhoid fever, respiratory tract, genito-urinary tract, skin and soft tissue infections, bone and joint infections due to haemophilus influenzae, sinusitis, exacerbation of chronic bronchitis, gonorrhoea in penicillin-allergic patient.
C/I: Pregnancy, infants under 6 wks; renal & hepatic failure, Jaundice & blood disorder.
S/E: Nausea, vomiting, rashes, eosinoph-ilia, agranulocytosis, granulocytopenia, purpura, leukopenia & megaloblastic anaemia due to trimethoprim.
Cautions: Blood counts in prolonged treatment; maintain adequate fluid intake; renal impairment; drug interactions.
Dosage & admin: By mouth, 960mg (2 tab or 20 ml) twice daily (12 hourly). Child- under 6 wks. not recommended; 6 wks. to 5 months, 120mg (2.5 ml); 6 months to 5 yrs. 240mg (5ml); 6 yrs. to 12 yrs. 480mg (10ml), all twice daily. By i.m injection or i.v infusion, 960mg every 12 hours.

❖ **ACTRIM Tab. Globe**
Cotrimoxazole 480mg/tablet
100's pack: 90.00 MRP
❖ **ACTRIM-DS Tab. Globe**
Co-trimoxazole 960mg / tablet
100's pack: 140.00 MRP
❖ **ACTRIM Susp. Globe**
Cotrimoxazole 240mg/5ml: suspension
60ml bot: 22.00 MRP
❖ **ALCOT Tab. Pacific**
Cotrimoxazole 480mg/tablet
100's pack: 100.00 MRP
❖ **ALCOT-DS Tab. Pacific**
Co-trimoxazole 960mg (double strength)/tablet
100's pack: 200.00 MRP
❖ **ALCOT Susp. Pacific**
Cotrimoxazole 240mg/5ml: suspension
60ml bot: 20.00 MRP
❖ **APCETRIM-DS Tab. A.P.C Pharma**
Co-trimoxazole 960mg (double strength)/tablet
100's pack: 200.00 MRP
❖ **APCETRIM Susp. A.P.C Pharma**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 20.00 MRP
❖ **APTRIM Susp. Apollo**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 20.54 MRP
❖ **AVLOTRIN DS Tab. ACI**
Co-trimoxazole 960mg (double strength)/ tablet
100's pack: 200.00 MRP
❖ **AVLOTRIN Susp. ACI**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 21.49 MRP
❖ **BACTAZOL Tab. Sonear**
Co-trimoxazole 480mg/tablet
100's pack: 148.00 MRP
❖ **BACTAZOL-DS Caplet Sonear**
Co-trimoxazole 960mg/caplet
40's pack: 80.00 MRP
❖ **BACTAZOL-S Susp. Sonear**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 22.00 MRP
❖ **BACTIPRONT Tab. Renata**
Co-trimoxazole 480mg/tablet
100's pack: 148.00 MRP
❖ **BACTIPRONT-DS Tab. Renata**
Co-trimoxazole 960mg/tablet
100's pack: 202.00 MRP
❖ **BACTIPRONT Susp. Renata**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 22.06 MRP
❖ **BACTIPRONT P-120 Tab. Renata**
Co-trimoxazole 120mg/tablet (pediatric prepn.)
100's pack: 48.00 MRP

❖ **BIOTRIM Tab. Bio-pharma**
Co-trimoxazole 480mg/tablet
100's pack: 140.00 MRP
❖ **BIOTRIM-DS Tab. Bio-pharma**
Co-trimoxazole 960mg (double strength)/tablet
100's pack: 200.00 MRP
❖ **BIOTRIM Susp. Bio-Pharma**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 21.48 MRP
❖ **CENTRIM Tab. CPL**

Co-trimoxazole 480mg: tablet
100's pack: 120.00 MRP

❖ **CENTRIM-DS Tab. CPL**
Co-trimoxazole 960mg/tablet (double strength)
100's pack: 200.00 MRP

❖ **CENTRIM Susp. CPL**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 20.00 MRP

❖ **COSAT DS Tab. SK+F**
Co-trimoxazole 960mg (double strength)/tablet
100's pack: 202.00 MRP

❖ **COSAT Susp. SK+F**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 22.00 MRP

❖ **COTRAZEN Tab. Zenith**
Co-trimoxazole 480mg/tablet
100's pack: 130.00 MRP

❖ **COTRAZEN DS Tab. Zenith**
Co-trimoxazole 960mg (double strength)/tablet
100's pack: 200.00 MRP

❖ **COTRAZEN Susp. Zenith**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 21.22 MRP

❖ **COTRIM Tab. Square**
Co-trimoxazole 480mg/tablet
100's pack: 149.00 MRP

❖ **COTRIM-DS Tab. Square**
Co-trimoxazole 960mg (double strength)/tablet
100's pack: 202.00 MRP

❖ **COTRIM Susp. Square**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 21.49 MRP

❖ **CO-TRY-DS Tab. Ad-din**
Co-trimoxazole 960mg (double strength)/tablet
100's pack: 186.00 MRP

❖ **CO-TRY Susp. Ad-din**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 18.55 MRP

❖ **COTS Susp. Opsonin**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 21.25 MRP

❖ **DECATRIM DS Tab. Decent**
Co-trimoxazole 960mg (double strength)/tablet
100's pack: 150.00 MRP

❖ **DECATRIM Susp. Decent**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 21.75 MRP

❖ **DEOTRIM Tab. Desh Pharma**
Co-trimoxazole 480mg/tablet
100's pack: 120.00 MRP

❖ **DEOTRIM-DS Tab. Desh Pharma**
Co-trimoxazole 960mg (double strength)/tablet
100's pack: 200.00 MRP

❖ **DEOTRIM Susp. Desh Pharma**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 21.80 MRP

❖ **DOCTRIM Susp. Doctor's**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 21.00 MRP

❖ **EDITRIM-DS Tab. Edruc**
Co-trimoxazole 960mg /tablet
100's pack: 202.00 MRP

❖ **EDITRIM Susp. Edruc**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 20.23 MRP

❖ **FISAT Tab. Sanofi-aventis**
Co-trimoxazole 480 mg/tablet
100's pack: 151.00 MRP

❖ **FISAT-DS Tab. Sanofi-aventis**
Co-trimoxazole 960mg (double strength)/ tablet
100's pack: 264.00 MRP

❖ **GENTRIM Tab. General**
Co-trimoxazole 480mg/tablet
100's pack: 149.00 MRP

❖ **GENTRIM Susp. General**
Co-trimoxazole 240m/5ml: suspension
60ml bot: 22.05 MRP

❖ **G-COTRIMOXAZOLE Tab. Gonosha**
Co-trimoxazole 480mg/tablet.
100's pack: 120.00 MRP
500's pot: 605.00 MRP

❖ **G-COTRIMOXAZOLE DS Tab. Gonoshas**
Co-trimoxazole 960mg/tablet (double strength)
100's pack: 175.00 MRP

❖ **G-COTRIMOXAZOLE Susp. Gonoshas**
Co-trimoxazole 240mg/5ml: suspension
100ml bot: 28.00 MRP
50ml bot: 18.00 MRP

❖ **JASOTRIM Tab. Jayson**
Co-trimoxazole 480mg/tablet
100's pack: 106.00 MRP

❖ **JASOTRIM Susp. Jayson**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 21.53 MRP

❖ **K-TRIM Tab. Chemico**
Co-trimoxazole 480mg/tablet
100's pack: 140.00 MRP

❖ **K-TRIM DS Tab. Chemico**
Co-trimoxazole 960mg (double strength)/t ablet
100's pack: 200.00 MRP

❖ **K-TRIM Susp. Chemico**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 20.00 MRP

❖ **LITRIM-DS Tab. Millat**
Co-trimoxazole 960mg (double strength)/tablet
100's pack: 202.00 MRP

❖ **LITRIM Susp. Millat**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 21.05 MRP

❖ **MEDITRIM Tab. Medimet**
Co-trimoxazole 480mg/tablet
100's pack: 145.00 MRP

❖ **MEDITRIM-DS Tab. Medimet**
Co-trimoxazole 960mg/tablet (double strength)
50's pack: 130.00 MRP

❖ **MEDITRIM Susp. Medimet**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 22.00 MRP

❖ **MEGASET Tab. Alco Pharma**
Co-trimoxazole 960mg/tablet (double strength)
100's pack: 202.00 MRP

❖ **MEGATRIM-DS Tab. Beximco**
Co-trimoxazole 960mg/tablet (double strength)
150's pack: 303.00 MRP

❖ **MEGATRIM Susp. Beximco**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 21.50 MRP

❖ **METHOTRIN-DS Tab. Gaco**
Co-trimoxazole 960mg/tablet (double strength)
50's pack: 101.36 MRP
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 22.00 MRP

❖ **METHOTRIN Susp. Gaco**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 20.54 MRP

❖ **METRIM Susp. Chemist**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 21.52 MRP

❖ **MOTRIM-DS Tab. Cosmic**
Co-trimoxazole 960mg/tablet (double strength)
100's pack: 150.00 MRP

❖ **MOTRIM Susp. Cosmic**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 21.00 MRP

❖ **M-TRIM Tab. Modern**
Co-trimoxazole 480mg/tablet.
100's pack: 146.00 MRP

❖ **M-TRIM DS Tab. Modern**
Co-trimoxazole 960mg/tablet (double strength)
100's pack: 202.00 MRP

❖ **M-TRIM Susp. Modern**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 21.24 MRP

❖ **NAVATRIM-DS Tab. Navana**
Co-trimoxazole 960mg/tablet
100's pack: 200.00 MRP

❖ **NAVATRIM Susp. Navana**
Co-trimoxazole 240mg /5ml: suspension
60ml bot: 21.00 MRP

❖ **NEOSET Tab. Alco Pharma**
Co-trimoxazole 480mg/tablet.
100's pack: 142.00 MRP.

❖ **NEOSET Susp. Alco Pharma**
Co-trimoxazole 240mg / 5ml
60 ml bot: 20.99 MRP

❖ **NEOTRIM Tab. Medicon**
Co-trimoxazole 480mg/tablet.
100's pack: 140.00 MRP.

❖ **NEOTRIM-DS Tab. Medicon**
Co-trimoxazole 960mg/tablet (double strength)
100's pack: 200.00 MRP

❖ **NEOTRIM Susp. Medicon**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 22.00 MRP

❖ **OCTRIM Susp. Orion**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 21.00 MRP

❖ **PABA Susp. Belsen**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 20.00 MRP

❖ **PHARMATRIM Tab. Pharmadesh**
Co-trimoxazole 480mg/tablet
100's pack: 130.00 MRP

❖ **PHARMATRIM-DS Tab. Pharmadesh**
Co-trimoxazole 960mg/tablet
100's pack: 200.00 MRP

❖ **PHARMATRIM Susp. Pharmadesh**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 20.00 MRP

❖ **POLITRIM Tab. Acme**
Co-trimoxazole 480mg/tablet
100's pack:142.00 MRP

❖ **POLITRIM-DS Tab. Acme**
Co-trimoxazole 960mg/tablet (double strength)
100's pack: 263.00 MRP

❖ **POLITRIM Susp. Acme**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 21.49 MRP.

❖ **RASAT-DS Tab. Rasa Pharma**
Co-trimoxazole 960mg / tablet
100's pack: 200.00 MRP

❖ **RASAT Susp. Rasa Pharma**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 20.00 MRP

❖ **REGTIN-DS Tab. Rephco**
Co-trimoxazole 960mg/ tablet
96's pack: 199.00 MRP

❖ **REGTIN Susp. Rephco**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 21.00 MRP

❖ **SALTRIM Tab. Salton**
Co-trimoxazole 480mg/tablet
100's pack: 140.00 MRP
❖ **SALTRIM DS Tab. Salton**
Co-trimoxazole 960mg/tablet
50's pack: 100.00 MRP
❖ **SALTRIM Susp. Salton**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 21.00 MRP
❖ **SEEMATRIN DS Tab. Seema**
Co-trimoxazole 960mg/tablet
100's pack: 200.00 MRP
❖ **SEEMATRIN Susp. Seema**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 24.00 MRP
❖ **SEFTRIM-DS Tab. Hudson**
Co-trimoxazole 960mg/tablet
100's pack: 150.00 MRP
❖ **SEFTRIM Susp. Hudson**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 17.00 MRP
❖ **SEMOTRIM Tab. Elixir**
Co-trimoxazole 480mg/tablet
100's pack:
❖ **SEMOTRIM DS Tab. Elixir**
Co-trimoxazole 960mg/tablet
100's pack:
❖ **SEMOTRIM Susp. Elixir**
Co-trimoxazole 240mg/5ml: suspension
60ml bot:
❖ **SEPTRA Tab. Asiatic**
Co-trimoxazole 480mg/tablet
100's pack: 140.00 MRP
❖ **SEPTRA-DS Tab. Asiatic**
Co-trimoxazole 960mg/tablet
100's pack: 200.00 MRP
❖ **SEPTRA Susp. Asiatic**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 20.00 MRP
❖ **SINATRIM Tab. Ibn Sina**
Co-trimoxazole 480mg/tablet.
100's pack: 142.00 MRP
❖ **SINATRIM-DS Tab. Ibn Sina**
Co-trimoxazole 960mg/tablet (double strength)
100's pack: 203.00 MRP
❖ **SINATRIM Susp. Ibn Sina**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 21.24 MRP
❖ **SITRIM DS Tab. Silva**
Co-trimoxazole 960mg/tablet (double strength)
100's pack: 200.00 MRP
❖ **SITRIM Susp. Silva**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 20.00 MRP
❖ **SKYTRIN Tab. Skylab**
Co-trimoxazole 480mg/tablet
100's pack: 110.00 MRP
❖ **SKYTRIN-DS Tab. Skylab**
Co-trimoxazole 960mg/tablet (double strength)
100's pack: 200.00 MRP
❖ **SKYTRIN Susp. Skylab**
Co-trimoxazole 240mg/5ml: suspension
60 ml bot: 20.00 MRP
❖ **SOMA-DS Tab. Ambee**
Co-trimoxazole 960mg/tablet (double strength)
100's pack: 203.00 MRP
❖ **SUMETROLIM Susp. Ambee**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 21.53 MRP
❖ **SUPRIM-DS Tab. Nipa**
Co-trimoxazole 960mg/tablet
50's pack: 101.00 MRP
❖ **SUPRIM Susp. Nipa**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 20.00 MRP
❖ **SYNAC Susp. Hallmark**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 21.00 MRP
❖ **SYTRIM DS Tab. Syntbo**
Co-trimoxazole 960mg/tablet
50's pack: 100.00 MRP
❖ **SYTRIM Susp. Syntho**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 21.25 MRP
❖ **TRICOT-DS Tab. Reman**
Co-trimoxazole 960mg/tablet
100's pack: 114.00 MRP
❖ **TRICOT Snsp. Reman**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 21.80 MRP
❖ **TRIMETRIN Susp. Aexim**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 21.00 MRP
❖ **TRIPRIM-DS Tab. Supreme**
Co-trimoxazole 960mg/tablet
100's pack: 200.00 MRP
❖ **TRIPRIM Susp. Supreme**
Co-trimoxazole 240mg/5ml: suspension
60ml bot: 21.00 MRP
❖ **Z-TRIM DS Tab. Ziska**
Co-trimoxazole 960mg/tablet
100's pack: 140.00 MRP

1.9 4-Quinolone prepns.

CIPROFLOXACIN[21,26,33,86,101]

CIPROFLOXACIN: Tablet/Suspension/ Sachet/Injection
Ciprofloxacin is a synthetic 4-quinolone derivative. It has bactericidal activity against a wide range of gram-positive and gram-negative organisms.
Mode of action: The mode of action of the quinolones is not fully known. In susceptible bacteria, quinolones inhibit the activity of DNA gyrase (topoisomerase-II), an essential bacterial enzyme required for DNA replication, transcription. repair, and recombination. The drugs are bactericidal during the stationary growth phase, as well as in the logarith mic growth phase of certain bacteria (other anti-infective agents are most active during the logarithmic growth phase).
Quinolones also inhibit topoisomerase-IV, an enzyme structurally similar to DNA gyrase and essential for bacterial DNA replication.
Topoisomerase-IV may be the primary target of ma jor quinolones in gram-positive bacteria, (DNA gyrase appears to be the main target in gram-negative bacteria). The targets of older quinolones (ciprofloxacin, and other second generation agents) probably are different from the targets of the newer agents.
Ind: UTI, respiratory tract infection, infections of ear, nose, throat, eyes, skin & soft tissue, bone, joints, and g.i tract. Gonorrhoea, severe systemic infection & gram negative pneumonia.
Ciprofloxacin is particularly active against gram negative bacteria, including salmonella, shigella, camphylobacter, neisseria and pseudomonas. It only has moderate activity against gram positive bacteria such as streptococcus pneumoniae and streptococcus faecalis.
C/I: Growing adolescents, except where benefits exceed risks; pregnancy and lactation; epilepsy and history of CNS disorders.
S/E: Nausia, vomiting, diarrhoea, dyspepsia, abdominal pian, dizziness, headache, restlessness, rash, pruritus, tremor, confusion, convulsions, hallucinations, somnolence, blurred vision, muscle and joint pain, photosensitivity; blood disorders including eosinophilia, leucopenia thrombocytopenia, thrombocytosis, pseudomembranous colitis, vasculitis, Steven-Johnson syndrome and tachycardia reported.
Cautions: 4-quinolones should be used with caution in patients with epilepsy or a history of epilepsy, in hepatic or renal impairment, in pregnancy, during breast-feeding, and in children or adolescents (arthropathy has developed in weight-bearing joints in young animals). 4-quinolones may induce convulsions in patients with or without a history of convulsions; taking NSAIDs at the same time may also induce them. The drug should be discontinued if mental, neurological or hypersensitivity reactions occur with the first dose.
Dosage & admin: ***By mouth:*** **Adult:**
Urinary tract infections: **Mild to moderate infection, 250mg every 12 hours; complicated infections, caused by organisms not highly susceptible to drug, 500mg every 12 hours.**
Infectious diarrhoea: **500mg every 12 hrs.**
Lower respiratory tract, skin & soft tissue, bone & joint infections: **In mild to moderate infections in all cases, usual dosage is 500mg every 12 hours; a dosage of 750mg every 12 hours may be needed, specially in bone and joint infections or when infections are severe or complicated.**
In severe infections, particularly due to pseudomonas, staphylococcus and streptococci, the higher dosage of ciprofloxacin 750mg tablet twice daily should be used.
The duration of therapy depends on the type and severity of infection and should be determined by the clinical and bacteriologic response of the patients. For most infections, usual duration is 1-2 weeks but severe or complicated infections may require more prolonged therapy.
Gonorrhoea: **A single 500mg oral dose of ciprofloxacin followed by oral doxycycline therapy for possible coexisting chlamydia infection. In the treatment of chancroid, 500mg orally twice daily for 3 days is required.**
Surgical prophylaxis: **A single dose of ciprofloxacin 750mg is given 60-90 minntes before the procedure.**
Children: Not recommended but where benefit outweighs risk, by mouth 7.5-15mg/kg daily in 2 divided doses.

Dosage of XR Tablets: **Ciprofloxacin XR (extended-release) 500mg tablet is specially formulated only for the treatment of uncomplicated urinary tract infections (acute cystitis) to be taken once daily, usually for 3 days with or without food and drinking water**

liberally. No dosage adjustment is needed for renally impaired patients.
In patients with complicated urinary tract infections and acute uncomplicated pyelonephritis, who have a creatinine clearance of <30ml/min, ciprofloxacin XR 500mg can be used for 7-14 days.
Ciprofloxacin XR 500mg tablet and ciprofloxacin immediate release tablets are not interchangeable.
The tablet should be swallowed whole and it is advised not to split, crush or chew the tablet.
Patients whose therapy is started with ciprofloxacin i.v for UTIs may be switched to ciprofloxacin XR 500mg tablet when clinically indicated.
By i.v infusion (over 30-60 mins):
Ciprofloxacin i.v infusion is indicated for patients with severe infections or where oral administration is not possible. Intravenous therapy should be replaced by oral tablets at the appropriate time.
The usual recommended dosage schedule for adults is as following:
UTI & GI infections: 100-200mg i.v 12 hourly.
Gonorrhoea: 100mg i.v single dose.
Other infections: 200mg i.v 12 hourly.
Children: Not recommended, but where benefit outweighs risk, 5-10mg/kg daily in 2 divided doses.
In case of marked renal impairment (creatinine clearance <20ml/min), the total daily dosage should be halved.
Duration of treatment: **For acute infection the usual treatment period is 5 to 7 days (i.v), then if required to continue the therapy may be changed to oral tablet.**

❖ **ADECIN Tab. Supreme**
Ciprofloxacin 500mg/tablet.
500mg x 30's pack: 360.00 MRP

❖ **AMIFLOX Tab. Amico**
Ciprofloxacin 250mg, 500mg & 750mg/tablet
250mg x 30's pack: 150.00 MRP
500mg x 30's pack: 300.00 MRP
750mg x 10's pack: 160.00 MRP

❖ **AMIFLOX DS Susp. Amico**
Ciprofloxacin 250mg/5ml: suspension (double strength).
60ml bot: 85.00 MRP

❖ **ANCIPRO Tab. UniHealth**
Ciprofloxacin 250mg, 500mg & 750mg/tab.
250mg x 30's pack: 255.00 MRP
500mg x 20's pack: 280.00 MRP
750mg x 20's pack: 360.00 MRP

❖ **ANGYR Tab. SAPL**
Ciprofloxacin 250mg & 500mg/tablet.
250mg x 50's pack: 425.00 MRP
500mg x 30's pack: 360.00 MRP

❖ **APROCIN Tab. Aristopharma**
Ciprofloxacin 250mg & 500mg/tablet.
250mg x 30's pack: 255.00 MRP
500mg x 30's pack: 420.00 MRP

❖ **APROCIN Susp. Aristopharma**
Ciprofloxacin 250mg/5ml (taste masked pellets for suspension): suspension.
60ml bot: 90.00 MRP

❖ **BACTIN Tab. Ibn Sina**
Ciprofloxacin 250mg, 500mg & 750mg/tablet.
250mg x 20's pack: 152.00 MRP
500mg x 20's pack: 243.00 MRP
750mg x 20's pack: 360.00 MRP

❖ **BENPROX Tab. Benham**
Ciprofloxacin 500mg & 750mg/tablet.
500mg x 30's pack: 345.00 IP
750mg x 20's pack: 360.00 IP

❖ **BEUFLOX Tab. Incepta**
Ciprofloxacin 250mg, 500mg & 750mg/tablet.
250mg x 18's pack: 153.00 MRP
500mg x 20's pack: 280.00 MRP
750mg x 20's pack: 360.00 MRP

❖ **BEUFLOX Sachet Incepta**
Ciprofloxacin 250mg granules/sachet: suspension.
Dose & admin: For dosage: See above under the text.
Preparation of suspension: Whole contents of the sachet should be taken into a small glass containing 2-3 tsf of water. Other liquids or foods should not be used. The mixer should be stirred well and drink immediately. The glass should be refilled with water and drink. If the suspension is to be administered through a nasogastric or orogastric tube, the suspension should be constituted with about 20ml of water, and an approximately sized syringe should be used to instill the suspension in the tube. The suspension should be washed through the tube with about 20ml of water.
250mg sachet x 14's pack: 168.00 MRP

❖ **BEUFLOX Paed Sachet Incepta**
Ciprofloxacin 125mg granules/sachet: for paediatric suspension.
Dose & admin: For dosage: See above under the text.
Preparation of suspension: Same as above (Beuflox sechet).
125mg sachet x 14's pack: 112.00 MRP

❖ **BEUFLOX I.V Inf. Incepta**
Ciprofloxacin 200mg in 100ml bottle & 400mg in 200ml bottle: i.v infusion.
100ml (200mg) bot: 70.00 MRP
200ml (400mg) bot: 130.00 MRP

❖ **CERO Tab. Gaco**
Ciprofloxacin 250mg & 500mg/tablet.
250mg x 50's pack: 374.98 MRP
500mg x 20's pack: 280.00 MRP

❖ **CIFLOX Tab. Reman**
Ciprofloxacin 500mg/tablet.
500mg x 20's pack: 240.00 MRP

❖ **CILOCIN Tab. Pacific**
Ciprofloxacin 500mg/tablet.
500mg x 100's pack: 500.00 MRP

❖ **CILOCIN XR Tab. Pacific**
Ciprofloxacin 500mg/tablet (extended release).
500mg x 30's pack: 450.00 MRP

❖ **CIP Tab. Asiatic**
Ciprofloxacin 500mg & 750mg/tablet.
500mg x 30's pack: 420.00 MRP
750mg x 12's pack: 216.00 MRP

❖ **CIPCIN Tab. Bio-pharma**
Ciprofloxacin 250mg, 500mg & 750mg/tablet.
250mg x 30's pack: 240.00 MRP
500mg x 30's pack: 390.00 MRP
750mg x 12's pack: 204.00 MRP

❖ **CIPCIN DS Susp. Bio-pharma**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 80.00 MRP

❖ **CIPLON Tab. Techno Drugs**
Ciprofloxacin 500mfg & 750mg/tablet.
500mg x 30's pack: 300.00 MRP
750mg x 20's pack: 300.00 MRP

❖ **CIPLON I.V Inf. Techno Drugs**
Ciprofloxacin 200mg in 100ml bottle: i.v infusion.
100ml bot: 75.00 MRP

❖ **CIPLON DS I.V Inf. Techno Drugs**
Ciprofloxacin 400mg in 100ml bottle (double strength): i.v infusion.
100ml bot: 120.00 MRP

❖ **CIPOXIA-500 Tab. Pharmasia**
Ciprofloxacin 500mg/tablet.
500mg x 20's pack: 280.00 IP

❖ **CIPRIN Tab. Nipa**
Ciprofloxacin 500mg/tablet.
500mg x 30's pack: 360.00 MRP

❖ **CIPRO-500 Tab. Apollo**
Ciprofloxacin 500mg/tablet.
500mg x 30's pack: 300.00 IP

❖ **CIPRO Susp. Apollo**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 80.00 IP

❖ **CIPRO-A Tab. Acme**
Ciprofloxacin 250mg, 500mg & 750mg/tablet
250mg x 30's pack: 255.00 MRP
500mg x 20's pack: 280.00 MRP
750mg x 20's pack: 360.00 MRP

❖ **CIPRO-A Susp. Acme**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 90.00 IP

❖ **CIPRO-A Inf. Acme**
Ciprofloxacin 200mg in 100ml bot: i.v infusion.
200mg x 100ml bot: 90.00 MRP

❖ **CIPRO-B Tab. Belsen**
Ciprofloxacin 500mg/tablet.
500mg x 30's pack: 360.00 MRP

❖ **CIPROBAC 500 Tab. Bristol**
Ciprofloxacin 500mg/tablet.
500mg x 24's pack: 240.00 MRP

❖ **CIPRO-C Tab. Chemist**
Ciprofloxacin 250mg & 500mg/tablet.
250mg x 50's pack: 429.50 MRP
500mg x 20's pack: 222.40 MRP

❖ **CIPROCAP Tab. Sonear**
Ciprofloxacin 250mg & 500mg/tablet.
250mg x 30's pack: 255.00 MRP
500mg x 16's pack: 224.00 MRP

❖ **CIPROCIN Tab. Square**
Ciprofloxacin 250mg, 500mg & 750mg/ tablet.
250mg x 30's pack: 255.00 MRP
500mg x 20's pack: 280.00 MRP
750mg x 20's pack: 360.00 MRP

❖ **CIPROCIN XR 1gm Tab. Square**
Ciprofloxacin 1gm/tablet (extended release).
1gm x 12's pack: 240.00 MRP

❖ **CIPROCIN Susp. Square**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 90.00 MRP

❖ **CIPROL 500 Tab. Medicon**
Ciprofloxacin 500mg/tablet.
500mg x 30's pack: 300.00 MRP

❖ **CIPROL-DS Susp. Medicon**

Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 90.00 MRP

❖ **CIPROLEX Tab. Mystic**
Ciprofloxacin 250mg & 500mg/tablet.
250mg x 30's pack: 210.00 MRP
500mg x 20's pack: 240.00 MRP

❖ **CIPROLYN Tab. Cosmic**
Ciprofloxacin 250mg & 500mg/tablet.
250mg x 50's pack: 300.00 MRP
500mg x 30's pack: 360.00 MRP

❖ **CIPROM Tab. Millat**
Ciprofloxacin 250mg & 500mg/tablet.
250mg x 30's pack: 255.00 MRP
500mg x 20's pack: 280.00 MRP

❖ **CIPROM Susp. Millat**
Ciprofloxacin 250mg/5ml: suspension.
100ml bot: 70.00 MRP

❖ **CIPRO-M Tab. Modern**
Ciprofloxacin 500mg & 750mg/tablet.
500mg x 20's pack: 200.00 MRP
750mg x 20's pack: 280.00 MRP

❖ **CIPROMET Tab. Medimet**
Ciprofloxacin 250mg & 500mg/tablet.
250mg x 30's pack: 255.00 MRP
500mg x 20's pack: 280.00 MRP

❖ **CIPROMIN Tab. Skylab**
Ciprofloxacin 500mg/tablet.
500mg x 20's pack: 240.00 MRP

❖ **CIPRON Tab. Edruc**
Ciprofloxacin 500mg/tablet.
500mg x 30's pack: 364.50 MRP

❖ **CIPRONIL Tab. Silva**
Ciprofloxacin 500mg & 750mg/tablet.
500mg x 30's pack: 300.00 MRP
750mg x 12's pack: 156.00 MRP

❖ **CIPRONIL Susp. Silva**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 90.00 MRP

❖ **CIPROQUIN Tab. Marksman**
Ciprofloxacin 500mg/tablet.
500mg x 30's pack: 360.00 MRP

❖ **CIPRO-S Tab. Seema**
Ciprofloxacin 500mg/tablet
500mg x 60's pack: 720.00 MRP

❖ **CIPRO-S Susp. Seema**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 80.00 MRP

❖ **CIPROTEC-500 Tab. A.P.C Pharma**
Ciprofloxacin 500mg/tablet
500mg x 20's pack: 160.00 MRP

❖ **CIPROX Tab. Opsonin**
Ciprofloxacin 250mg, 500mg & 750mg/tablet.
250mg x 30's pack: 255.00 MRP
500mg x 20's pack: 280.00 MRP
750mg x 20's pack: 360.00 MRP

❖ **CIPROX XR 1000 Tab. Opsonin**
Ciprofloxacin 1000mg/tablet (extended release).
1000mg x 6's pack: 120.00 MRP

❖ **CIPROX DS Susp. Opsonin**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 90.00 MRP

❖ **CIPROX I.V Inj. Opsosaline**
Ciprofloxacin 200mg in 100ml bot: i.v injection.
100ml bot: 65.00 MRP

❖ **CIPROXEN Tab. Ad-din**
Ciprofloxacin 250mg & 500mg/tablet.
250mg x 30's pack: 210.00 MRP
500mg x 14's pack: 196.00 MRP

❖ **CIPROXIM Tab. White Horse**
Ciprofloxacin USP 500mg & 750mg/tablet.
500mg x 20's pack: 240.00 MRP
750mg x 20's pack: 320.00 MRP

❖ **CIPROXIM Susp. White Horse**
Ciprofloxacin 250mg/5ml: suspension.
100ml bot: 80.00 MRP

❖ **CIPROZ Tab. Ziska**
Ciprofloxacin 500mg & 750mg/tablet.
500mg x 30's pack: 300.00 MRP
750mg x 20's pack: 280.00 MRP

❖ **CIPROZ Susp. Ziska**
Ciprofloxacin 250mg/5ml: suspension.
100ml bot: 60.00 MRP

❖ **CIPROZEN Tab. Zenith**
Ciprofloxacin 250mg/tablet.
250mg x 50's pack: 400.00 MRP

❖ **CIPROZEN DS Tab. Zenith**
Ciprofloxacin 500mg/tablet.
500mg x 50's pack: 700.00 MRP

❖ **CIPROZEN Susp. Zenith**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 75.00 MRP

❖ **CIPROZID Tab. Drug Inter.**
Ciprofloxacin 250mg/tablet.
50's pack: 350.00 MRP

❖ **CIPROZID-DS Tab. Drug Inter.**
Ciprofloxacin 500mg/tablet.
30's pack: 390.00 MRP

❖ **CIPROZID-750 Tab. Drug Inter.**
Ciprofloxacin 750mg/tablet.
30's pack: 480.00 MRP

❖ **CIPROZID-XR- 1000 Tab. Drug Inter.**
Ciprofloxacin 1000mg/tablet (extended release).
1000mg x 12's pack: 240.00 MRP

❖ **CIPROZID Susp. Drug Inter.**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 90.00 MRP

❖ **CIPROZID Inf. Drug Inter.**
Ciprofloxacin 200mg in 100ml bot: i.v infusion.
200mg x 100ml bot: 70.00 MRP

❖ **CIVOX Tab. Popular**
Ciprofloxacin 500mg/tablet.
24's pack: 288.00 MRP

❖ **CIVOX XR Tab. Popular**
Ciprofloxacin 1000mg/tablet (extended release).
1000mg x 12's pack: 300.00 MRP

❖ **CIVOX Susp. Popular**
Ciprofloxacin 200mg/5ml: suspension.
60ml bot: 90.00 MRP

❖ **CIVOX Inf. Popular**
Ciprofloxacin 200mg in 100ml bot: i.v infusion.
200mg x 100ml bot: 70.00 MRP

❖ **CPFLOX Tab. Cosmo Pharma**
Ciprofloxacin 500mg/tablet.
500mg x 20's pack: 202.20 MRP

❖ **DEFLOX Tab. Desh Pharma**
Ciprofloxacin 500mg & 750mg/tablet.
500mg x 30's pack: 315.00 MRP
750mg x 20's pack: 260.00 MRP

❖ **DEFLOX-DS Susp. Desh Pharma**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 80.00 MRP

❖ **DEOFLOX Tab. Delta**
Ciprofloxacin 500mg & 750mg/tablet.
500mg x 32's pack: 320.00 MRP
750mg x 8's pack: 112.00 MRP

❖ **DEOFLOX Susp. Delta**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 90.00 MRP

❖ **D-FLOXIN Tab. Doctors**
Ciprofloxacin 250mg & 500mg/tablet.
250mg x 30's pack: 136.50 MRP
500mg x 30's pack: 300.00 MRP

❖ **D-FLOXIN Susp. Doctors**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 65.00 MRP

❖ **DFX Tab. Delta**
Ciprofloxacin 500mg & 750mg/tablet.
500mg x 32's pack: 320.00 MRP
750mg x 8's pack: 112.00 MRP

❖ **DFX Susp. Delta**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 89.99 MRP

❖ **DOQUIN Tab. Hallmark**
Ciprofloxacin 500mg/tablet.
30's pack: 360.00 MRP

❖ **DUMAFLOX Tab. Alco Pharma**
Ciprofloxacin 250mg, 500mg & 750mg/tablet
250mg x 30's pack: 225.00 MRP
500mg x 30's pack: 300.00 MRP
750mg x 20's pack: 240.00 MRP

❖ **DUMAFLOX Susp. Alco Pharma**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 65.00 MRP

❖ **ELIPROX Tab. Elixir**
Ciprofloxacin 500mg/tablet
500mg x 30's pack: 330.00 MRP

❖ **FIPROX Tab. Sanofi-aventis**
Ciprofloxacin 250mg, 500mg & 750mg/tab.
250mg x 30's pack: 255.00 MRP
500mg x 30's pack: 420.00 MRP
750mg x 20's pack: 360.00 MRP

❖ **FLONTIN Tab. Renata**
Ciprofloxacin 250mg, 500mg & 750mg/tab.
250mg x 20's pack: 170.00 MRP
500mg x 30's pack: 420.00 MRP
750mg x 20's pack: 360.00 MRP

❖ **FLONTIN Susp. Renata**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 60.00 MRP
100ml bot: 80.00 MRP

❖ **FLONTIN I.V Inj. Renata**
Ciprofloxacin 200mg in 100ml bot: i.v injection.
100ml bot: 145.00 MRP

❖ **FLOXABID Tab. ACI**
Ciprofloxacin 250mg, 500mg & 750mg/tablet.
250mg x 50's pack: 425.00 IP
500mg x 30's pack: 420.00 IP
750mg x 20's pack: 360.00 IP

❖ **FLOXABID SR Tab. ACI**
Ciprofloxacin 1000mg/tablet (sustained release).
1000mg x 8's pack: 160.00 IP

❖ **FLOXABID DS Susp. ACI**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 80.00 IP

❖ **FLOXABID DS Susp. (Pellets) ACI**
Ciprofloxacin 250mg/5ml: pellets for suspension.
60ml bot: 90.00 IP

❖ **FLOXACIN Tab. Navana**
Ciprofloxacin 250mg & 500mg/tablet.
250mg x 50's pack: 250.00 IP
500mg x 30's pack: 300.00 IP

❖ **FLOXIN Tab. Pharmadesh**
Ciprofloxacin 250mg & 500mg/tablet.
250mg x 50's pack: 225.00 MRP
500mg x 30's pack: 178.80 MRP

❖ **FLOXIN-DS Susp. Pharmadesh**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 80.00 MRP

❖ **G-CIPRO Tab. Gonoshas**
Ciprofloxacin 500mg/tablet.

30's pack: 180.00 MRP

❖ **G-CIPRO I.V Inf. Gonoshas**
Ciprofloxacin 250mg in 100ml bot: i.v infusion.
100ml bot: 50.00 MRP

❖ **GEFLOX Tab. General**
Ciprofloxacin 250mg & 500mg/tablet.
250mg x 30's pack: 255.00 MRP
500mg x 30's pack: 420.00 MRP

❖ **GEFLOX XR Tab. General**
Ciprofloxacin 500mg/tablet (extended release).
500mg x 20's pack: 300.00 MRP

❖ **GLAXIPRO Tab. GlaxoSmithKline**
Ciprofloxacin 500mg/tablet.
500mg x 30's pack: 420.00 MRP

❖ **HIFLOX Tab. Ambee**
Ciprofloxacin 500mg & 750mg/tablet.
500mg x 30's pack: 260.10 MRP
750mg x 20's pack: 240.00 MRP

❖ **HIFLOX Susp. Ambee**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 70.00 MRP

❖ **HI-FLOXIN Tab. Hudson**
Ciprofloxacin 500mg/tablet.
500mg x 30's pack: 360.00 MRP

❖ **KAPRON Tab. Globe**
Ciprofloxacin 250mg, 500mg & 750mg/tab.
250mg x 30's pack: 180.00 MRP
500mg x 60's pack: 720.00 MRP
750mg x 20's pack: 300.00 MRP

❖ **LIBRACIN-200 I.V Inf. Libra**
Ciprofloxacin 200mg in 100ml bot: i.v infusion.
200mg x 100ml bot: 106.25 MRP

❖ **LIBRACIN-400 I.V Inf. Libra**
Ciprofloxacin 400mg in 100ml bot: i.v infusion.
400mg x 100ml bot: 145.75 MRP

❖ **LOX-500 Tab. Apex**
Ciprofloxacin 500mg/tablet.
500mg x 28's pack: 361.00 MRP

❖ **LOX-750 Tab. Apex**
Ciprofloxacin 750mg/tablet.
750mg x 20's pack: 280.00 MRP

❖ **LOX-DS Susp. Apex**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 60.00 MRP

❖ **MAPROCIN Tab. Orion**
Ciprofloxacin 500mg & 750mg/ tablet.
500mg x 30's pack: 420.00 MRP
750mg x 20's pack: 360.00 MRP

❖ **MAPROCIN Susp. Orion**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 90.00 MRP

❖ **MAPROCIN I.V Inf. Orion**
Ciprofloxacin 200mg in 100ml bot: i.v infusion.
100ml bot: 70.00 MRP

❖ **MAPROCIN-DS I.V Inf. Orion**
Ciprofloxacin 400mg in 100ml bot: i.v infusion.
100ml bot: 130.00 MRP

❖ **MONIPRO Tab. MonicoPharma**
Ciprofloxacin 500mg/tablet.
500mg x 24's pack: 336.00 MRP

❖ **NEOFLOX Tab. CPL**
Ciprofloxacin 500mg/tablet.
500mg x 30's pack: 360.00 MRP

❖ **NEOFLOX Susp. CPL**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 60.00 MRP

❖ **NEOFLOXIN Tab. Beximco**
Ciprofloxacin 250mg, 500mg & 750mg/ tablet.
250mg x 50's pack: 425.00 MRP
500mg x 20's pack: 280.00 MRP
500mg x 50's pack: 700.00 MRP
750mg x 30's pack: 540.00 MRP

❖ **NEOFLOXIN XR Tab. Beximco**
Ciprofloxacin 500mg/tablet (extended release).
500mg x 20's pack: 220.00 MRP

❖ **NEOFLOXIN XR 1000 Tab. Beximco**
Ciprofloxacin 1000mg/tablet (extended release).
1000mg x 10's pack: 250.00 MRP

❖ **NEOFLOXIN Susp. Beximco**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 80.00 MRP

❖ **NEOFLOXIN Inj. Beximco**
Ciprofloxacin 200mg in 100ml bot: i.v infusion.
100ml bot: 146.50 MRP

❖ **OCTABID Tab. Rephco**
Ciprofloxacin 500mg/tablet.
500mg x 30's pack: 420.00 MRP

❖ **ORLEV IV Inj. Orion Infusion**
Ciprofloxacin 500mg in 100ml bot: i.v infusion.
100ml bot: 100.00 MRP

❖ **PANCIPRO Tab. Globex**
Ciprofloxacin 500mg/tablet.
500mg x 30's pack: 260.00 MRP

❖ **PEOFLOX Tab. Peoples**
Ciprofloxacin 500mg/tablet.
500mg x 30's pack: 360.00 MRP

❖ **PROCIN Tab. Chemico**
Ciprofloxacin 250mg, 500mg & 750mg/tablet
250mg x 30's pack: 225.00 MRP
500mg x 30's pack: 360.00 MRP
750mg x 20's pack: 340.00 MRP

❖ **PROCIN Susp. Chemico**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 90.00 MRP

❖ **PROFLOX Tab. Kumudini**
Ciprofloxacin 250mg & 500mg/tablet
250mg x 30's pack: 180.00 MRP
500mg x 20's pack: 200.00 MRP

❖ **QNOL-500 Tab. Decent**
Ciprofloxacin 500mg/tablet.
500mg x 30's pack: 330.00 MRP

❖ **QPRO 500 Tab. Proteety**
Ciprofloxacin 500mg/tablet.
500mg x 20's pack: 160.00 MRP

❖ **QUINOX Tab. SK+F**
Ciprofloxacin 250mg, 500mg & 750mg/tablet.
250mg x 30's pack: 255.00 MRP
500mg x 40's pack: 560.00 MRP
750mg x 10's pack: 180.00 MRP

❖ **QUINOX XR 1000 Tab. SK+F**
Ciprofloxacin USP 1000mg/tablet (extended release).
1000mg x 8's pack: 160.00 MRP

❖ **QUINOX DS Susp. SK+F**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 90.00 MRP

❖ **RACIPROX 500 Tab. RAK Pharma**
Ciprofloxacin 500mg/tablet.
500mg x 20's pack: 280.00 MRP

❖ **RANFLOX Tab. Rangs Pharma**
Ciprofloxacin 500mg & 750mg/tablet.
500mg x 20's pack: 280.00 MRP
750mg x 20's pack: 360.00 MRP

❖ **ROCIN-500 Tab. Rasa Pharma**
Ciprofloxacin 500mg/tablet.
500mg x 20's pack: 250.00 MRP

❖ **ROCIPRO Tab. Healthcare**
Ciprofloxacin 500mg & 750mg/tablet.
500mg x 30's pack: 390.00 MRP
750mg x 16's pack: 256.00 MRP

❖ **SAFLOX Tab. Salton**
Ciprofloxacin 500mg/tablet.
500mg x 30's pack: 360.00 MRP

❖ **SERVIFLOX Tab. Sandoz/Novartis**
Ciprofloxacin 250mg, 500mg & 750mg/tablet.
250mg x 30's pack: 242.70 MRP
500mg x 30's pack: 420.00 MRP
750mg x 20's pack: 360.00 MRP

❖ **SPECTRA-500 Tab. Jayson**
Ciprofloxacin 500mg/tablet.
500mg x 20's pack: 202.40 IP

❖ **SYPRON Tab. Syntho**
Ciprofloxacin 500mg/tablet.
500mg x 30's pack: 360.00 IP

❖ **TYFLOX Tab. Somatec**
Ciprofloxacin 250mg, 500mg & 750mg/tablet
250mg x 30's pack: 255.00 IP
500mg x 30's pack: 360.00 IP
750mg x 10's pack: 180.00 IP

❖ **TYFLOX Susp. Somatec**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 60.00 IP

❖ **ULCIP 500 Tab. Ultra Pharma**
Ciprofloxacin 500mg/tablet.
500mg x 30's pack: 360.00 MRP

❖ **UNIFLOX Tab. Aexim**
Ciprofloxacin 500mg/tablet.
500mg x 30's pack: 240.00 MRP

❖ **XBAC Tab. Beacon**
Ciprofloxacin 500mg & 750mg/tablet.
500mg x 30's pack: 420.00 MRP
750mg x 20's pack: 360.00 MRP

❖ **XIROCIP Tab. Novo Healthcare**
Ciprofloxacin 500mg/tablet.
500mg x 20's pack: 280.00 MRP

❖ **XIROCIP XR 1000 Tab. Novo Healthcare**
Ciprofloxacin USP 1000mg/tablet (extended release).
1000mg x 8's pack: 200.00 MRP

❖ **Susp. Novo Healthcare**
Ciprofloxacin 250mg/5ml: suspension.
60ml bot: 90.00 MRP

❖ **XIROCIP Inj. Novo Healthcare**
Ciprofloxacin 200mg in 100ml bot: i.v infusion.
100ml bot: 70.00 MRP

GATIFLOXACIN[42,134]

GATIFLOXACIN: Tablet/Injection
Gatifloxacin is a synthetic broad spectrum 8-methoxyfluoroquinolone antibacterial agent. It is available as gatifloxacin (as sesquihydrate) INN 400mg film-coated tablet & 200ml (400mg) i.v infusion.

Mode of action: See above under the text of ciprofloxacin.

Ind: Gatifloxacin is indicated for the treatment of infections due to susceptible strains of gram+ve and gram-ve microorganisms in the following infection diseases, viz: i. Acute bacterial exacerbation of chronic bronchitis, ii. Acute sinusitis, iii. Community-acquired pneumonia, iv. Uncomplicated skin & skin structure infections (i.e simple abscesses, furuncles, folliculitis,

wound infections, & cellulitis), v. Uncomplicated urinary tract infections (cystitis), vi. Complicated urinary tract infections, vii. Pyelonephritis (due to E. coli), viii. Uncomplicated urethral and cervical gonorrhea (due to neisseria gonorrhoeae), ix. Acute, uncomplicated rectal infections in women (due to neisseria gonorrhoeae).

C/I: Patients with a history of hypersensitivity to gatifloxacin or any member of the quinolone class of antimicrobial agents. Growing adolescents (less than 18 years of age), except where benefits exceed risks. Pregnancy & lactation.

S/E: Gatifloxacin is generally well tolerated. The most common side effects that can occur while taking this drug are usually mild and include nausea, vomting, stomach pain, diarrhoea, dizziness, and headache.

Precautions: Gatifloxacin should be used with caution in patients receiving drugs that may affect the QTc interval in ECG, such as cisapride, erythromycin, antipsychotics, and tricyclic antidepressants.

In patients with impaired renal function (creatinine clearance <40ml/min), adjustment of the dosage regimen is necessary.

As gatifloxacin may cause disturbances in blood glucose levels, careful monitoring of blood glucose is recommended when this drug is administered in diabetic patients.

Pregnancy & lactation: The safety and effectiveness of gatifloxacin in pregnant women, and lactating mothers have not been established.

Dosage & admin: **By mouth:**

1. *Acute bacterial exacerbation of chronic bronchitis*- 400mg once daily for 5 days.
2. *Acute sinusitis*- 400mg once daily for 10 days.
3. *Community-acquired pneumonia*- 400mg once daily for 7-14 days.
4. *Uncomplicated skin & skin structure infections*- 400mg once daily for 7-10 days.
5. *Uncomplicated urinary tract infections (cystitis)*- 400mg or 200mg single dose for 3 days.
6. *Complicated urinary tract infections*- 400mg once daily for 7-10 days.
7. *Pyelonephritis*- 400mg once daily for 7-10 days.
8. *Uncomplicated urethral and cervical gonorrhea*- 400mg single dose.
9. *Acute, uncomplicated rectal infections in women*- 400mg single dose.
The drug may be taken with or without meals.

By I.V infusion:

1. *Acute bacterial exacerbation of chronic bronchitis*- 400mg i.v once daily for 5 days.
2. *Acute sinusitis*- 400mg i.v once daily for 10 days.
3. *Community-acquired pneumonia*- 400mg i.v once daily for 7-14 days.
4. *Uncomplicated skin & skin structure infections*- 400mg i.v once daily for 7-10 days.
5. *Uncomplicated urinary tract infections (cystitis)*- 400mg i.v or 200mg i.v single dose for 3 days.
6. *Complicated urinary tract infections*- 400mg i.v once daily for 7-10 days.
7. *Pyelonephritis*- 400mg i.v once daily for 7-10 days.
8. *Uncomplicated urethral and cervical gonorrhea*- 400mg i.v single dose.
9. *Acute, uncomplicated rectal infections in women*- 400mg i.v single dose.

Incase of renal insufficiency: **If the creatinine clearance is <40ml/min and hemodialysis occurred or continuous peritoneal dialysis is going on, the starting dose will be 400mg and subsequent daily dose will be 200mg.**

Impaired hepatic function: **No adjustment in the dosage is necessary in patients with moderate hepatic impairment. There are no data in patients with severe hepatic impairment.**

Drug inter: Probenecid: Concomitant administration of gatifloxacin with probenecid resulted in increase in AUC and a longer half-life of gatifloxacin.

Iron: When gatifloxacin is administered concomitantly with ferrous sulfate, bioavailability of gatifloxacin is reduced. Administration of gatifloxacin 2 hours after or 2 hours before ferrous sulfate does not significantly alter the oral bioavailability of gatifloxacin.

Antacids: Antacids contaning aluminium/ magnesium component do not cause a clinically significant effect on the pharmacokinetics of gatifloxacin when administer 4 hours after gatifloxacin administration.

Milk, calcium, and calcium-containing antacids: No significant pharmacokinetic interactions occur when milk or calcium carbonate is administered concomitantly with gatifloxacin.

Zinc, magnesium, or iron: Gatifloxacin can be administered 4 hours before the administration of dietary supplements containing zinc, magnesium, or iron (such as multivitamins & multiminerals).

Digoxin, cimetidine, midazolam, theophyline, warfarin, or glyburide: No significant pharmacokinetic interactions occur when digoxin, cimetidine, midazolam, theophyline, warfarin, or glyburide is administered concomitantly with gatifloxacin.

❖ **ADLON Tab. Globe**
Gatifloxacin INN 400mg/tablet (film-coated).
400mg x 30's pack: 300.00 MRP

❖ **AMIQUIN Tab. Amico**
Gatifloxacin INN 400mg/tablet (film-coated).
400mg x 20's pack: 200.00 MRP

❖ **ATAQ Tab. Orion**
Gatifloxacin INN 200mg & 400mg/tablet (f.c).
200mg x 20's pack: 120.00 MRP
400mg x 20's pack: 200.00 MRP

❖ **GATAXIN Tab. Navana**
Gatifloxacin INN 400mg/tablet (f.c).
400mg x 28's pack: 180.00 IP

❖ **GATFO Tab. Alco Pharma**
Gatifloxacin INN 200mg & 400mg/tablet (f.c).
200mg x 30's pack: 180.00 MRP
400mg x 20's pack: 200.00 MRP

❖ **GATI 400 Tab. Square**
Gatifloxacin INN 400mg/tablet (film-coated).
400mg x 20's pack: 200.00 MRP

❖ **GATIFLOX Tab. Incepta**
Gatifloxacin INN 400mg/tablet (film-coated).
400mg x 20's pack: 200.00 MRP

❖ **GATIGEN Tab. General**
Gatifloxacin INN 400mg/tablet (film-coated).
400mg x 20's pack: 200.00 MRP

❖ **GATIKING I.V Inf. Opso Saline**
Gatifloxacin (as sesquihydrate) INN 2mg/ml;
200ml (i.e 400mg) bottle: i.v infusion.
200ml bottle: 150.00 MRP

❖ **GATILEX 400 Tab. Mystic**
Gatifloxacin INN 400mg/tablet (film-coated).
400mg x 20's pack: 200.00 MRP

❖ **GATILON Tab. ACI**
Gatifloxacin INN 400mg/tablet (film-coated).
400mg x 20's pack: 200.00 MRP

❖ **GATIMET Tab. Medimet**
Gatifloxacin INN 400mg/tablet (film-coated).
400mg x 50's pack: 500.00 MRP

❖ **GATINOX Tab. SK+F**
Gatifloxacin INN 400mg/tablet (film-coated).
400mg x 20's pack: 200.00 MRP

❖ **GATIQUIN Tab. Rangs Pharma**
Gatifloxacin INN 400mg/tablet (f.c).
400mg x 20's pack: 200.00 MRP

❖ **GATIZEN Tab. Zenith**
Gatifloxacin INN 200mg & 400mg/tablet (f.c).
200mg x 30's pack: 180.00 MRP
400mg x18's pack: 180.00 MRP

❖ **GATLIN Tab. Renata**
Gatifloxacin INN 200mg & 400mg/tablet (f.c).
200mg x 20's pack: 120.00 MRP
400mg x 10's pack: 100.00 MRP
400mg x 30's pack: 300.00 MRP

❖ **GATOX Tab. Acme**
Gatifloxacin INN 400mg/tablet (film-coated).
400mg x 20's pack: 200.00 MRP

❖ **GATPRO-400 Tab. Desh**
Gatifloxacin INN 400mg/tablet (film-coated).
400mg x 30's pack: 300.00 MRP

❖ **GATSINA Tab. Ibn Sina**
Gatifloxacin INN 400mg/tablet (film-coated).
400mg x 20's pack: 200.00 MRP

❖ **GF-400 Tab. Healthcare**
Gatifloxacin INN 400mg/tablet (film-coated).
400mg x 24's pack: 240.00 IP

❖ **GQ-400 Tab. Ultra Pharma**
Gatifloxacin INN 400mg/tablet (film-coated).
400mg x 20's pack: 200.00 MRP

❖ **LOGAT-400 Tab. Chemico**
Gatifloxacin INN 400mg/tablet (film-coated).
400mg x 20's pack: 200.00 MRP

❖ **TAG-400 Tab. Aristopharma**
Gatifloxacin INN 400mg/tablet (film-coated).
400mg x 30's pack: 300.00 MRP

❖ **TEQUIN Tab. Apex**
Gatifloxacin INN 400mg/tablet (film-coated).
400mg x 8's pack: 80.00 MRP

❖ **XEGAL Tab. Beximco**
Gatifloxacin INN 400mg/tablet (film-coated).
400mg x 30's pack: 300.00 IP

GEMIFLOXACIN

GEMIFLOXACIN: Tablet

Gemifloxacin is a synthetic broad spectrum 4th generation fluoroquinolone antibiotic for oral administration. It is available as gemifloxacin mesylate INN equivalent to 320mg gemifloxacin/tablet.

Mode of action: See under the text of ciprofloxacin.

Ind: Gemifloxacin is indicated for the treatment of infections caused by susceptible strains of the designated microorganisms in the conditions listed as following:

Acute bacterial exacerbation of chronic bronchitis caused by streptococcus pneumoniae, haemophilus influenzae, haemophilus

parainfluenzae, or moraxella catarrhalis.
Community-acquired pneumonia (of mild to moderate severity) caused by streptococcus pneumoniae (including multi-drug resistant strains-MDRSP*), haemophilus influenzae, moraxella catarrhalis, mycoplasma pneumoniae, chlamydia pneumoniae, or klebsiella pneumoniae.
Acute sinusitis.
Uncomplicated urinary tract infections.
Acute pyelonephritis.
C/I: History of hypersensitivity to gemifloxacin, fluoroquinolone antibiotic agents, or any of the product components.
S/E: Nausea, stomach upset, loss of appetite, diarrhea, drowsiness, dizziness, headache, dry mouth, altered taste, constipation, or trouble sleeping may occur. This medication may rarely cause a severe intestinal condition (pseudomembranous colitis) due to a resistant bacteria. This condition may occur while receiving therapy or even weeks after treatment has stopped. Do not use anti-diarrhea products or narcotic pain medications if you have the following symptoms because these products may make them worse. Seek immediate medical attention if you develop: abdominal or stomach pain/cramping, blood/mucus in your stool, persistent diarrhea. A serious allergic reaction to this drug is unlikely, but seek immediate medical attention if it occurs. Symptoms of a serious allergic reaction include: rash, hives, itching, swelling, severe dizziness, trouble breathing.
Precautions: Before taking gemifloxacin, tell your doctor if you have any history of allergy; any medical history, specially of- brain or nervous system disorders (e.g cerebral arteriosclerosis, tumors, increased intracranial pressure), heart problems (e.g cardiomyopathy, slow heart rate, torsades de pointes, QTc prolongation), history of seizures, kidney disease, liver disease, muscle/joint/tendon problems, untreated mineral imbalance (e.g low potassium or magnesium). This drug may make the patient dizzy or drowsy; use caution engaging in activities requiring alertness such as driving or using machinery. This medication may make the patient more sensitive to the sun. Avoid prolonged sun exposure, tanning booths or sunlamps. Caution is advised when using this drug in the elderly because they may be more sensitive to its side effects. Caution is advised when using this drug in children. Contact your doctor for more information.
Pregnancy & lactation: This medication should be used only when clearly needed during pregnancy. It is not known if this medication passes into breast milk. So, consultation is necessary before breast-feeding.

Dosage & Admin: Gemifloxacin can be taken with or without food and should be swallowed whole with a liberal amount of liquid. The recommended dose of gemifloxacin is 320mg daily, and given as following:

1. **Acute bacterial exacerbation of chronic bronchitis (AECB)- 320mg daily for 5 days.**
2. **Community-acquired pneumonia (CAP) of mild to moderate severity- 320mg daily for 7 days. (Therapy may be extended to 14 days incases of serious pneumonia).**
3. **Acute sinusitis- 320mg daily for 5 days.**
4. **Uncomplicated urinary tract infections- 320mg daily for 3 days.**
5. **Acute pyelonephritis- 320mg daily for 10 days.**

The recommended dose and duration of gemifloxacin should not be exceeded.

(*MDRSP, multi-drug resistant Streptococcus pneumoniae, includes isolates previously known as PRSP (penicillin-resistant Streptococcus pneumoniae), and are strains resistant to two or more of the following antibiotics: penicillin (MIC = 2 µg/mL), 2nd generation cephalosporins (e.g., cefuroxime), macrolides, tetracyclines and trimethoprim/sulfamethoxazole.)

Use in renally impaired patients: **Dose adjustment in patients with creatinine clearance > 40ml/min is not required. Modification of the dosage is recommended for patients with creatinine clearance ≤ 40ml/min. In these patients recommended dose is 160mg every 24 hours.**
Use in hepatically impaired patients: **No dosage adjustment is recommended in patients with mild, moderate or severe hepatic impairment.**
Use in elderly: **No dosage adjustment is necessary.**
Drug inter: May interact with 'blood thinners' (e.g warfarin), corticosteroids (e.g prednisone), diabetes medications (e.g glyburide, insulin), probenecid, live vaccines. Report the use of drugs which might increase seizure risk (decrease seizure threshold) when combined with gemifloxacin, such as phenothiazines (e.g thioridazine), tricyclic antidepressants (e.g amitriptyline), isoniazid (INH), or theophylline.
Note: For further information please consult manufacturer's literature.

❖ **GEMIFLOX Tab. Popular**
Gemifloxacin mesylate INN equivalent to 320mg gemifloxacin/tablet (film-coated).
320mg x 8's pack: 520.00 MRP

LEVOFLOXACIN[26,42,134]

LEVOFLOXACIN: Tablet/Injection
Levofloxacin is a synthetic, broad-spectrum antibacterial agent for oral use, belonging to the third generation fluoroquinolone derivative. Chemically it is a chiral fluorinated carboxyquinolone.
Mode of action: See above under the text of ciprofloxacin.
Ind: Levofloxacin is indicated in the treatment of mild, moderate and severe infections caused by susceptible strains of the designated micro-organisms in the following diseases: acute maxillary sinusitis; acute bacterial exacerbation of chronic bronchitis; community-acquired pneumonia; complicated urinary tract infections, acute pyelonephritis; uncomplicated & complicated skin and soft tissue infections including abscesses, cellulitis, furuncles, impetigo, pyoderma, wound infections.
C/I: Patients with a history of hypersensitivity to levofloxacin or any member of the quinolone class of antimicrobial agents. Growing adolescents (less than 18 years of age), except where benefits exceed risks. Pregnancy & lactation.

S/E: Side-effects may include- nausea, vomiting, diarrhoea, abdominal pain, flatulence and rare occurrence of phototoxicity (o.1 %). Very rarely there may be tremor, depression, anxiety, confusion etc.

Precautions: While taking levofloxacin, adequate amount of water should be taken to avoid concentrated form of urine. Dose adjustment should be exercised during levofloxacin ingestion in presence of renal insufficiency.

Pregnancy & lactation: Levofloxacin is not recommended in pregnancy or nursing mother, as the effects on the foetus or nursing infant are unknown.

Dosage & Admin: By mouth:

1. *Exacerbation of chronic bronchitis:* 250-500mg daily for 7 days.
2. *Acute sinusitis*: 500mg once daily for 10-14 days.
3. *Community-acquired pneumonia:* 500mg once or twice daily for 7-14 days.
4. *Complicated urinary tract infections & acute pyelonephritis:* 250mg daily for 7-10 days.
5. *Uncomplicated skin and soft-tissue infections:* 500mg once daily for 7-10 days.
6. *Complicated skin and soft-tissue infections:* 750mg once daily for 7-14 days.

Children: Not recommended for children (<18 years of age).

By i.v infusion:

1. *Exacerbation of chronic bronchitis:* 250-500mg i.v once or twice daily for 7 days.
2. *Acute sinusitis:* 500mg i.v once daily for 10-14 days.
3. *Community-acquired pneumonia:* 500mg i.v once or twice daily for 7-14 days.
4. *Complicated urinary tract infections:* 250mg i.v once or twice daily for 7-10 days.
5. *Acute pyelonephritis:* 250mg i.v once daily for 7-10 days.
6. *Uncomplicated skin and soft-tissue infections:* 500mg i.v once or twice daily for 7-10 days.
7. *Complicated skin and soft-tissue infections:* 750mg i.v once or twice daily for 7-14 days.

Children: Not recommended for children (<18 years of age).

Overdosage: Levofloxacin exhibits a low potential for acute toxicity, however, in the events of an acute overdosage, the stomach should be emptied. The patients should be kept under observation and appropriate hydration should be maintained.

Drug interaction: Antacids, iron and adsorbents reduce absorption of levofloxacin. NSAID may increases the risk of CNS stimulation. Warfarin may increase the risk of bleeding.

❖ **ANLEV Tab. UniHealth**
Levofloxacin hemihydrate INN 250mg, 500mg & 750mg/tablet.
250mg x 10's pack: 80.00 MRP
500mg x 10's pack: 150.00 MRP
750mg x 10's pack: 200.00 MRP

❖ **AVELOX-500 Tab. SAPL**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 20's pack: 240.00 MRP

❖ **BACNIL Tab. Rephco**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 20's pack: 300.00 MRP

❖ **BENFLOXIN 500 Cap. Benham**
Levofloxacin hemihydrate INN 500mg/capsule.
500mg x 20's pack: 238.60 MRP

❖ **CORBIC Tab. Novo Healthcare**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 10's pack: 150.00 MRP

❖ **COSLEV Tab. Cosmo Pharma**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 20's pack: 280.00 MRP

❖ **EVO Tab. Beximco**
Levofloxacin hemihydrate INN 250mg, 500mg & 750mg/tablet.
250mg x 30's pack: 240.00 IP
500mg x 20's pack: 300.00 IP
750mg x 10's pack: 200.00 IP

❖ **EVO Syp. Beximco**
Levofloxacin hemihydrate INN 125mg/5ml: syrup 100ml bot: 75.00 IP

❖ **EVOCIN Tab. Hudson**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 20's pack: 300.00 MRP

❖ **EVOLOXIN 500 Tab. Hallmark**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 20's pack: 260.00 MRP

❖ **EVONEX Tab. Jayson**
Levofloxacin hemihydrate INN 250mg & 500mg/tablet.
250mg x 30's pack: 210.00 MRP
500mg x 20's pack: 260.00 MRP

❖ **EXOLEV Tab. Sandoz/Novartis**
Levofloxacin hemihydrate INN 500mg & 750mg/tablet.
500mg x 20's pack: 280.00 MRP
750mg x 10's pack: 200.00 MRP

❖ **LEE-500 Tab. Asiatic**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 20's pack: 300.00 MRP

❖ **LEEVOTIN Tab. Syntho**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 30's pack: 450.00 MRP

❖ **LEFEX 500 Tab. Doctor's**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 30's pack: 420.00 MRP

❖ **LEFLOX Tab. ACI**
Levofloxacin hemihydrate INN 500mg & 750mg/tablet.
500mg x 20's pack: 300.00 IP
750mg x 10's pack: 200.00 IP

❖ **LEO Tab. Acme**
Levofloxacin hemihydrate INN 250mg, 500mg & 750mg/tablet.
250mg x 32's pack: 256.00 MRP
500mg x 20's pack: 300.00 MRP
750mg x 12's pack: 240.00 MRP

❖ **LEOFLOX Tab. Alco Pharma**
Levofloxacin hemihydrate INN 250mg & 500mg/tablet.
250mg x 10's pack: 70.00 MRP
500mg x 20's pack: 240.00 MRP

❖ **LEQUIN Tab. Apex**
Levofloxacin hemihydrate INN 250mg & 500mg/tablet.
250mg x 20's pack: 120.00 MRP
500mg x 20's pack: 200.00 MRP

❖ **LETAB Tab. Chemist**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 20's pack: 200.00 MRP

❖ **LETHIQUIN 500 Tab. Rangs**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 20's pack: 300.00 MRP

❖ **LEVIN Tab. Amico**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 10's pack: 100.00 MRP

❖ **LEVOBAC Tab. Popular**
Levofloxacin hemihydrate INN 500mg & 750mg/tablet.
500mg x 24's pack: 360.00 MRP
750mg x 24's pack: 480.00 MRP

❖ **LEVOBAC Inf. Popular**
Levofloxacin hemihydrate INN 500mg/100ml bottle: i.v infusion.
500mg (100ml) bot: x 1's pack: 100.00 MRP

❖ **LEVOCIN-500 Tab. Desh Pharma**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 30's pack: 420.00 MRP

❖ **LEVOCOS Tab. Cosmic**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 30's pack: 420.00 MRP

❖ **LEVOFLOX Tab. Drug Inter.**
Levofloxacin hemihydrate INN 500mg & 750mg/tablet.
500mg x 20's pack: 240.00 MRP
750mg x 10's pack: 200.00 MRP

❖ **LEVOFLOX Inf. Drug Inter.**
Levofloxacin hemihydrate INN 500mg/100ml bottle: i.v infusion.
500mg (100ml) bot: x 1's pack: 100.00 MRP

❖ **LEVOGEN Tab. General**
Levofloxacin hemihydrate INN 250mg & 500mg/tablet.
250mg x 30's pack: 240.00 MRP
500mg x 20's pack: 300.00 MRP

❖ **LEVOKING Tab. Renata**
Levofloxacin hemihydrate INN 250mg, 500mg & 750mg/tablet (f.c).
250mg x 30's pack: 240.00 MRP
500mg x 30's pack: 450.00 MRP
750mg x 18's pack: 360.00 MRP

❖ **LEVOKING Syp. Renata**
Levofloxacin hemihydrate INN 125mg/5ml: syrup 100ml bot: 75.00 MRP

❖ **LEVOLEX Tab. Pharmadesh**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 20's pack: 212.00 MRP

❖ **LEVOLON Tab. Peoples**
Levofloxacin hemihydrate INN 250mg & 500mg/tablet.
250mg x 30's pack: 240.00 MRP
500mg x 30's pack: 420.00 MRP

❖ **LEVOMET 250 Tab. Medimet**
Levofloxacin hemihydrate INN 500mg/tablet.
250mg x 20's pack: 160.00 MRP

❖ **LEVONIX 500 Tab. Ziska**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 21's pack: 294.00 MRP

❖ **LEVOQUIN Tab. Navana**
Levofloxacin hemihydrate INN 250mg & 500mg/tablet.
250mg x 20's pack: 160.00 IP
500mg x 24's pack: 360.00 IP

❖ **LEVORA Tab. Somatec**
Levofloxacin hemihydrate INN 250mg & 500mg/tablet.
250mg x 20's pack: 160.00 MRP
500mg x 20's pack: 280.00 MRP

❖ **LEVORA Syp. Somatec**
Levofloxacin hemihydrate INN 125mg/5ml: syrup 100ml bot: 75.00 MRP

❖ **LEVOSEEM-500 Tab. Seema**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 20's pack: 200.00 MRP

❖ **LEVOSINA Tab. Ibn Sina**
Levofloxacin hemihydrate INN 250mg & 500mg/tablet.
250mg x 20's pack: 160.00 MRP
500mg x 20's pack: 300.00 MRP

❖ **LEVOSTIN Tab. Aexim**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 20's pack: 260.00 MRP

❖ **LEVOX Tab. Opsonin**
Levofloxacin hemihydrate INN 250mg, 500mg & 750mg/tablet.
250mg x 30's pack: 240.00 MRP
500mg x 20's pack: 300.00 MRP
750mg x 10's pack: 200.00 MRP

❖ **LEVOX I.V Inf. Opsonin**
Levofloxacin hemihydrate INN 500mg/100ml bottle: i.v infusion.
500mg (100ml) bot: x 1's pack: 100.00 MRP

❖ **LEVOXIN Tab. Incepta**
Levofloxacin hemihydrate INN 250mg, 500mg & 750mg/tablet.
250mg x 30's pack: 240.00 MRP
500mg x 20's pack: 300.00 MRP
750mg x 10's pack: 200.00 MRP

❖ **LEVOXIN Syp. Incepta**
Levofloxacin hemihydrate INN 125mg/5ml: syrup 100ml bot: 75.00 MRP

❖ **LEVOXIN I.V Inf. Incepta**
Levofloxacin hemihydrate INN 500mg/100ml bottle: i.v infusion.
500mg (100ml) bot: x 1's pack: 100.00 MRP

❖ **LEXA-500 Tab. Globex Pharma**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 20's pack: 240.00 MRP

❖ **LEXAZEN Tab. Zenith**
Levofloxacin hemihydrate INN 250mg & 500mg/tablet.
250mg x 30's pack: 240.00 MRP
500mg x 18's pack: 252.00 MRP

❖ **LEXLO Tab. Ambee**
Levofloxacin hemihydrate INN 250mg & 500mg/tablet.
250mg x 20's pack: 160.00 MRP
500mg x 20's pack: 260.00 MRP

❖ **LIFCIN Tab. Bio-pharma**
Levofloxacin hemihydrate INN 500mg & 750mg/tablet.
500mg x 20's pack: 260.00 MRP
750mg x 12's pack: 240.00 MRP

❖ **LIN Tab. Chemico**
Levofloxacin hemihydrate INN 250mg & 500mg/tablet.
250mg x 30's pack: 300.00 MRP
500mg x 20's pack: 300.00 MRP

❖ **LIVACIN-500 Tab. Gaco**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 20's pack: 240.00 MRP

❖ **LIVODON Tab. Apollo**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 8's pack: 120.00 MRP
❖ **LOCIN Tab. Globe**
Levofloxacin hemihydrate INN 250mg & 500mg/tablet.
250mg x 20's pack: 140.00 MRP
500mg x 20's pack: 240.00 MRP
❖ **LOVICIN Tab. Nipa**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 30's pack: 450.00 MRP
❖ **LOXIN Tab. Medicon**
Levofloxacin hemihydrate INN 250mg & 500mg/tablet.
250mg x 30's pack: 210.00 MRP
500mg x 20's pack: 300.00 MRP
❖ **LQ- 500 Tab. Ultra Pharma**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 20's pack: 200.00 MRP
❖ **NEOLEV 500 Tab. Marksman**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 20's pack: 240.00 MRP
❖ **NIVOLOC 500 Tab. Kumudini**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 20's pack: 280.00 MRP
❖ **OLCIN Tab. Delta**
Levofloxacin hemihydrate INN 500mg & 750mg/tablet.
500mg x 20's pack: 240.00 MRP
750mg x 10's pack: 160.01 MRP
❖ **ORLEV Tab. Orion**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 20's pack: 300.00 MRP
❖ **OVEL-500 Tab. Aristopharma**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 30's pack: 450.00 MRP
❖ **QLEV Tab. Proteety**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 15's pack: 180.00 MRP
❖ **QUIXIN Tab. Beacon**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 30's pack: 360.00 MRP
❖ **RESQUIN Tab. Healthcare**
Levofloxacin hemihydrate INN 250mg, 500mg & 750mg/tablet.
250mg x 30's pack: 240.00 MRP
500mg x 24's pack: 360.00 MRP
750mg x 18's pack: 360.00 MRP
❖ **TIVANIK Tab. Silva**
Levofloxacin hemihydrate INN 250mg & 500mg/tablet.
250mg x 30's pack: 240.00 MRP
500mg x 20's pack: 300.00 MRP
❖ **TREVOX Tab. Square**
Levofloxacin hemihydrate INN 500mg & 750mg/tablet.
500mg x 20's pack: 300.00 MRP
750mg x 20's pack: 400.00 MRP
❖ **TREVOX Syp. Square**
Levofloxacin hemihydrate INN 125mg/5ml: syrup 100ml bot: 75.00 MRP
❖ **TRILON-500 Tab. White Horse**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 24's pack: 360.00 MRP
❖ **URILEV 750 Tab. Techno Drugs**
Levofloxacin hemihydrate INN 250mg, 500mg & 750mg/tablet.
250mg x 20's pack: 170.00 MRP
500mg x 20's pack: 300.00 MRP
750mg x 18's pack: 360.00 MRP
❖ **URILEV I.V Inf. Techno Drugs**
Levofloxacin hemihydrate INN 500mg/100ml bottle: i.v infusion.
500mg (100ml) bot: x 1's pack: 100.00 MRP
❖ **XENOXIN Tab. SK+F**
Levofloxacin hemihydrate INN 500mg & 750mg/tablet.
500mg x 30's pack: 450.00 MRP
750mg x 20's pack: 400.00 MRP
❖ **3-F 500 Tab. Edruc**
Levofloxacin hemihydrate INN 500mg/tablet.
500mg x 20's pack: 280.00 IP

LOMEFLOXACIN[21,74]

LOMEFLOXACIN: Tablet
Lomefloxacin is a synthetic quinolone broad-spectrum antimicrobial agent.
Mode of action: See above under the text of ciprofloxacin.
Ind: Iit is indicated in the treatment of infections of lower respiratory tract & urinary tract, caused by susceptible organisms and prophylaxis in patients undergoing transurethral surgical procedures.

C/I: Patients with a history of hypersensitivity to lomefloxacin or any member of the quinolone class of antimicrobial agents. Growing adolescents (less than 18 years of age), except where benefits exceed risks. Pregnancy & lactation.
S/E: There may be mild to moderate and transient development of some side-effects such as, nausea, headache, photosensitivity, dizziness and diarrhoea.

Precautions & Warnings:
Patient should be advised to avoid the maximum extent possible direct or indirect sunlight during and several days after therapy; to discontinue therapy if any sign/symptom of phototoxicity reaction such as sensation of skin burning, redness, swelling, blisters, rash, itching or dermatitis appears; to drink fluids liberally.

Dosage & Admin: For treatment of lower respiratory tract infections or uncomplicated and complicated urinary tract infections, the usual adult dose is 400mg once daily for 10 days (14 days for complicated UTI).
For prophylaxis in patients undergoing transurethral surgical procedures- a single dose of 400mg 2-6 hours prior to the procedure in adults.
Geriatric patients generally can receive usual adult dosages unless creatinine clearance is less than 40ml/min. No dosage adjustment is needed for elderly patients with normal renal function.
In patients with a creatinine clearance >10ml/min but <40ml/min, the recommended dosage is an initial loading dose of 400mg followed by daily maintenance dose of 200mg once daily for the duration of treatment.

❖ **LOMEFLOX Tab. Aristopharma**
Lomefloxacin 400mg/tablet.
400mg x 20's pack: 300.00 MRP
❖ **MEXLO Tab. Square**
Lomefloxacin 400mg/tablet.
400mg x 20's pack: 300.00 MRP
❖ **NAMICIN Tab. Nipa**
Lomefloxacin 400mg/tablet.
400mg x 30's pack: 300.00 MRP

MOXIFLOXACIN[87,120]

MOXIFLOXACIN: Tablet
Moxifloxacin is a new fourth generation synthetic fluoroquinolone antibacterial agent. This is approved recently (by the FDA) for the treatment of acute bacterial sinusitis, acute becterial exacerbation of chronic bronchitis and community acquired pneumonia in adults. As there is development of cross-resistance among the quinolones, primarily as a result of mutation affecting DNA gyrase, moxifloxacin and other newer quinolones don't exhibit cross-resistance with some single mutations that developed resistance to older quinolones. It is readily absorbed from the gastrointestinal tract following oral administration with an absolute bioavailability of about 90%.
Mode of action: See above under the text of ciprofloxacin.
Ind: Acute bacterial sinusitis; acute bacterial exacerbation of chronic bronchitis; community-acquired pneumonia; skin and skin structure infections.
C/I: Patients with a history of hypersensitivity to moxifloxacin or any member of the quinolone class of antimicrobial agents. Growing adolescents (less than 18 years), except where benefits exceed risks. Pregnancy & lactation.
S/E: Adverse effects include- nausea, diarrhea, dizziness, headache, abdominal pain, vomiting, dyspepsia, taste perversion and abnormal liver function tests.
Precautions: Safety and effectiveness in paediatric patients and adolescents less than 18 years of age have not been established. Patient should be instructed to drink fluid liberally during treatment with any fluoroquinolone in order to prevent crystal formation in the urine.
Pregnancy & lactation: Moxifloxacin should not be used in pregnant women and breast-feeding mothers.
Dosage & admin: ***Acute bacterial sinusitis:*** **400mg once daily for 10 days.**
Acute bacterial exacerbation of chronic brochitis: **400mg once daily for 5 days.**
Community-acquired pneumonia: **400mg once daily for 10 days.**
Skin and skin structure infection: **400mg once daily for 7 days.**
Moxifloxacin may be taken with or without food.
Drug inter: Antacids containing magnesium or aluminium, sucralfate, metal cations such as iron or zinc may interfere with oral absorption of moxifloxacin. These agents should be given 2 hours after or 6 hours before moxifloxacin.

❖ **MOXIFLOX Tab. Alco Pharma**
Moxifloxacin INN 400mg/tablet
400mg x 8's pack: 680.00 MRP

OFLOXACIN[21,33]

OFLOXACIN: Tablet/Injection

Ofloxacin is a synthetic antibacterial drug which belongs to the 4-quinolone family.
Ind: UTI, lower respiratory tract infections, uncomplicated gonorrhoea, non-gonococcal urethritis & cervicitis, septicaemia, severe or complicated infections.
C/I; S/E: See under Ciprofloxacin (which are almost common in all 4-quinolones). Other side effects include haemolytic anaemia, renal impairment, hepatic dysfunction, anaphylaxis & hypoglycaemia.
Cautions: See under Ciprofloxacin
Dosage & admin: By mouth, U.T.I- 200-400mg daily preferably in the morning, increased if necessary in upper U.T.I to 400mg twice daily. Lower R.T.I, 400mg daily preferably in the morning, increased if necessary to 400mg twice daily.
Uncomplicated gonorrhoea, 400mg as a single dose.
Non-gonococcal urethritis and cervicitis, 400mg daily in single or divided doses.
By I.V infusion (over at least 30 minutes), complicated U.T.I, 200mg daily.
Lower R.T.I, 200mg twice daily.
Septicaemia, 200mg twice daily.
Severe or complicated infections, dose may be increased to 400mg twice daily.

❖ **FLOCET Tab. Opsonin**
Ofloxacin 200mg & 400mg/tablet
200mg x 20's pack: 240.00 MRP
400mg x 10's pack: 220.00 MRP
❖ **OFLACIN Tab. Drug Inter**
Ofloxacin 200mg & 400mg/tablet
200mg x 20's pack: 240.00 MRP
400mg x 20's pack: 400.00 MRP
❖ **RUTIX Tab. Square**
Ofloxacin 200mg & 400mg/tablet
200mg x 20's pack: 240.00 MRP
400mg x 10's pack: 220.00 MRP

PEFLOXACINE[21,35]

PEFLOXACINE MESYLATE: Tablet/ injection
Pefloxacine is a synthetic antibacterial drug which belongs to the quinolone family.
Ind: Sevre infections in adults, caused by gram-negative and staphylococci organisms.
C/I; S/E: Please see above under ciprofloxacin.
Cautions: Please see above under ciprofloxacin.
Adult: 400 mg 12 hourly with meals to avoid g.i symptoms. By injection, 400mg (1amp.) diluted in 250ml of 5% glucose in aqua, as a slow one-hour infusion, twice daily.
(Pefloxacine should not be diluted in any solution containing chloride ions. Initial dose may be 800mg.

❖ **G-PEFLOXACINE Tab. Gonoshastha.**
Pefloxacine 400mg/tablet
30's pack: 150.00 MRP
❖ **G-PEFLOXACIN Inj. Gonoshastha.**
Pefloxacine 400mg/5ml ampoule: injection
5 amps pack: 150.00 MRP
❖ **ISOFLOXIN Tab. Beximco**
Pefloxacine 400mg/tablet
50's pack: 600.00 IP
❖ **NOBAC Tab. Ibn Sina**
Pefloxacine 400mg/tablet
20's pack: 222.80 IP
❖ **PEFLA Tab. Sonear**
Pefloxacine 400mg/tablet
10's pack: 150.00 MRP
20's pack: 300.00 MRP
❖ **PEFLACINE Tab. Sanofi-aventis**
Pefloxacine 400mg/tablet
30's pack: 455.10 MRP.
❖ **PEFLON Tab. GlaxoSmithKline**
Pefloxacine 400mg/tablet
50's pack: 700.00 MRP
❖ **PEFLOX Tab. Drug Inter.**
Pefloxacine 400mg/tablet
20's pack: 220.00 MRP

SPARFLOXACIN[21,44]

SPARFLOXACIN: Tablet
Sparfloxacin is a synthetic, broad-spectrum bactericidal agent from the fluoroquinolone family of antibacterials.
Ind: Upper and lower respiratory tract infections including sinusitis, acute exacerbation of chronic bronchitis, pneumonia due to atypical organisms; urinary tract infections including gonococcal and nongonococcal urethritis, chancroid and other sexually transmitted diseases; skin & soft tissue infections; prophylactic use in different urological & ophthalmic operations.
C/I: Hypersensitivity to any of fluoroquinolones; pregnacy and lactaion; history of achilles tendinits following the use of fluoroquninolones; glucose-6 phosphate dehydrogenase (G-6PD) deficiency.
S/E: Side-effects are mild and transient and seldom result in cessation of therapy with sparfloxacin. Nausea, vomiting, diarrhoea, sleep disturbances, allergy, pain, tendinitis, phototoxicity, cardiac rhythm disturbances, have been reported in some patients.
Precautions: Renal disease, gastric ulcers, concomitant use of NSAIDs.
Dosage: Depending on the severity of infection, causative pathogen and clinical response, the dosage is to be individualised. For most of the infections in majority of clinical practices the following dosage regimen is sufficient- 400mg on day 1, followed by 200mg/day for 5 to 7 days. In renal failure of third degree severity (creatinine clearance < 30ml/min) dosage modification is recommended- 400mg on day 1, 200mg/day on day 2 & 3 followed by 200mg every 48 hours. Children: below 12 years not recommended.

❖ **ACIFLOX Tab. ACI**
Sparfloxacin INN 200mg/tablet.
10's pack: 150.00 IP
❖ **ANSPAR Tab. UniHealth**
Sparfloxacin INN 200mg/tablet.
10's pack: 120.00 MRP
❖ **ASAF Tab. Asiatic**
Sparfloxacin INN 200mg/tablet.
20's pack: 320.00 MRP
❖ **FLOXIPAR Tab. Acme**
Sparfloxacin INN 200mg/tablet.
10's pack: 155.00 MRP
❖ **MEGA-FLOX Tab. Hudson**
Sparfloxacin INN 200mg/tablet.
20's pack: 300.00 MRP
❖ **NEOSPECTRA Tab. Jayson**
Sparfloxacin INN 200mg/tablet.
12's pack: 180.00 IP
❖ **OMNIFLOX Tab. Aristopharma**
Sparfloxacin INN 200mg/tablet.
10's pack: 150.00 MRP
❖ **PARFLOX Tab. Somatec**
Sparfloxacin INN 200mg/tablet.
10's pack: 150.00 IP
❖ **PARLOX Tab. SK+F**
Sparfloxacin INN 200mg/tablet.
10's pack: 150.00 MRP
❖ **PIOCIN-200 Tab. Millat**
Sparfloxacin INN 200mg/tablet.
6's pack: 84.00 MRP
❖ **QUINOFLOX Tab. Healthcare**
Sparfloxacin INN 200mg/tablet.
10's pack: 150.00 MRP
❖ **ROXIPAR Tab. Cosmic**
Sparfloxacin INN 200mg/tablet.
10's pack: 150.00 MRP
❖ **SAGA Tab. Square**
Sparfloxacin INN 200mg/tablet.
10's pack: 150.00 MRP
❖ **SALOCIN Tab. Chemico**
Sparfloxacin INN 200mg/tablet.
10's pack: 170.00 MRP
❖ **SPACIN Tab. Sandoz/Novartis**
Sparfloxacin INN 200mg/tablet.
10's pack: 250.30 MRP
❖ **SPALOCIN Tab. Pacific**
Sparfloxacin INN 200mg/tablet.
10's pack: 150.00 MRP
❖ **SPALOX Tab. Edruc**
Sparfloxacin INN 200mg/tablet.
10's pack: 160.00 IP
❖ **SPAR Tab. Globe**
Sparfloxacin INN 200mg/tablet.
10's pack: 150.00 MRP
❖ **SPARCIN-200 Tab. Chemist**
Sparfloxacin INN 200mg/tablet.
20's pack: 300.00 MRP
❖ **SPARDON Tab. Apollo**
Sparfloxacin INN 200mg/tablet.
12's pack: 192.00 IP
❖ **SPARFLOX Tab. Alco Pharma**
Sparfloxacin INN 200mg/tablet.
10's pack: 160.00 MRP
❖ **SPARFLOXIN-200 Tab. Desh Pharma**
Sparfloxacin INN 200mg/tablet.
20's pack: 320.00 MRP
❖ **SPARK Tab. Navana**
Sparfloxacin INN 200mg/tablet.
10's pack: 200.00 IP
❖ **SPARLIN Tab. Beximco**
Sparfloxacin INN 200mg/tablet.
10's pack: 150.00 IP
❖ **SPARONEX Tab. Drug Inter.**
Sparfloxacin INN 200mg/tablet.
20's pack: 360.00 MRP

Anti-Tuberculer Antibiotics

STREPTOMYCIN[21,33]

STREPTOMYCIN: Injection
Ind: Tuberculosis in combination with other drugs; some gram-ve infections such as,

klebsiella pneumoniae, E. coli, tularaemia, plague, brucellosis etc but usually not used.
C/I: Streptomycin hypersensitivity, diseases of the ear particularly suppurative otitis media, labyrinthine disturbances.
S/E: Ototoxicity and vestibular damage usually preceded by dizziness, headache, nausea, vomiting, nystagmus & ataxia; allergic rashes and fever with eosinophilia; paraesthesia of mouth.

Cautions: If symptoms of ototoxicity occur, must stop the drug.

Dosage & admin: Tuberculosis: Adult, 0.75-1 gm. daily or 0.75-1gm 3 times a week (for fully supervised intermittent therapy) i.m. injection; Child, usually 30 mg/kg upto 1gm daily.
***Non-tuberculous infections:* Adult, I gm/ day i.m inj. for 3-7 days; Child, 22 to 40 mg/kg daily may be given in divided doses.**

❖ **STREPTOMYCIN Inj. Renata**
Streptomycin 1 gm/vial: injection
1gm vial: 9.19 MRP

RIFAMPICIN[21,33]

RIFAMPICIN: Tablet/capsule/syrup

Ind: Tuberculosis (in combination with other drugs, usually isoniazid & ethambutol); Leprosy; Brucellosis, Legionnaires; prophylaxis of meningo-coccal meningitis and haemophilus influenzae infection.

C/I: Pregenancy, Jaundice.

S/E: G.I symptoms including anorexia, nausea, vomiting, diarrhoea; hepatic reactions with alterations of liver-functions, jaundice; acute renal failure; thrombocytopenic purpura; urticaria & rashes; pink colouration of urine and other body secretions. Other side effects like muscular weakness, myopathy, leucopenia, oesinophilia, menstrual disturbance.

Cautions: Hepatic impairment, alcoholism, drug interactions.

Dose: Adult, under 50kg 450mg daily before breakfast; 50kg and over 600mg daily.
Child, 10mg/kg daily.
Brucellosis & Legionnaires, by mouth or by i.v infusion, 0.6-1.2gm daily in 2-4 divided doses.
Leprosy, 600mg once monthly (450mg for those weighing less than 35kg) along with other antileprotic drug/drugs.

❖ **G-RIFAMPICIN Cap. Gonoshas**
Rifampicin 150mg & 450mg/capsule
450mg x 50's pack: 303.50 MRP
❖ **RIFATAN Syp. Gaco**
Rifampicin 100mg/5ml: syrup
60ml bot: 29.39 MRP
❖ **RIFCIN Cap. Pharmadesh**
Rifampicin 450mg/capsule
450mg x 40's: 440.00 MRP
❖ **RIFCIN Syp. Pharmadesh**
Rifampicin 100mg/5ml: syrup
60ml bot: 40.00 MRP
❖ **RIMACTANE 450 Sandoz/Novartis**
Rifampicin 450mg/capsule
50's pack: 543.00 MRP

Anti-Tuberculer Chemotherapeutics

ISONIAZID[21,33]
(Isonicotinic acid hydrazide)

ISONIAZID: Tablet/Elixir/Inj.
Ind: Tuberculosis (in combination with other drugs).
C/I: Hepatic damage (Jaundice) .
S/E: Nausea, vomiting; allergic reactions including rashes; peripheral neuropathy with high doses (treat with pyridoxine 10-20 mg daily) ; mental disturbances, convulsions & incoordination ; alcoholic intolerence, hypertoxicity; agranulocytosis and rarely anaemia and pellagra.
Dose: Adult, 300mg daily; child, 10mg/kg (max. 300mg) daily or 15mg/kg 3 times a week (both adult and child) for intermittent supervised therapy.
Preparations: May not be available.

ETHAMBUTOL[21,33]

ETHAMBUTOL: Tablet
Ind: Tuberculosis (in combination with other drugs, usually isoniazid and rifampicin).
C/I: Young children, elderly patients, optic neuritis.
S/E: Optic neuritis, red/green colour blindness, peripheral neuritis.
Caution: Reduced dose in renal impairment; warn patients to report any visual change; lactation.
Dosage & admin: Adults, prophylaxis & treatment- 15 mg/kg daily as a single dose or 25mg/kg daily in the initial phage followed by 15mg/kg daily in the continuous phage. Or for supervised intermittent treatment- 30mg/kg 3 times a week or 45mg/kg 2 times a week.
Children: treatment, 25 mg/kg daily as a single dose for 2 months, then 15mg/kg body-wt. daily as a single dose. Prophylaxis-15 mg/kg daily as a single dose.
Tuberculous meningitis, 25mg/kg daily .

❖ **SURAL Tab. Ambee**
Ethambutol 400mg/tablet
100's pack: 166.00 MRP

PYRAZINAMIDE[21,33]

PYRAZINAMIDE: Tablet
Ind: Tuberculosis, specially tuberculous meningitis.
C/I: Liver damage, pregnancy & children.
S/E: Hepatotoxicity, occasional mild fever, malaise, liver tenderness, hepatomegaly, jaundice and fulminating liver failure; gastro-intestinal disturbances are anorexia, nausea, vomiting, diarrhoea & aggravation of peptic ulcer; acute gout, arthralgia; sideroblastic anaemia & urticaria.
Dosage & admin: Adult, under 50kg 1.5gm, 50kg and over 2gm daily.
Child, 35 mg/kg daily for first 2 months only.
Intermittent supervised therapy- adult, under 50kg 2gm 3 times a week, 50kg and over 2.5gm; child, 50mg/kg 3 times a week. Or adult, under 50kg 3gm 2 times a week, 50kg and above 3.5gm; child, 75mg/kg 2 times a week.

❖ **PZA-CIBA Tab. Sandoz/Novartis**
Pyrazinamide 500mg/tablet
100's pack: 234.00 MRP

Combined anti-TB prepns.

RIFAMPICIN + ISONIAZID[21,33]

RIFAMPICIN + ISONIAZID: Tablet/ Capsule
Ind: Tuberculosis.
C/I; S/E: See above under Rifampicin & INH.
Dose: See below, under individual drug.

❖ **RIFAGEN 450 Tab. Pharmadesh**
Rifampicin 450mg + Isoniazid 300mg/tablet
Dose: 1 tab. daily in a single dose before breakfast for the patients under 50kg body-wt.
20's pack: 348.40 MRP
❖ **RIMACTAZID 150 Tab. Sandoz/ Novartis**
Rifampicin 150mg + Isoniazid 100mg/tablet
Dose: Under 50 kg body-wt. 3 tabs. daily as a single dose before breakfast.
100's pack: 422.00 MRP
❖ **RIMACTAZID 150/75 Tab. Sandoz/ Novartis**
Rifampicin 150mg + Isoniazid 75mg/tablet.
Dose: Under 50kg body-wt. 3 tablets daily as a single dose before breakfast.
100's pack: 398.00 MRP
❖ **RIMACTAZID 300 Tab. Sandoz/ Novartis**
Rifampicin 300mg+ Isoniazid 150mg/tablet.
Dose: Over 50kg 2 tablets daily as a single dose before breakfast.
50's pack: 384.00 MRP
❖ **RIMACTAZID 450 Tab. Sandoz/Novartis**
Rifampicin 450mg + Isoniazid 300mg/tablet
Dose: 1 tablet daily in a single dose before breakfast for the patients under 50kg body-wt.
50's pack: 583.00 MRP

RIFAMPICIN + ISONIAZID + PYRAZINAMIDE[21,54]

RIFAMPICIN + ISONIAZID + PYRAZINAMIDE: Tablet
Ind: Tuberculosis, where combination of three drugs required.
C/I; S/E: See above under Rifampicin, INH & Pyrazinamide.
Dose: See below, under individual drug.

❖ **RIMACTAZID 150+Z Sandoz/Novartis**
Each blister strip contains 3 coated tablets of Rimactazid 150 (Rifampicin 150mg + Isoniazid 100mg) & 3 scored tablets of Pyrazinamide 500mg (i.e 3+3): tablets in combipack.
Ind: For short-course TB chemotherapy.
C/I; S/E: See under individual drugs.
Dose: Under 50kg body-wt. (3+3) tabs. daily as a single dose before breakfast.
(3+3) tabs x 10's pack: 196.80 MRP

❖ **RIMACTAZID 150/75+Z Sandoz/Novartis**

Each blister strip contains 3 coated tablets of Rimactazid 150/75 (Rifampicin 150mg + Isoniazid 75mg) & 3 scored tablets of Pyrazinamide 500mg (i.e 3+3): tablets in combipack.
Ind: For short-course TB chemotherapy.
C/I; S/E: See under individual drugs.
Dose: Under 50kg body-wt. (3+3) tabs. daily as a single dose before breakfast.
(3+3) tabs x 10's pack: 189.60 MRP

❖ **RIMACTAZID 300+Z Sandoz/Novartis**
Each blister strip contains 2 coated tablets of Rimactazid 300 (Rifampicin 300mg + Isoniazid 150mg) & 4 scored tablets of Pyrazinamide 500mg (i.e 2+4): tablets in combipack.
Ind; C/I; S/E: See under individual drugs.
Dose: Over 50kg. (2+4) tabs. daily as a single dose before breakfast.
(2+4) tabs. x 10's pack: 247.20 MRP

❖ **RIMACTAZID 450+Z Sandoz/Novartis**
Each blister strip contains 1 coated tablet of Rimactazid 450 (Rifampicin 450mg + Isoniazid 300mg) & 3 scored tablets of Pyrazinamide 500mg (i.e 1+3): tablets in combipack.
Ind: For short-course TB chemotherapy.
C/I; S/E: See under individual drugs.
Dose: Over 50kg body wt, one blister strip of rimactazid-450+Z (i.e 1+3 tabs.) daily as a single dose before breakfast, for the first 2 months of treatment followed by 1 tablet of rimactazid-450 or 2 tablets of rimactazid-300 daily for the next 4 months to complete a 6-months course of treatment.
(1+3) tabs. x 10's: 186.80 MRP

❖ **RIMSTAR 4-FDC & RIMCURE 3-FDC Tab. Sandoz/Novartis**
Rimstar 4-FDC presents- Rifampicin 150mg + Isoniazid 75mg + Pyrazinamide 400mg + Ethambutol 275mg/tablet.
Rimcure 3-FDC presents- Rifampicin 150mg + Isoniazid 75mg + Pyrazinamide 400mg/tablet.
Ind: Rifampicin, isoniazid, pyrazinamide and ethambutol are major drugs in the management of tuberculosis and in certain opportunist mycobacterial infections. Rifampicin is also effective in the cases resistant to other anti-tuberculous agents.
C/I: In known or suspected hypersensitivity to rifampicin and/or to isoniazid, pyrazinamide and ethambutol and/or to any of the excipients, including, a history of drug induced hepatitis, acute liver diseases, peripheral neuritis and optic neuritis.
S/E: Please see under individual preparation.
Precautions: Caution is advised in patients with impaired renal, liver and visual function, diabetes mellitus, gout.
Pregnancy: Should not be given during pregnancy unless the potential benefit justifies the potential risk to the foetus.
Dosage: The total dosage requirement of rifampicin is 10 (8 to 12) mg/kg/day, of isoniazid 5 (4 to 6) mg/kg/day, of pyrazinamide 25 (20 to 30) mg/kg/day and of ethambutol 15 (15-20) mg/kg/day.
Calculating the daily dosage as above, a treatment schedule has been prepared as below:
New patients:
Body weight < 50kg, initial 2 months- Rimstar 4-FDC 3 tablets at a time daily; next 4 months- continuation dose Rifampicin 450mg + Isoniazid 300mg (or Rimactazid-450 one tablet) daily.
Body weight ? 50kg, initial 2 months- Rimstar 4-FDC 4 tablets at a time daily; next 4 months- continuation dose Rifampicin 600mg + Isoniazid 300mg (or Rimactazid-300 two tablets) at a time daily.
Retreatment patients:
Body weight < 50kg, initial 2 months- Rimstar 4-FDC 3 tablets at a time daily, & Streptomycin 15mg/kg daily; next 1 month- Rimstar 4-FDC 3 tablets at a time daily; next 5 months- continuation dose Rifampicin 450mg + Isoniazid 300mg (or Rimactazid-450 one tablet) daily, & Ethambutol 400mg 2 tablets (800mg) at a time daily.
Body weight ? 50kg, initial 2 months- Rimstar 4-FDC 4 tablets at a time daily, & Streptomycin 15mg/kg daily; next 1 month- Rimstar 4-FDC 4 tablets at a time daily; next 5 months- continuation dose Rifampicin 600mg + Isoniazid 300mg (or Rimactazid-300 two tablets) at a time daily, & Ethambutol 400mg 21/2 tablets (1000mg) at a time daily.
Rimcure 3-FDC x 100's pack: 551.00 MRP
Rimstar 4-FDC x 50's pack: 376.50 MRP

1.11 Anti-Leprotic drugs

DAPSONE[21,33]

DAPSONE: Tablet.
Ind: Leprosy; Dermatitis herpetiformis, (and also malaria).
S/E: Anaemia (mild to severe); allergic dermatitis, hepatitis, psychosis; anorexia, nausea, vomiting; headache, insomnia, tachycardia; agranulocytosis; Lepra reactions (discontinue if eye or nerve trunks affected).
Dose: Treatment of leprosy started on a low dose (1/4 th of the standard) which then gradually increased so as to take 6 or 8 weeks to reach the standard. The following regimens have been used; 100-200 mg once a day or 200-400 mg twice a week or 300-600 mg once a week or 1-2mg/kg/day.
Dermatitis herpetiformis- adult, initially 50-100mg daily modified according to response.

❖ **DAPSONE Tab. Clonmel**
Dapsone BP 100mg/tablet
1000's pack: 210.00 MRP
Preparation: May not be available; price could not be corrected.

❖ **LEPSONE Tab. Gaco**
Dapsone BP 100mg/tablet
100's pack: 38.43 MRP

OTHER PREPNS.

RIFAMPICIN: See under anti- T.B drugs.

2. ANTI-VIRAL DRUGS/ANTI-AIDS DRUGS

Anti-viral drugs that are available now a day may be classified as below:[1,21]

2.1 **Drugs for Herpes virus infection:**
- i. **Herpes simplex & Varicella-zoster:** Such as- ***Acyclovir, Famciclovir, Inosine pranobex, Valacyclovir.***
- ii. **Drugs for Cytomegalovirus:** Such as- ***Cidofovir, Foscarnet, Ganciclovir, Valganciclovir.***

2.2. **Drugs for Human immunodeficiency virus (HIV):** See below under antiretroviral drugs.

2.3. **Drugs for Viral hepatitis infection:**
- i. **Chronic hepatitis B:** Such as- ***Lamivudine, Adefovir dipivoxil, Entecavir, Telbivudine.***
- ii. **Chronic hepatitis C:** Such as- ***Peginterferon alfa, Ribavirin (in combination with Peginterferon alfa).***

2.4. **Drugs for Influenza virus:** Such as- ***Amantadine, Oseltamivir, Zanamivir***

2.5. **Drugs for Respiratory syncytial virus:** Such as- ***Palivizumab, Ribavirin***

2.1 Drugs for Herpes simplex & Varicella-zoster

Drugs for Herpes simplex & Varicella-zoster

ACYCLOVIR[21,47]

ACYCLOVIR: Tablet/Syrup
Ind: Treatment of herpes simplex virus infections of the skin & mucous membrane, including initial & recurrent genital herpes. Prophylaxis in immunocompromised patients.
C/I: Patients known to be hypersensitive to acyclovir.
S/E: Events occuring during acyclovir therapy are not different in nature, incidence or severity from events occuring in patients receiving placebo.
Cautions: In patients with severe renal impairment (creatinine clearance less than 10ml/min), a dose of 200mg every 12 hourly is recommended. No more information is available.
Dosage & admin: Adult: Treatment- 1 tablet (or 5ml syrup) 5 times daily at 4 hourly intervals (omitting the night time-dose) for 5 days. Prophylaxis- 1 tablet or 5ml 4 times

daily at 6 hourly intervals.
Child: Treatment- under 2 years, 1/2 tablet or 2.5ml 5 times daily at 4 hourly intervals for 5 days. Over 2 years , same as adult.
Prophylaxis- under 2 years, 1/2 tablet or 2.5ml 4 times dalily at 6 hourly intervals; over 2 years , same as adult.

❖ **NOVIREX Tab. Drug Inter.**
Acyclovir 200mg & 400mg/tablet
200mg x 30's pack: 360.00 MRP
400mg x 20's pack: 440.00 MRP
❖ **VIROXI Tab. SK+F**
Acyclovir 200mg/tablet
200mg x 20's pack: 280.00 MRP
❖ **VIRUX Tab. Square**
Acyclovir 200mg & 400mg/tablet
200mg x 30's pack: 420.00 MRP
400mg x 20's pack: 440.00 MRP
❖ **VIRUX Susp. Square**
Acyclovir 200mg/5ml: suspension
70ml bot: 125.00 MRP

FAMCICLOVIR[54]

FAMCICLOVIR: Tablet
Famciclovir is the orally administered pro-drug of the antiviral agent penciclovir. Famciclovir itself has no antiviral activity until it is biotransformed to penciclovir. Following oral administration, famciclovir is rapidly absorbed and converted to the antivirally active compound, penciclovir. Studies have shown that famciclovir is well absorbed and produces plasma penciclovir concentrations superior to those obtained following oral administration of penciclovir alone. The mean bioavailability of penciclovir after oral administration of famciclovir is about 77%.

Mode of action: Penciclovir is a substituted guanine analogue with potent and selective antiviral activity against varicella zoster virus and other human herpes viruses. Penciclovir is in the same class of antiviral drugs as acyclovir, and both are phosphorylated by viral thymidine kinase and then by cellular enzymes to the active triphosphate form in virus-infected cells. Penciclovir triphosphate inhibits viral DNA polymerase competitively with deoxyguanosine triphosphate and is incorporated into the extending DNA chain, preventing significant chain elongation. Consequently, viral DNA synthesis and, therefore, viral replication are inhibited. Inhibition of the virus reduces the period of viral shedding, limits the degeree of spread and level of pathology, and thereby facilitates healing.
Penciclovir is not readily phosphorylated in uninfected cells and does not inhibit cellular DNA synthesis even at concentrations > 20 times those achieved in clinical usage.

Ind: Famciclovir is indicated: 1. For the treatment of acute herpes zoster (shingles). 2. For the treatment or suppression of recurrent episodes of genital herpes in immunocompetent adults. 3. For the treatment of recurrent episodes of mucocutaneous herpes simplex infections in HIV-infected patients.
C/I: Patients who have known hypersensitivity to famciclovir or to any ingredient in the formulation or component of the container. For a complete information, please see the manufacturer's literature.
Precautions & warnings: The efficacy of famciclovir has not been established for first episode genital herpes infections, disseminated zoster, or in immuncompromised patients with herpes zoster. Dosage adjustment is required when administrering famciclovir to patients with moderate or severe renal dysfunction.
Genital herpes is a sexually transmitted disease with an increased risk of transmission during acute episodes. There are no data evaluating whether famciclovir will prevent transmission of infection to others. Patients should be advised to avoid intercourse when lesions and/or symptoms are present (even if treatment with an anti-viral has been initiated) in order to avoid infecting partners. Genital herpes can aslo be transmitted in the absence of symptoms through asymptomatic viral shedding.
Famciclovir 125mg, 250mg and 500mg tablets contain lactose (26.9mg, 53.7mg and 107.4mg, respectively). Patients with rare heredity problems of galactose intolerance, a severe case of lactase deficiency or glucose-galactose malabsorption should not take famciclovir tablets.
Pregnancy & lactation: Although animal studies have not shown any embryotoxic or teratogenic effects with famciclovir or penciclovir, the safety of famciclovir in human pregnancy has not been established. Because animal reproductive studies are not always predictive of human response, famciclovir should, therefore, not be used in pregnancy unless the potential benefits are considered to outweigh the potential risks associated with treatment.
Following oral administration of famciclovir to lactating rats, penciclovir is excreted in milk. It is not known whether it (penciclovir) is excreted in human milk, thus a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.
Adverse reactions: The following adverse events have been reported during post-approval use of famciclovir (frequency has been estimated from spontaneous and literature reports): Rare cases of headache, nausea and confusion (including delirium, disorientation, confusional state, occuring predominantly in the elderly), and very rare cases of rash, urticaria, pruritus, serious skin reactions (e.g erythema multiforme, Steven Johnson syndrome, toxic epidermal necrolysis), vomiting, dizziness, somnolence (predominantly in the elderly), hallucinations and jaundice. However, reporting rates determined on the basis of spontaneously reported post-marketing adverse events are generally presumed to underestimate the risks associated with drug treatment.
Abnormal haematological and clinical chemistry findings: In post-market experience, thrombocytopenia has been reported very rarely.

Dosage & admin:
Herpes zoster infections: **The recommended dose is 500mg 3 times per day for 7 days. Therapy should be initiated within 72 hours of the onset of the rash.**
Herpes simplex infections: **Immunocompetent patients.**
Recurrent genital herpes episodes: **The recommended dosage is 125mg twice a day for 5 days. Initiation of treatment is recommended during the prodromal period or as soon as possible after onset of lesions.**
Suppression of recurrent genital herpes episodes: **The recommended dosage is 250mg twice daily for up to 1 year. The safety and efficacy of famciclovir therapy beyond one year of treatment has not been established.**
HIV-infected patients: **For recurrent episodes of mucocutaneous herpes simplex infection, the recommended dosage is 500mg twice a day for 7 days.**
Famciclovir tablets should be swallowd whole and may be taken with or without food.
Missed dose: **If a dose of famciclovir is missed, it should be taken as soon as the patient remembers. The next dose should be taken at the normal time. The patient should carry on as normal until they have finished all the tablets.**
Do not double-dose.
Use in children: **Safety and efficacy in children under the age of 18 years has not been established.**

Drug inter: No clinically significant drug interactions have been observed in any study of coadministration of any drugs with pamciclovir therapy.

❖ **FAMVIR Tab. Novartis**
Famciclovir 125mg & 250mg/tablet
125mg x 10's pack: 1250.00 MRP
250mg x 21's pack: 4095.00 MRP

2.2 Drugs for Human immunodeficiency virus (HIV) / Antiretroviral drugs[1,21]

The antiretroviral drugs available now-a-day, are classified into three main categories-

1. ***Nucleoside & nucleotide reverse transcriptase inhibitors:***
   a. Zidovdine
   b. Didanosine
   c. Zalcitabine
   d. Stavudine
   e. Lamivudine
   f. Abacavir
   g. Adefovir
2. ***Nonnucleoside reverse transcriptase inhibitors:***
   a. Nevirapine &
   b. Delavirdine
   c. Efavirenz
3. ***Protease inhibitors:***
   a. Indinavir
   b. Nelfinavir
   c. Ritonavir
   d. Saquinavir

Nucleoside & nucleotide reverse transcriptase inhibitors

LAMIVUDINE[47]

The text of Lamivudine has been discussed below under the drugs of 'chronic hepatitis B'.

ZIDOVUDINE

ZIDOVUDINE: Capsule
Zidovudine is a synthetic nucleoside analogue. It is presented as 100mg capsule for oral administration. But recently not available in our market.

Nonnucleoside reverse transcriptase inhibitors

EFAVIRENZ[48]

EFAVIRENZ: Tablet
Efavirenz is a synthetic anti-retroviral agent. It is available as Efavirenz INN 600mg tablet.
Mode of action: Efavirenz is a non-nucleoside reverse transcriptase inhibitor. Although efavirenz is pharmacologically related to other non-nucleoside reverse transcriptase inhibitors, it differs structurally from this group of drugs and other currently available anti-retroviral agents.
Ind: Efavirenz is indicated in combination with other anti-retroviral agents for the treatment of HIV-1 infection. This indication is based on analysis of plasma HIV-RNA levels and CD4 cell counts in controlled studies of up to 24 weeks in duration. At present, there are no results from controlled trials evaluating long-term suppression of HIV-RNA with efavirenz.
C/I: Efavirenz is contraindicated in patients with known hypersensitivity to the drug or any ingredient in formulation.
S/E: ***CNS effects:*** CNS effects including dizziness, impaired concentration, abnormal dreams and insomnia have been reported in about 52% of adults receiving efavirenz 600mg once daily. These CNS effects were described as mild (do not interfere with daily activities) in 31.4%, moderate (may interfere with daily activities) in 17.8% or severe (interrupt usual daily activities) in 2.6% cases. Adverse CNS effects generally begin during the first 1-2 days of efavirenz therapy, improve with continued therapy and usually resolve after the first 1-2 days of efavirenz therapy. These effects may be more tolerable if the daily dose of efavirenz is administered at bedtime, specially during the first 2-4 weeks of therapy and in patients who continue to experience such effects. Fatigue has been reported in up to 7% of adults receiving efavirenz
Severe acute depression, sometimes accompanied by suicidal ideation/ attempts, has been reported rarely in patients receiving efavirenz.
Adverse CNS effects reported in less than 2% of patients receiving efavirenz include- ataxia, confusion, impaired coordination, migraine headache, neuralgia, paresthesia, peripheral neuropathy, seizures, speech disorder, tremor, or vertigo. In addition, aggravated depression, agitation, amnesia, anxiety, apathy, emotional liability, euphoria, hallucination, or psychosis has occurred in less than 2% of efavirenz-treated patients. Adverse CNS effects occurred in 9% of children receiving efavirenz in clinical studies.
Dermatolgic and sensitivity reactions: Rash has occurred in 27.3% of adults receiving efavirenz in clinical studies. Pruritus or increased sweating has been reported in 1-2% of patients receiving efavirenz. Allergic reaction, alopecia, eczema, folliculitis, skin exfoliation or urticaria has occurred in lees than 2% of patients receiving the drug.
GI effects: Nausea or diarrhoea has been reported in up to 12% of adults receiving efavirenz. Vomiting, dyspepsia, abdominal pain, or flatulence has occurred in some efavirenz-treated adults. Dry mouth or taste change has been reported in up to 2% of patients receiving efavirenz.
Hepatic effects: Hepatitis occurred in less than 2% of patients receiving efavirenz.
Cardiovascular effects: Total serum cholesterol level increases 10-20% in healthy individuals receiving efavirenz. Hot flushes, flushing, palpitations, tachycardia, or thrombophlebitis has been reported in less than 2% of patients receiving efavirenz.
Precautions & warning: *Warnings:* As high fat foods may cause unwanted increase in drug effect, avoid taking with high-fat foods and also in an empty stomach.
Regular, periodic measurement of plasma HIV-1 RNA levels and CD4+ T-cell count is necessary to determine the risk of disease progression and to determine when to modify anti-retroviral agent regimens. Patients should be advised that efavirenz has not been shown to reduce the risk of transmission of HIV to others via sexual contact or blood contamination, and that is why practices designed to prevent transmission of HIV should be maintained during anti-retroviral therapy.
Efavirenz should always be administered in conjunction with other anti-retroviral agent and should not be used alone in the treatment of HIV infection. Although efavirenz used in combination with other anti-retroviral agents appears to be well tolerated, patients should be monitored closely for adverse effects during combination therapy. The usual precautions and contraindications of the other anti-retroviral agents in the regimen should be considered during combination therapy; efavirenz should not be added as sole agent to a failing regimen.
Whenever a change in anti-retroviral therapy is considered because of therapeutic failure, at least 2 components of the previous regimen should be changed since adding a single new agent may predispose to the development of viral resistance. Use of an entirely new regimen containing at least 3 drugs is preferred. The effect of efavirenz therapy on subsequent therapy with other non-nucleoside reverse transcriptase inhibitors remains to be determined. As cross-resistance occurs among non-nucleoside reverse transcriptase inhibitors, most clinicians suggest that individuals who experience disease progression while receiving one of the agents (e.g delavirdine, efavirenz, nevirapine) should not be switched to another agent in the class. Patients taking efavirenz should not involve in any hazardous activities requiring mental alertness or physical coordination such as operating machinery or driving a motor vehicle. Patients should be advised to contact their clinician if they experience delusions, inappropriate behavior, or acute depression while receiving efavirenz; discontinuance of efavirenz may be necessary in patients who experience such CNS effects. Efavirenz is metabolized in the liver, so the drug should be used with caution in patients with hepatic impairment. Serum hepatic enzyme concentrations should be monitored during efavirenz therapy in patients who have, or may have, hepatitis B and/or C virus infection, in patients receiving concomitant ritonavir and in patients receiving concomitant therapy with hepatotoxic drugs. In patients with serum hepatic enzyme concentrations more than 5 times the upper limit of normal, the benefits of continued efavirenz therapy versus the risks of hepatotoxicity should be considered. As increases in serum cholesterol concentration have occurred in individuals receiving efavirenz, cholesterol monitoring should be considered in patients receiving the drug.
Precautions: Efavirenz may cause drowsiness or dizziness. Alcohol may intensify this effect.
Pediatric precautions: Safety and efficacy of efavirenz in neonates and children younger than 3 years of age or who weigh less than 13kg have not been evaluated. Adverse effects reported in children receiving efavirenz are similar to those reported in adults including CNS, GI and dermatologic effects. But, in children rashes and dermatologic reactions have been reported more frequently than adults. Antihistamines may be used for the prevention of rash when initiating efavirenz therapy in children.
Pregnancy & lactation: Should not use in pregnant, planning to become pregnant or breast-feeding women.
Dosage & admin: Adults: The recommended dosage of efavirenz is 600mg orally, once daily, in combination with a protease inhibitor and/or nucleoside analogue reverse transcriptase inhibitors (NRTIs). Efavirenz may be taken with or without food; however, a high fat meal may increase the absorption of efavirenz and should be avoided.
In order to improve the tolerability of nervous system side effects, bedtime dosing is recommended during the first 2 to 4 weeks of therapy and in patients who continue to experience these symptoms.
Pediatric patients: The pediatric patients include 3 years of age or older and weighing between 10 and 40kg. The recommended dosage of efavirenz is given orally, once daily at a rate- body weight 10 to < 15kg, 200mg; 15 to < 20kg, 250mg; 20 to < 25kg, 300mg; 25 to < 32.5kg, 350mg; 32.5 to < 40kg, 400mg. The recommended dosage for pediatric patients weighing greater than 40kg is 600mg (as adult), once daily.
Drug inter: Please see the manufacturer's literature.
Note: For further information please consult manufacturer's literature.

❖ **ADIVA Tab. Square**
Efavirenz INN 600mg/tablet
10's pack: 2000.00 MRP
❖ **AVIFANZ Tab. Beximco**
Efavirenz INN 600mg/tablet
10's pack: 2000.00 IP

Protease Inhibitors

NELFINAVIR[48]

NELFINAVIR: Tablet
Nelfinavir is a human immunodeficiency virus (HIV) protease inhibitor. It is available as Nelfinavir mesylate 250mg film-coated tablet.
Ind: Indicated for the treatment of HIV infection when antiretroviral therapy is warranted.
C/I: Nelfinavir is contraindicated in patients with clinically significant hypersensitivity to any of its components. Co-administration of nelfinavir is contraindicated with drugs that are highly dependent on CYP3A for clearnace and for which elevated plasma concentrations are associated with serious and/or life-threatening adverse events.
S/E: The majority of adverse events found with nelfinavir therapy either alone or in combination with nucleoside analogues were mild in intensity. The most fequently reported adverse event was diarrhoea, of mild to moderate intensity.
Adverse events occurring in less than 2% of patients receiving nelfinavir treatment and of at least moderate severity are listed as below.
Body as a whole: abdominal pain, accidental injury, allergic reaction, asthenia, back pain, fever, headache, malaise, pain and redistribution/accumulation of body fat.
Digestive system: Anorexia, dyspepsia, epigastric pain, gastrointestinal bleeding, hepatitis, mouth ulceration, pancreatitis and vomiting.
Hemic/lympathic system: Anemia, leukopenia and thrombocytopenia.
Metabolic/nutritional: Increase in alkaline phosphatase, amylase, creatine phosphokinase, lactic dehydrogenase, SGOT, SGPT and gamma glutamyl transpeptidase, hyperlipemia, hyperuricemia, hyperglycemia, hypoglycemia, dehydration and abnormal liver function tests .
Musculoskeletal system: Arthralgia, arthritis, cramps, myalgia, myasthenia and myopathy.
Nervous system: Anxiety, depression, dizziness, emotional liability, hyperkinesia, insomnia, migraine, paresthesia, seizures, sleep disorder, somnolence and suicide ideation.
Respiratory system: Dyspnea, pharyngitis, rhinitis and sinusitis.
Special senses: Acute iritis and eye disorder.
Urogenital system: Kidney calculus, sexual dysfunction and urine abnormality.
Skin/appendages: Dermatitis, folliculitis, fungal dermatitis, maculopapular rash, pruritus, sweating, and urticaria.
Warnings: Nelfinavir should not be administered concurrently with terfenadine, astemizole, cisapride, triazolam, midazolam, ergot derivatives, amiodarone or quinidine because nelfinavir may affect the hepatic metabolism of these drugs and create potential for serious and/or life-threatening adverse events.
New onset diabetes mellitus, exacerbation of pre-existing diabetes mellitus and hyperglycemia have been reported in HIV-infected patients receiving protease inhibitor therapy. Some patients required either initiation or dose adjustments of insulin or oral hypoglycemic agents for treatment of these events. In some cases diabetic ketoacidosis has occurred. In those patients who discontinued protease inhibitor therapy, hyperglycemia persisted in some cases.
Precautions: ***General:*** Nelfinavir is principally metabolized by the liver, therefore, caution should be exercised when administering this drug to patients with hepatic impairment.
Hemophilia: There have been reports of increased bleeding, including spontaneous skin hematomas and hemarthrosis in patients with hemophilia type A and B treated with protease imhibitors. In some patients, additional factor VIII has to be given. In more than half of the reported cases, treatment with protease inhibitors was continued or reintroduced. A causal relationship has not been established.
Pregnancy & lactation: There are no adequate and well-controlled studies in pregnant women. HIV-infected women are advised not to breast-feed to avoid postnatal transmission of HIV to the newborn and infants who may not yet been infected. Studies in lactating rats have demonstrated that nelfinavir is excreted in milk, but it is yet not known whether nelfinavir is excreted in human milk.
Dosage & admin: ***Adults:*** **The recommended dose is 1250mg (250mg x 5 tabs.) twice daily or 750mg (250mg x 3 tabs.) three times daily. Nelfinavir should be taken with a meal. Antiviral activity is enhanced when nelfinavir is administered in combination with nucleoside analogues (e.g lamivudine). Therefore, it is recommended that nelfinavir be used in combination with nucleoside analogues.**
Children (2-13 years): **The recommended oral dose is 20-30mg/kg per dose, 3 times daily with a meal.**
Pediatric use: **The safety, effectiveness and pharmacokinetics of nelfinavir have not been evaluated yet in pediatric patients below the age 2 years.**
Drug inter: Please see the manufacturer's literature.
Note: For further information please consult manufacturer's literature.

❖ **AVIFIX Tab. Beximco**
Nelfinavir mesylate 250mg/tablet (film-coated).
10's pack: 450.00 IP
❖ **NELVIR Tab. Square**
Nelfinavir mesylate 250mg/tablet (film-coated).
10's pack: 450.00 MRP

Combined Preparations

LAMIVUDINE + ZIDOVUDINE[48]

LAMIVUDINE + ZIDOVUDINE: Tablet
This combined preparation contains lamivudine INN 150mg and zidovudine USP 300mg/tablet.
Mode of action: Please see under the text of lamivudine & zidovudine given separately.
Ind: This is indicated for the treatment of HIV infection, where combined preparation is thought necessary.
C/I; S/E; Precautions: Please see under the text of lamivudine & zidovudine given separately.
Dosage & admin: ***The recommended oral dose of lamivudine and zidovudine combined preparation is as follows:*** **For adults and adolescents of age 12 years and above- 1 tablet (lamivudine 150mg + zidovudine 300mg) twice daily.**
Dose adjustment: **As this is a fixed-dose combination, it should not be prescribed for patients requiring dosage adjustment such as those with reduced renal function (creatinine clearance < 50ml/min), those with low body-weight (50kg or 110 lb), or those experiencing dose-limiting adverse events.**
This is also not recommended for patients with impaired hepatic function.
Overdose: There is no experience of overdosage with lamivudine and zidovudine combination. However, there are limited data available on the consequences of ingestion of acute overdoses of lamivudine and zidovudine in humans. No fatalities occurred, and all patients recovered. No special signs or symptoms have been identified following such overdosage.

❖ **AVUDIN Tab. Square**
This is a combined preparation, containing lamivudine INN 150mg and zidovudine USP 300mg/tablet.
10's pack: 450.00 MRP
❖ **DIAVIX Tab. Beximco**
This is a combined preparation, containing lamivudine INN 150mg and zidovudine USP 300mg/tablet.
10's pack: 450.00 IP

ABACAVIR + LAMIVUDINE + ZIDOVUDINE[42]

❖ **TIVIZID Tab. Square**
Tivizid is a combined preparation, containing 3 synthetic nucleoside analogues- Abacavir (as sulfate) 300mg, Lamivudine INN 150mg, and Zidovudine USP 300mg, available as film-coated tablet.
Mode of action: *Abacavir:* Abacavir is a carbocyclic synthetic nucleoside analogue. Intracellularly, abacavir is converted by cellular enzymes to the active metabolite, carbovir triphosphate. Carbovir triphosphate is an analogue of deoxyguanosine-5-triphosphate (dGTP). Carbovir triphosphate inhibits the activity of HIV-1 reverse transcriptase (RT) both by competing with the natural substrate dGTP and by its incorporation into viral DNA. The lack of a 3'-OH group in the incorporated nucleoside analogue prevents the formation of the 5' to 3' phosphodiester linkage essential for DNA chain elongation and therefore, the viral DNA growth is terminated.
Lamivudine & zidovudine: Please see under the text of lamivudine & zidovudine given separately.
Ind: Tivizid is indicated alone or in combination with other antiretroviral agents for the treatment

of HIV-1 infection.
C/I: Tivizid tablets are contraindicated in patients with previously demonstrated hypersensitivity to any of the components of the product.
A/R & Warning: *Hypersensitivity reaction:* Abacavir sulfate, a component of this combination has been associated with fatal hypersensitivity reactions. Patients developing signs or sympotms of hypersensitivity should discontinue this combination as soon as hypersensitivity reaction is first suspected, and should seek medical evaluation immediately.
Bone marrow suppression: Since zidovudine has myelosuppressive effect, this combination should be used with caution in patients who have bone marrow compromise evidenced by granulocyte count <1,000 cells/mm^3 or hemoglobin <9.5 g/dl. Frequent blood conunts are strongly recommended in patients with advanced HIV disease who are treated with this combination. For HIV-infected individuals and patients with asymptomatic or early HIV disease, periodic blood counts are recommended.
Myopathy: Myopathy and myositis, with pathological changes similar to that produced by HIV idsease, havee been associated with prolonged use of zidovudine, and therefore may occur with therapy with this combination.
Post-treatment exacerbations of hepatitis: In clinical trials in non-HIV-infected patients treated with lamivudine for chronic hepatitis B (HBV), clinical and laboratory evidence of exacerbations of hepatitis have occurred after discontinuation of lamivudine. Patients should be closely monitored with both clinical and laboratory followup for at least several months after stopping treatment.

Precautions: The potential for cross-resistance between abacavir and other NRTIs should be considered when choosing new therapeutic regimens in therapy-experienced patients.
Patients with HIV & Hepatitis B virus coinfection: Lamivudine: Safety and efficacy of lamivudine have not been established for treatment of chronic hepatitis B in patients dually infected with HIV and HBV.
Patients with impaired renal function: Abacavir, lamivudine and zidovudine: Since this combination is a fixed-dose one and the dosage of the individual components cannot be altered, patients with creatinine clearance <50ml/min should not receive this combination.
Fat redistribution: Redistribution/accumulation of body fat including central obesity dorsocervical fat enlargement (buffalo hump), peripheral wasting, facial wasting, breast enlargement, and cushingoid appearance have been observed in patients receiving antiretroviral therapy.

Pregnancy & lactation: There are no adequate and well-controlled studies of abacavir sulphate, lamivudine and zidovudine in pregnant women. This combination should be used during pregnancy only if the potential benefits outweigh the risks.
Nursing mothers: The centers for disease control and prevention recommend that HIV-infected mothers not breastfeed their infants to avoid risking postnatal transmission of HIV infection.
Zidovudine is excreted in breast milk; abacavir and lamivudine are secreted into the milk of lactating rats.
Because of both the potential for HIV transmission and the potential for serious adverse reactions in nursing infants, mothers should be instructed not to breastfeed if they are receiving this combination.
Dosage & admin: The recommended oral dose of Tivizid for adults and adolescents is 1 tablet twice daily. Tivizid is not recommended in adults or adolescents who weigh less than 40kg because it is a fixed-dose tablet.
Drug inter: No clinically significant changes to pharmacokinetic parameters were observed for abacavir, lamivudine, or zidovudine when administered together.
Note: For further information please consult manufacturer's literature.
10's pack: 1400.00 MRP

LAMIVUDINE + ZIDOVUDINE + NEVIRAPINE[48]

❖ **TRIOVIX Tab. Beximco**
Triovix is a combined preparation, containing Lamivudine INN 150mg, Zidovudine USP 300mg & Nevirapine INN 200mg/tablet.
Ind & use: This is a fixed dose combination of lamivudine, zidovudine and nevirapine, recommended for human immunodeficiency virus (HIV-1) infected patients who are able to tolerate standard doses of lamivudine, zidovudine and nevirapine separately for at least 2 weeks prior to switching over to this fixed dose combination. Patients should have demonstrated adequate tolerability to nevirapine i.e who are able to tolerate maintenance therapy with nevirapine 200mg twice daily.
This three-drug combined preparation is administered twice daily and each tablet contains half of the daily dose for each component. Twice daily formulation in single tablet for three drugs is convenient for patients to take and also ensures higher rate of compliance.
C/I: Please see above under the text of lamivudine & zidovudine. For nevirapine- history of hypersensitivity; not to be used as initial therapy, because initial therapy requires 200mg once daily, whereas fixed dose combination allows for 200mg twice daily.
S/E: Please see above under the text of lamivudine & zidovudine. For nevirapine: more ferquent incidence- skin rash, diarrhea, gastrointestinal problems, headache, nausea, stomach pain; less frequent incidence- aphthous stomatitis, fever, hepatitis, Stevens- Johnson syndrome.

Warnings & precautions: For the following conditions, assess risk to the patient and take action as needed- chronic hepatitis B, hepatomegaly with steatosis, lactic acidosis, liver function impairment, severe renal function impairment, peripheral neuropathy.
Dosage & admin: For treatment of HIV infection: Adult dosage- 1 tablet twice daily. This fixed dose combination is not recommended for patients who have not been on initial lower dose of nevirapine 200mg once daily for 2 weeks and/or have not tolerated this dose. After successful therapy with low dose nevirapine for two weeks, patients can be switched over to 200mg b.i.d dose provided they have not demonstrated any hypersensitivity reaction (rash, abnormal liver function tests) during their initial exposure to nevirapine. Monitoring of patients for their liver function tests etc is desirable prior to initiating therapy with nevirapine and monitoring at frequent intervals once therapy with fixed dose combination is continued.
Dosage adjustment: As this is a fixed-dose combination, it should not be prescribed for patients requiring dosage adjustment such as those with reduced renal function (creatinine clearance < 50ml/min), those with low body-weight (50kg or 110 lb), or those experiencing dose-limiting adverse events.
This is also not recommended for patients with impaired hepatic function.
10's pack: 700.00 IP

2.3.1 Drugs for Chronic Viral Hepatitis B

LAMIVUDINE[42,47]

LAMIVUDINE: Tablet/Syrup
Lamivudine is a synthetic nucleoside analogue. It is available as 150mg film-coated tablet & 10mg/ml syrup in 100ml bottle.
Mode of action: Intracellularly, lamivudine is phosphorylated to its active 5'-triphosphate metabolite, lamivudine triphosphate (L-TP). The principal mode of action of L-TP is inhibition of RT (HIV-1 reverse transcriptase) via DNA chain termination after incorporation of the nucleoside analogue. L-TP is a weak inhibitor of mammalian DNA polymerases.
Ind: 1. Lamivudine is used to treat patients 16 years of age or over with long term (chronic) hepatitis B. It reduces the amount of hepatitis B virus in the body and thus prevents liver damage and improves liver function.
2. Lamivudine is also used in combination therapy with Zidovudine in the management of HIV-infection & AIDS.
C/I: It must not be taken if any hypersensitivity to the active substance lamivudine or to any ingedients found in the preparation.
S/E: The most commonly reported undesirable effects are- tiredness, respiratory tract infections, throat discomfort, headache, stomach discomfort and pain, nausea, vomiting and diarrhoea. These are generally mild in severity.
Some patients may be allergic to the medicine, and if there is any of the following symptoms soon after taking the drug, stop further taking and tell the physician immediately-

- sudden wheeziness and chest pain or tightening.
- swelling of eyelids, face or lips.
- skin rash or 'hives' any where on the body.

Precautions: Please see the manufactu-rer's literature.
Dosage & Admin: ***Treatment of chronic hepatitis-B:*** **The recommended dose of lamivudine is 100mg once a day. The tablet**

should be swallowed whole with water and can be taken with or without food. Doses can be adjusted by tbe physician if tbere is any renal impairment. The duration of treatment will be decided by the physician depending on the clinical condition of the patient.
If the patient forgets to take the schedule dose in time, take it as soon as remembered & then continue to take it as instructed.
Treatment of HIV-infection & AIDS:
Lamivudine is also used in the management of HIV-infection & AIDS in combination therapy with Zidovudine. Lamivudine is given 150mg twice daily in combination with Zidovudine 600mg daily in 2 or 3 divided doses.
Drug inter: Trimethoprim (TMP) 160mg/ sulfamethoxazole (SMX) 800mg once daily has been shown to increase lamivudine exposure (AUC). The effect of higher doses of TMP/SMX on lamivudine pharmacokinetics has not been studied. Lamivudine and zalcitabine may inhibit the intracellular phosphorylation of one another. Therefore, use of this combination in combination with zalcitabine is not recommended.

❖ **AVILAM Tab. Beximco**
Lamivudine INN 150mg/tablet (f.c).
10's pack: 250.00 IP
❖ **HEPAVIR Tab. Square**
Lamivudine INN 100mg/tablet (f.c).
20's pack: 500.00 MRP
❖ **HIVARIF Tab. Square**
Lamivudine INN 150mg/tablet (f.c).
10's pack: 250.00 MRP
❖ **HIVARIF Syp. Square**
Lamivudine INN 10mg/ml: syrup
100ml bot: 110.00 MRP
❖ **LAMIDIN Tab. SK+F**
Lamivudine INN 150mg/tablet (f.c).
10's pack: 253.00 MRP
❖ **LAMIVIR Tab. Incepta**
Lamivudine INN 150mg/tablet (f.c).
20's pack: 500.00 MRP
❖ **ZEFFIX Tab. GlaxoSmithKline**
Lamivudine INN 100mg/tablet (f.c).
10's pack: 900.00 MRP

ADEFOVIR DIPIVOXIL[26]

ADEFOVIR DIPIVOXIL: Tablet
Adefovir is an acyclic nucleotide analog of adenosine monophosphate. It is available as adefovir dipivoxil INN 10mg/tablet.
Mode of action: Adefovir is phosphorylated to its active metabolite, adefovir diphosphate, by cellular kinases. Adefovir diphosphate inhibits HBV DNA polymerase(reverse transcriptase) by competing with the natural substrate deoxyadenosine triphosphate and by causing DNA chain termination after its incorporation into viral DNA.
Ind: Adefovir is indicated for the treatment of chronic hepatitis B in adults with evidence of active viral replication and either evidence of persistent elevations in serum aminotransferases (ALT or AST) or histologically active disease.
C/I: Known hypersensitivity to any of the components of the product.
S/E: Treatment related clinical adverse events that occurrd in 3% or greater number of patients are asthenia, headache, abdominal pain, nausea, flatulence, diarrhea, dyspepsia.
Precautions: Severe acute exacerbation of hepatitis has been reported in patients who have discontinued anti-hepatitis B therapy, including therapy with adefovir dipivoxil. Patients who discontinue adefovir dipivoxil should be monitored at repeated intervals over a period of time for hepatic function. If appropriate, resumption of anti-hepatitis B therapy may be warranted.
Chronic administration of adefovir dipivoxil (10mg once daily) may result in nephrotoxicity. The overall risk of nephrotoxicity in patients with adequate renal function is low. However, this is of special importance in patients at risk of or having underlying renal dysfunction and patients taking concomitant nephrotoxic agents such as cyclosporine, tacrolimus, aminoglycosides, vancomycin and NSAIDs.
Elderly patients: In general, caution should be exercised when prescribing elderly patients since they have greater frequency of decreased renal or cardiac function due to concomitant disease or other durg therapy.

Pregnancy & lactation: There are no adequate and well-controlled studies in pregnant women. Therefore, adefovir dipivoxil should be used during pregnancy only if clearly needed and after careful consideration of the risks and benefits.
It is not known whether adefovir is excreted in human milk. Mothers should be instructed not to breast feed if they are taking adefovir dipivoxil.

Dosage & admin: The recommeded dose of adefovir in chronic hepatitis B patients is 10mg once daily, taken orally, without regard to food.

Dose adjustment in renal impairment:
Significantly increased drug exposures are seen when adefovir dipivoxil is administered to patients with renal impairment. Therefore, the dosing interval of adefovir dipivoxil should be adjusted in patients with baseline creatinine clearance <50ml/min using tbe following suggested guidelines:
- if creatinine clearance is ?50ml/min, the dose of adefovir dipivoxil should be adjusted as 10mg in every 24 hours.
- if creatinine clearance is 20-49ml/min, the dose of adefovir dipivoxil should be adjusted as 10mg in every 48 hours.
- if creatinine clearance is 10-19ml/min, the dose of adefovir dipivoxil should be adjusted as 10mg in every 72 hours.
- if the patient is under haemodialysis, the dose of adefovir dipivoxil should be adjusted as 10mg in every 7 days following dialysis.
Pediatric use: **Safety and effectiveness in pediatric patients have not been established.**

Drug inter: When adefovir dipivoxil is co-administered with lamivudine, trimethoprim/ sulfamethoxazole and acetaminophen, the pharmacokinetics of adefovir remain unchanged and vice-versa.

When adefovir dipivoxil is co-administered with ibuprofen (800mg 3 times daily), there is no change in pharmacokinetics of ibuprofen but, there is increase in adefovir Cmax (33%), AUC (23%) and urinary recovery are observed.

❖ **ADFOVIR Tab. Sun Pharma**
Adefovir dipivoxil INN 10mg/tablet.
10's pack: 250.00 MRP
❖ **ADOVIR Tab. Renata**
Adefovir dipivoxil INN 10mg/tablet.
30's pack: 300.00 MRP
❖ **ANTIVA Tab. Square**
Adefovir dipivoxil INN 10mg/tablet.
10's pack: 350.00 MRP
❖ **INFOVIR Tab. Incepta**
Adefovir dipivoxil INN 10mg/tablet.
10's pack: 350.00 MRP

ENTECAVIR[26]

ENTECAVIR : Tablet
Entecavir is a guanosine nucleoside analogue with activity against HBV polymerase. It is available as entecavir INN 0.5mg tablet.
Mode of action: Entecavir functionally inhibits all activities of the hepatitis B virus (HBV) polymerase (reverse transcriptase).
Ind: Entecavir is indicated for the treatment of chronic hepatitis B virus infection in adults with evidence of active viral replication and either evidence of persistent elevation in serum aminotransferases (ALT or AST) or histologically active disease.
C/I: Entecavir is contraindicated in patients with previously demonstrated hypersensitivity to entecavir or any component of the product.
S/E: The most common adverse events are headache, fatigue, dizziness and nausea.
Precautions: *Lactic acidosis:* Lactic acidosis and severe hepatomegaly with steatosis, including fatal cases have been reported with the use of nucleoside analogues alone or in combination with antiretrovirals.
Exacerbations of hepatitis after discontinuation of treatment: Severe acute exacerbations of hepatitis B have been reported in patients who have discontinued anti-hepatitis B therapy, including entecavir.
Pregnancy & lactation: There are no data on the effect of entecavir on transmission of HBV from mother to infant. Therefore, appropriate care should be taken. It is not known whether it is excreted in human milk. Mothers should be instructed not to breast feed if they are taking entecavir.

Dosage & admin: The recommended dose of entecavir for chronic hepatitis B virus infection in nucleoside-treatment-naive adults and adolescents 16 years of age is 0.5mg once daily. Entecavir should be administered on an empty stomach (at least 2 hours before or 2 hours after a meal).
Children: Below the age of 16 years not recommended.
Dose adjustment in renal impairment: **Dose adjustment is recommended for patients with creatinine clearance <50ml/min, including patients on hemodialysis or continuous ambulatory peritoneal dialysis (CAPD) is as following:**
Creatinine clearance 30 to < 50ml/min, the dose is 0.5mg every 48 hours;
Creatinine clearance 10 to < 30ml/min, the dose is 0.5mg every 72 hours;

Creatinine clearance < 10ml/min, or hemodialysis or CAPD patient, the dose is 0.5mg every 7 days.
Missed dose: **If it is almost time for next dose, skip the missed dose and take the next dose at the proper time. Nobody should take a double dose to make up for the missed dose.**
Drug Inter: Coadministration of entecavir with lamivudine or adefovir dipivoxil did not result in significant drug interactions. The effects of coadministration of entecavir with other drugs that are renally eliminated or are known to affect renal function have not been evaluated.

❖ **BARCAVIR Tab. Incepta**
Entecavir INN 0.5mg/tablet.
10's pack: 650.00 MRP
❖ **TEVIRAL Tab. ACI**
Entecavir INN 0.5mg/tablet.
10's pack: 480.00 IP

TELBIVUDINE[54]

❖ **SEBIVO Tab. Novartis Pharma**
Telbivudine 600mg/tablet (film-coated).
Ind: Treatment of chronic hepatitis B in adults with evidence of viral replication and active liver inflammation.
C/I: Hypersensitivity to telbivudine or to any of the excipients.
S/E: Common side-effects are- dizziness, headache, blood amylase increased, diarrhoea, lipase increased, nausea, alanine aminotransferase increased, rash, blood creatine phosphokinase increased, fatigue. Rare side-effects are- aspartate aminotransferase increased, myopathy, arthralgia, myalgia, malaise.
Precautions & warnings: Risk of post-treatment severe acute exacerbation of hepatitis B. Hepatic function must be monitored for at least several months after treatment discontinuation. Risks of lactic acidosis and hepatomegaly with steatosis. Risk of myopathy. Treatment discontinuation if myopathy is diagnosed. Caution with co-administration of agents associated with myopathy. Caution in patients with impaired renal function, and with drugs that affect renal function. Limited data available in elderly patients. Use in children under 16 years not recommended.
Pregnancy & lactation: Use during pregnancy only if clearly necessary. Avoid breast-feeding.
Dosage: The recommended dose is 600mg daily. Dose must be reduced in patients with renal impairment.
Drug inter: Caution with concomitant use of drugs affecting renal function.
Note: Before prescribing, please read full prescribing information.
600mg x 28's pack: 5992.00 MRP

2.3.2 *Drugs for Chronic Viral Hepatitis C*

PEGINTERFERON ALFA-2a/2b[21,26,50]

PEGINTERFERON ALFA-2a/2b: Injection

Peginterferon alfa, a pegylated interferon alfa-2a/2b with increase in mean molecular weight of approximately 60,000 daltons.
Peginterferon alfa-2a is available as 135mcg/ml vial & 180mcg/ml vial for subcutaneous injection.
Peginterferon alfa-2b is available as 50mcg/vial, 80mcg/vial, 100mcg/vial, 120mcg/vial and 150mcg/vial for subcutaneous injection.
Description & mode of action: Peginterferon alfa (2a/2b) is a derivative of natural interferon alfa. Pegylation (polyethylene glycol-conjugation) increases the mean molecular weight and thus persistence of the interferon in the blood. The molecular weight of the PEG fraction of peginterferon is about 40,000 daltons, which has a direct effect on the clinical pharmacology because the size and branching of the PEG component determines the absorption, distribution and elimination characteristics of peginterferon. Peginterferons bind to specific interferon alfa-receptors on the cell surface, initiating complex intracellular signal transduction and inducing activation of gene transcription. This influences various biological processes, such as inhibition of viral replication in infected cells, inhibition of cell proliferation and immunomodulation. Like non-PEG conjugated alfa-interferon, peginterferon displays antiviral and antiproliferative activity in vitro.
Ind: Peginterferon alfa-2a/2b are indicated for the treatment of chronic hepatitis C, and chronic hepatitis B, usually in combination with ribavirin if available and indicated or as monotherapy if ribavirin is not available or not tolerated.
C/I: Hypersensitivity to alfa-interferons or any of its ingredients; autoimmune chronic hepatitis, cirrhotic patients; existing or previous severe psychiatric disorders, organ transplantation (other than liver).
S/E: The frequency and severity of reported undesirable effects in patients treated with peginterferon alfa are similar to those observed during treatment with interferon alfa (see product literature). In clinical trial treatment with peginterferon alfa was associated with clinically significant changes in thyroid function tests that necessitated clinical intervention.

Precautions: Treatment should be started only by physicians experienced in the treatment of hepatitis C (in non cirrhotic patients or cirrhotic patients with compensated liver diseases).
Pregnancy & lactation: Safe use in human pregnancy has not yet been established, therefore alfa-interferon should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. It is not known whether alfa-interferon is excreted in breast milk. Because many drugs are excreted in human milk, caution should be exercised if peginterferon alfa (2a/2b) is administered to a nursing woman.

Dosage & admin: ***The recommended duration of treatment:*** **Patients infected with hepatitis C virus (genotype 2 and/or 3) previously untreated with interferon, should be treated with interferon or peginterferon alfa and ribavirin for 24 weeks.**
Patients infected with hepatitis C virus (genotype 1 and/or 4) previously untreated with interferon, should be treated with interferon or peginterferon alfa and ribavirin for 12 to 48 weeks. After 12 weeks (or 24 weeks) of treatment virologic response should be assessed, and if the viral load has been reduced to less than 1% of the load at the start of treatment, the combination should be continued for a total of 48 weeks; but, if the viral load exceeds 1% of the load at the start of treatment, therapy should be discontinued. There are no safety and efficacy data on treatment for longer than 48 weeks in the previously untreated patient population.
In patients who relapse following interferon therapy, the recommended duration of treatment is 24 weeks. There are no safety and efficacy data on treatment for longer than 24 weeks in the relapse patient populations.

Dosage schedule of Peginterferon + Ribavirin:
Ribavirin: Chronic hepatitis C (genotypes 1 & 4): Adult, body weight < 75kg, ribavirin daily 400mg in the morning and 600mg in the evening; body weight ? 75kg, ribavirin daily 600mg in the morning and 600mg in the evening.
Chronic hepatitis C (genotypes 2 & 3): Adult (of any body weight), ribavirin daily 400mg in the morning and 400mg in the evening.
Peginterferon alfa 2a/2b: Chronic hepatitis C (genotypes 1, 2, 3 & 4): Adult (of any body weight), 180mcg once weekly subcutaneously.
Duration: 48 weeks in cases of genotype 1 & 4; 24 weeks in cases of genotype 2 & 3.
Ribavirin may be administered without regard to food, but should be administered in a consistent manner. Drink plenty of water while being treated with this medication; drinking water will decrease the risk of serious side effects.

Missed dose: **If any dose is missed, it should be taken as soon as remembered. If it is near the time of the next dose, skip the missed dose and resume usual dose schedule. Do not double the dose to catch up.**
Patients under 18 years: **The safety and efficacy of peginterferon alfa has not yet been established in these patients.**
Patients with renal impairment: **No special dose adjustment is required in patients with renal dysfunction. Peginterferon alfa has not been studied in patients requiring haemodialysis.**
Patients with hepatic impairment: **No special dosage modification is required in patients with Child's Class A cirrhosis. Peginterferon alfa has not been studied in patients with decompensated liver disease.**

Storage: Store the product away from light in the sealed original package at a temperature of 2°-8°C in refrigerator.

❖ **PEG-INTRON Inj. ScheringPlough/Janata Healthcare**
Peginterferon alfa-2b 80mcg/vial: solution for subcutaneous injection.
Dosage & admin: See above under the text of Peginterferon alfa-2a/2b, and consult manufacturer's literature.
80mcg vial x 1's: 17728.90 MRP

RIBAVIRIN[21,26,50]

RIBAVIRIN: Capsule
Ribavirin is a nucleoside analog with antiviral activity. It is available as ribavirin BP 200mg capsule.
Ind: Ribavirin is indicated in combination with peginterferon alfa-2a, 2b or interferon alfa injection for the treatment of chronic hepatitis C virus (genotype 1, 2, 3 and 4) in patients with compensated liver disease previously untreated with alfa interferon or who have relapsed following alfa interferon therapy.
Ribavirin alone is ineffective in hepatitis C virus infection.
C/I: Ribavirin is conraindicated in patients with known hypersensitivity to ribavirin or any components of the capsule, women who are pregnant, men whose female partners are pregnant, patients with haemoglobinopathies (e.g thalassemia major or sickle cell anemia), autoimmune hepatitis or hepatic decompensation before or during treatment.
S/E: Nausea, vomiting, headache, dizziness, blurred vision, stomach upset or pain, trouble sleeping, and flu-like symptoms (e.g fever, chills, sore throat, muscle aches) may occur. Other severe side effects include hair loss, loss of appetite, weight loss, rash, itching, fatigue, dark urine, yellow eyes, mood changes (including severe depression or suicidal thoughts), rapid or trouble breathing, chest pain, muscle pain, joint pain, easy bruising or unusual bleeding.
Precautions: Before using this drug, following things should be considered: Patients suffering from severe heart disease, kidney disease, blood disorders (e.g sickle cell anemia, low haemoglobin), other types of hepatitis (e.g autoimmune hepatitis), other liver problems, breathing problems, pancreas problems (e.g pancreatitis), diabetes, any allergy. Caution should be taken in activities requiring alertness such as driving or using machinery. Caution is advised when using this drug in the elderly because they may be more sensitive to its effects.
Pregnancy & lactation: This medication must not be used during pregnancy. It is not known whether this drug passes into breast milk. Because of the potential risk to the infant, breast-feeding is not recommended while using this drug.

Dosage & admin:
Dosage schedule of Ribavirin+Peginterferon:
See above under the text of peginterferon alfa.
Dosage schedule of Ribavirin + Interferon:
Ribavirin: **Chronic hepatitis C (all genotypes 1, 2, 3 & 4): Adult, body weight < 75kg, ribavirin daily 400mg in the morning and 600mg in the evening; body weight ? 75kg, ribavirin daily 600mg in the morning and 600mg in the evening.**
Interferon alfa 2a/2b: Chronic hepatitis C (all genotypes 1, 2, 3 & 4): Adult (of any body weight), 3 MIU 3 times weekly subcutaneously.
Duration: **48 weeks in cases of genotype 1 & 4; 24 weeks in cases of genotype 2 & 3.**
Pediatric patients: **Safety and efficacy of ribavirin has not been established in patients below the age of 18 yrs.**

Drug inter: This drug should not be used with the following medications because very serious interactions may occur, viz: didanosine, stavudine, zidovudine.
No pharmacokinetic interactions were noted between interferon alfa and ribavirin.

❖ **CELBARIN Cap. Incepta**
Ribavirin BP 200mg/capsule
20's pack: 700.00 MRP

2.4 Drugs for Influenza virus

AMANTADINE[128]

AMANTADINE: Syrup
Amantadine hydrochloride is chemically known as 1-adamantanamine hydrochloride. Amantadine has pharmacological actions both as an antiviral and an anti-parkinson's drug. It is available as amantadine hydrochloride USP 100mg/capsule and amantadine hydrochloride USP 50mg/5ml syrup.
Ind: Amantadine is indicated for the prophylaxis and treatment of signs and symptoms of infection caused by various strains of influenza-A virus. Amantadine hydrochloride is also indicated in the treatment of parkinsonism and drug-induced extrapyramidal reactions.
C/I: Patients with known hypersensitivity to the drug.
S/E: The adverse reactions reported most frequently (5-10%) are: nausea, dizziness (lightheadedness), and insomnia. Adverse reactions reported less frequently (1-5%) are: depression, anxiety, irritability, hallucinations, confusion, anorexia, dry mouth, constipation, ataxia, orthostatic hypotension, headache, nervousness, dream abnormality, agitation, dry nose, diarrhea and fatigue. Rare side effects (0.1-1%) are: congestive heart failure, urinary retention, dyspnoea, skin rash, vomiting, weakness, confusion, hyperkinesia, hypertension, decreased libido, and visual disturbance.
Precautions: Amantadine should not be discontinued abruptly in patients with Parkinson's disease since a few patients have experienced a parkinsoninan crisis, i.e a sudden marked clinical deterioration when this medication is suddenly stopped. The dose of anticholinergic drugs or of amantadine should be reduced if atropine-like effects appear when these drugs are used concurrently. Neuroleptic malignant syndrome (NMS): Sporadic cases of possible neuroleptic malignant syndrome (NMS) characterized by fever or hyperthermia, muscle rigidity, involuntary movements, tachycardia, tachypnea, hyper-or hypotension.
Pregnancy & lactation: There are no adequate and well-controlled studies in pregnant women. So, amantadine should be used during pregnancy only if the potential benefit justifies the potential risk to the embryo or fetus.
Amantadine is excreted in human milk; so, it's use is not recommended in nursing mothers.
Dosage & admin: Prophylaxis and treatment of uncomplicated influenza-A Virus illness: Adult: The daily dosage of amantadine hydrochloride is 200mg (2 capsules or 4 tsf of syrup) given as a single dose or in two divided doses.
Elderly: In persons 65 years of age or older, the daily dosage of amantadine hydrochloride is 100mg.
Children: 1-9 years of age- the total daily dose is 4.4-8.8mg/kg/day, but should not exceed 150mg/day; 9-12 years of age- the total daily dose is 200mg given in two divided doses. The 100mg daily dose has not been studied in children.
Dosage for parkinsonism: **Adult: The usual dose of amantadine hydrochloride is 100mg twice daily when used alone. The initial dose of amantadine hydrochloride is 100mg daily for patients with serious associated medical illnesses or who are receiving high doses of other antiparkinson drugs. After one to several weeks at 100mg once daily, the dose may be increased to 100mg twice daily, if necessary. Dosage for concomitant therapy: Some patients who do not respond to anticholinergic antiparkinson drugs, may respond to amantadine. When amantadine or anticholinergic, antiparkinson drugs are each used alone with marginal benefit, concomitant use may produce additional benefit. When amantadine and levodopa are initiated concurrently, the patient can exhivit rapid therapeutic benefits. Amantadine should be held constant at 100mg daily or twice daily while the daily dose of levodopa is gradually increased to optimal benefit.**
Dosage for durg induced extrapyramidal reactions: **Adult: The usual dose of amantadine hydrochloride is 100mg twice daily. Occasionally patients whose responses are not optimal with amantadine 200mg daily dose, an increase up to 300mg daily in divided doses may be benefited.**
Dosage for impaired renal function: **Depending upon creatinine clearance, the following dosage adjustments are recommended:**
C. clearance 30-50mL/min/1.73m2- 200mg 1st day and 100mg each day thereafter.
C. clearance 15-29mL/min/1.73m2- 200mg 1st day followed by 100mg on alternate days.
C. clearance <15mL/min/1.73m2 - 200mg every 7 days.
The recommended dosage for patients on hemodialysis is 200mg every 7 days.
Drug inter: Careful observation is required when amantadine is administered concurrently with central nervous system stimulants. Co-administration of thioridazine has been reported to worsen the tremor in elderly patients with Parkinson's disease; however, it is not known if other phenothiazines produce a similar response.

❖ **INFLU Cap. Peoples**
Amantadine hydrochloride USP 100mg/capsule
60's pack: 180.00 MRP
❖ **INFLU Syp. Peoples**
Amantadine hydrochloride USP 50mg/5ml: syrup
100ml bot: 40.00 MRP

OSELTAMIVIR[48]

OSELTAMIVIR: Capsule
Oseltamivir phosphate is an ethyl ester prodrug which undergoes ester hydrolysis by hepatic esterases to form active ingredient, oseltamivir carboxylate. It is available as oseltamivir phosphate INN equivalent to oseltamivir

75mg/capsule.
Mode of action: Oseltamivir carboxylate acts by selective inhibition of influenza viral neuraminidase with the possibility of alteration of virus particle aggregation and release.
A lipophilic side chain of the active drug binds to the virus enzyme, blocking its ability to cleave sialic acid residues on the surface of the infected cell and resulting in an inability to release progeny virions.
Ind: 1. *Prophylaxis of influenza:* Oseltamivir is indicated for prevention of influenza (including Pandemic influenza or Bird flu, strain - H5N1) in adults and adolescents aged 13 years and over who have been in contact with someone diagnosed with flu.
2. *Treatment of influenza:* In adults and in children over 1 year of age when the influenza virus is circulating in the community.
3. WHO recommended oseltamivir for prophylaxis and treatment of Pandemic influenza (Bird Flu). WHO also prescribed oseltamivir as the drug for treatment and prophylaxis of seasonal influenza, to reduce the complications.
C/I: This product is contraindicated in patients with known hypersensitivity to any of the components of the product.
S/E: The most frequently reported adverse events are nausea and vomiting. These events generally of mild to moderate degree and usually occur on the first 2 days of administration. Additional adverse events may occur (in <I % of patients) include- unstable angina, anemia, pseudomembranous colitis, humerus fracture, pneumonia, pyrexia, and peritonsillar abscess.
Precautions & warnings: ***General:*** There is no evidence for efficacy of oseltamivir phosphate in any illness caused by agents other than influenza viruses types A and B. Efficacy of oseltamivir phosphate in patients who begin treatment after 48 hours of symptoms has not been established.
Hepatic impairment: The safety and phamacokinetics in patients with hepatic impairment have not been evaluated.
Renal impairment: Dose adjustment is recommended for patients with a serum creatinine clearance <30ml/min.
Geriatric use: The safety of oseltamivir phoshate has been established in clinical studies.
Pregnancy & lactation: There are insufficient human data upon which evaluation of risk of oseltamivir phosphate to the pregnant woman or developing fetus can be based.
It is also not known whether oseltamivir is excreted in human milk. Oseltamivir phosphate should, therefore, be used only if the potential benefit for the lactating mother justifies the potential risk to the breast-fed infant.
Dosage & admin: ***Treatment of influenza:*** **Adults & adolescents 13 years & older: The recommended standard oral dose is 75mg twice daily for 5 days. Treatment should begin within 2 days of onset of symptoms of influenza. Pediatric use: The safety and efficacy of oseltamivir phosphate in pediatric patietns younger than 1 year of age have not been studied. Oseltamivir phosphate is not recommended for treatment of influenza in pediatric patients younger than 1 year of age.**
Prophylaxis of influenza: **Adults & adolescents 13 years & older: The recommended standard oral dose of oseltamivir for prophylaxis of influenza following close contact with an infected individual is 75mg once daily for at least 7 days. Therapy should begin within 2 days of exposure. The recommended dose for prophylaxis during a community outbreak of influenza is 75mg once daily for up to 6 weeks, because safety and efficacy have been demonstrated for up to 6 weeks. The duration of protection lasts for as long as dosing is continued.**
Pediatric use: **The safety and efficacy of oseltamivir for prophylaxis of influenza in pediatric patients younger than 13 years of age have not been established.**
Oseltamivir phosphate may be taken with or without food. However, when taken with food, tolerability may be enhanced in some patients.
Drug inter: Information derived from phamacology and pharmacokinetic studies of oseltamivir suggests that clinically significant drug interactions are unlikely. Co-administration with amoxicillin does not alter plasma levels of either compound.

❖ **AVIFLU Cap. Square**
Oseltamivir phosphate INN equivalent to oseltamivir 75mg/capsule.
10's pack: 1800.00 MRP
❖ **OSEFLU Cap. Beximco**
Oseltamivir phosphate INN equivalent to oseltamivir 75mg/capsule.
10's pack: 1800.00 IP
❖ **PANDEFLU Cap. ACI**
Oseltamivir phosphate INN equivalent to oseltamivir 75mg/capsule.
8's pack: 1440.00 IP
❖ **TAMIFLU Cap. Roche**
Oseltamivir phosphate INN equivalent to oseltamivir 75mg/capsule.
10's pack: 2498.00 MRP

3. SYSTEMIC ANTI-FUNGAL DRUGS

Systemic antifungal preparations belong to different groups:[21]

1. **Polyene antifungals: Such as *Amphotericin, Nystatin.***
2. **Imidazole antifungals: Such as *Clotrimazole, Econazole, Fenticonazole, Isoconazole, Ketoconazole, Miconazole, Sulconazole & Tioconazole.***
3. **Triazole antifungals: Such as *Fluconazole, Itraconazole.***
4. **Other antifungals: Such as *Flucytosine, Griseofulvin & Terbinafine etc.***

GRISEOFULVIN[21,33]

GRISEOFULVIN: Tablet/ Suspension
Ind: Fungal (dermatophyte) infections of skin, hands, nails and scalp.
C/I: Porphyria, severe liver disease.
S/E: Headache, nausea, vomiting, gastric discomport, urticarial reactions, erythematous rashes, photosensitivity.
Cautions: Pregnancy, drug interactions (specially coumarin anticoagulant admn.).
Dose: Adult, 500mg-1gm daily preparably in divided doses (or as single dose) after meals. Children, 10 mg/kg body-wt. daily in divided doses.

❖ **AFUVIN Tab. Ambee**
Griseofulvin 500mg/tablet.
100's pack: 530.00 MRP
❖ **FULCINEX Forte Tab. ACI**
Griseofulvin 500mg/tablet
100's pack: 556.00 MRP
❖ **FULCINEX Susp. ACI**
Griseofulvin 125mg/5ml, oral suspensinon specially for children.
60ml bot: 23.33 MRP
❖ **G.G. VIN Tab. Gonoshas.**
Griseofulvin 500mg/tablet.
50's pack: 200.00 MRP
❖ **GRIFULVIN Tab. Gaco**
Griseofulvin 500mg/tablet.
100's pack: 479.65 MRP
❖ **GRISEOFULVIN Tab. A.P.C Pharma**
Griseofulvin 500mg/tablet.
100's pack: 550.00 MRP
❖ **GRISEOFULVIN Tab. Chemist**
Griseofulvin 500mg/tablet.
50's pack: 253.00 MRP
❖ **GRISEOFULVIN-FP Tab. Bristol**
Griseofulvin 500mg/tablet.
100's pack: 500.00 MRP
❖ **GRISIN Tab. Seema**
Griseofulvin 500mg/tablet.
100's pack: 557.00 MRP
❖ **GRISO 500 Tab. Ziska**
Griseofulvin 500mg/tablet.
100's pack: 350.00 MRP
❖ **GRISOFULVIN-M Tab. Modern**
Griseofulvin 500mg/tablet.
100's pack: 556.00 MRP
❖ **GRISOVIN-FP GlaxoSmithKline**
Griseofulvin 500mg: tablet
100's pack: 556.24 MRP
❖ **GRISOZEN Tab. Zenith**
Griseofulvin 500mg: tablet
100's pack: 278.00 MRP
❖ **GROVIN Tab. Nipa**
Griseofulvin 500mg/tablet.
100's pack: 556.00 MRP
❖ **SEOVIN Tab. Chemico**
Griseofulvin 500mg/tablet.
30's pack: 150.00 MRP

NYSTATIN[21,33]

NYSTATIN: Tablet/Drop
Ind: Intestinal candidosis. (Drop, usually used for oral & oesophageal candidosis.)
S/E: Nausea, vomiting, diarrhoea.
Dosage: Tablet, adult- 1-2 tabs. 4 times daily. Drop, adult- 1ml 4 times daily; child- 1ml 4 times daily.
Prophylaxis in neonates, 1ml daily. For oral lesions retain suspension in the mouth for a while.

❖ **CANDEX Drop Square**
Nystatin 100,000 units/1ml: drop

12ml bot: 22.65 MRP
❖ **CANSTAT Tab. Jayson**
Nystatin 500,000 units/tablet.
100's pack: 278.00 MRP
❖ **CANSTAT Drop Jayson**
Nystatin 100,000 units/1ml: drop
10ml bot: 17.20 MRP
❖ **FEFUN Drop Amico**
Nystatin 100,000 units/1ml: drop
12ml bot: 21.00 MRP
❖ **FUNGISTIN Drop Beximco**
Nystatin 100,000 units/1ml: drop
12ml bot: 22.65 MRP
❖ **MYCOCIN Tab. Ibn Sina**
Nystatin 500,000 units/tablet.
28's pack: 140.00 MRP
❖ **MYCOCIN Drop Ibn Sina**
Nystatin 100,000 units/1ml: drop
12ml bot: 20.72 MRP
❖ **MYSTATIN Tab. Skylab**
Nystatin 500,000 units/tablet.
30's pack: 150.00 MRP
❖ **MYSTATIN Drop Skylab**
Nystatin 100,000 units/1ml: drop
12ml bot: 23.00 MRP
❖ **NAF Drop Opsonin**
Nystatin 100,000 units/1ml: drop
12ml bot: 20.00 MRP
❖ **NYST Drop Somatec**
Nystatin 100,000 units/1ml: drop
12ml bot: 20.00 MRP
❖ **NYSTAT Tab. Acme**
Nystatin 500,000 units/tablet.
50's pack: 253.00 MRP
❖ **NYSTAT Drop Acme**
Nystatin 100,000 units/1ml.
12ml bot: 22.50 MRP
❖ **ORNYS Drop Chemico Lab.**
Nystatin 100,000 units/1ml: drop
12ml bot: 20.00 MRP
❖ **ZENISTIN Drop Zenith**
Nystatin 100,000 units/1ml: drop
12ml bot: 20.11 MRP

FLUCONAZOLE[21,33]

FLUCONAZOLE: Capsule/ Suspension/ I.V infusion
Ind: See under Dose.
S/E: Nausea, abdominal discomfort, diarrhoea, and flatulence; occasionally abnormalities of liver enzymes; rarely rash (discontinue treatment); angioedema, anaphylaxis and Stevens-Johnson syndrome reported; fixed drug eruption also reported.
Cautions: Renal impairment; pregnancy (toxicity at high doses in animal studies) and breast-feeding; children (use only if imperative and if no alternative treatment; not recommended under 1 year); raised liver enzymes.
Warnings: Avoid concomitant administration with astemizole or terfenadine.
Dosage & admin : Acute or recurrent vaginal candidiasis, by mouth, a single dose of 150mg.
Mucosal candidiasis (except vaginal), by mouth, 50mg daily (100mg daily in unusually difficult infections) given for 7-14 days in oropharyngeal candidiasis (max. 14 days except in severely immunocompromised patients); for 14 days in atrophic oral candidiasis associated with dentures; for 14-30 days in other mucosal infections (e.g. oesophagitis, candiduria).
Tinea pedis, corporis, cruris, versicolor, and dermal candidiasis, by mouth, 50mg daily for 2-4 weeks (for up to 6 weeks in tinea pedis); max. duration of treatment 6 weeks.
Systemic candidiasis and cryptococcal infections (including meningitis), by mouth or i.v infusion, 400mg initially then 200mg daily, increased if necessary to 400mg daily; treatment continued according to response (at least 6-8 weeks for cryptococcal meningitis).
Prevention of relapse of cryptococcal meningitis in AIDS patients after completion of primary therapy, 100-200mg daily.
Prevention of fungal infections in immunocompromised patients following cytotoxic chemotherapy or radiotherapy, 50-400mg daily adjusted according to risk; 400mg daily if high risk of systemic infections e.g. following bone-marrow transplantation; commence treatment before anticipated onset of neutropenia and continue for 7 days after neutrophil count in desirable range.
Child- over 1 year (see cautions), by mouth or by i.v infusion, superficial candidal infections, 1-2 mg/kg daily; systemic candidiasis and cryptococcal infections, 3-6mg/kg daily (in serious life-threatening infections up to 12mg/kg daily has been given to children aged 5-13 years- max. 400mg daily)

❖ **AFLUZOLE Cap. Ambee**
Fluconazole 50mg & 150mg/capsule
50mg x 30's pack: 240.00 MRP
150mg x 10's pack: 220.00 MRP
❖ **AFLUZOLE Susp. Ambee**
Fluconazole 50mg/5ml: suspension
35ml bot: 78.00 MRP
❖ **ANFASIL Tab. Silva**
Fluconazole 50mg & 150mg/tablet
50mg x 30's pack: 210.00 MRP
150mg x 12's pack: 240.00 MRP
❖ **ANFASIL Susp. Silva**
Fluconazole 50mg/5ml: suspension
35ml bot: 75.00 MRP
❖ **CANAZOLE Tab. ACI**
Fluconazole 50mg & 150mg/tablet
50mg x 30's pack: 240.00 MRP
150mg x 10's pack: 220.00 MRP
❖ **CANAZOLE Susp. ACI**
Fluconazole 50mg/5ml: suspension
35ml bot: 78.00 MRP
❖ **CANDID Tab. Amico**
Fluconazole 50mg & 150mg/tablet
50mg x 30's pack: 210.00 MRP
150mg x 10's pack: 220.00 MRP
❖ **CANDINIL Cap. Healthcare**
Fluconazole 50mg & 150mg/capsule
50mg x 30's pack: 240.00 IP
150mg x 12's pack: 264.00 IP
❖ **CANDINIL Susp. Healthcare**
Fluconazole 50mg/5ml: suspension
35ml bot: 78.00 MRP
❖ **CONAZ Tab. Orion**
Fluconazole 50mg & 150mg/tablet
50mg x 20's pack: 160.00 MRP
150mg x 12's pack: 264.00 MRP
❖ **CONAZOLE Cap. Apollo**
Fluconazole 50mg/capsule
50mg x 24's pack: 120.00 IP
❖ **COSFLU 50 Tab. Cosmo Pharma**
Fluconazole 50mg/tablet
50mg x 30's pack: 240.00 MRP
❖ **DERMA Tab. Alco Pharma**
Fluconazole 50mg & 150mg/tablet
50mg x 20's pack: 160.00 MRP
150mg x 12's pack: 240.00 MRP
❖ **DIFLU Cap. Aristopharma**
Fluconazole 50mg & 150mg/capsule.
50mg x 48's pack: 384.00 MRP
150mg x 12's pack: 264.00 MRP
❖ **DIFLU Susp. Aristopharma**
Fluconazole 50mg/5ml: suspension
35ml bot: 78.00 MRP
❖ **DIFLUCON Cap. Aexim**
Fluconazole 50mg/capsule.
50mg x 30's pack: 150.00 MRP
❖ **FLAVONA Cap. Rephco**
Fluconazole 50mg/capsule
50mg x 30's pack: 180.00 MRP
❖ **FLUCANEX 50 Cap. RAK Pharma**
Fluconazole 50mg/capsule
50mg x 30's pack: 240.00 MRP
❖ **FLUCESS Cap. Sandoz/Novartis**
Fluconazole 50mg & 150mg/capsule
50mg x 30's pack: 240.00 MRP
150mg x 10's pack: 220.00 MRP
❖ **FLUCODER Cap. SK+F**
Fluconazole 50mg & 150mg/capsule
50mg x 30's pack: 243.00 MRP
150mg x 10's pack: 220.00 MRP
❖ **FLUCON Cap. Opsonin**
Fluconazole 50mg & 150mg/capsule
50mg x 30's pack: 240.00 MRP
150mg x 10's pack: 220.00 MRP
❖ **FLUCONAL Tab. Acme**
Fluconazole 50mg & 150mg/tablet
50mg x 20's pack: 160.00 MRP
150mg x 10's pack: 264.00 MRP
❖ **FLUCONAL Susp. Acme**
Fluconazole 50mg/5ml: suspension
35ml bot: 78.00 MRP
❖ **FLUCOSTAN Cap. Ziska**
Fluconazole INN 50mg/capsule
50mg x 20's pack: 100.00 MRP
❖ **FLUDA Cap. Novo Healthcare**
Fluconazole INN 50mg/capsule
50mg x 30's pack: 240.00 MRP
❖ **FLUDA Susp. Novo Healthcare**
Fluconazole 50mg/5ml: suspension
35ml bot: 78.00 MRP
❖ **FLUDEX Cap. Medicon**

Fluconazole INN 50mg/capsule
50mg x 30's pack: 200.00 MRP
❖ **FLUGAL Cap. Square**
Fluconazole 50mg, 150mg & 200mg/capsule
50mg x 30's pack: 240.00 MRP
150mg x 10's pack: 220.00 MRP
200mg x 10's pack: 250.00 MRP
❖ **FLUGAL Susp. Square**
Fluconazole 50mg/5ml : suspension
35ml bot: 78.00 MRP
❖ **FLUMART Cap. Desh Pharma**
Fluconazole 50mg & 150mg/capsule
50mg x 30's pack: 210.00 MRP
150mg x 12's pack: 240.00 MRP
❖ **FLUNAC Cap. Drug Inter.**
Fluconazole 50mg & 150mg/capsule
50mg x 50's pack: 300.00 MRP
150mg x 20's pack: 320.00 MRP
❖ **FLUNAC Susp. Drug Inter.**
Fluconazole 50mg/5ml : suspension
35ml bot: 70.00 MRP
❖ **FLUNOL Cap. Somatec**
Fluconazole 50mg & 150mg/capsule
50mg x 32's pack: 240.00 IP
150mg x 10's pack: 200.00 IP
❖ **FLUNOL Susp. Somatec**
Fluconazole 50mg/5ml: suspension
35ml bot: 75.00 IP
❖ **FLUVIN-OD Tab. GlaxoSmithKline**
Fluconazole 50mg & 150mg/tablet
50mg x 30's pack: 240.00 MRP
150mg x 10's pack: 200.00 MRP
❖ **FLUZOLE Tab. Globe**
Fluconazole 50mg & 150mg/tablet
50mg x 30's pack: 150.00 MRP
150mg x 20's pack: 280.00 MRP
❖ **FUNGA Cap. Doctor's**
Fluconazole 50mg & 150mg/capsule
50mg x 50's pack: 275.00 MRP
150mg x 20's pack: 300.00 MRP
❖ **FUNGARD Cap. Cosmic**
Fluconazole 50mg/capsule
50mg x 30's pack: 240.00 MRP
❖ **FUNGATA Tab. Bio-pharma**
Fluconazole 50mg & 150mg/tablet
50mg x 30's pack: 180.00 MRP
150mg x 10's pack: 150.00 MRP
❖ **FUNGATA Susp. Bio-pharma**
Fluconazole 50mg/5ml: suspension
35ml bot: 75.00 MRP
❖ **FUNGI-F Cap. Edruc**
Fluconazole 50mg/capsule
50mg x 30's pack: 240.00 IP
❖ **FUNGITROL Cap. Rangs**
Fluconazole 50mg & 150mg/capsule
50mg x 20's pack: 140.00 MRP
150mg x 12's pack: 240.00 MRP
❖ **FUNGITROL Susp. Rangs**
Fluconazole 50mg/5ml: suspension
35ml bot: 70.00 MRP
❖ **FUNGUL Cap. Ultra Pharma**
Fluconazole 150mg/capsule
150mg x 10's pack: 140.00 MRP
❖ **GALFIN Cap. General**
Fluconazole 50mg & 150mg/capsule
50mg x 30's pack: 240.00 MRP
150mg x 10's pack: 170.00 MRP
❖ **ILUCA Cap. Ibn Sina**
Fluconazole 50mg & 150mg/capsule
50mg x 20's pack: 160.00 MRP
150mg x 12's pack: 264.00 MRP
❖ **LEUCODER Tab. Chemist**
Fluconazole 50mg/tablet
50mg x 20's pack: 120.00 MRP
❖ **LUCAN-R Cap. Renata**
Fluconazole 50mg & 150mg/capsule
50mg x 30's pack: 240.00 MRP
150mg x 10's pack: 220.00 MRP
❖ **LUCAN-R Susp. Renata**
Fluconazole 50mg/5ml: suspension
35ml bot: 78.00 MRP
❖ **LUCON Cap. Navana**
Fluconazole 50mg & 150mg/capsule
50mg x 30's pack: 240.00 IP
150mg x 10's pack: 220.00 IP
❖ **MYCODER Tab. UniHealth**
Fluconazole 50mg & 150mg/tablet
50mg x 30's pack: 210.00 MRP
150mg x 10's pack: 200.00 MRP
❖ **MYCODER Susp. UniHealth**
Fluconazole 50mg/5ml: suspension
35ml bot: 70.00 MRP
❖ **MYCOREST 50 Cap. Marksman**
Fluconazole 50mg/capsule
50mg x 30's pack: 180.00 MRP
❖ **NISPORE Cap. Incepta**
Fluconazole 50mg & 150mg/capsule
50mg x 30's pack: 240.00 MRP
150mg x 10's pack: 220.00 MRP
❖ **NISPORE Susp. Incepta**
Fluconazole 50mg/5ml: suspension
35ml bot: 78.00 MRP
❖ **OLIF Cap. Chemico**
Fluconazole 50mg & 150mg/capsule
50mg x 50's pack: 400.00 MRP
150mg x 10's pack: 140.00 MRP
❖ **OMASTIN Cap. Beximco**
Fluconazole 50mg & 150mg/capsule
50mg x 50's pack: 400.00 IP
150mg x 20's pack: 440.00 IP
❖ **OMASTIN Susp. Beximco**
Fluconazole 50mg/5ml: suspension.
35ml bot: 78.00 IP
❖ **ONICON Tab. Zenith**
Fluconazole 50mg/tablet
50mg x 50's pack: 300.00 MRP
❖ **ONICON Susp. Zenith**
Fluconazole 50mg/5ml: suspension.
35ml bot: 65.00 MRP
❖ **ORAF Cap. Hallmark**
Fluconazole 50mg/capsule
50mg x 30's pack: 195.00 MRP
❖ **ORAF Tab. Hallmark**
Fluconazole 150mg/tablet
150mg x 20's pack: 360.00 MRP
❖ **ORAF Susp. Hallmark**
Fluconazole 50mg/5ml: suspension.
35ml bot: 60.00 MRP
❖ **SACONA-50 Cap. SAPL**
Fluconazole 50mg/capsule
50mg x 30's pack: 240.00 MRP
❖ **SEGAL Cap. Supreme**
Fluconazole 50mg & 150mg/capsule
50mg x 20's pack: 120.00 MRP
150mg x 10's pack: 150.00 MRP
❖ **SEGAL Susp. Supreme**
Fluconazole 50mg/5ml: suspension
35ml bot: 65.00 MRP
❖ **ZOLEN Cap. Apex**
Fluconazole 50mg & 150mg/capsule
50mg x 50's pack: 250.00 MRP
150mg x 10's pack: 120.00 MRP

ITRACONAZOLE[21,42]

ITRACONAZOLE: Capsule
Itraconazole is a broad spectrim, orally active triazole antifungal drug.
Mode of action: Itraconazole inhibits cytochrome P-450 dependent enzymes resulting in impairment of the biosynthesis of ergosterol, a major component of the cell membrane of yeasts and fungal cells.
Inhibition of the synthesis of ergosterol leads to formation of defective cell membrane, inhibition of growth, and accumulation of intracellular lipids and membranous vesicles.
Ind: Itraconazole is used for the treatment of oropharyngeal candidiasis, vulvovaginal candidiasis, pityriasis versicolor, tinea pedis, tinea cruris, tinea corporis, tinea manuum, onychomycosis, histoplasmosis. It is indicated in the treatment of systemic candidiasis, aspergillosis, and cryptococcosis (including cryptococcal meningitis). It is also used for maintenance therapy in AIDS patients to prevent relapse of underlying fungal infections and in the prevention of fungal infection during prolonged neutropenia.
C/I: Known hypersensitivity to the drug or any ingredient in the formulation. Patients who have severe hepatic disease are not advised to take itraconazole. It is not advisable to use the drug in patients taking rifampicin which appears to initially inhibit and then enhance the metabolism of itraconazole.
S/E: Nausea, abdominal pain, dyspepsia, constipation, headache, dizziness, raised liver enzymes, menstrual disorder, allergic reactions (including pruritus, rash, urticaria and angioedema), hepatitis and cholestatic jaundice, & peripheral neuropathy reported. On prolonged use hypokalemia, edema and hair loss are also reported.
Precaution: Absorption is impaired when gastric acidity is reduced. In patients receiving acid neutralizing medicines (e.g antacids), these should be administered at least two hours after the intake of itraconazole. The drug should be administered after a full meal. Rarely, cases of hepatitis and jaundice have been reported mainly in patients treated for longer than one month. It is therefore advised to monitor liver function in patients receiving continuous treatment of more

than one month.
Pregnancy & lactation: Itraconazole is contraindicated in pregnancy. Breast feeding while receiving itraconazole is not recommended.
Dosage & admin: Oropharyngeal candidiasis- 100mg daily (200mg daily in AIDS or neutropenia) for 15 days.
Vulvovaginal candidiasis- 200mg twice daily for 1 day.
Pityriasis versicolor- 200mg daily for 7 days.
Tinea corpris & tinea cruris- 100mg daily for 15 days or 200mg daily for 7 days. Tinea pedis & tinea manuum- 100mg daily for 30 days or 200mg twice daily for 7 days.
Onychomycosis- 200mg daily for 3 months or a course of 200mg twice daily for 7 days; subsequent courses should be repeated after 21 day interval; fingernails- two courses; toenalis- three courses.
Systemic infections (aspergillosis, candidiasis, cryptococcosis including crytococcal meningitis) where other antifungal drugs are inappropriate or ineffective- 200mg once daily, increased in invasive or diseminated disease and in cryptococcal meningitis to 200mg twice daily.
Histoplasmosis- 200mg 1-2 times daily.
Maintenance in AIDS patients to prevent relapse of underlying fungal infection and prophylaxis in neutropenia when standard therapy is inappropriate- 200mg once daily, increased to 200mg twice daily if low plasma concentration is detected.
Children- the recommended dose is 3 to 5mg/kg/day.
Drug Inter: The drug astemizole, HMG-CoA reductase inhibitors such as simvastatin, oral midazolam or triazolam should not be given concurrently with itraconazole. Significant interactions are also observed during co-administration of rifampicin, phenytoin, phenobarbital, digoxin, and calcium channel blockers.

❖ **ITRA Cap. Square**
Itraconazole INN 100mg/capsule
12's pack: 180.00 MRP
❖ **ITRACON Cap. Navana**
Itraconazole INN 100mg/capsule
12's pack: 180.00 IP
❖ **I-ZOL Cap. Popular**
Itraconazole INN 100mg/capsule
12's pack: 180.00 MRP

KETOCONAZOLE[21,33]

KETOCONAZOLE: Tabtet/ Suspension
Ind: Systemic mycoses, prophylaxis of mycoses in patients with reduced immune responses. Serious chronic mucocutaneous candidosis & serious mycoses of the g. i tract not responsive to other therapy. Dermatophyte infections not responsive to other therapy excluding infection of the toe nails or for pityriasis versicolor. Chronic vaginal candidosis not responsive to other therapy.
C/I: Hypersensitivity to ketoconazole or other imidazole. Pre-existing liver disease or significant abnormalities on liver function tests. Pregnancy.
S/E: Rarely nausea, rashes, pruritus, hepatitis (discontinue treatment if signs of hepatitis develop).
Caution: Monitor patients for signs of liver disease during & after treatment. Concurrent admn. Of drugs that reduce gastric acid secretion or that are plasma protein bound.
Dosage: Adult: 200-400 mg once daily with meals. Continue for at least one week after symptoms have cleared.
Child: 3mg/kg. daily with food.
Vaginal candidiasis: 200mg with food every 12 hours for 5 days.

❖ **KETOCON Tab. Opsonin**
Ketoconazole 200mg/tablet.
30's pack: 240.00 MRP
❖ **KETOFUN Tab. Amico**
Ketoconazole 200mg/tablet
30's pack: 249.90 MRP
❖ **KETORAL Tab. Square**
Ketoconazole 200mg/tablet.
30's pack: 270.00 MRP

MICONAZOLE[21,52]

MICONAZOLE: Oral gel
Ind: Treatment & prevention of fungal infection of the oropharynx, g.i tract & of super infection due to gram +ve bacteria. This includes oral candidiasis & denture stomatitis.
C/I: No known contra-indications.
S/E: No major side-effects have been reported.
Cautions: Systemic miconazole may potentiate the activity of anti-coagulants, anti-epileptics, or hypoglycaemic drugs, the dosage of which may require adjustment. In pregnancy no significant teratogenic affect is reported, however, as with other imidazole, it should be avoided in pregnant women.
Dosage & admin: Micoral oral gel should be taken after meals. The recommended dosage is 15mg/kg/day.
Adult: 1 to 2 tsf (5 to 10ml) of gel 4 times daily.
Children: age 6 years and over, 1 tsf of gel 4 times daily; age 2-6 years, 1 tsf (5ml) of gel twice daily; infants under 2 years, half tsf (2.5ml) of gel twice daily.
Alternatively, for localised lesions of the mouth, a small amount of gel may be applied directly to the affected area with a clean finger, 2 to 4 times daily.
For best results in the treatment of oral lesions, Micoral oral gel should be kept in contact with the affected area for as long as possible. This can be achieved by retaining the gel in the mouth for the maximum time possible.
Treatment should be continued for upto 2 days after symptoms have cleared.

❖ **MICORAL Oral Gel ACI**
Miconazole base 125mg USP
in each 5ml, 2% w/w: oral gel prepn.
15mg tube: 50.00 MRP

TERBINAFINE[21,54]

TERBINAFINE HCl: Tablet
Ind: Fungal infections of the skin and nails (dermatophyte & ringworm infections).
C/I: Hypersensitivity to terbinafine.
S/E: Gastrointestinal symptoms (feeling of fullness, loss of appetite, nausea, mild abdominal pain, diarrhoea); skin reactions (rashes, urticaria).
Cautions: Pregnant and breast-feeding women; hepatic & renal impairment.
Dosage: Ringworm infection-250mg daily usually for 2-6 weeks in tinea pedis, 2-4 weeks in tinea cruris, 4 weeks in tinea corporis; nail infection- 6 weeks-3 months or longer in nail infections.
Child- not recommended.

❖ **DERFIN Tab. Alco Pharma**
Terbinafine hydrochloride 250mg/tablet.
10's pack: 350.00 MRP
❖ **LAMISIL Tab. Novartis**
Terbinafine hydrochloride 250mg/tablet.
14's pack: 2030.00 MRP
❖ **MYCOFIN Tab. SK+F**
Terbinafine hydrochloride 250mg/tablet.
10's pack: 400.00 MRP
❖ **TELFIN Tab. UniMed/UniHealth**
Terbinafine hydrochloride 250mg/tablet.
10's pack: 300.00 MRP
❖ **TERBEX Tab. Beximco**
Terbinafine hydrochloride 250mg/tablet.
10's pack: 500.00 IP
❖ **TERBIFIN Tab. Aristopharma**
Terbinafine hydrochloride 250mg/tablet.
12's pack: 360.00 MRP

* **Topical antifungal preparations can be found in Dermatology sections.**

* **Uro-genital anti-fungal drugs can be found in Uro-genital section.**

4. ANTI- PROTOZOAL DRUGS

Amoebicidal/Anti-giardial/ Trichomonacidal drugs

METRONIDAZOLE[21,33]

METRONIDAZOLE: Tablet/ Susp/ Injection/ Suppositories.
Ind: Amoebiasis, liver abceess; giardiasis; trichomonal vaginitis; colonic anaerobes (specially bacteroides fragilis), ulcerative

stomatitis and amoebic infections of other organs. Intravenous (i.v) preparations are indicated and prepared specially for curative and preventive treatment against anaerobic infections during colonic surgery.

C/I: Pregnancy (1st trimester), active CNS disease.

S/E: Nausea, headache, drowsiness, dizziness; rashes, leucopenia, darkening of urine, peripheral neuropathy in prolonged treatment, ataxia and transient epileptic seizures with high doses.

Cautions: Blood dyscrasias; pregnancy, lactation; avoid alcohol.

Dosage & admin: ***Oral preparation:***
Amoebiasis, 800 mg thrice daily for 5 days. Child, 7-10 yrs. 400 mg; 3-7 yrs. 200mg tds.; 1-3 years 100mg every 8 hours for 5 days. Giardiasis, 2gm daily for 3 days. Child, 1-3 yrs. 500mg daily; 3-7 yrs. 600-800mg daily; 7-10 yrs. 1gm daily for 3 days. Trichomoniasis, 200mg 3 times daily for 7 days or 400mg every 12 hours for 7 days or 800mg in the morning and 1.2gm at night for 2 days, or 2gm as a single dose. Child, 50mg 8 hourly (1-3 yrs.), 100mg 12 hourly (3-7 yrs.), 100mg 8 hourly (7-10 yrs.). All for 7 days. Anaerobic infections, 400mg 3 times daily for 7 days. Child, 7.5mg/kg every 8 hours. Amoebic abscess, 400mg 3 times daily for 5-10 days. The course may be repeated after 2 weeks if necessary.
I.V preparation: **100ml injection is given by i.v infusion immediately before, during or after colonic operation at the rate of 5ml per minute. This should be repeated 8 hourly until oral medication can be given to complete a 7 day course of treatment.**
Suppository: **Use rectally.**

❖ **AMETROL-DS Tab. Ambee**
Metronidazole 800mg/tablet
100's pack: 200.00 MRP

❖ **AMEZOL Tab. Cosmic**
Metronidazole 400mg/tablet
100's pack: 100.00 MRP

❖ **AMEZOL Susp. Cosmic**
Metronidazole 200mg/5ml: suspension
60ml bot: 24.00 MRP

❖ **AMOBIN Tab. Doctor's**
Metronidazole 200 mg & 400 mg/tablet.
200mg x 100's pack: 53.00 MRP
400mg x100's pack: 114.00 MRP

❖ **AMOBIN Susp. Doctor's**
Metronidazole 200mg/ 5ml : suspension
60ml bot: 24.00 MRP

❖ **AMODIS Tab. Square**
Metronidazole 400mg/tablet.
400mg x 200's pack: 202.00 MRP

❖ **AMODIS Susp. Square**
Metronidazole 200mg/ 5ml: suspension
60ml bot: 24.75 MRP

❖ **AMOGIT Tab. Marksman**
Metronidazole 400mg/tablet.
400mg x 100's pack: 95.00 MRP

❖ **AMOTREX Tab. ACI**
Metronidazole 200mg & 400mg/tablet
200mg x 100's pack: 66.00 MRP
400mg x 100's pack: 114.00 MRP

❖ **AMOTREX DS Tab. ACI**
Metronidazole 800mg/tablet
800mg x 100's pack: 200.00 MRP

❖ **AMOTREX Syp. ACI**
Metronidazole 200mg/5ml: suspension
60ml bot: 25.00 MRP

❖ **ANAMET Tab. Navana**
Metronidazole 400mg/tablet
100's pack: 110.00 MRP

❖ **ANAMET Susp. Navana**
Metronidazole 200mg/5ml: suspension
60ml bot: 25.00 MRP

❖ **ANTIPRO 400 Tab. Rangs Pharma**
Metronidazole 400mg/tablet
100's pack: 100.00 MRP

❖ **ANTIPRO Susp. Rangs Pharma**
Metronidazole 200mg/5ml: suspension
60ml bot: 21.00 MRP

❖ **ANZOLE 400 Tab. MonicoPharma**
Metronidazole 400mg/tablet
100's pack: 115.00 MRP

❖ **APETRYL-400 Tab. A.P.C Pharma**
Metronidazole 400mg/tablet
100's pack: 75.00 MRP

❖ **APETRYL Susp. A.P.C Pharma**
Metronidazole 200mg/5ml: suspension
60ml bot: 20.00 MRP

❖ **APZYL Susp. Apollo**
Metronidazole 200mg/5ml: suspension
60ml bot: 20.22 MRP

❖ **BENMET Tab. Pacific**
Metronidazole 400mg/tablet
96's pack: 96.00 MRP

❖ **BENMET Susp. Pacific**
Metronidazole 200mg/5ml suspension
60ml bot: 20.00 MRP

❖ **BIOZYL Tab. Bio-pharma**
Metronidazole 400mg/tablet
100's pack: 100.00 MRP

❖ **BIOZYL Susp. Bio-pharma**
Metronidazole 200mg/5ml suspension
60ml bot: 21.60 MRP

❖ **CEDOL Tab. CPL**
Metronidazole 400mg/tablet
100's pack: 100.00 MRP

❖ **CEDOL Susp. CPL**
Metronidazole 200mg/5ml suspension
60ml bot: 22.00 MRP

❖ **CHEMAGYL-400 Tab. Chemist**
Metronidazole 400mg/tablet
100's pack: 102.00 MRP

❖ **CHEMAGYL Syp. Chemist**
Metronidazole 200mg/5ml: suspension
60ml bot: 20.23 MRP

❖ **DECAGYL Tab. Decent**
Metronidazole 400mg/tablet.
400mg x 100's: 100.00 MRP

❖ **DECAGYL Syp. Decent**
Metronidazole 200mg/5ml: suspension
60ml bot: 21.49 MRP

❖ **DIROZYL Tab. Acme**
Metronidazole 200mg & 400mg/tablet.
200mg x 100's: 66.00 MRP
400mg x 100's: 101.00 MRP

❖ **DIROZYL Susp. Acme**
Metronidazole 200mg/5ml: suspension
60ml bot: 25.00 MRP

❖ **DIROZYL Suppo. Acme**
Metronidazole 500mg/stick: suppository.
10 sticks pack: 120.00 MRP

❖ **DIROZYL I.V Inf. Acme**
Metronidazole 500mg in 100ml vial: i.v infusion
100ml vial: 50.00 IP

❖ **D-METRO-400 Tab. Desh Pharma**
Metronidazole 400mg/tablet.
400mg x 100's: 100.00 MRP

❖ **D-METRO Susp. Desh Pharma**
Metronidazole 200mg/5ml: suspension
60ml bot: 21.00 MRP

❖ **DYMET Tab. Syntho**
Metronidazole 400mg/tablet.
400mg x 100's: 100.00 MRP

❖ **DYMET Susp. Syntho**
Metronidazole 200mg/5ml: suspension
60ml bot: 22.00 MRP

❖ **FILMET Tab. Beximco**
Metronidazole 200mg & 400 mg/tablet.
200mg x 200's: 134.00 MRP
400mg x 250's: 252.50 MRP

❖ **FILMET-DS Tab. Beximco**
Metronidazole 800 mg/tablet (double strength).
800mg x 100's: 200.00 MRP

❖ **FILMET Susp. Beximco**
Metronidazole 200mg/5ml
60ml bot: 25.14 MRP

❖ **FILMET I.V Inj. Beximco**
Metronidazole 500mg in 100ml bottle: i.v infusion
100ml bot: 52.60 MRP

❖ **FLAGYL Tab. Sanofi-aventis**
Metronidazole 200mg & 400mg: tablet
200mg x 500's: 332.00 MRP
400mg x 250's: 285.00 MRP

❖ **FLAGYL Susp. Sanofi-aventis**
Metronidazole 200mg/5ml: suspension
60 ml bot: 24.85 MRP

❖ **FLAGYL I.V Inj. Sanofi-aventis**
Metronidazole 500mg in 100ml bottle (0.5% w/v): i.v injection.
100ml bot: 84.90 MRP

❖ **FLAMYD Tab. Incepta**
Metronidazole 250mg & 500mg: tablet (f.c)
250mg x 100's: 78.00 MRP
500mg x 100's: 135.00 MRP

❖ **FLAMYD I.V Inf. Incepta**
Metronidazole 500mg in 100ml bottle: i.v infusion
100ml bot: 53.18 MRP

❖ **G- METRONIDAZOLE Tab. Gonoshas**
Metronidazole 400mg/tablet
400mg x 100's: 101.00 MRP

❖ **G-METRONIDAZOLE Susp. Gonoshas**
Metronidazole 125mg/5ml: suspension
50ml bot: 17.19 MRP
100ml bot: 30.34 MRP

❖ **G-METRONIDAZOLE I.V Inf. Gonoshas**
Metronidazole 500mg in 100ml vial: i.v infusion
100ml bot: 35.40 MRP

❖ **GYL 400 Tab. Proteety**
Metronidazole 400mg/tablet
400mg x 100's: 102.00 MRP

❖ **GYL Susp. Proteety**
Metronidazole 125mg/5ml: suspension
60ml bot: 22.00 MRP

❖ **KEMET Tab. Chemico**
Metronidazole 400mg/tablet
400mg x 100's: 112.00 MRP

❖ **KEMET Susp. Chemico**
Metronidazole 200mg/5ml: suspension
60ml bot: 22.00 MRP

❖ **KILPRO Tab. Techno Drugs**
Metronidazole 400mg/tablet
400mg x 100's: 100.00 MRP

❖ **KILPRO I.V Inf. Techno Drugs**

Metronidazole 500mg in 100ml vial: i.v infusion
100ml bot: 55.00 MRP

❖ **KLION Tab. Ambee**
Metronidazole 200mg & 400mg/tablet
200mg x 100's: 66.00 MRP
400mg x 100's: 109.00 MRP

❖ **KLION Susp. Ambee**
Metronidazole 125mg/5ml: suspension
60ml bot: 23.27 MRP

❖ **LIBRAZOL I.V Inf. Libra**
Metronidazole 500mg in 100ml vial: i.v infusion
100ml bot: 49.57 MRP

❖ **M-DAZOLE Tab. Modern**
Metronidazole 200mg & 400mg/tablet
200mg x 100's pack: 61.00 MRP
400mg x 100's pack: 102.00 MRP

❖ **M-DAZOLE Susp. Modern**
Metronidazole 200mg/5ml: suspension
60ml bot: 21.00 MRP

❖ **MECOZOL Tab. Amico**
Metronidazole 400mg/tablet
100's pack: 100.00 MRP

❖ **MECOZOL Susp. Amico**
Metronidazole 200mg/5ml: suspension
60ml bot: 21.30 MRP

❖ **MEDIZOL Tab. Medicon**
Metronidazole 400mg/tablet
100's pack: 110.00 MRP

❖ **MEDIZOL Susp. Medicon**
Metronidazole 200mg/5ml: suspension
60ml bot: 21.00 MRP

❖ **MELAGYL Tab. Elixir**
Metronidazole 400mg/tablet
100's pack:

❖ **MELAGYL Susp. Elixir**
Metronidazole 200mg/5ml: suspension
60ml bot:

❖ **MENILET Tab. Alco Pharma**
Metronidazole 400mg/tablet
400mg x 100's pack: 101.00 MRP

❖ **MENILET Susp. Alco Pharma**
Metronidazole 200mg/5ml: suspension
60ml bot: 21.24 MRP

❖ **MENOL Tab. Supreme**
Metronidazole 400mg/tablet
400mg x 100's pack: 100.00 MRP

❖ **MENOL Susp. Supreme**
Metronidazole 200mg/5ml: suspension
60ml bot: 21.60 MRP

❖ **METASON Tab. Jayson**
Metronidazole 400mg/tablet.
400mg x 100's pack: 114.00 MRP

❖ **METASON Susp. Jayson**
Metronidazole 200mg/5ml: suspension
60ml bot: 25.00 MRP

❖ **METCO Tab. SK+F**
Metronidazole 400mg/tablet
400mg x 100's pack: 116.32 MRP

❖ **METCO Susp. SK+F**
Metronidazole 200mg/5ml: suspension
60ml bot: 25.12 MRP

❖ **METFIL Tab. Bristol**
Metronidazole 400mg/tablet
400mg x 100's pack: 100.00 MRP

❖ **METONID 400 Tab. Popular**
Metronidazole 400mg/tablet
400mg x 100's pack: 114.00 MRP

❖ **METONID Susp. Popular**
Metronidazole 200mg/5ml: suspension
60ml bot: 25.14 MRP

❖ **METONID Inj. Popular**
Metronidazole 500mg in 100ml vial: i.v infusion
100ml bot: 52.59 MRP

❖ **METRA Tab. Ad-din**
Metronidazole 400mg/tablet
400mg x 100's pack: 93.00 MRP

❖ **METRA Susp. Ad-din**
Metronidazole 200mg/5ml: suspension
60ml bot: 21.00 MRP

❖ **METRION Tab. General**
Metronidazole 400mg/tablet
400mg x 100's pack: 114.00 MRP

❖ **METRION Susp. General**
Metronidazole 200mg/5ml: suspension
60ml bot: 25.66 MRP

❖ **METRIZOL Tab. Cosmo Pharma**
Metronidazole 400mg/tablet
400mg x 100's pack: 101.00 MRP

❖ **METRO Tab. Rasa Pharma**
Metronidazole 400mg/tablet.
400mg x 100's: 105.00 MRP

❖ **METRO Susp. Rasa Pharma**
Metronidazole 200mg/5ml: suspension
60ml bot: 18.00 MRP

❖ **METRO 400 Tab. Ziska**
Metronidazole 400mg/tablet.
400mg x 100's: 105.00 MRP

❖ **METRO Susp. Ziska**
Metronidazole 200mg/5ml: suspension
60ml bot: 24.00 MRP

❖ **METRO I.V Inf. Opsosaline**
Metronidazole 500mg in 100ml bot: i.v infusion
100ml bot: 35.00 MRP

❖ **METROGYL Tab. Rephco**
Metronidazole 400mg/tablet
400mg x 100's: 110.00 MRP

❖ **METROGYL Susp. Rephco**
Metronidazole 200mg/5ml: suspension.
60ml bot: 25.00 MRP

❖ **METROMAX I.V Inj. Novo Healthcare**
Metronidazole 500mg in 100ml vial: i.v infusion
100ml bot: 52.00 MRP

❖ **METROPILL Tab. Medimet**
Metronidazole 200mg & 400mg/tablet
200mg x 100's pack: 66.00 MRP
400mg x 100's pack: 110.00 MRP

❖ **METROPILL Susp. Medimet**
Benzoyl metronidazole 200mg/5ml: suspension
60ml bot: 25.00 MRP

❖ **METROSIL Tab. Silva**
Metronidazole 400mg/tablet
400mg x 100's: 100.00 MRP

❖ **METROSIL Susp. Silva**
Benzoyl metronidazole 200mg/5ml: suspension
60ml bot: 19.00 MRP

❖ **METROSON Tab. Hudson**
Metronidazole 400mg/tablet
400mg x 100's pack: 75.00 MRP

❖ **METROSON Susp. Hudson**
Metronidazole 200mg/5ml: suspension
60ml bot: 18.00 MRP

❖ **METROZEN Tab. Zenith**
Metronidazole 400mg/tablet
400mg x 200's pack: 214.00 MRP

❖ **METROZEN Susp. Zenith**
Metronidazole 200mg/5ml: suspension
60ml bot: 21.30 MRP

❖ **METRYL Tab. Opsonin**
Metronidazole 200mg, & 400mg/tablet.
200mg x 100's: 62.00 MRP
400mg x 100's: 108.00 MRP

❖ **METRYL Susp. Opsonin**
Metronidazole 200mg/5ml: suspension
60ml bot: 24.00 MRP

❖ **METRYL I.V Inf. Opsonin**
Metronidazole 500mg in 100ml bottle: i.v infusion
100ml bot: 53.00 MRP

❖ **METSINA Tab. Ibn Sina**
Metronidazole 200mg & 400mg/tablet.
200mg x 100's: 61.00 MRP
400mg x 100's: 114.00 MRP

❖ **METSINA Susp. Ibn Sina**
Metronidazole 200mg/5ml: suspesion
60ml bot: 25.00 MRP

❖ **MEZ Tab. Renata**
Metronidazole 400mg/tablet.
400mg x 100's: 125.00 MRP

❖ **MEZ I.V Inf. Renata**
Metronidazole 500mg in 100ml bottle: i.v infusion.
100ml bot: 70.00 MRP

❖ **MEZAL Tab. Skylab**
Metronidazole 200mg & 400mg/tablet.
200mg x 100's: 55.00 MRP
400mg x 100's: 90.00 MRP

❖ **MEZAL Susp. Skylab**
Metronidazole 200mg/5ml: suspension
60ml bot: 17.70 MRP

❖ **MICOGYL Tab. Globe**
Metronidazole 400mg/tablet
400mg x 100's pack: 100.00 MRP

❖ **MICOGYL Susp. Globe**
Metronidazole 200mg/5ml: suspension
60ml bot: 22.00 MRP

❖ **M-ZED Tab. Kumudini**
Metronidazole 400mg/tablet
400mg x 100's pack: 113.00 MRP

❖ **M-ZED Susp. Kumudini**
Metronidazole 200mg/5ml: suspension
60ml bot: 21.00 MRP

❖ **NELAGYL-400 Tab. Gaco**
Metronidazole 400mg/tablet.
400mg x 50's pack: 54.00 MRP

❖ **NELAGYL Susp. Gaco**
Metronidazole 200mg/5ml: suspension
60ml bot: 21.54 MRP

❖ **NEOGYL-400 Tab. Millat**
Metronidazole 400mg/tablet.
400mg x 100's pack: 106.00 MRP

❖ **NEOGYL Susp. Millat**
Metronidazole 200mg/5ml: suspension
60ml bot: 24.60 MRP

❖ **NIDA Tab. Sonear**
Metronidazole 400mg/tablet.
400mg x 100's pack: 80.00 MRP

❖ **NIDA-S Susp. Sonear**
Metronidazole 200mg/5ml: suspension
60ml bot: 25.00 MRP

❖ **NIDAZYL Tab. Orion**
Metronidazole 400mg/tablet
400mg x 100's: 114.00 MRP

❖ **NIDAZYL Susp. Orion**
Metronidazole 200mg/5ml: suspension
60ml bot: 21.00 MRP

❖ **NIDAZYL I.V Inf. Orion**
Metronidazole 500mg in 100ml bottle: i.v infusion
100ml bot: 52.00 MRP

❖ **ONIDA Tab. Mystic**
Metronidazole 400mg/tablet
400mg x 100's pack: 100.00 MRP

❖ **ONIDA Susp. Mystic**

Metronidazole 200mg/5ml: suspension
60ml bot: 21.00 MRP

❖ **ORMET Tab. Belsen**
Metronidazole 400mg/tablet
400mg x 100's pack: 112.00 MRP

❖ **ORMET Susp. Belsen**
Metronidazole 125mg/5ml: suspension
60ml bot: 20.00 MRP

❖ **PHIDAZOLE Tab. Pharmadesh**
Metronidazole 400mg/tablet.
400mg x 100's: 99.00 MRP

❖ **PHIDAZOLE Susp. Pharmadesh**
Metronidazole 200mg/5ml: suspension
60ml bot: 19.25 MRP

❖ **PROTEC Tab. Hallmark**
Metronidazole 400mg/tablet.
400mg x 100's: 107.32 MRP

❖ **PROTEC Susp. Hallmark**
Metronidazole 200mg/5ml: suspension
60ml bot: 21.00 MRP

❖ **PROZOL Tab. SAPL**
Metronidazole 400mg/tablet.
400mg x 100's: 90.00 MRP

❖ **QUGYL-400 Tab. Aexim**
Metronidazole 400mg/tablet.
400mg x 100's pack: 100.00 MRP

❖ **QUGYL Susp. Aexim**
Metronidazole 200mg/5ml: suspension
60ml bot: 24.00 MRP

❖ **REMAGYL Tab. Reman**
Metronidazole 200mg & 400mg/tablet.
400mg x 100's pack: 63.00 MRP

❖ **REMAGYL Susp. Reman**
Metronidazole 200mg/5ml: suspension
60ml bot: 21.50 MRP

❖ **SEEMAGYL Tab. Seema**
Metronidazole 400mg/tablet.
400mg x 100's pack: 200.00 MRP

❖ **SEEMAGYL Susp. Seema**
Metronidazole 200mg/5ml: suspension
60ml bot: 24.00 MRP

❖ **STRAZYL Tab. Asiatic**
Metronidazole 400mg/tablet
400mg x 100's pack: 105.00 MRP

❖ **STRAZYL Susp. Asiatic**
Metronidazole 200mg/5ml: suspension
60ml bot: 24.00 MRP

❖ **TRICOZYL Tab. Edruc**
Metronidazole 400mg/tablet
400mg x 100's pack: 103.00 MRP.

❖ **TRICOZYL Susp. Edruc**
Metronidazole 200mg/5ml: suspension
60ml bot: 21.24 MRP

❖ **VARIZIL Tab. Drug Inter.**
Metronidazole 400mg/tablet
400mg x 100's pack: 86.00 MRP

❖ **VARIZIL I.V Inf. Drug Inter.**
Metronidazole 500mg in 100ml bottle: i.v infusion.
100ml bot: 45.00 MRP

❖ **VIGIL Tab. Salton**
Metronidazole 400mg/tablet
400mg x 100's pack: 100.00 MRP.

❖ **VIGIL Susp. Salton**
Metronidazole 200mg/5ml: suspension
60ml bot: 22.00 MRP

DILOXANIDE FUROATE[21,75]

DILOXANIDE FUROATE: Tablet/Suspension

Ind: Chronic intestinal amoebiasis in which only cyst and non-vegetative forms of E. histolytica are present in the faeces.
S/E: Flatulence, vomiting, urticaria, pruritus.
Dose: 500mg 3 times (every 8 hours) daily for 10 days, give alone for chronic infection or following 5 days of metronidazole treatment in acute dysenteric infection.

❖ **DILAMIDE Tab. Pharmadesh**
Diloxanide Furoate 500mg/tablet
100's pack: 226.00 MRP

❖ **DILAMIDE Susp. Pharmadesh**
Diloxanide Furoate BP 250mg/5ml: suspension.
60ml bot: 30.36 MRP

❖ **FUROXAMID Tab. Medimet**
Diloxanide furoate 500mg/tablet
100's pack: 170.00 MRP

❖ **KAMOMIDE Tab. Chemico**
Diloxanide furoate 500mg/tablet
100's pack: 175.00 MRP

ORNIDAZOLE[35,45]

ORNIDAZOLE: Tablet
Ornidazole belongs to 5-nitroimidazole group of drugs. It is an antiprotozoal and antimicrobial agent for the treatment of infections due to Trichomonas vaginalis, Entamoeba histolytica, Giardia lamblia and certain anaerobic bacteria such as bacteroides and Clostridium spp, Fusobacterium spp. and anaerobic cocci.
Mode of action: The antimicrobial activity of ornidazole is due to the reduction of the nitro group to a more reactive amine that attacks microbial DNA, brings about loss of helical sructure of DNA and subsequent DNA breakage, thus inhibiting further synthesis and causing degradation of existing DNA of the microbes.
Ind: Ornidazole is used in the treatment of hepatic and intestinal amoebiasis, giardiasis, trichomoniasis of urogenital tract and bacterial vaginosis; also used in the treatment and prophylaxis of susceptible anaerobic infections in dental and gastrointestinal surgery & in other mixed aerobic-anaerobic infections. Ornidazole is also advocated in the management of H. pylori induced duodenal ulcer in combination with other drugs.
C/I; Warnings: First trimester of pregnancy, nursing mothers, known hypersensitivity to imidazole derivatives.
S/E: The following side-effects are common to all nitroimidazoles & are rarely serious: gastrointestinal disturbances, nausea, epigastric pain, metallic taste, glossitis.
Dosage & Admin: Amoebiasis- adults, 500mg twice daily for 5-7 days; children, 25mg/kg once daily for 5-10 days. Amoebic dysentery- adults, 1.5gm as a single dose for 3 days; children, 40mg/kg once daily for 3 days. Giardiasis- adults, 1.5gm once daily for 1-2 days; children, 40mg/kg daily for 2 days. Trichomoniasis- adults, 1.5gm as a single dose or 500mg twice daily for 5 days, sexual partner should be simultaneously treated; children, 25mg/kg as a single dose. Bacterial vaginosis- adults, 1.5gm once or 500mg twice daily for 5-7 days.
Anaerobic bacterial infections- initiate oral therapy as soon as possible.

❖ **OR-500 Tab. Zenith**
Ornidazole INN 500mg/tablet (f.c).
30's pack: 195.00 MRP

❖ **ORNID Tab. Drug Inter.**
Ornidazole INN 500mg/tablet (f.c).
50's pack: 350.00 MRP

❖ **ORNIL Tab. Opsonin**
Ornidazole INN 500mg/tablet (f.c).
10's pack: 65.00 MRP

❖ **ORNIZOL Tab. Alco Pharma**
Ornidazole INN 500mg/tablet (f.c).
30's pack: 180.00 MRP

❖ **ROBIC Tab. Square**
Ornidazole INN 500mg/tablet (f.c).
30's pack: 195.00 MRP

❖ **TRONIZ Tab. UniMed/UniHealth**
Ornidazole INN 500mg/tablet (f.c).
30's pack: 195.00 MRP

❖ **ULNID Tab. Ultra Pharma**
Ornidazole INN 500mg/tablet (f.c).
30's pack: 120.00 MRP

❖ **XYNOR Tab. Beximco**
Ornidazole INN 500mg/tablet (f.c).
30's pack: 195.00 IP

SECNIDAZOLE[21,35]

SECNIDAZOLE: Tablet/Syrup
Secnidazole is a synthetic derivative of the nitroimidazole series of antiprotozoal drugs.
Ind: Intestinal amoebiasis, hepatic amoebiasis, urethritis and vaginitis dueto Trichomonas vaginalis, giardiasis.
C/I; Warnings: First trimester of pregnancy, nursing mothers, known hypersensitivity to imidazole derivatives.
S/E: The following side-effects are common to all nitroimidazoles & are rarely serious: gastrointestinal disturbances, nausea, epigastric pain, metallic taste, glossitis. With secnidazole, gastrointestinal disorders (nausea, vomiting, epigastric pain) have been reported in very rare cases.
Dosage & Admin: The usual adult dosage is 2gm once only, just before meals. For hepatic amoebiasis, the adult dosage is 1.5gm/day, in a single or divided dose, just before meals, for 5 days.

❖ **PRONIL-DS Tab. Acme**
Secnidazole 1gm/tablet (double strength).
8's pack: 128.00 MRP

❖ **SECNID DS Tab. Square**
Secnidazole 1gm/tablet (double strength).
10's pack : 160.00 MRP

❖ **SECNID Susp. Square**
Secnidazole 500mg (as granules) in 10ml single dose bottle: suspension
500mg (10ml) dose bot: 25.00 MRP

❖ **SECNIDAL-DS Tab. Sanofi-aventis**
Secnidazole 1gm/tablet (double strength).
10's pack: 252.80 MRP

❖ **SECNIZOL DS Tab. Incepta**
Secnidazole 1gm/tablet (double strength).
6's pack: 96.00 MRP

❖ **SEZOL-DS Tab. ACI**
Secnidazole 1gm/tablet (double strength).
10's pack: 150.00 MRP

TINIDAZOLE[21,62]

TINIDAZOLE: Tablet/ Injection
Ind: Amoebiasis; Giardiasis; Urogenital trichomoniasis; prophylaxis and treatment of Anaerobic infections.
C/I: Blood dyscrasias; Neurological disorders.
Cautions: Pregnancy, lactation; concurrent use with alcohol.
Dose: Amoebiasis, 2gm daily in a single dose for 3 days.
Giardiasis, 2gm as a single dose.
Trichomoniasis, 2gm as a single dose.
Anaerobic infections, by mouth, 2gm initially then 1 gm daily for minimum
5-6 days; prophylaxis- 2gm as a single dose.
Or by injection, treatment- 800mg by slow i.v infusion followed by 800mg i.v daily (unitl oral maintenance) & prophylaxis, 1600mg by slow i.v infusion.
Children, 50-60mg/kg/day.

❖ **PROTOGYN Tab. Renata**
Tinidazole 500mg & 1gm/tablet (f.c).
500mg x 100's: 400.00 MRP
1gm x 20's: 120.00 MRP

Antimalarials

CHLOROQUINE[21,33]

CHLOROQUINE: Tablet/Syrup/ Injection
Ind: Prophylaxis and treatment of malaria; extra-intestinal amoebiasis (amoebic hepatitis), giardiasis, rheumatoid arthritis, SLE.
S/E: Headache, nausea, vomiting, diarrhoea; rashes; rarely psychotic episodes, convulsions; corneal and retinal changes with prolonged high doses.
Cautions: Impaired renal and hepatic functions, psoriasis, porphyria; ocular change.
Dosage & admin: Malaria- Adult, 600 mg (of base) stat then 300 mg (base) after 6 to 8 hours, then 300 mg daily (single dose) for 2 days. (Approx. total cumulative dose of 25mg/kg of base).
Child, initial dose of 10mg/kg (of base) then a single dose of 5mg/kg after 6-8 hours then a single dose of 5mg/kg daily for 2 days.
Prophylaxis- adult, 2 tabs. as a single dose on the same day each week; start 2 weeks before entering endemic area and continue for 4 weeks after leaving. Child, 5 mg/kg (of base) at weekly intervals; start 2 weeks before entering epidemic area and continue for 4 weeks after leaving.
Amoebic hepatitis: Adult, 4 tab. daily for 2 days then 1 tab 2 times daily for 2-3 weeks. Child, not recommended;
Chloroquine better take after meal.

❖ **AVLOQUIN Tab. ACI**
Chloroquine phosphate 250mg/tablet.
100's pack: 121.00 MRP
❖ **AVLOQUIN Syp. ACI**
Chloroquine 80mg (base 50mg)/5ml: syrup
Dosage: For children, Prophylaxis- under 1 year not recommended; 1-4 yars. 2 tsf; 4-8 yrs. 3 tsf; 8-12 yrs. 4-5 tsf.
Treatment- under 1 year , initial 1-2 tsf followed by 1 tsf after 6 hours, then 1 tsf daily for 4 days: 1-4 yrs. 3-4 tsf.+ 2 tsf then 2 tsf daily for four days; 4-8 yrs. 4-6 tsf. + 3 tsf then 3 tsf daily for 4 days; 8-12 yrs. 6-9 tsf+ 3 tsf then 4 tsf daily for 4 days.
60ml bot: 14.82 MRP

❖ **CLIT Tab. Hudson**
Chloroquine phosphate 250mg/tablet.
100's pack: 120.00 MRP
❖ **CLIT Syp. Hudson**
Chloroquine 80mg/5ml: syrup
60ml bot: 12.00 MRP
100ml bot: 22.00 MRP
❖ **G-CHLOROQUINE Tab. Gonoshasthaya**
Chloroquine phosphate 250mg/tablet.
100's pack: 105.00 MRP
1000's pot: 900.00 MRP
❖ **G-CHLOROQUINE Syp. Gonoshasthaya**
Chloroquine 80mg/5ml: syrup
60ml bot: 14.82 MRP
❖ **JASOCHLOR Tab. Jayson**
Chloroquine phosphate 250mg/tablet.
100's pack: 106.00 MRP
❖ **JASOCHLOR Syp. Jayson**
Chloroquine 80mg/5ml: syrup
60ml bot: 14.81 MRP
❖ **QUINOLEX Tab. Globe**
Chloroquine phosphate 250mg/tablet.
100's pack: 100.00 MRP
❖ **QUINOLEX Syp. Globe**
Chloroquine phosphate 80mg/5ml: syrup
60ml bot: 12.00 MRP
❖ **SEEMAQUINE Tab. Seema**
Chloroquine phosphate 250mg/tablet.
100's pack: 120.00 MRP
❖ **UNIQUIN Tab. Aexim**
Chloroquine phosphate 250mg/tablet.
100's pack: 100.00 MRP
❖ **ZENOQUINE Tab. Zenith**
Chloroquine phosphate 250mg/tablet.
100's pack: 130.00 MRP
❖ **ZENOQUINE Syp. Zenith**
Chloroquine phosphate 80mg/5ml: syrup
60ml bot: 14.65 MRP

MEFLOQUINE[21,50]

MEFLOQUINE: Tablet
Ind: Chemoprophylaxis of malaria, (in areas of the world where there is a high risk of chloroquine-resistant falciparum malaria); treatment of uncomplicated falciparum malaria and chloroquine-resistant vivax malaria.
It is also effective in the treatment of benign malarias, but is not required as chloroquine is usually efective.
Mefloquine should not be used for treatment if it has been used for prophylaxis.
C/I: Chemoprophylaxis in first trimester of pregnancy (teratogenic in animals, avoid pregnancy during and for 3 months after), breast-feeding, and history of serious psychiatric disorders or convulsions (or family history of epilepsy); hypersensitivity to quinine.
S/E: Nausea, vomiting, diarrhoea, abdominal pain; dizziness, loss of balance, headache, somnolence, sleep disorders (insommia, abnormal dreams); also neuropsychiatric reactions (including sensory and motor neuropathies, anxiety, depression, hallucinations, overt psychosis, convulsions), tinnitus and vestibular disorders, visual disturbances, circulatory disorders (hypotension and hypertension), tachycardia, bradycardia, cardiac conduction disorders, muscle weakness, myalgia, arthralgia, rash, urticaria, pruritus, alopecia, asthenia, malaise, fatigue, fever, loss of appetite, leucopenia or leucocytosis, thrombocytopenia; disturbances in liver function tests; rarely Stevens-Johnson syndrome, AV block and encephalopathy.
Cautions: Exclude pregnancy before starting chemoprophylaxis; avoid chemoprophylaxis in severe hepatic impairment; renal impairment; cardiac conduction disorder; epilepsy; not recommended in young children (under 15kg).
May affect performance of skilled tasks e.g driving; effects may persist for upto 3 weeks.
Dosage & admin: Chemoprophylaxis: Adult, 250mg each week starting 1-2 weeks before departure and continued for 4 weeks after leaving malarious area; Child, 2-5 years (15-19kg) quarter adult dose, 6-8 years (20-30kg) half adult dose, 9-11 years (31-45kg) three-quarters adult dose.
Treatment: Adult, by mouth, 20mg/kg (of base) as a single dose (up to max. 1.5gm) or preferably in 2 divided doses 6-8 hours apart; Children, by mouth 20mg/kg as a single dose or preferably in 2 divided doses 6-8 hrs. apart.
Drug inter: Halofantrine must not be given with or after mefloquine therapy (danger of fatal arrhythmias).

❖ **MEFLON Tab. ACI**
Mefloquine 250mg/tablet
5's pack: 196.70 MRP

HYDROXYCHLOROQUINE

Preparations: See in the chapter of 'antirheumatic & anti-inflammatory drugs' under 'disease-modifying antirheumatic drugs'.

PRIMAQUINE[21,33]

PRIMAQUINE Phosphate: Tablet
Ind: Radical cure of malaria (pl. vivax & ovale malaria).
C/I: Haemolytic anaemia.
S/E: Anorexia, nausea, vomiting, jaundice; less commonly mild diarrhoea; haemolytic anaemia and bone marrow depression.
Dosage & admin: Adult, 15 mg (1 tablet) daily for 14-21 days following a course of chloroquine or amodiaquine. Child, half the adult dose.

❖ **JASOPRIM Tab. Jayson**
Primaquine phosphate 15mg/tablet
100's pack: 126.00 MRP
❖ **KANAPRIM Tab. Globe**
Primaquine phosphate 15mg/tablet
100's pack: 62.00 MRP
❖ **P-PHOS Tab. Hudson**
Primaquine phosphate 15mg/tablet
100's pack: 62.00 MRP

PYRIMETHAMINE[21,33]

PYRIMETHAMINE: Tablet
Ind: Chemprophylaxis of malaria.
S/E; Cautions: See above (sulphadoxine + pyrimethamine prepn.)
Dose: prophylaxis, 25-50mg, once a week. Child, 5-12 yrs. half adult dose; under 5 yrs. quarter adult dose.

❖ **PYRISON Tab. Jayson**
Pyrimethamine 25mg/tablet
100's pack: 27.00 IP

QUININE[21,33]

QUININE: Tahlet/Syrup/ Injection
Ind: malignant tertian malaria; nocturnal leg cramps.
S/E: Cinchonism, including tinitus, headache, nausea, abdominal pain, rashes, visual disturbances, blindness, hypersensitivity reactions including angioneurotic oedema.
C/I: Haemoglobinuria, optic neuritis.
Dosage & admin: ***By mouth:*** **Adult, 600 mg every 8 hours for 7 days. Child, 10mg/kg 8 hourly for 7 days.**
By injection: **If the patient is seriously ill, i.v quinine should be given- loading dose 20mg/kg infuse over 4 hours; then maintenance dose- 10mg/kg infuse over 4 hours, every 8-12 hourly followed by oral quinine.**

❖ **ALOQUIN Tab. Alco Pharma**
Quinine sulphate 300mg/tablet
100's pack: 340.00 MRP
❖ **CINQUIN Tab. Sonear**
Quinine sulphate 300mg/tablet
100's pack: 340.00 MRP
❖ **G-QUININE Inj. Gonoshasthaya**
Quinine hydrochloride300mg/5ml amp: injection.
10 amps pack: 103.70 MRP
❖ **JASOQUIN Tab. Jayson**
Quinine sulph. 300mg/tablet
100's pack: 640.00 MRP
❖ **JASOQUIN Inj. Jayson**
Quinine hydrochloride300mg/5ml amp: injection.
10 amps pack: 205.20 MRP
❖ **KANAQUINE Tab. Globe**
Quinine sulph. 300mg/tablet
100's pack: 640.00 MRP
❖ **KANAQUINE Inj. Globe**
Quinine hydrochloride300mg/5ml amp: injection.
10 amps pack: 105.00 MRP
❖ **QUIN-H Tab. Hudson**
Quinine sulphate 300mg/tablet
100's pack: 347.00 MRP

SULFADOXIN + PYRIMETHAMINE[21,33]

PYRIMETHAMINE: Tablet
Ind: Malarial attacks and symptoms; suppressant in malaria (chemoprophylaxis); Chloroquine-resistant falciparum malaria.
S/E: Depression of haemopoesis with prolonged treatment, rashes.
Cautions: Hepatic or renal impairment; folate supplements in pregnancy; blood counts required with high doses.
Dosage & admin: Adult: over 14 yrs. 2-3 tabs. as a single dose. Child: under 4 yrs. 1/2 tab; 4-8 yrs.1 tab; 9-14 yrs. 2 tabs. All as a single dose. Prophylaxis: over 14 yrs. 1 tab. weekly; child, under 4 yrs. 1/4 adult dose; 4-8 yrs. 1/2 adult dose; 9-14 yrs. 3/4 adult dose.

❖ **MALACIDE Tab. Square**
Sulfadoxine 500mg + pyrimethamine 25mg/tablet.
60's pack: 264.00 MRP
❖ **MALASON Tab. Hudson**
Sulfadoxine 500mg + pyrimethamine 25mg/tablet.
100's pack: 380.00 MRP
❖ **MALEX Tab. Ibn Sina**
Sulfadoxine 500mg + pyrimethamine 25mg/tablet.
30's pack: 121.20 MRP
❖ **MALODOXIN Tab. Sonear**
Sulfadoxine 500mg + pyrimethamine 25mg/tablet.
15's pack: 60.00 MRP
90's pack: 360.00 MRP
❖ **SULFAMIN Tab. Jayson**
Sulfadoxine 500mg + pyrimethamine 25mg/tablet.
30's pack: 132.00 MRP

Other Preparations

ARTEMETHER/LUMEFANTRINE[35,54]

ARTEMETHER+LUMEFANTRINE: Tablet & Syrup
Combination preparations of artemether (a synthetic antimalarial drug derived from methyl ether artemisinin) & lumefantrine are available as tablet & syrup in a fixed proportion, such as:
Tablet: Artemether 20mg+lumefantrine 120mg/tablet.
Syrup: Artemether 15mg+lumefantrine 90mg/5ml.
The combination provides the rapid antimalarial effects of artemether, while reducing the incidence of recrudescence because of the prolonged effect of lumefantrine.
The two components may act synergistically both in vitro and in vivo. There appears to be a correlation between efficacy and AUC (area under the plasma concentration) for lumefantrine regardless of the initial parasite load.
Mode of action: The endoperoxide bridge of artemether is thought to interact with haem before it is metabolised in the malaria parasite's food vacuole. Free radicals are generated which catalyse various biological processes and can result in parasite death.
Ind: Treatment and stand-by emergency treatment of non-immune adults and children with malaria due to plasmodium falciparum infection or mixed infection including P. falciparum. This combination is also recommended for malaria infections acquired in areas where the parasites may be resistant to other antimalarials.
C/I: Hypersensitivity to the active substances or any of the excipients. Pregnancy, unless the doctor considers it essential.
S/E: Headache, anorexia, abdominal pain, dizziness, asthenia, cough, myalgia, arthralgia, sleep disorder, etc.
Precautions & warnings: Cerebral malaria or other severe manifestations of complicated malaria including pulmonary oedema or renal failure. QTc prolongation. Patients with food aversion. Pregnancy, lactation. Drivers & machinery users.
Dosage & admin: Adults: 1. ***Treatment, general:*** **4 tablets (or equivalent syrup) at initial diagnosis and then after 8, 24 and 48 hours.**
2. ***Treatment of multi-drug resistant malaria and non-immune patients:*** **A 3-day course comprising 4 tablets (or equivalent syrup) at initial diagnosis, again after 8 hours, and then twice daily for the following two days.**
3. ***Stand-by emergency treatment:*** **A 3-day course comprising 4 tablets (or equivalent syrup) at the onset of symptoms, again after 8 hours, and then twice daily for the following two days.**

Children: 1. ***Treatment, general:*** **1 to 3 tablets (or equivalent syrup) at initial diagnosis (depending on body-weight) and then after 8, 24 and 48 hours.**
2. ***Treatment of multi-drug-resistant malaria and non-immune patients:*** **A 3-day course comprising 1 to 3 tahlets (or equivalent syrup) at initial diagnosis (depending on body-weight) again after 8 hours and then twice daily on the followint two days.**
3. ***Stand-by emergency treatment:*** **A 3-day course comprising 1 to 3 tablets (or equivalent syrup) at the onset of symptoms (depending on body-weight), again after 8 hours, and then twice daily on the following two days.**
Drug inter: Interaction studies in healthy volunteers who have received high levels of mefloquine with Coartem, & studies in the field, when enrolled patients on Coartem had been previously treated with quinine there were no evidence of drug interactions.

❖ **AREXEL Tab. Jayson**
Artemether 20mg & lumefantrine 120mg/tablet.
24's pack: 408.00 IP
❖ **ARTEM Tab. Aexim**
Artemether 20mg & lumefantrine 120mg/tablet.
16's pack: 320.00 MRP
❖ **ARTEM Dry Syp. Aexim**
Artemether 15mg & lumefantrine 90mg/5ml: dry syrup.
60ml bot: 220.00 MRP
❖ **COARTEM Tab. Novartis**
Artemether 20mg & lumefantrine 120mg/tablet.
24's pack: 519.60 MRP
❖ **LUMERTAM Tab. Square**
Artemether 20mg & lumefantrine 120mg/tablet.
24's pack: 480.00 MRP
❖ **MALFAN Tab. Globe**
Artemether 20mg & lumefantrine 120mg/tablet.
20's pack: 400.00 MRP

ARTESUNATE[136]

ARTESUNATE: Tablet.
Artesunate INN 50mg/tablet.
Artesunate is an antimalarial drug with high degree of efficacy on malarial parasites and no cross resistance to chloroquine. It is available as artesunate INN 50mg/tablet.
Ind: Artesunate can quickly and reliably control the acute attack of malaria. It is suitable to

salvage the patients with pernicious malaria and treat p. falciparum malaria and p. vivax malaria. It is effective against malaria caused by chloroquine resistant strain of plasmodium falciparum.
S/E: No adverse reactions were observed with recommended dose uptill now.
Precaution: Artesunate should be used carefully in pregnant women during the first tri-mester of pregnancy.
Pregnancy & lactation: See above under 'precaution'.
Dosage & admin: Adult: 5 days treatment- on the 1st day 2 tablets twice and 2nd day onward 1 tablet twice daily for remaining 4 days (i.e total 12 tablets).
Children: **1-3 years: 5 days treatment- on the 1st day 1/2 tablet twice and 2nd day onward 1/4 tablet twice daily for remaining 4 days (i.e total 3 tablets).**
4-5 years: 5 days treatment- on the 1st day 1 tablet twice and 2nd day onward 1/2 tablet twice daily for remaining 4 days (i.e total 6 tablets).
6-12 years: 5 days treatment- on the 1st day 11/2 tablet twice, 2nd day 1 tablet twice and 3rd day onward 1/2 tablet twice daily for remaining 3 days (i.e total 8 tablets).
Prophylaxis: **100mg tablet once a week, from 1 week before entering malarial areas, to 4 weeks after leaving the area.**

❖ **ARINET Tab. Alco Pharma**
Artesunate INN 50mg/tablet.
20's pack: 200.00 MRP
❖ **ARTESUNET Tab. Aexim**
Artesunate INN 50mg/tablet.
12's pack: 144.00 MRP
❖ **ARTEX-50 Tab. Jayson**
Artesunate INN 50mg/tablet.
12's pack: 144.00 IP
❖ **MALINATE Tab. Globe**
Artesunate INN 50mg/tablet.
12's pack: 144.00 MRP

Anti-kala-azar drugs (Leishmaniacides)

SODIUM STIBOGLUCONATE[21,47]

SODIUM STIBOGLUCONATE (An antimony compound): Injection .
Preparation: Stibatin injection (GlaxoSmithkline)- may not be available.

5. ANTHELMINTICS

Drugs for Round worms Hook worms Thread worms Whip worms

LEVAMISOLE[21,33]

LEVAMISOLE: Tablet/Syrup
Ind: Roundworm, Hookworm (and Thread or Pinworm).
C/I: Severe liver and kidney disease.
S/E: Nausea, vomiting , abdominal discomport, headache, dizziness etc.
Dosage & admin: 1-4 years 40-50mg; 5-12 years 80-100mg ; above 12 years and adult, 120-150mg in a single dose at night may be repeated after 1 week.
Syrup: 1-4 yrs. 1 tsf. 5-12 yrs. 2 tsf; above 12 years and adult, 3 tsf in a single dose at night.

❖ **ASITRAX Syp. Asiatic**
Levamisole 40mg/5ml: syrup
15ml bot: 8.00 MRP
❖ **BIOTREX Syp. Bio-Pharma**
Levamisole 40mg/5ml: syrup
15ml bot: 8.00 MRP
30ml bot: 12.00 MRP
❖ **DEOTREX Tab. Desh**
Levamisole 40mg/tablet
100's strip pack: 40.00 MRP
❖ **ETRAX Tab. ACI**
Levamisole 40mg/tablet
100's strip pack: 60.00 MRP
❖ **ETRAX Syp. ACI**
Levamisole 40mg/5ml: syrup
30ml bot: 15.00 MRP
❖ **G-LEVAMIZOLE Syp. Gonoshas.**
Levamisole 40mg/5ml: syrup
30ml bot: 9.50 MRP
❖ **HELMISOLE Tab. Gaco**
Levamisole 40mg/tablet
100's pack: 41.08 MRP
❖ **HELMISOLE Syp. Gaco**
Levamisole 40mg/5ml: syrup.
30ml bot: 10.00 MRP
❖ **KRIMINA Syp. Modern**
Levamisole 40mg/5ml: syrup
30ml bot: 10.00 MRP
❖ **LEVAMIN Tab. Pharmadesh**
Levamisole 40mg/tablet
100's pack: 46.00 MRP
❖ **LEVAMIN Syp. Pharmadesh**
Levamisole 40mg/5ml: syrup
30ml bot: 11.85 MRP
❖ **LEVAMISOLE-M Tab. Modern**
Levamisole 40mg/tablet
100's pack: 40.00 MRP
❖ **LEVATRAX Syp. Globe**
Levamisole BP 40mg/5ml: syrup
15ml bot: 6.25 MRP
❖ **LEVOSOL Tab. Seema**
Levamisole 40mg/tablet
100's pack: 45.00 MRP
❖ **LEVOSOL Syp. Seema**
Levamisole BP 40mg/5ml: syrup
15ml bot: 8.00 MRP
30ml bot: 12.00 MRP
❖ **MEDIREX Syp. Elixir**
Levamisole BP 40mg/5ml: syrup
30ml bot:
100ml bot:
❖ **NEOTRAX Tab. Acme**
Levamisole 40mg/tablet
200's pack: 86.00 MRP
❖ **NEOTRAX Syp. Acme**
Levamisole 40mg/5ml: syrup
30ml bot: 12.00 MRP
❖ **SKYTEX Tab. Skylab**
Levamisole 40mg/tablet
100's pack: 45.00 MRP
❖ **SKYTEX Syp. Skylab**
Levamisole 40mg/5ml: syrup
30ml bot: 10.50 MRP
15ml bot: 6.00 MRP
❖ **VERMICOM Tab. Opsonin**
Levamisole 40mg/tablet
100's pack: 40.00 MRP
❖ **VERMICOM Syp. Opsonin**
Levamisole 40mg/5ml: syrup
30ml bot: 9.25 MRP
❖ **WORVEX Syp. Rasa Pharma**
Levamisole 40mg/5ml: syrup
15ml bot: 6.50 MRP
30ml bot: 11.00 MRP

MEBENDAZOLE[21,33]

MEBENDAZOLE: Tablet/Syrup
Ind: Roundworm, threadworm, common & American hookworm and whipworm.
C/I: Pregnancy; children under 2 yrs.
S/E: Diarrhoea and rarely abdominal pain.
Dosage & admin: Adult and children over 2 years, roundworm, hookworm & whipworm- 100mg twice daily (morning & evening) for 3 days . Threadworm- 100mg in a single dose for all age, a second dose may be given after 2-3 wks. if not cured.

❖ **BENDEX Tab. Gaco**
Mebendazole 100mg & 500mg/tablet
100mg x 30's pack: 22.20 MRP
500mg x 30's pack: 65.99 MRP
❖ **BENDEX Susp. Gaco**
Mebendazole 100mg/5ml: suspension
30ml bot: 14.83 MRP
❖ **ERMOX Tab. Square**
Mebendazole 100mg/tablet
100mg x 150's: 111.00 MRP
❖ **ERMOX Syp. Square**
Mebendazole 100mg/5ml: syrup
30ml bot: 14.83 MRP.
❖ **G-MEBENDAZOLE Tab. Gonoshasthaya**
Mebendazole 100mg/tablet
100mg x 60's strip: 42.60 MRP
❖ **G-MEBENDAZOLE 500 Tab. Gonoshas**
Mebendazole 500mg/tablet
100mg x 500's tin: 655.00 MRP
❖ **HELBEN Susp. Ad-din**
Mebendazole 100mg/5ml: suspension
30ml bot: 10.60 MRP
❖ **MEBANTRIN Tab. Pharmadesh**
Mebendazole 100mg/tablet
30's pack: 22.50 MRP
❖ **MEBANTRIN Susp. Pharmadesh**
Mebendazole 100mg/5ml: suspension
30ml bot: 15.00 MRP
❖ **MEBENDOL Tab. Doctor's**
Mebendazole 100mg/tablet
60's pack: 42.00 MRP
❖ **MEBENDOL Susp. Doctor's**
Mebendazole 100mg/5ml: syrup.
30ml bot: 13.65 MRP
❖ **MEBREX Tab. Medimet**
Mebendazole 100mg/tablet
60's pack: 44.40 MRP
❖ **MEBREX Susp. Medimet**
Mebendazole 100mg/5ml: syrup.
30 ml bot: 14.75 MRP
❖ **PANAMOX Tab. Jayson**

Mebendazole 100mg/tablet
120's pack: 88.80 MRP
❖ **PANAMOX Syp. Jayson**
Mebendazole 100mg/5ml: syrup.
30ml bot: 14.69 MRP
❖ **SARMOX Tab. Salton**
Mebendozole100mg/tablet.
30's pack: 21.00 MRP
❖ **SEEMOX Tab. Seema**
Mebendozole100mg/tablet.
150's pack: 111.00 MRP
❖ **SEEMOX Susp. Seema**
Mebendozole100mg/5ml: suspension
30ml bot: 16.00 MRP
❖ **SOLAS Tab. Opsonin**
Mebendozole100mg/tablet.
60's pack: 42.00 MRP
❖ **SOLAS Syp. Opsonin**
Mebendozole100mg/5ml: suspension
30ml bot: 13.50 MRP
❖ **VERMIZOLE Tab. Zenith**
Mebendazole 100mg/tablet
30's pack: 22.23 MRP
❖ **WORMIN-K Tab. Chemico**
Mebendazole 100mg/tablet
60's pack: 42.00 MRP
❖ **WORMIN-K Susp. Chemico**
Mebendazole 100mg/5ml: suspension
30ml bot: 13.50 MRP

ALBENDAZOLE[21,33]

ALBENDAZOLE: Tablet/Suspension
Ind: It is a broad spectrum anthelmintic for the treatment of - pinworm or theradworm, whipworm, large roundworm, hookworm & tapeworm, in single or mixd infestations of any of the above.

C/I; Warnings: Use in pregnancy- because albendazole was found to be embryotoxic and teratogenic in the rat and rabbit, its use is contraindicated in pregnant women or those likely to be pregnant. for women of child-bearing age (15-40 yrs) 'albendazole' should be administered within 7 days of the start of normal menstruation.

Dosage & admin: Usual dose in both adutls and children over 2 years of age, 400mg(two tablets) as a single dose in cases of Enterobius vermicularis, Trichuris trichiura, Ascaris lumbricoides, Ancylostoma duodenale and Necator americanus.
In cases of Strongyloidiasis or Taeniasis `albendazole' 400mg as a single dose should be given for 3 consecutive days.

Children under 2 yrs. a single dose of 200mg is effective in common infections. In hymenolepis nana infections a dose of 400mg for 3 consecutive days has been found to be effective.
If the patients is not cured on follow-up after three weeks, a second course of treatment is indicated.

❖ **ADZE Tab. Chemico**
Albendazole 400mg/tablet
50's pack: 200.00 MRP
❖ **ALBA Tab. Navana**
Albendazole 400mg/tablet
50's pack: 190.00 IP
❖ **ALBAMAX-DS Tab. Ziska**
Albendazole 400mg/tablet.
100's pack: 380.00 MRP
❖ **ALBAZOLE-DS Tab. CPL**
Albendazole 400mg/tablet.
50's pack: 175.00 MRP
❖ **ALBEN-DS SK+F**
Albendazole 400mg/tablet.
48's pack: 192.00 MRP
100's pack: 400.00 MRP
❖ **ALBEN Susp. SK+F**
Albendazole 200mg/5ml: suspension.
10ml bot: 15.00 MRP
❖ **ALBENDA-DS Tab. Aexim**
Albendazole 400mg/tablet
20's pack: 66.00 MRP
❖ **ALBENDOL Tab. Globex**
Albendazole 400mg/tablet
50's pack: 90.00 MRP
❖ **ALBEZEN Tab. Zenith**
Albendazole 400mg/tablet
60's pack: 180.00 MRP
❖ **ALBEZOLE Tab. Apollo**
Albendazole 400mg/tablet
30's pack: 114.00 IP
❖ **ALBREX Tab. Medimet**
Albendazole 400mg/tablet
50's pack: 175.00 MRP
❖ **AL-DS Tab. Globe**
Albendazole 400mg/tablet
40's pack: 152.00 MRP
❖ **ALDA-DS Tab. Supreme**
Albendazole 400mg/tablet
25's pack: 80.00 MRP
❖ **ALDA Susp. Supreme**
Albendazole 200mg/5ml: suspension.
10ml bot: 15.00 MRP
❖ **ALDABEN-DS Tab. Ad-din**
Albendazole 400mg/tablet
50's pack: 193.00 MRP
❖ **ALDABEN Susp. Ad-din**
Albendazole 200mg/5ml: suspension.
10ml bot: 11.40 MRP
❖ **ALDES-DS Tab. Desh Pharma**
Albendazole 400mg/tablet
50's pack: 200.00 MRP
100's pack: 400.00 MRP
❖ **ALDES Susp. Desh Pharma**
Albendazole 200mg/5ml: suspension.
10ml bot: 15.00 MRP
❖ **ALDEX-DS Tab. Gaco**
Albendazole 400mg/tablet
20's pack: 66.00 MRP
❖ **ALDEX Susp. Gaco**
Albendazole 200mg/5ml: suspension.
10ml bot: 15.00 MRP
❖ **ALDIN DS Tab. Techno Drugs**
Albendazole 400mg/tablet
60's pack: 180.00 MRP
❖ **ALENTIN-DS Tab. Renata**
Albendazole 400mg/tablet
25's pack: 83.50 MRP
❖ **ALMEX Tab. Square**
Albendazole 400mg/tablet.
25's pack: 94.00 MRP
❖ **ALMEX Susp. Square**
Albendazole 200mg/5ml: suspension.
10ml bot: 15.00 MRP
❖ **ALMIN Tab. Kumudini**
Albendazole 400mg/tablet.
50's pack: 175.00 MRP
❖ **ALMIN Susp. Kumudini**
Albendazole 200mg/5ml: suspension.
10ml bot: 14.00 MRP
❖ **ALPHIN-DS Tab. Beximco**
Albendazole 400mg/tablet
50's pack: 175.00 IP
❖ **ALPRO Tab. Pharmadesh**
Albendazole 400mg/tablet
30's pack: 93.90 MRP
❖ **ALZED Tab. General**
Albendazole 400mg/tablet
20's pack: 66.00 MRP
❖ **ALZEN Tab. Sonear**
Albendazole 400mg/tablet
20's pack: 76.00 MRP
❖ **ALZOL-DS Tab. Rasa Pharma**
Albendazole 400mg/tablet
50's pack: 200.00 MRP
❖ **ANTHEL Tab. Seema**
Albendazole 400mg/tablet
50's pack: 200.00 MRP
❖ **ASIBEN Tab. Asiatic**
Albendazole 400mg/tablet
10's pack: 38.00 MRP
❖ **ASIBEN Susp. Asiatic**
Albendazole 200mg/5ml: suspension.
10ml bot: 14.00 MRP
❖ **AZOLE Tab. Bio-pharma**
Albendazole 400mg/tablet
20's pack: 80.00 MRP
❖ **AZOLE Susp. Bio-pharma**
Albendazole 200mg/5ml: suspension.
10ml bot: 15.00 MRP
❖ **BEN-A Tab. Acme**
Albendazole 400mg/tablet
400mg x 25's pack: 100.00 MRP
❖ **BENDA-DS Tab. Bristol**
Albendazole 400mg/tablet
50's pack: 175.00 MRP
❖ **CHUBEN Tab. Alco Pharma**
Albendazole 400mg/tablet
50's pack: 192.50 MRP
500's pack: 1925.00 MRP

❖ **COLAZ Tab. Cosmic**
Albendazole 400mg/tablet
30's pack: 150.00 MRP
❖ **COSBEN 400 Tab. Cosmo Pharma**
Albendazole 400mg/tablet
50's pack: 150.00 MRP
❖ **DURAZOL-400 Tab. Millat**
Albendazole 400mg/tablet
50's pack: 190.00 MRP
❖ **DURAZOL Susp. Millat**
Albendazole 200mg/5ml: suspension.
10ml bot: 15.00 MRP
❖ **E-BEN Tab. Elixir**
Albendazole 400mg/tablet
20's pack:
❖ **EBEN-DS Tab. Edruc**
Albendazole 400mg/tablet
25's pack: 81.00 IP
❖ **EBEN Susp. Edruc**
Albendazole 200mg/5ml: suspension.
10ml bot: 15.00 IP
❖ **ELMIN Tab. Jayson**
Albendazole 400mg/tablet
25's pack: 82.50 IP
❖ **ESTAZOL-400 Tab. Ibn Sina**
Albendazole 400mg/tablet
50's pack: 190.00 IP
❖ **ESTAZOL Susp. Ibn Sina**
Albendazole 200mg/5ml: suspension.
10ml bot: 15.00 MRP
❖ **G-ALBENDAZOLE Tab. Gonoshasthaya**
Albendazole 200mg & 400mg/tablet
200mg x 100's pack: 223.00 MRP
400mg x 100's pack: 324.00 MRP
❖ **H-BEN Tab. Hudson**
Albendazole 400mg/tablet
40's pack: 144.00 MRP
❖ **HELBEN DS Tab. Modern**
Albendazole 400mg/tablet
25's pack: 76.00 MRP
❖ **INFESEN Tab. Drug Inter.**
Albendazole 400mg/tablet
60's pack: 210.00 MRP
❖ **INFESEN Susp. Drug Inter.**
Albendazole 200mg/5ml: suspension.
10ml bot: 15.00 MRP
❖ **KRIMIZOLE-DS Tab. Mystic**
Albendazole 400mg/tablet
25's pack: 81.25 MRP
❖ **KRIMIZOLE Susp. Mystic**
Albendazole 200mg/5ml: suspension.
10ml bot: 15.00 MRP
❖ **LUBAN-DS Tab. Rephco**
Albendazole 400mg/tablet
30's pack: 99.00 MRP
❖ **MEBEL DS Tab. Medicon**
Albendazole 400mg/tablet
100's pack: 265.00 MRP
❖ **MEBEL Susp. Medicon**
Albendazole 200mg/5ml: suspension.
10ml bot: 15.00 MRP
❖ **NEMATOX-DS Tab. Chemist**
Albendazole 400mg/tablet
50's pack: 177.00 MRP
❖ **NOWORM-400 Tab. A.P.C Pharma**
Albendazole 400mg/tablet
50's pack: 165.00 IP
❖ **NT-PAR Tab. Rangs**
Albendazole 400mg/tablet
50's pack: 187.50 MRP
❖ **NT-PAR Susp. Rangs**
Albendazole 200mg/5ml: suspension.
10ml bot: 15.00 MRP
❖ **SINTEL Tab. ACI**
Albendazole 400mg/tablet
400mg x 50's pack: 190.00 MRP
❖ **SINTEL Susp. ACI**
Albendazole USP 200mg/5ml: suspension.
10ml bot: 15.00 IP
❖ **SKBEN-DS Tab. Skylab**
Albendazole 400mg/tablet
50's pack: 200.00 MRP
❖ **TRIBEN Tab. Ambee**
Albendazole 400mg/tablet
400mg x 25's pack: 83.50 MRP
❖ **TRIBEN Susp. Ambee**
Albendazole 200mg/5ml: suspension.
10ml bot: 13.91 MRP
❖ **ULBEX-400 Tab. Ultra Pharma**
Albendazole 400mg/tablet
50's pack: 200.00 MRP
❖ **VERBEN Tab. Proteety**
Albendazole 400mg/tablet
25's pack: 67.50 MRP
❖ **VERMID Tab. Somatec**
Albendazole 400mg/tablet
25's pack: 82.50 IP
❖ **VERMIN-DS Tab. Nipa**
Albendazole 400mg/tablet
25's pack: 88.75 MRP
❖ **WORMEX Tab. Syntho**
Albendazole 400mg/tablet
26's pack: 91.00 MRP
❖ **WORMEX Susp. Syntho**
Albendazole 200mg/5ml: suspension.
10ml bot: 14.00 MRP
❖ **ZOBEN Tab. Amico**
Albendazole 400mg/tablet
50's pack: 150.00 MRP
❖ **ZOBEN Susp. Amico**
Albendazole 200mg/5ml: suspension.
10ml bot: 14.00 MRP

PYRANTEL PAMOATE[21,33]

PYRANTEL PAMOATE: Tablet/ Suspension.
Ind: Threadworm, roundworm, hookworm and whipworm; Trichostrongyliasis.
C/I: Hepatic dysfunction.
S/E: Gastro- intestinal disturbances, headache, dizziness, drowsiness, insomnia and rashes.
Dosage & admin: Adult and children over 6 months - Ascaris lumbricoides alone, a single dose of 5 mg/kg; mixed infections involving ascaris lumbricoides, a single dose of 10 mg/kg is given. Or,
Adult & children (over 6 months): 6 months to 4 yrs. 125mg (1 tab. or 0.5 tsf); 5 to 10 yrs. 250mg (2 tabs or 1 tsf); 11 to 15 yrs . 375mg (3 tabs. or 1.5 tsf); adult 625mg (5 tabs or 3 tsf) in a single dose.
Children, before 6 months- not recommended.

❖ **DELENTIN Syp. Renata**
Pyrantel pamoate 50mg/ml: Syrup
10ml bot: 11.42 MRP
❖ **MELPHIN Tab Beximco**
Pyrantel pamoate 125mg/tablet
100's pack: 166.00 MRP
❖ **MELPHIN Syp. Beximco**
Pyrantel pamoate 50mg/ml: syrup
10ml bot: 11.43 MRP
❖ **WORMEX Susp. Hallmark**
Pyrantel pamoate 50mg/ml: suspension
10ml bot: 11.00 MRP

Drugs for Tapeworms

NICLOSAMIDE[21,33]

❖ **YOMESAN Tab. Bayer**
Niclosamide 500mg/tablet.
Ind: Tapeworms.
Caution: Avoid alcohol.
Dose: Tenia solium, 2 gm as a single dose after a light breakfast, followed by purgative after 2 hours. Child, up to 2 yrs. 500mg, 2-6 yrs. 1gm. as a single dose.
Tenia saginata and Diphyllobothrium latum, as for Tenia solium but half the dose may be taken after breakfast and the remainder one hour later followed by a purgative after a further 2 hours.
4 tabs. pack: 76.10 MRP
Preparation: May not be available; price could not be corrected

Filaricidal Drugs

DIETHYL CARBAMAZINE[21,33]

DIETHYL CARBAMAZINE: Tablet/ Injection.
Ind: Filariasis; (Onchocerciasis loiasis).
C/I: Pregnancy.
S/E: Headache, nausea, sedation & malaise; severe skin reactions may appear.
Cautions: Monitor onchocerciasis patients for eye changes.
Dose: 6mg/kg body-wt daily in divided doses for 3-4 weeks.
To minimise reactions treatment is commenced with a dose of 1mg/kg and increase gradually over 3 days to 6mg/kg. Close medical supervision is necessary particularly in the early phage of treatment.

❖ **CARNOCIDE Tab. Gaco**
Diethylcarbamazine citrate 50mg/tablet
100's pack: 71.55 MRP
❖ **FILAZINE Tab. Hudson**
Diethylcarbamazine citrate 100mg/tablet
100's pack: 130.00 MRP
❖ **REMAZIN Tab. Reman**
Diethylcarbamazine citrate 50mg/tablet
100's pack: 75.00 MRP

Parasiticidal Drugs

IVERMECTIN[48]

IVERMECTIN: Tablet
Ivermectin is a semisynthetic, avermectin-derivative anthelmintic and antiectoparasitic agent. It is available as ivermectin BP 6mg/tablet.

Ind: I. Scabies, an infestation with the mite sarcoptes scabiei. 2. Pediculosis, the three lice species that infest humans are- Pediculus humanus capitis (head louse), Phthirus pubis (crab or pubic louse), and Pediculus humanus corpus (body louse). 3. Strongyloidiasis of the intestinal tract (nondisseminated) due to the nematode parasite strongyloides stercoralis. 4. Onchocerciasis due to the nematode parasite onchocerca volvulus. 5. Cutaneous larva migrans.

C/I: It is contraindicated in patients who are hypersensitive to any component of this product.
S/E: Strongyloidiasis: Asthenia/fatigue, abdominal pain, anorexia, constipation, diarrhea, nausea, vomiting; dizziness, somnolence, vertigo, tremor; pruritus, rash and urticaria, Onchocerciasis: Arthralgia/synovitis; axillary, cervical, inguinal and other lymph node enlargement and tenderness; pruritus; skin involvement including edema, papular and pustular or frank urticarial rash, and fever; abnormal sensation in the eyes, eyelid edema, anterior uveitis, conjunctivitis, limbitis, keratitis, and chorioretinitis or choroiditis. These have rarely been severe or associated with loss of vision and have generally resolved without corticosteroid treatment. There are some other adverse reactions have been reported since the drug was registered, such as- hypotension (mainly orthostatic hypotension), worsening of bronchial asthma, toxic epidermal necrolysis, and Stevens-Johnson syndrome.

Precaution & warnings: After treatment with microfilaricidal drugs, patients with hyperreactive onchodermatitis (sowda) may be more likely than others to experience severe adverse reactions, specially edema and aggravation of onchodermatitis, rarely, patietns with onchocerciasis who are also heavily infected with loa loa may develop a serious or even fatal encephalopathy either spontaneously or following treatment with an effective microfilaricide.
Warning: Historical data have shown that microfilarcidal drugs, such as diethylcarbamazine citrate, might cause cutaneous and/or systemic reactions of varying severity (the Mazzotti reaction) and ophthalmological reactions in patients with onchocerciasis.
Pregnancy & lactation: Ivermectin does not appear to be selectively fetotoxic to the developing fetus. There are, however, no adequate and well-controlled studies in pregnant women, so, ivermectin should not be used during pregnancy since safety in pregnancy has not been established. In nursing mothers, ivermectin is excreted in breast milk in low concentrations, so, treatment of mothers who intend to breast feed should only be undertaken when the risk of delayed treatment to the mother outweighs the possible risk to the newborn.

Dosage & admin: The recommended dosages of ivermectin are as following:

1. Scabies: Dose of 200mcg/kg repeated in 7 to 14 days.

2. Pediculosis: Dose of 200mcg/kg repeated in 7 to 14 days.

3. Strongyloidiasis: Single dose of 200mcg/kg body-wt.
4. Onchocerciasis: Single dose of 150mcg/kg (may be repeated every 3 to 12 months).
5. Filariasis: Single dose of 200mcg/kg.
6. Cutaneous larva migrans: Single dose of 200mcg/kg.

Pediatric use: Safety and effectiveness in pediatric patients weighing less than 15kg have not heen established.

❖ **IVERA 6 Tab. Beximco**
Ivermectin BP 6mg/tablet
10's pack: 150.00 IP

Chapter-8
ANALGESIC & ANTIPYRETIC DRUGS

ANALGESICS

Analgesics are broadly classified in the following groups:

1. **Non-opioid analgesics**
2. **Opioid analgesics**
3. **Anti-migraine drugs**
4. **Drugs used in Trigeminal neuralgia**
5. **Drugs used in dental pain**
6. **Embrocations**

1. NON-OPIOID ANALGESICS

Non-opioid analgesics are suitable for mild to moderate pain of musculoskeletal origin. They are also effective as antipyretic drugs. Whereas the opioid drugs are more suitable for moderate to severe visceral pain and play no role in pyrexia.

Non-opioid analgesics include:

1. **Aspirin**
2. **Paracetamol**
3. **Nefopam**
4. **Other NSAIDs (discussed under anti-inflammatory drugs)**

ASPIRIN[33.52]

ASPIRIN: Tablet
Ind: Analgesic (mild to moderate pain including headache), antipyretic, anti-inflammatory and antirheumatic, anti-thrombosis (reduce platelet adhesion).
Prophylaxis of cerebrovascular disease or myocardial infarction; to reduce the risk of myocardial infarction in patients who have had a previous attack or in patients with unstable angina. Prevention of graft occlusion following aortocoronary by-pass surgery.
C/I: Children under 12 years (unless specially indicated) and in breast feeding mother, active peptic ulceration, haemophilia and other bleeding disorders. Aspirin should not be given to patients with asthma.
S/E: Side-effects are mild for usual dosage of aspirin. These are nausea, dyspepsia, gastrointestinal ulceration & bronchospasm. Aspirin may induce gastric irritation and gastrointestinal haemorrtage. There may be skin reactions in hypersensitive patients. Prolonged administration may give rise to hearing disturbances, such as tinnitus.
Cautions: Asthma or history of brochospasm; Precautios: Aspirin should be administered cautiously in uncontrolled blood pressure & in patients with history of brochospasm or asthma (if clearly needed); impaired renal or hepatic function; dyspepsia & dehydration.
It should be given with caution to patients with nasal polyps and nasal allergy.
Pregnancy & lactation: It is evident that aspirin is safe in pregnancy, but it may prolong labour and contribute to maternal and neonatal bleeding and is best avoided in the last trimester of pregnancy unless recommended by the physician. Aspirin is excreted in low concentration in breast milk, but, is unlikely to adversely affet the breast-fed infant.
Dose: Adult- 300-900mg in water, 4 to 6 hourly when necessary (usually after meal); max. 4gm. daily.
Angina pectoris- 150-300mg daily (after meal).
Acute myocardial infarction- 300mg stat & then 75-150mg daily for atleast 4 weeks.
Child under 12 years: Not recommended.
Drug Inter: Aspirin may enhance the effects of anticoagulants, oral hypoglycaemics and methotrexate and decreases the action of uricosuric drugs.

❖ **ANASPRIN-S Tab. Pharmaco Int.**
Soluble aspirin 300mg/tablet.
100's pack: 45.52 MRP
500's pack: 227.58 MRP
❖ **A.S.A-300 Tab. Apex**
Aspirin 300mg/tablet.
100's pack: 45.00 MRP
❖ **DISPRIN Tab. Reckitt Benckiser**
Soluble aspirin 300mg/tablet.
10,000's pack: 4230.00 MRP
❖ **ECOSPRIN Tab. Acme**
Aspirin 300mg/tablet (e.c)
300mg x 100's: 107.00 MRP
❖ **ENCOPRIN Tab. Medimet**
Aspirin 300mg/tablet (e.c)
70's pack: 35.00 MRP
❖ **GACOPYRIN Tab. Gaco**
Aspirin 300mg/tablet (e.c)
100's pack: 35.78 MRP
❖ **G-ASPIRIN Tab. Gonoshasthaya**
Aspirin 300mg/tablet (e.c)
100's pack: 20.00 MRP
1000's pack: 200.00 MRP

PARACETAMOL[26,42,52]

PARACETAMOL: Tablet/Suspension/Syrup/ Drop/Suppository

Paracetamol is a fast acting and safe non-opioid analgesic & antipyretic drug.

Ind: All kinds of mild to moderate pain (analgesic) and fever (antipyretic), including neuritis, neuralgia, headache, toothache, earache, body ache, myalgia, minor arthritic pain, pain due to rheumatic disorder, cold, influenza, dysmenorrhoea etc.

C/I: Severe renal function impairment & hepatic disease; known hypersensitivity to paracetamol.

S/E: Side-effects are usually mild, though haematological reactions including thrombocytopenia, leukopenia, pancytopenia, neutropenia, and agranulocytosis have been reported. Pancreatitis, skin rashes, and other allergic recations occur occasionally.

Precautions: Paracetamol should be given with care to patients with impaired kidney or liver function.

Pregnancy & lactation: Paracetamol is safe in all stages of pregnancy and lactation.

Dosage & Admin: Adult:, 0.5-1gm (1-2 tablets or 4-8 tsf syrup) 4-6 times daily, upto a maximum of 4gm in 24 hours.

Children: ***Syrup:*** **Under 3 months, usually not recommended; only can be given on doctor's advice, as for post immunization pyrexia at 2 months age- 60mg (or 1/2 tsf) or 10mg/kg (or 5mg/kg if jaundiced); 3 months to 1year- 60-120mg (1/2-1 tsf); 1 to 5 years- 1-2 tsf; 6 to 12 years- 2-4 tsf.**

These doses may be repeated every 4-6 hours when necessary (maximum of 4 doses in 24 hours).

Children: ***Paediatric drop:*** **Under 3 months, usually not recommended; only can be given on doctor's advice, as for post immunization pyrexia at 2 months age- 40mg to 60mg (or 0.5-0.75ml) or 10mg/kg (or 5mg/kg if jaundiced); 3 months to 1 year- 60mg to 120mg (0.75-1.5ml); 1 to 2 years- 120mg (1.5ml). These doses may be repeated every 4-6 hours when necessary (max. of 4 doses in 24 hours).**

Dispersible tablet: **Dispersible tablets are a better way of replacing other liquid preparations (such as syrup, suspension, drop). At the time of giving medicine to the patient one or more dispersible tablet to be placed in a teaspoon or cup, add adequate amount of water; the tablet will dissolve instantly, then give the amount (as advised or required) to the baby or patient.**

Suppository: **Children below 5 years- 125-250mg suppository 2-3 times a day; 6-12 years 250-500mg suppository 2-3 times a day; Adult- 500mg suppository 2-3 times a day. In all cases suppository should be used rectally.**

Overdosage: Moderate overdose: 4-10gm/day.

Excessive overdose: More than 10gm/day.

Symptoms of paracetamol overdose in the first 24 hours are pallor, nausea, vomiting, anorexia and abdominal pain. Liver damage may become apparent 12 to 48 hours after ingestion. Abnormalities of glucose metabolism & metabolic acidosis may occur.

In severe poisoning hepatic failure may progress to encephalopathy, coma & death.

Drug inter: Paracetamol should be given with care to patients taking other drugs that affect the liver.

Storage: Paracetamol tablet, syrup & suspension- store at a cool and dry place; protect from light and moisture. Suppository- store below 30°C.

❖ **ACE Tab. Square**
Paracetamol 500mg/tablet
500's pack: 400.00 MRP

❖ **ACE Susp. Square**
Paracetamol 120mg/5ml: suspension
60ml bot: 20.56 MRP

❖ **ACE Syp. Square**
Paracetamol 120mg/5ml: syrup
50ml bot: 18.18 MRP

❖ **ACE Drop Square**
Paracetamol 80mg/ml: paediatric drop.
15ml bot: 12.27 MRP
30ml bot: 15.67 MRP

❖ **ACE Suppo. Square**
Paracetamol 60mg, 125mg, 250mg & 500mg/stick: suppository
60mg x 10's pack: 35.00 MRP
125mg x 10's pack: 40.00 MRP
250mg x 10's pack: 50.00 MRP
500mg x 10's pack: 80.00 MRP

❖ **ACEP Tab. Zenith**
Paracetamol 500mg/tablet
200's pack: 120.00 MRP

❖ **ACEP Susp. Zenith**
Paracetamol 120mg/5ml: suspension
60ml bot: 12.70 MRP

❖ **ACEP Drop Zenith**
Paracetamol 80mg/ml: paediatric drop.
15ml bot: 10.87 MRP

❖ **ACETA Tab. Bio-pharma**
Paracetamol 500mg/tablet
200's pack: 160.00 MRP

❖ **ACETA Susp. Bio-pharma**
Paracetamol 120mg/5ml: suspension
60ml bot: 16.25 MRP

❖ **ACETA Drop Bio-pharma**
Paracetamol 80mg/ml: paediatric drop.
15ml bot: 12.25 MRP

❖ **ACETO Tab. Elixir**
Paracetamol 500mg/tablet
500's pack:

❖ **ACETOPHEN Susp. Elixir**
Paracetamol 120mg/5ml: Suspension
60ml bot:

❖ **ACT Tab. Ambee**
Paracetamol 500mg/tablet
250's pack: 200.00 MRP

❖ **ACT Susp. Ambee**
Paracetamol 120mg/5ml: suspension
60ml bot: 16.28 MRP

❖ **ACT Drop Ambee**
Paracetamol 80mg/ml: paediatric drop.
15ml bot: 12.27 MRP

❖ **ACTOL Tab. Somatec**
Paracetamol 500mg/tablet
200's pack: 160.00 MRP

❖ **ACTOL Susp. Somatec**
Paracetamol 120mg/5ml: suspension
60ml bot: 16.20 MRP

❖ **ANALPAIN Tab. Pharmadesh**
Paracetamol 500mg/tablet
500's pack: 220.00 MRP

❖ **ANALPAIN Susp. Pharmadesh**
Paracetamol 120mg/5ml: suspension
60ml bot: 15.50 MRP

❖ **ANALPAIN Drop Pharmadesh**
Paracetamol 80mg/ml: paediatric drop.
15ml bot: 12.00 MRP

❖ **ARCHI Tab. Aexim**
Paracetamol 500mg/tablet
200's pack: 100.00 MRP

❖ **ARCHI Susp. Aexim**
Paracetamol 120mg/5ml: suspension
60ml bot: 12.00 MRP

❖ **ASTA Tab. Rephco**
Paracetamol 500mg/tablet
250's pack: 200.00 MRP

❖ **ASTA Susp. Rephco**
Paracetamol 120mg/5ml: suspension
60ml bot: 16.28 MRP

❖ **ATOPEN Tab. Chemico**
Paracetamol 500mg/tablet
200's pack: 160.00 MRP
400's pack: 320.00 MRP

❖ **ATOPEN Susp. Chemico**
Paracetamol 120mg/5ml: suspension
60ml bot: 16.00 MRP

❖ **ATP Tab. General**
Paracetamol 500mg/tablet
250's pack: 200.00 MRP

❖ **ATP Susp. General**
Paracetamol 120mg/5ml: suspension
60ml bot: 16.28 MRP

❖ **CENTAMOL Tab. CPL**
Paracetamol 500mg/tablet
200's pack: 110.00 MRP

❖ **CENTAMOL Susp. CPL**
Paracetamol 120mg/5ml: suspension
60ml bot: 12.00 MRP

❖ **CETAL Tab. Supreme**
Paracetamol 500mg/tablet
24's pack: 14.40 MRP
240's pack: 144.00 MRP

❖ **CETAL Susp. Supreme**
Paracetamol 120 mg/5ml: suspension
60ml bot: 16.00 MRP

❖ **CETAM Tab. Pacific**
Paracetamol 500mg/tablet
500's pack: 326.00 MRP

❖ **CETAM Susp. Pacific**
Paracetamol 120mg/5ml: suspension
50ml bot: 11.00 MRP

❖ **CPMOL Tab. Cosmo Pharma**
Paracetamol 500mg/tablet
250's pack: 150.00 MRP

❖ **DECETAMOL Susp. Decent**
Paracetamol 120mg/5ml: suspension
60ml bot: 12.00 MRP

❖ **DEPOL Tab. Desh Pharma**
Paracetamol 500mg/tablet
400's pack: 240.00 MRP

❖ **DEPOL Susp. Desh Pharma**
Paracetamol 120mg/5ml: suspension
60ml bot: 12.73 MRP

❖ **DEPYRIN Tab. Delta**
Paracetamol 500mg/tablet
200's pack: 120.05 MRP

❖ **DEPYRIN Susp. Delta**
Paracetamol 120mg/5ml: Suspension
60ml bot: 12.00 MRP

❖ **FAP Tab. Beacon**
Paracetamol 500mg/tablet.
200's pack: 130.00 MRP

❖ **FAST Tab. Acme**
Paracetamol 500mg/tablet.
500's pack: 400.00 MRP

❖ **FAST Susp. Acme**
Paracetamol 120mg/5ml: suspension
60ml bot: 16.28 MRP

❖ **FAST Suppo. Acme**
Paracetamol 125mg, 250mg & 500mg/stick: suppository
125mg x 10's pack: 40.00 MRP
250mg x 10's pack: 50.00 MRP
500mg x 10's pack: 80.00 MRP

❖ **FEA Tab. Navana**
Paracetamol 500mg/tablet.
200's pack: 112.00 MRP

❖ **FEA Susp. Navana**
Paracetamol 120mg/5ml: suspension
60ml bot: 16.00 MRP

❖ **FEVA Tab. Ad-din**
Paracetamol 500mg/tablet
200's pack: 100.00 MRP

❖ **FEVA Susp. Ad-din**
Paracetamol 120mg/5ml: suspension
60ml bot: 12.87 MRP

❖ **FEVAC Susp. Orion**
Paracetamol 120mg/5ml: suspension
60ml bot: 16.28 MRP

❖ **FIBI Tab. Syntho**
Paracetamol 500mg/tablet
200's pack: 120.00 MRP

❖ **FIBI Susp. Syntho**
Paracetamol 120mg/5ml: suspension
60ml bot: 12.10 MRP

❖ **G-PARACETAMOL Tab. Gonoshas.**
Paracetamol 500mg/tablet
250's pack: 120.00 MRP
1000's pot: 370.00 MRP

❖ **G-PARACETAMOL Susp. Gonoshas.**
Paracetamol 250mg/5ml: Suspension
50ml bot: 11.31 MRP
100ml bot: 16.69 MRP

❖ **HEPA Tab. Hudson**
Paracetamol 500mg/tablet
500's pack: 275.00 MRP

❖ **HEPA Susp. Hudson**
Paracetamol 120mg/5ml: Suspension
60ml bot: 16.28 MRP

❖ **HIPA Tab. Rasa Pharma**
Paracetamol 500mg/tablet
250's pack: 130.00 MRP

❖ **HIPA Susp. Rasa Pharma**
Paracetamol 120mg/5ml: suspension
60ml bot: 12.00 MRP

❖ **ISPHA Tab. Globex**
Paracetamol 500mg/tablet
250's pack: 125.00 MRP

❖ **KNOCK Tab. Proteety**
Paracetamol 500mg/tablet
200's pack: 100.00 MRP
500's pack: 250.00 MRP

❖ **KNOCK Susp. Proteety**
Paracetamol 120mg/5ml: suspension
60ml bot: 16.00 MRP

❖ **M-POL Tab. Modern**
Paracetamol 500mg/tablet
200's pack: 122.00 MRP

❖ **M-POL Susp. Modern**
Paracetamol 120mg/5ml: suspension
60ml bot: 12.14 MRP

❖ **NAPA Tab. Beximco**
Paracetamol 500mg/tablet
500's pack: 400.00 MRP

❖ **NAPA DT Tab. Beximco**
Paracetamol 500mg/dispersible tablet
200's pack: 146.00 MRP

❖ **NAPA Susp. Beximco**
Paracetamol 120mg/5ml: suspension
50ml bot: 14.62 MRP
60ml bot: 16.28 MRP

❖ **NAPA Syp. Beximco**
Paracetamol 120mg/5ml: syrup
50ml bot: 18.18 MRP
60ml bot: 20.56 MRP
100ml bot: 31.66 MRP

❖ **NAPA Drop Beximco**
Paracetamol 80mg/ml: paediatric drop.
15ml bot: 12.27 MRP

❖ **NAPA Suppo. Beximco**
Paracetamol 125mg, 250mg & 500mg/stick: suppository
125mg x 20's pack: 80.00 MRP
250mg x 20's pack: 100.00 MRP
500mg x 20's pack: 160.00 MRP

❖ **NEOPARA Tab. Bristol**
Paracetamol 500mg/tablet
200's pack: 100.00 MRP

❖ **NIPA Tab. Nipa**
Paracetamol 500mg/tablet
100's pack: 65.00 MRP

❖ **NIPA Susp. Nipa**
Paracetamol 150mg/5ml: suspension
60ml bot: 12.66 MRP

❖ **NIPA Drop Nipa**
Paracetamol 80mg/ml: paediatric drop.
15ml bot: 10.87 MRP

❖ **NOVA Tab. Cosmic**
Paracetamol 500mg/tablet
200's pack: 130.00 MRP

❖ **NOVA Susp. Cosmic**
Paracetamol 120mg/5ml: suspension
60ml bot: 16.00 MRP

❖ **ORPA Tab. Belsen**
Paracetamol 500mg/tablet
100's pack: 50.00 MRP

❖ **PAINIL Tab. Kumudini**
Paracetamol 500mg/tablet
500's pack: 300.00 MRP

❖ **PAINIL Susp. Kumudini**
Paracetamol 120mg/5ml: suspension
60ml bot: 16.00 MRP

❖ **PANA Tab. Skylab**
Paracetamol 500mg/tablet
200's pack: 67.50 MRP

❖ **PARA Tab. Amico**
Paracetamol 500mg/tablet
200's pack: 100.00 MRP

❖ **PARA Susp. Amico**
Paracetamol 120mg/5ml: Suspension
60ml bot: 12.00 MRP

❖ **PARA Drop Amico**
Paracetamol 80mg/ml: paediatric drop.
15ml bot: 10.00 MRP

❖ **PARA-C Tab. Chemist**
Paracetamol 500mg/tablet
100's pack: 50.00 MRP

❖ **PARA-C Susp. Chemist**
Paracetamol 120mg/5ml: suspension
60ml bot: 11.63 MRP

❖ **PARACETAMOL Tab. SAPL**
Paracetamol 500mg/tablet
200's pack: 120.00 MRP

❖ **PARACETAMOL Tab. Ziska**
Paracetamol 500mg/tablet
200's pack: 115.00 MRP
500's pack: 175.00 MRP

❖ **PARAFEN Susp. Ziska**
Paracetamol 120mg/5ml: suspension
60ml bot: 16.28 MRP

❖ **PARAMOL Tab. Seema**
Paracetamol 500mg/tablet
200's pack: 130.00 MRP

❖ **PARAMOL Susp. Seema**
Paracetamol 120mg/5ml: suspension
60ml bot: 20.00 MRP

❖ **PARAPYROL Tab. Glaxosmithkline**
Paracetamol 500mg/tablet
500's pack: 360.00 MRP

❖ **PARAPYROL Susp. Glaxosmithkline**
Paracetamol 120mg/5ml: suspension
60ml bot: 16.28 MRP

❖ **PARAXIA Tab. Pharmasia**
Paracetamol 500mg/tablet
200's pack: 130.00 MRP

❖ **PARAXIA Susp. Pharmasia**
Paracetamol 120mg/5ml: suspension
60ml bot: 16.28 MRP

❖ **POL Tab. Globe**
Paracetamol 500mg/tablet
500's pack: 325.00 MRP

❖ **POL Susp. Globe**
Paracetamol 120mg/5ml: suspension
60ml bot: 20.56 MRP

❖ **PREDUET Tab. Silva**
Paracetamol 500mg/tablet
250's pack: 200.00 MRP

❖ **PREDUET Susp. Silva**
Paracetamol 120mg/5ml: suspension
60ml bot: 16.00 MRP

❖ **PREFER Tab. Marksman**
Paracetamol 500mg/tablet
300's pack: 165.00 MRP

❖ **PREFER Susp. Marksman**
Paracetamol 120mg/5ml: suspension
60ml bot: 12.00 MRP

❖ **PROMEL Susp. Apollo**
Paracetamol 120mg/5ml: suspension
60ml bot: 12.80 MRP

❖ **PYRAC Tab. Medimet**
Paracetamol 500mg/tablet
500's pack: 325.00 MRP

❖ **PYRAC Susp. Medimet**
Paracetamol 120mg/5ml: suspension
50ml bot: 18.18 MRP
60ml bot: 16.25 MRP

❖ **PYRALGIN Tab. Renata**
Paracetamol 500mg/tablet
500's pack: 400.00 MRP.

❖ **PYRALGIN Susp. Renata**
Paracetamol 120mg/5ml: Suspension

60ml bot: 16.28 MRP

❖ **PYRAMOL Tab. Peoples Pharma**
Paracetamol 500mg/tablet
250's pack: 140.00 MRP

❖ **REMALGIN Tab. Reman**
Paracetamol 500mg/tablet
250's pack: 150.00 MRP

❖ **REMALGIN Susp. Reman**
Paracetamol 125mg/5ml: suspension
60ml bot: 14.00 MRP

❖ **RENOVA Tab. Opsonin**
Paracetamol 500mg/tablet
250's pack: 155.00 MRP

❖ **RENOVA Susp. Opsonin**
Paracetamol 150mg/5ml: suspension
60ml bot: 12.88 MRP

❖ **RENOVA Drop Opsonin**
Paracetamol 80mg/ml: paediatric drop.
15ml bot: 10.87 MRP

❖ **RENOVA Suppo. Opsonin**
Paracetamol 125mg, 250mg & 500mg/stick: suppository
125mg x 10's pack: 40.00 MRP
250mg x 10's pack: 50.00 MRP
500mg x 10's pack: 80.00 MRP

❖ **RESET Tab. Incepta**
Paracetamol 500mg/tablet
200's pack: 160.00 MRP

❖ **RESET Susp. Incepta**
Paracetamol 125mg/5ml: suspension
60ml bot: 16.28 MRP

❖ **RESET Drop Incepta**
Paracetamol 80mg/ml: paediatric drop.
15ml bot: 12.27 MRP

❖ **SERIDOL Tab. Sonear**
Paracetamol 500mg/tablet
100's pack: 65.00 MRP
500's pack: 325.00 MRP

❖ **SILPA Tab. Silva**
Paracetamol 500 mg/tablet.
250's pack: 150.00 MRP

❖ **SILPA Susp. Silva**
Paracetamol 125mg/5ml: suspension
60ml bot: 16.00 MRP

❖ **SINAPOL Tab. Ibn Sina**
Paracetamol 500 mg/tablet.
250's pack: 200.00 MRP

❖ **SINAPOL Susp. Ibn Sina**
Paracetamol 125mg/5ml: suspension
60ml bot: 16.28 MRP

❖ **SKYMOL Susp. Skylab**
Paracetamol 125mg/5ml: suspension.
60ml bot: 10.00 MRP
30ml bot: 7.00 MRP

❖ **TAMEN Tab. SK+F**
Paracetamol 500mg/tablet
500's pack: 397.50 MRP

❖ **TAMEN Susp. SK+F**
Paracetamol 120mg/5ml: suspension
60ml bot: 16.58 MRP
100ml bot: 24.53 MRP

❖ **TAMEN Drop SK+F**
Paracetamol 80mg/ml: paediatric drop.
15ml bot: 12.26 MRP

❖ **TAMOL Tab. Apex**
Paracetamol 500mg/tablet.
500's pack: 300.00 MRP

❖ **TAMOL Susp. Apex**
Paracetamol 120mg/5ml: suspension
60ml bot: 16.00 MRP

❖ **TANDAMOL Tab. Medicon**
Paracetamol 500mg/tablet.
300's pack: 180.00 MRP

❖ **TANDAMOL Susp. Medicon**
Paracetamol 120mg/5ml: suspension
60ml bot: 18.00 MRP

❖ **TEMPAC Tab. Hallmark**
Paracetamol 500mg/tablet.
200's pack: 120.00 MRP

❖ **TEMPAC Susp. Hallmark**
Paracetamol 120mg/5ml: suspension
60ml bot: 16.28 MRP

❖ **TEMPIL Tab. Alco Pharma**
Acetaminophen 500mg/tablet.
500's pack: 400.00 MRP

❖ **TEMPIL Susp. Alco Pharma**
Acetaminophen 120mg/5ml: suspension
60ml bot: 16.28 MRP

❖ **TEMPOL Tab. Asiatic**
Paracetamol 500mg/tablet.
200's pack: 130.00 MRP

❖ **TIMIDAL Tab. Gaco**
Paracetamol 500mg/tablet
250's pack: 149.00 MRP

❖ **TIMIDAL Susp. Gaco**
Paracetamol 120mg/5ml: Suspension
60ml bot: 16.28 MRP

❖ **TYDENOL Tab. Edruc**
Paracetamol 500mg/tablet
200's pack: 102.00 MRP

❖ **TYDENOL Susp. Edruc**
Paracetamol 120mg/5ml: suspension
60ml bot: 15.00 MRP

❖ **TYLEN Tab. RAK Pharma**
Paracetamol 500mg/tablet
200's pack: 160.00 MRP

❖ **TYNOL Tab. Salton**
Paracetamol 500mg/tablet
500's pack: 325.00 MRP

❖ **TYNOL Susp. Salton**
Paracetamol 120mg/5ml: suspension
60ml bot: 16.28 MRP

❖ **XCEL Tab. ACI**
Paracetamol 500mg/tablet
500's pack: 400.00 MRP

❖ **XCEL DT Tab. ACI**
Paracetamol 120mg/dispersible tablet
100's pack: 73.00 IP

❖ **XCEL Susp. ACI**
Paracetamol 120mg/5ml: suspension
60ml bot: 16.28 MRP

❖ **XCEL Paed. Drop ACI**
Paracetamol 80mg/ml: paediatric drop.
15ml bot: 12.27 MRP

❖ **XPA Tab. Aristopharma**
Paracetamol 500mg/tablet
250's pack: 200.00 MRP

❖ **XPA Susp. Aristopharma**
Paracetamol 120mg/5ml: suspension
60ml bot: 16.28 MRP
100ml bot: 24.53 MRP

❖ **XPA Drop Aristopharma**
Paracetamol 80mg/ml: paediatric drop.
15ml bot: 12.26 MRP

❖ **ZERIN Tab. Jayson**
Paracetamol 500mg/tablet
500's pack: 400.00 MRP

❖ **ZERIN Susp. Jayson**
Paracetamol 120mg/5ml: suspension
60ml bot: 16.28 MRP.

❖ **ZERIN Drop Jayson**
Paracetamol 80mg/ml: paediatric drop.
15ml bot: 12.27 MRP

❖ **2 A Tab. Mystic**
Paracetamol 500mg/tablet
500's pack: 325.00 MRP

❖ **2 A Susp. Mystic**
Paracetamol 120mg/5ml: suspension
60ml bot: 16.28 MRP

PARACETAMOL + CAFFEINE[124]

PARACETAMOL + CAFFEINE: Tablet
Pracetamol BP 500mg and caffeine BP 65mg/tablet (film-coated).

Ind: It is indicated for the relief of fever, migraine and headache, common colds and flu, sore throat, earache, toothache, backache, rheumatic and muscular pain, neuralgia and menstrual pain.

C/I: Patients with known hypersensitivity to paracetamol, caffeine or any other components of the product.

Precaution: It should be used with caution in severe liver or kidney disease.
S/E: In recommended doses, it is usually free from side effects. However, skin reactions such as urticaria have been reported rarely.

Pregnancy & lactation: Although there is epidemiological evidence of the safety of paracetamol in pregnancy and lactation, medical advice should be sought before using this product.

Dosage & admin: Adults & adolescents over 12 years: 1-2 tablets in every 4 hours, or as needed. Maximum dose is 8 tablets in 24 hours. Drug inter: The ingredients of this combination may interact with anticoagulant agents on prothrombin time. The liver effects of it may be increased by the use of alcohol and concomitant use of certain drugs which enhance the metabolism of paracetamol in the liver (i.e barbiturates, tricyclic antidepressants).

❖ **ACE Plus Tab. Square**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
200's pack: 300.00 MRP

❖ **ACEP Plus Tab. Zenith**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **ACETA-X Tab. Bio-pharma**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **ACT Plus Tab. Ambee**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **ARCHI Extra Tab. Aexim**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **ASTA Plus Tab. Rephco**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 190.00 MRP

❖ **ATOPEN Plus Tab. Chemico**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 150.00 MRP
200's pack: 300.00 MRP

❖ **BENALGIN Plus Tab. Benham**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 146.00 MRP

❖ **CAFCETA Tab. Peoples**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
200's pack: 300.00 MRP

❖ **CAFEDON Tab. Healthcare**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
200's pack: 300.00 MRP

❖ **CAFENOL Tab. General**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **CAFFO Tab. Somatec**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **CAF-N Tab. Globex**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **CETAM Plus Tab. Pacific**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
200's pack: 380.00 MRP

❖ **CLOFAMOL Tab. Ziska**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
200's pack: 300.00 MRP

❖ **CPMOL Plus Tab. Cosmo Pharma**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 200.00 MRP

❖ **DC-Plus Tab. Decent**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **DEPOL EXTRA Tab. Desh Pharma**
Paracetamol BP 500mg + caffeine BP 65mg/tablet (film-coated).
100's pack: 140.00 MRP

❖ **DUET Tab. Silva**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
200's pack: 300.00 MRP

❖ **FAP Plus Tab. Beacon**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
200's pack: 300.00 MRP

❖ **FAST PLUS Tab. Acme**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **FEA Plus Tab. Navana**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **FEVA Plus Tab. Ad-din**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 137.00 MRP

❖ **FIBI Plus Tab. Syntho**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **GESIC Plus Tab. Popular**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 150.00 IP

❖ **HEDEX Tab. Orion**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **HEPA-Plus Tab. Hudson**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 150.00 IP

❖ **KNOCK Plus Tab. Proteety**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **K-POL Tab. Modern**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **NAPA EXTRA Tab. Beximco**
Paracetamol BP 500mg + caffeine BP 65mg/tablet (film-coated).
200's pack: 380.00 MRP

❖ **NEOPARA Plus Tab. Bristol**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **NOVA Plus Tab. Cosmic**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **PAC Tab. Ibn Sina**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated)
60's pack: 90.00 MRP
200's pack: 300.00 MRP

❖ **PACE Tab. Marksman**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
200's pack: 300.00 MRP

❖ **PAINIL Plus Tab. Kumudini**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
200's pack: 300.00 MRP

❖ **PANADOL Extra Tab. GlaxoSmithKline**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
200's pack: 300.00 MRP

❖ **PARA-C Tab. Amico**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **PARACET Plus Tab. White Horse**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
50's pack: 125.00 MRP

❖ **PARACIN Tab. Pharmadesh**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 100.00 MRP

❖ **PARA-CAF Tab. Seema**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **PARAXIA-Plus Tab. Pharmasia**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
100's pack: 150.00 IP

❖ **PAX Tab. SAPL**
Paracetamol BP 500mg + caffeine USP 65mg/tablet (film-coated).
200's pack: 300.00 MRP

❖ **P+C Tab. Alco Pharma**
Paracetamol BP 500mg + caffeine BP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **POL Plus Tab. Globe**
Paracetamol BP 500mg + caffeine BP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **PROMEL Plus Tab. Apollo**
Paracetamol BP 500mg + caffeine BP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **PYRA Plus Tab. Renata**
Paracetamol BP 500mg + caffeine BP 65mg/tablet (film-coated).
150's pack: 225.00 MRP

❖ **PYRENOL Tab. Delta**
Paracetamol BP 500mg + caffeine BP 65mg/tablet (film-coated).
200's pack: 300.01 MRP

❖ **RENOVA Plus Tab. Opsonin**
Paracetamol BP 500mg + caffeine BP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **RESET Plus Tab. Incepta**
Paracetamol BP 500mg + caffeine BP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **TAMEN-X Tab. SK+F**
Paracetamol BP 500mg + caffeine BP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **TAMOL Plus Tab. Apex**
Paracetamol BP 500mg + caffeine BP 65mg/tablet (film-coated).

100's pack: 150.00 MRP

❖ **TANDAMOL Plus Tab. Medicon**
Paracetamol BP 500mg + caffeine BP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **TEMPOL Plus Tab. Asiatic**
Paracetamol BP 500mg + caffeine BP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **TEMRIF Plus Tab. MonicoPharma**
Paracetamol BP 500mg + caffeine BP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **TYLEN Plus Tab. RAK Pharma**
Paracetamol BP 500mg + caffeine BP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **TY- PLUS Tab. Edruc**
Paracetamol BP 500mg + caffeine BP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **U-PA Tab. Ultra Pharma**
Paracetamol BP 500mg + caffeine BP 65mg/tablet (film-coated).
100's pack: 150.00 MRP

❖ **XCEL Plus Tab. ACI**
Paracetamol BP 500mg + caffeine BP 65mg/tablet (film-coated).
200's pack: 300.00 IP

❖ **XPA-C Tab. Aristopharma**
Paracetamol BP 500mg + caffeine BP 65mg/tablet (film-coated).
200's pack: 380.00 MRP

❖ **ZERIN-XP Tab. Jayson**
Paracetamol BP 500mg + caffeine BP 65mg/tablet (film-coated).
100's pack: 150.00 IP

NEFOPAM[42]

NEFOPAM: Tablet/Injection
Nefopam is a centrally acting mild to moderate non-opioid analgesic with a rapid onset of action. The main site of action appears to be in the central nervous system both at the brain and spinal levels.
Nefopam is totally different from the other centrally acting opioid analgesics such as morphine, codeine, pentazocine and propoxyphene. Unliike the narcotic agents, nefopam has been shown not to cause respiratory depression. There is no evidence for pre-clinical research of habituation occurring with nefopam.
Nefopam is available as: 1. Nefopam hydrochloride INN 30mg film coated tablet; 2. Nefopam hydrochloride INN 20mg/1ml ampoule for injection.

Mode of action: Nefopam is a centrally acting analgesic. In vitro experiments have shown that, nefopam inhibits the re-uptake of various catecholamines (including noradrenaline, serotonin and dopamine). It is possible that, the mechanism of action of nefopam is at least in part by altering the levels of these neuromodulators in the brain and at the spinal level.
Ind: Nefopam is most commonly used to treat pain after surgery, dental pain, muscular pain and pain associated with cancer.
Nefopam should not be used to treat the pain from a heart attack.
C/I: Nefopam is contraindicated in patients with a history of convulsive disorders and should not be given to patients taking monoamine oxidase (MAO) inhibitors.
Nefopam should not be used in the treatment of myocardial infarction. This advice is based on the lack of clinical experience for this indication.
S/E: More commonly- nausea, nervousness, dry mouth, lightheadedness and urinary retention may occur. Less commonly- vomiting blurred vision, drowsiness, sweating, insomnia, headache, confusion, hallucinations, tachycardia and aggravation of angina have been reported. Rarely a temporary harmless pink discolouration of the urine has occurred.
Precautions & warnings: Hepatic and renal insufficiency may interfere with the metabolism and excretion of nefopam. Nefopam should be used with caution in patients with glaucoma and with or at risk of urinary retention. Nefopam may cause adverse sympathomimetic effects including tachycardia and aggravation or precipitation of angina. Caution should be exercised in patients with a history of ischaemic heart disease.
Pregnancy & lactation: Nefopam is not recommended for pregnant women or those likely to become pregnant unless the expected benefit to the mother outweighs any potential risk to the foetus.
Nefopam is excreted in human milk. A decision should be made whether to discontinue nursing or discontinue the medication, taking into account the potential for adverse effects for the foetus and the importance of treatment to the mother.

Dosage & admin: ***By injection:*** **20mg (1ml) i.m or i.v, repeated if necessary every six hours. Onset of effect after i.m injection is within 15 to 20 minutes and peak effect is reached 1 to $1^{1}/_{2}$ hours after administration.**
Nefopam injection should always be given with the patient lying down and after injection the patient should remain lying down for 15 to 20 minutes. The patient should then get up slowly.
Treatment started with nefopam injection may be continued with nefopam tablets. 60mg nefopam (2 tablets) is approximately bioequivalent to 20mg (1 ampoule) given by injection.
By mouth (tablet): Adults: **The usual starting dose is 60mg (2 tablets) taken three times daily. This may be increased up to a maximum of 90mg (3 tablets) taken 3 times a day.**
Elderly: **Elderly patients may require reduced dosage due to slower metabolism. It is strongly recommended that the starting dose does not exceed 30mg (1 tablet) 3 times daily as the elderly appear more susceptible to, in particular, the CNS side effects of nefopam and some cases of hallucination and confusion have been reported in this age group.**
Children: **Nefopam is not recommended for children under the age of 12 years.**
Missing dose: **If there in missing a dose, it should be taken as soon as it is remembered. Then carry on taking the tablets as recommended by the doctor.**
Overdose: *Symptoms and signs:* Nefopam toxicity is manifested by neurological symptoms (convulsions, hallucinations, agitation) and cardiovascular response (tachycardia with hyperdynamic circulation).
Treatment: Supportive treatment is suggested including gastric lavage, forced emesis and diuresis. Oral administration of activated charcoal may help prevent absorption. Convulsions and hallucinations may be controlled (e.g. with diazepam i.v or i.m or p.r). Beta-adrenergic blockers may be of use in controlling the cardiovascular complications.
Drug inter: The side effects of nefopam may be additive to those of other agents with anticholinergic or sympathomimetic activity. Nefopam should be used with caution in patients on tricyclic anti-depressants and is contraindicated in patients on MAO inhibitors.

❖ **ACUTEN Tab. ACI**
Nefopam hydrochloride INN 30mg/tablet (f.c)
30mg x 60's pack: 180.00 IP

❖ **ACUTEN Inj. ACI**
Nefopam hydrochloride INN 20mg/1ml ampoule: i.m/i.v injection.
1ml amp x 10's pack: 150.00 IP

❖ **EFOPAM Tab. SK+F**
Nefopam hydrochloride INN 30mg/tablet (f.c)
30mg x 60's pack: 180.00 MRP

❖ **NEFOREX Tab. Incepta**
Nefopam hydrochloride INN 30mg/tablet (f.c)
30mg x 30's pack: 90.00 MRP

❖ **NEFOREX Inj. Incepta**
Nefopam hydrochloride INN 20mg/1ml ampoule: i.m/i.v injection.
1ml amp x 5's pack: 75.00 MRP

❖ **XRIPA Tab. Square**
Nefopam hydrochloride INN 30mg/tablet (f.c)
30mg x 60's pack: 180.00 MRP

❖ **XRIPA Inj. Square**
Nefopam hydrochloride INN 20mg/1ml ampoule: i.m/i.v injection.
1ml amp x 10's pack: 150.00 MRP

2. OPIOID ANALGESICS[21]

Opioid analgesics: opioid analgesics are used to relieve moderate to severe pain particularly of visceral origin. Repeated use of these drugs may cause dependence and tolerence.
Opioid analgesics have got many side-effects common to all though qualitative & quantitative differences exist. The most commons include- nausea, vomiting, constipation, and drowsiness. Larger doses produce respiratory depression and hypotension. Among the opioid analgesics, morphine remains the most valuable and standard one, against which other opioid analgesics are compared.
Opioid analgesics include:
Morphine, Buprenorphine Codeine & dihydrocodeine, Dextromoramide, Dextropropoxyphene, Diamorphine (heroin), Diphenoxylate, Dipipanone,

Fentanyl, alfentanil & remifentanil (used for intra-operative analgesia), Meptazinol, Methadone, Nalbuphine, Oxycodone, Papaveretum, Pentazocine, Pethidine, Phenazocine, Tramadol

MORPHINE[21,33]

MORPHINE: Tablet/Syrup/ Injection.
Ind: Severe and intractable pain (e.g. pain of myocardial infarction, acute pancreatitis etc); pre-operative & post-operative medication, enhancemen of anaesthesia; acute pulmonary oedema.
C/I: Acute respiratory depression, obstructive airway diseases; hepatic insu fficiency; acute abdomen; raised intracranial pressure, head injury; acute alcoholism; concurrent admin. of other opiates; with or within 2 weeks of MAOIs.
S/E: Drug dependence and addiction; nausea, vomiting, severe constipation, respiratory depression, drawsiness, difficulty in micturition, ureteric and biliary spasm, sweating, dry mouth, facial flushing, vertigo, bradycardia, palpitation, postural hypotension, hypothermia, hallucination, mode change, miosis, articaria, pruritus.
Cautions: Hypotension, hypothyroidism, asthma, (avoid during attack) and decreased respiratory reserve, prostatic hypertrophy; pregnancy, labour and breast-feeding; may precipitate coma in hepatic impairment (reduce dose or avoid but many such patients tolerate morphine well); reduce dose or avoid in renal impairment; elderly and debilitated (reduce dose); convulsive disorders, dependence (severe withdrwal symptoms if withdrawn abruptly); use of cough suppressants containing opioid analgesics not generally recommended in children and should be avoided altogether in those under at least 1 year; concurrent admin. of CNS depressants.

Dosage & admin: ***Parenteral preparation:***
Acute pain- **By s.c or by i.m injection, 10mg every 4 hours (if necessary, 15mg for heavier patients); Child, up to 1 month 150mcg/kg, 1-12 months 200mcg/kg, 1-5 years 2.5-5mg, 6-12 years 5-10mg. By slow i.v injection, quarter to half corresponding i.m dose.**
Pre-operative sedation: **By s.c or i.m injection up to 10mg 60-90 minutes before operation; Child, by i.m injection 150mcg/kg.**
Post-operative pain: **By s.c or i.m injection, 10mg every 2-4 hours (if necessary, 15mg for heavier patients); Child up to 1 month 150mcg/kg, 1-12 months 200mcg/kg, 1-5 years 2.5-5mg, 6-12 years 5-10mg.**
Myocardial infarction: **By slow i.v injection (2mg/minute), 10mg followed by a further 5-10mg if necessary; elderly or frail patients, reduce dose by half.**
Acute pulmonary oedema: **By slow i.v injection (2mg/minute) 5-10mg.**
Chronic pian: **By s.c or i.m injection 5-20mg regularly every 4 hours dose may be increased according to needs.**
Oral preparation: **Dosage- see below under the individual product.**

❖ **G-MORPHINE SR Tab. Gonoshasthaya**[21]
Morphine sulphate 15mg/tablet (sustained release).
Dosage & admin: 1 tablet every 12 hourly; dose adjusted according to daily morphine requirements.
For further information- please consult manufacturer's literature.
30's pack: 300.00 MRP

❖ **G-MORPHINE Inj. Gonoshasthaya**
Morphine sulphate 15mg/1ml ampoule: injection.
Dosage & admin: See above under the text.
5 amps pack: 101.15 MRP

❖ **MORPHINEX Inj. Popular**
Morphine sulphate 15mg/1ml ampoule: i.m/i.v injection.
Dosage & admin: See above under the text.
5 amps pack: 101.15 MRP

NALBUPHINE[26]

NALBUPHINE HCl: Injection
Nalbuphine is a synthetic opioid analgesic. It is available as nalbuphine hydrochloride INN 10mg in 1ml ampoule and 20mg in 2ml ampoule for i.m and i.v injection.
Mode of action: Nalbuphine hydrochloride binds with mu, kappa and delta receptor. Its analgesic potency is equivalent to morphine on a milligram basis and 10 times more than that of pentazocine but has lower side effects and less abuse potential than morphine. The onset of action of nalbuphine occurs within 2 to 3 minutes after i.v administration and in less than 15 minutes following i.m injection.
Ind: i. Relief of moderate to severe pain associated with myocardial infarction (MI); ii. as a supplement of balanced anesthesia; iii. pre-operative and post-operative analgesia; iv. obstetrical analgesia during labor and delivery.
C/I: Known hypersensitivity to nalbuphine hydrochloride.
S/E: Generally nalbuphine is well tolerated. However, few side-effects like sedation, sweating, nausea, vomiting, dizziness, vertigo, dry mouth, headache, respiratory depression, dyspnea and asthma may be seen.
Precautions: Caution should be taken in the following conditions: impaired respiration, impaired renal or hepatic function, billiary tract surgery, myocardial infarction and hypotension.
Pregnancy & lactation: The placental transfer of nalbuphine is high and rapid. There are no adequate and well-controlled studies in pregnant women. This drug should be used during pregnancy only if clearly needed.
Less than 1% of the administered dose is excreted in the breast-milk. However, cautions should be exercised when nalbuphine is administered to a nursing mother.
Dosage & admin: ***Moderate to severe pain:*** **By i.v or i.m injection 10-20mg for 70kg patients, adjusted as required. Child up to 0.3mg/kg repeated once or twice as necessary.**
In balanced anesthesia: By i.v or i.m injection 0.1-0.2mg/kg.
Obstetrical analgesia during labor and delivery: **By i.v injection 0.3-1mg/kg over 10-15 minutes with maintenance dose of 0.25-0.5mg/kg in single i.v administration as required.**
Intra-operative analgesia: **By i.v injection 0.25-0.5mg/kg at 30 minutes intervals.**
Myocardial infarction: **By slow i.v injection 10-20mg repeated after 30 minutes if necessary. Larger dose is required when used as supplement of anesthesia than that required for analgesia.**
Children from 18 months to 15 years old: **Usually 0.2mg/kg given preferably by i.v or i.m injection. Maintenance doses may be given at intervals of 4 to 6 hours or the doses must be determined by the physician.**
Drug inter: No hazardous interactions have been identified with nalbuphine; however, interactions described with other opioids may be anticipated. Patient receiving a narcotic analgesic, general anesthesia, phenothiazines or other tranquilizers, sedatives, hypnotics, or other CNS depressants (including alcohol) concomitantly with nalbuphine may exhibit an additive effect.

❖ **NALBUN Inj. Incepta**
Nalbuphine hydrochloride INN 10mg in 1ml ampoule and 20mg in 2ml ampoule: i.m/i.v injection.
1ml (10mg) amp x 5's pack: 300.00 MRP
2ml (20mg) amp x 5's pack: 500.00 MRP

❖ **NALPHIN Inj. Acme**
Nalbuphine hydrochloride INN 10mg in 1ml ampoule and 20mg in 2ml ampoule: i.m/i.v injection.
1ml (10mg) amp x 5's pack: 300.00 MRP
2ml (20mg) amp x 5's pack: 500.00 MRP

❖ **RALTROX Inj. Opsonin**
Nalbuphine hydrochloride INN 10mg in 1ml ampoule and 20mg in 2ml ampoule: i.m/i.v injection.
1ml (10mg) amp x 3's pack: 180.00 MRP
2ml (20mg) amp x 1's pack: 100.00 MRP

PETHIDINE[21,33]

PETHIDINE HCl: Injection.
Ind: Moderate to severe pain; pre-anaesthetic medication; post-operative pain; obstetrical analgesia.
C/I: Comatose states; respiratory depression; obstructive airway disease; with or within 2 weeks. of MAOIs.
S/E: Dependence & addiction; dizziness, nausea, vomiting, tachycardia. Cardiovascular and resp. depression.
Cautions: Severe renal or hepatic impairment; head injury; hypothyroidism; pregnancy & labour; concurrent admn. of alcohol and CNS depressants.
Dosage & admin: Adult: ***General analgesia:*** **50-100 mg i.m daily four to six hourly or as reqd. 25-50 mg by slow i.v. injection.**
Pre-anaesthetic: **100mg i.m.**
Obstetrical analgesia: **50-100 mg. i.m. repeat 1-3 hours later if necessary. Max. 400mg. in 24 hours.**
Children: ***General analgesia:*** **Upto 1 year 1-2mg/kg; 1-5 years, 12.5-25mg; 6-12 years, 25-50mg by i.m injection as or when required.**
Pre-anaesthetic: **Under 8 years, not**

recommended; 8-12 years, 50mg intramuscularly.

❖ **G-PETHIDINE Inj. Gonoshasthaya**
Pethidine hydrochloride 100mg/2ml ampoule: i.m/i.v injection.
2ml amp x 5's pack: 75.85 MRP

TRAMADOL[21,77]

TRAMADOL HCl: Tablet/Sachet/Capsule/ Injection
Tramadol is an opioid analgesic, but its analgesic effect exarts by two ways: an opioid effect and an enhancement of serotoninergic and adrenergic pathways.
Ind: Moderate to severe acute pain, chronic pain, diagnostic procedures and surgical pain.
C/I: Acute intoxication with alcohol, hypnotics, analgesics or psychotropics. Narcotic with drawal treatment. Avoid in pregnancy and breast-feeding.
S/E: It is repoted to have fewer of the typical opioid side-effects notably, less respiratory depression, less constipation and less addiction potential; hypotension and occasionally hypertension also reported; sweating, dizziness, nausea, vomiting, dry mouth and fatigue; In rare cases, headache retching, g.i irritation, skin reactions, motorial weakness, appetite changes, micturition disorders, psychic side effects e.g mood, perception & activity changes.
Precautions: Opioid dependence; reduced level of consciousness of unclear origin; resp. disorders; increased intracranial pressure. Patients known to suffer from convulsions. Capacity to drive or operate machines may be impaired, specially if taken with alcohol.
Not suitable as subsitute in opioid dependent patients. General anaesthesia, not recommended for analgesia during potentially very light planes of general anaesthesia (possibly increased operative recall reported).
Dosage & admin: Adults & adolescents over 14 years of age: By mouth, 50-100mg not more often than every 4 hours; total of more than 400mg daily not usually required;
By suppository (rectal use), 50-100mg not more often than every 4 hours; total of more than 400mg daily not usually required;
By i.m injection or by i.v injection (over 2-3 minutes) or by i.v infusion, 50-100mg every 4-6 hours.
Post-operative pain, 100mg initially then 50mg every 10-20 minutes if necessary during first hour to total max. 250mg (including initial dose) in first hour, then 50-100mg every 4-6 hours, max. 600mg daily.
Children: Not recommended.
Drug inter: Sedative effects of some CNS drugs may be enhanced. Avoid concurrent administration of MAOIs.

❖ **ANADOL Cap. Square**
Tramadol hydrochloride 50mg/capsule
30's pack: 240.00 MRP
❖ **ANADOL Inj. Square**
Tramadol hydrochloride 100mg/2ml ampoule: injection
10 amps pack: 200.00 MRP
❖ **ANADOL Suppo. Square**
Tramadol hydrochloride 100mg/suppository
10's pack: 150.00 MRP
❖ **DOLAN Cap. Techno Drugs**
Tramadol hydrochloride INN 50mg/capsule
30's pack: 180.00 MRP
❖ **DOLAN Inj. Techno Drugs**
Tramadol hydrochloride INN 100mg/2ml ampoule: i.m/i.v injection
10 amps pack: 180.00 MRP
❖ **DOLONIL Cap. Acme**
Tramadol hydrochloride 50mg/capsule
20's pack: 150.00 IP
❖ **DOLONIL SR Tab. Acme**
Tramadol hydrochloride 100mg/tablet (sustained release)
16's pack: 224.00 IP
❖ **DOLONIL Inj. Acme**
Tramadol hydrochloride 100mg/2ml ampoule: i.m/i.v injection
5 amps pack: 100.00 MRP
❖ **DOLORAN Cap. Sandoz/Novartis**
Tramadol hydrochloride 50mg/capsule
30's pack: 227.70 MRP
❖ **DOLORAN Inj. Sandoz/Novartis**
Tramadol hydrochloride 100mg/2ml ampoule: injection
5 amps pack: 200.00 MRP
❖ **DOLORAN PR Tab. Sandoz/Novartis**
Tramadol hydrochloride 100mg/tablet (per rectal)
30's pack: 42w0.00 MRP
❖ **DOLORAN Suppo. Sandoz/Novartis**
Tramadol hydrochloride 100mg/suppository
10's pack: 200.00 MRP
❖ **DOLOREX Inj. Bio-pharma**
Tramadol hydrochloride 100mg/2ml ampoule: injection
5 amps pack: 100.00 MRP
❖ **IMADOL 50 Cap. Delta**
Tramadol hydrochloride 50mg/capsule
30's pack: 224.99 MRP
❖ **KADOL Cap. Chemico**
Tramadol hydrochloride 50mg/capsule
30's pack: 210.00 MRP
❖ **LUCIDOL Cap. Beximco**
Tramadol hydrochloride 50mg/capsule
50mg x 30's pack: 225.00 IP
❖ **OPIDOL Cap. Navana**
Tramadol hydrochloride 50mg & 100mg/capsule
50mg x 30's pack: 180.00 MRP
100mg x 20's pack: 200.00 MRP
❖ **PENDOL Cap. Alco Pharma**
Tramadol hydrochloride 50mg/capsule
50mg x 30's pack: 180.00 MRP
❖ **RAPIDOL Inj. Renata**
Tramadol hydrochloride 100mg/2ml ampoule: injection
5 amps pack: 125.00 MRP
❖ **SYNDOL Cap. Healthcare**
Tramadol hydrochloride 50mg/capsule
50mg x 30's pack: 240.00 MRP
❖ **SYNDOL Inj. Healthcare**
Tramadol hydrochloride 100mg/2ml ampoule: injection
5 amps pack: 110.00 MRP
❖ **TAMADOL Cap. Mystic**
Tramadol hydrochloride 50mg/capsule
50mg x 30's pack: 217.50 MRP
❖ **TENDIA Cap. ACI**
Tramadol hydrochloride 50mg/capsule
30's pack: 225.00 IP
❖ **TENDIA Inj. ACI**

Tramadol hydrochloride 100mg/2ml ampoule: injection
5 amps pack: 100.00 IP
❖ **TRAMADOL Cap. Amico**
Tramadol hydrochloride 50mg/capsule
50mg x 30's pack: 180.00 MRP
❖ **TRAMAL Cap. Grunenthal/ UniHealth**
Tramadol hydrochloride 50mg/capsule
50mg x 30's pack: 381.30 MRP
❖ **TRAMAL Rtd. Tab. Grunenthal/ UniMed**
Tramadol hydrochloride 100mg/tablet (retard).
100mg x 30's pack: 791.50 MRP
❖ **TRAMAL Inj. Grunenthal/UniHealth**
Tramadol hydrochloride 100mg/2ml ampoule: injection
5 amps pack: 317.90 MRP
❖ **TRAMAL Suppo. Grunenthal/ UniHealth**
Tramadol hydrochloride 100mg/suppository.
5's pack: 193.75 MRP
❖ **TRAMAPAN Inj. Popular**
Tramadol hydrochloride 100mg/2ml ampoule: injection
5 amps pack: 100.00 IP
❖ **TRANAL Cap. Opsonin**
Tramadol hydrochloride 50mg/capsule
50mg x 20's pack: 150.00 MRP
❖ **TRANAL Inj. Opsonin**
Tramadol hydrochloride 100mg/2ml ampoule: injection
5 amps pack: 100.00 MRP
❖ **TRANAL Suppo. Opsonin**
Tramadol hydrochloride 100mg/suppository.
10's pack: 150.00 MRP
❖ **TROL Cap. Apex**
Tramadol hydrochloride 50mg/capsule
50mg x 30's pack: 135.00 MRP
❖ **TRUMEN Cap. General**
Tramadol hydrochloride 50mg/capsule
50mg x 40's pack: 300.00 MRP
❖ **WINPAIN Cap. Incepta**
Tramadol hydrochloride 50mg/capsule
50mg x 40's pack: 300.00 MRP
❖ **WINPAIN Inj. Incepta**
Tramadol hydrochloride 50mg/1ml & 100mg/2ml ampoule: injection
50mg (1ml) amp x 5's pack: 75.00 MRP
100mg (2ml) amp x 5's pack: 100.00 MRP
❖ **XTRAPEL 50 Cap. Beacon**
Tramadol hydrochloride 50mg/capsule
50mg x 30's pack: 240.00 MRP
❖ **XTRAPEL SR Cap. Beacon**
Tramadol hydrochloride 100mg/capsule (sustained release).
30's pack: 360.00 MRP
❖ **XTRAPEL-100 Inj. Beacon**
Tramadol hydrochloride 100mg/2ml ampoule: injection
100mg (2ml) amp x 5's pack: 100.00 MRP

3. ANTI-MIGRAINE DRUGS[21]

3.1 Drugs for acute migraine attack
3.2 Prophylactics of migraine
3.3 Drugs for cluster headache

Drugs for Acute Migraine Attack[21]

Drugs used in the treatment of acute migraine attack include:

1. Analgesics: Such as- ***Aspirin, Paracetamol, or an NSAID (e.g Tolfenamic acid, Diclofenac sodium, Ibuprofen, Naproxen etc)***
2. 5HT1 ***agonists (triptans): Such as- Almotriptan, Eletriptan, Frovatriptan, Naratriptan, Rizatriptan, Sumatriptan, Zolmitriptan***
3. Ergot alkaloids: such as- ***Ergotamine tartrate***
4. Other drugs for migraine: such as- ***Isometheptene mucate***

Analgesics in Migraine

Analgesics that are used in the treatment of acute migraine such as Aspirin, Paracetamol and NSAIDs, are discussed separately in the respective class of drugs.

5HT Agonists (Triptans)

RIZATRIPTAN[42,135]

RIZATRIPTAN: Tablet
Rizatriptan is a 5-HT1 agonist (triptan), useful in the treatment of acute migraine attack. It is available as rizatriptan benzoate equivalent to rizatriptan INN 5mg/tablet.
Mode of action: Rizatriptan and other triptans bind to 5-HT1B/1D (5-hydroxytryptamine or serotonin) receptors on intracranial blood vessels and in sensory nerves of trigeminal system. This results in cranial vessel constriction and inhibition of pro-inflammatory neuropeptide release.
Ind: Rizatriptan is indicated for the treatment of acute migraine attacks with or without aura in adults.
C/I: Ischemic heart disease; known case of hypersensitivity to rizatriptan.
S/E: Rizatriptan is generally well-tolerated. The most common adverse events during treatment with rizatriptan were asthenia/fatigue, somnolence, pain/pressure sensation and dizziness.
Precautions: Patients who experience signs or symptoms suggestive of angina following dosing should be evaluated for the presence of coronary heart disease.
Dosage & admin: Single doses of 5 or 10mg of rizatriptan is indicated for the treatment of acute migraine attacks in adults. Doses should be separated by at least 2 hours; no more than 30mg should be given in any 24-hour period.

❖ MIGRIZ Tab. Chemist
Rizatriptan benzoate equivalent to rizatriptan INN 5mg/tablet.
5mg x 10's pack: 280.00 MRP
❖ RIZAMIG Tab. Healthcare
Rizatriptan benzoate equivalent to rizatriptan INN 5mg/tablet.
5mg x 10's pack: 355.00 IP
❖ RIZAT Tab. Acme
Rizatriptan benzoate equivalent to rizatriptan INN 5mg/tablet.
5mg x 10's pack: 300.00 MRP

SUMATRIPTAN[34]

SUMATRIPTAN: Tablet
Sumatriptan is a 5-HT1 agonist (triptan), useful in the treatment of acute migraine attack. It is available as sumatriptan succinate INN equivalent to sumatriptan INN 50mg/tablet.
Mode of action: See above under the text of Rizatriptan.
Ind: Treatment of acute migraine attacks.
C/I: Sumatriptan should not be used for prophylaxis and it is contra-indicated in ischaemic heart disease, previous myocardial infarction, coronary vasospasm including Prinzmetal's angina, uncontrolled hypertension and hypersensitivity to sumatriptan.
S/E: Side-effects of the sumatriptan include sensations of tingling, heat, heaviness, pressure, or tightness of any part of the body including throat and chest, flushing, dizziness, feeling of weakness; fatigue; nausea and vomiting also reported.
Precautions: Sumatriptan should be used with caution in conditions which predispose to coronary artery disease, hepatic impairment, renal impairment; sensitivity to sulphonamides; pregnancy and breast-feeding. Sumatriptan should not be taken concurrently with other acute migraine therapies.
Pregnancy & lactation: Though sumatriptan has no teratogenic effects, its use in pregnancy should be considered only if the benefits are expected to outweigh the possible risks to the fetus. Sumatriptan is excreted in human breast milk. Therefore, caution should be exercised when considering the administration of sumatriptan succinate tablets to a nursing woman.
Dosage & admin: Adult: 50mg (some patients may require 100mg) as soon as possible after onset; dose may be repeated after not less than 2 hours if migraine recurs; maximum 300mg in 24 hours.
Child & adolescent: Under 18 years not recommended.
Drug inter: As the drug may cause drowsiness, patients taking other drugs having this effect should be warned to take care when driving or using dangerous machinery. Concurrent administration with ergotamine increased risk of vasospasm. Sumatriptan should not be given to patients taking monoamine oxidase inhibitors, selective 5-HT reuptake inhibitors or lithium.

❖ NOMIGRAN Tab. Ambee
Sumatriptan succinate INN equivalent to sumatriptan INN 50mg & 100mg/tablet.
50mg x 4 tabs pack: 180.00 MRP
100mg x 4 tabs pack: 360.00 MRP

❖ SUMIGRAN Tab. General
Sumatriptan succinate INN equivalent to sumatriptan INN 50mg/tablet.
50mg x 4 tabs pack: 160.00 MRP

ZOLMITRIPTAN[21,42]

ZOLMITRIPTAN: Tablet
Zolmitriptan is a 5-HT1 agonist (triptan), useful in the treatment of acute migraine attack. It is available as 2.5mg film-coated tablet.
Mode of action: See above under the text of Rizatriptan.
Ind: Zolmitriptan is indicated for the treatment of acute migraine attack with or without aura. Zolmitriptan is not indicated for prophylaxis of migraine.
C/I: Zolmitriptan is contra-indicated in patients with knwon hypersensitivity to any component of the product. Zolmitriptan must not be given to patients with uncontrolled hypertension.
S/E: Zolmitriptan is well tolerated. Adverse reactions are typically mild to moderate, transient, not serious and resolve spontaneously without additional treatment. Possible adverse reactions tend to occur within 4 hours of dosing and are no more frequent following repeated dosing. The following adverse reactions have been the most commonly reported, are: nausea, dizziness, somnolence, warm sensation, asthenia, and dry mouth. Abnormalities or disturbances of sensation have been reported, such as- heaviness, tightness or pressure may occur in the throat, neck, limbs and chest (with no evidence of ischaemic changes on ECG); myalgia, muscle weakness, paraesthesia and dysaesthesia may also occur.

Precautions & Warnings: Zolmitriptan should only be used where a clear diagnosis of migraine has been established. Care should be taken to exclude other potentially serious neurological conditions. There are no data on the use of zolmitriptan in hemiplegic or basilar migraine. Zolmitriptan should not be given to patients with symptomatic Wolff-Parkinson-White syndrome or arrhythmias associated with other cardiac accessory conduction pathways. This class of compounds (5HT1 D agonists) has been found associated with coronary vasospasm; therefore, zolmitriptan is not recommended in patients with ischaemic heart disease. The patients in whom unrecognised coronary artery disease is likely, cardiovascular evaluation is recommended prior to commencement of treatment with 5HT1D agonists. As with other 5HT1D agonists, atypical sensations over the precordium (see undesirable effects) have been reported after the administration of zolmitriptan, but in clinical trials these have not been associated with arrhythmias or ischaemic changes on ECG. Zolmitriptan may cause mild, transient increases in blood pressure (which may be more pronounced in the elderly), however, this has not been associated with clinical sequelae in the clinical trial programme.

Pregnancy & lactation: Safety and efficacy of 5HT1 agonists in pregnancy and lactation have not been established. Therefore, zolmitriptan should be used with caution in pregnancy and

nursing mothers only if the benefits outweigh the potential risk to the fetus and child or discontinue the breast-feeding during medication.

Dosage & admin: The recommended dose of zolmitriptan to treat a migraine attack is 2.5mg. If symptoms persist or return within 24 hours, a second dose has been shown to be effective. If a second dose is required, it should not be taken within 2 hours of the initial dose.

If a patient does not achieve satisfactory relief with 2.5mg doses, subsequent attacks can be treated with 5mg doses of zolmitriptan. In those patients who respond, significant efficacy is apparent within 1 hour of dosing, zolmitriptan is equally effective whenever the tablets are taken during a migraine attack; although it is advisable that zolmitriptan tablets are taken as early as possible after the onset of migraine headache.

In the event of recurrent attacks, it is recommended that the total intake of zolmitriptan in a 24-hour period should not exceed 15mg.

Zolmitriptan is not indicated for prophylaxis of migraine.

Use in children: **Safety and efficacy of zolmitriptan in paediatric patients have not been established.**

Use in patients aged over 65 years: **Safety and efficacy of zolmitriptan in individuals aged over 65 years have not been systematically evaluated.**

Patients with hepatic impairment: **There is no clinical or pharmacokinetic experience in patients with hepatic impairment treated with zolmitriptan.**

Patients with renal impairment: **No dosage adjustment is required.**

Drug inter: There is no evidence that concomitant use of migraine prophylactic medications has any effect on the efficacy or unwanted effects of zolmitriptan (for example beta blockers, oral dihydroergotamine, pizotifen).

The pharmacokinetics and tolerability of zolmitriptan ere unaffected by acute symptomatic treatment such as paracetamol, metoclopramide and ergotamine. However, it is recommended that patients should leave at least 6 hours between taking an ergotamine preparation and starting zolmitriptan, and vice versa. Concomitant administration of other 5HT1D agonists within 12 hours of zolmitriptan treatment should be avoided. Following administration of moclobemide, a specific MAO-A inhibitor, there was a small increase (26%) in AUC for zolmitriptan and a 3-fold increase in AUC of the active metabolite. Therefore, a maximum intake of 7.5mg zolmitriptan in 24 hours is recommended in patients taking an MAO-A inhibitor.

❖ **NOMI Tab. Square**
Zolmitriptan INN 2.5mg/tablet
12's pack: 300.00 MRP

❖ **ZOMITAN 2.5 Tab. Incepta**
Zolmitriptan INN 2.5mg/tablet
10's pack: 250.00 IP

Ergot Alkaloids

ERGOTAMINE TARTRATE[21,33]

ERGOTAMINE TARTRATE: Tablet/ Suppositories/ Inhalation.
Ind: Migraine attack and other headaches of vascular origin.
C/I: Pregnancy and lactation; coronary, peripheral or occlussive vascular disease; severe hypertension; impaired hepatic or renal function; sepsis
S/E: Headache, nausea and vomiting, abdominal pain; repeated dsoage may cause ergotism with gangrene and mental derangement. Pleural and peritonial fibrosis may occur with excessive use.
Precautions: Renal, hepatic and cardiovascular disease; hyperthyroidism; unsuitable for prophylais. Concomitant admin. of erythromycin should be avoided. Withdraw the treatment immediately if numbness and tingling of extremities develops.
Dosage & admin: Adult: Oral, 2mg at onset of attack repeated every 30 minutes if necessary; max. 6mg daily (per attack), 10mg in any one week.
Child: Not recommended.

❖ **MIGRIN Tab. Skylab**
Ergotamine tartrate lmg + Caffeine 100mg/tablet
Adult: 2 tablets at onset of attac, repeated (if not relieved within half an hour) 1 tablet every 30 minutes if necessary . Max. 6 tablets daily; 10 in any one week.
Child: Not recommended.
50's pack: 250.00 MRP

Prophylactics of migraine[21]

1. **Antihistamine prepn.- such as *pizotifen***
2. **Beta-blockers- such as *propranolol, metoprolol, nadolol and timolol***
3. **Tricyclic antidepressants-such as *amitriptyline***
4. **Miscellaneous preparations- such as *flunarizine***

PIZOTIFEN[21,78]

PIZOTIFEN: Tablet/Syrup
Ind: Prevention of vascular headache including clas-sical migraine, common migraine & cluster headache.
C/I: Better to avoid in narrow-angle glaucoma, prostate hypertrophy and lactation.
S/E: Drowsiness, increased appetite and weight gain; rarely nausea, dizziness, dry mouth, constipation; CNS stimulation may occur in children.
Precautions: Urinary retention; renal impairment; pregnancy and breast feeding; drowsiness may affect performance of skilled tasks (e.g driving); effects of alcohol enhanced.
Dosage & admin: 1.5mg at night or 500mcg 3 times daily, and if necessary, may be increased gradually to 3mg daily; max. single dose 3mg max. daily dose may be upto 4.5mg.

Child- up to 1.5mg daily in divided doses; max. single dose at night 1mg.
Drug inter: Pizotifen may increase the drowsiness effects of tranquillizers, hypnotics & antidepressants. MAOIs.

❖ **ANTIGRAIN Tab. Ibn Sina**
Pizotifen 0.5mg/tablet
50's pack: 150.00 MRP

❖ **ANTIGRAIN-TS Tab. Ibn Sina**
Pizotifen 1.5mg/tablet (triple strength).
30's pack: 210.00 MRP

❖ **AVIDRO Tab. Beximco**
Pizotifen malate 0.5mg & 1.5mg/tablet
0.5mg x 100's pack: 300.00 IP
1.5mg x 50's pack: 350.00 IP

❖ **D-FEN Tab. Drug Inter**
Pizotifen malate 0.5mg & 1.5mg/tablet
0.5mg x 100's pack: 200.00 MRP
1.5mg x 50's pack: 200.00 MRP

❖ **MIGOFEN Tab. Techno Drugs**
Pizotifen malate 0.5mg & 1.5mg/tablet
0.5mg x 30's pack: 90.00 MRP
1.5mg x 30's pack: 180.00 MRP

❖ **MIGRANIL Tab. Square**
Pizotifen 0.5mg & 1.5mg/tablet
0.5mg x 50's pack: 150.00 MRP
1.5mg x 30's pack: 210.00 MRP

❖ **PITOFEN Tab. Medicon**
Pizotifen 0.5mg/tablet
100's pack: 300.00 MRP

❖ **PIZO-A Tab. Acme**
Pizotifen 0.5mg & 1.5mg/tablet
0.5mg x 100's pack: 300.00 MRP
1.5mg x 50's pack: 350.00 MRP

❖ **PIZOFEN Tab. Navana**
Pizotifen 0.5mg/tablet
100's pack: 300.00 IP

❖ **PIZOFEN-TS Tab. Navana**
Pizotifen 1.5mg/tablet (triple strength).
50's pack: 350.00 IP

❖ **PIZOTIN Tab. Nipa**
Pizotifen 0.5mg & 1.5mg/tablet
0.5mg x 100's pack: 300.00 MRP
1.5mg x 30's pack: 210.00 MRP

❖ **ZOFEN Tab. Aristopharma**
Pizotifen 0.5mg/tablet
50's pack: 150.00 MRP

❖ **ZOFEN TS Tab. Aristopharma**
Pizotifen 1.5mg/tablet (triple strength).
50's pack: 350.00 MRP

PROPRANOLOL HCl[21]

PROPRANOLOL HCl: Tablet
Ind: Prophylaxis or prevention of severe recurrent migraine
C/I; S/E; Cautions: See in the section of Cardiovascular drugs; caution also necessary with concurrent admin. of ergotamine
Dosage & admin: Adult: 40 mg 2 or 3 times daily.
Child : Half adult dose.
Preparations: See under the section of cardiovascular drugs.

Tricyclic Antidepressant drug[21]

Antidepressant drugs may be useful, for example- **Amitriptyline 10mg at night, increasing to a maintenance dose of 50 to 75mg at night.**
(For detail see Antidepressant drugs under CNS drugs).

Miscellaneous preparations

FLUNARIZINE[65]

FLUNARIZINE: Tablet
Flunarizine is the difluorinated derivative of cinnarizine. It is available as- flunarizine INN 5mg & 10mg tablet & capsule.
Mode of action: Flunarizine is a selective calcium channel antagonist. It prevents cellular calcium overload by reducing excessive transmembrane influxes of calcium. It does not interfere with normal cellular calcium homeostasis. It also has antihistaminic and sedative properties.
Ind: Prophylaxis of classic (with aura) or common (without aura) migraine.
Symptomatic treatment of vestibular vertigo, dizziness. Preripheral vascular disease (intermittent claudication, Raynaud's phenomenon, paresthesiae, cold extremities, nocturnal cramp and trophic disorders owing to ischaemia of limbs).
Refractory epilepsy resistant to conventional antiepileptic therapy Alternating hemplegia of childhood.
C/I: Hypersensitivity to flunarizine or structurally similar calcium channel blocker. Patients with a history of depressive illness. Patients with pre-existing symptoms of Parkinson's disease or other extra-pyramidal disorders. Hepatic insufficiency (relatively contraindicated).
S/E: Flunarizine is well tolerated and seldom causes serious side effects. The main adverse effects experienced by the patients are- depression, drowsiness, sedation, anxiety; heart burn, nausea, vomiting, dry mouth, gastralgia; weight gain, and/or increased appetite, asthenia, muscle aches, skin rash, and galactorrhea in female patients on oral contraceptives.

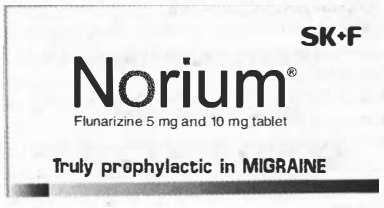
Precautions: Since sedation or drowsiness occur in some patients during treatment with flunarizine hydrochloride, patients should be cautioned against activities which require alertness or rapid, precise responses (e.g operating machinery or a motor vehicle) until the response to the drug has been determined.
Elderly: The efficacy of flunarizine in the prophylaxis of migraine has not been established in elderly subjects. Moreover, treatment with flunarizine may give rise to extrapyramidal and depressive symptoms and reveal parkinsonism, specially in the elderly. Therefore, it should be used with caution.
Patients with impaired hepatic function: Flunarizine is metabolised by the liver, therefore care should be exercised when flunarizine is given to patients with compromised liver function.

Pregnancy & lactation: There is no data to support the use of flunarizine during pregnancy. Therefore it should not be administered to pregnant women unless the anticipated benefits outweigh the potential risks. As animal studies have shown that flunarizine is excreted in breast milk, therefore, breast-feeding should be discouraged in women taking flunarizine.

Dosage & admin: The usual dose is 5 to 10mg daily, usually given at night to minimize the effects of drowsiness.

Migraine prophylaxis: **Starting dose is 10mg daily (at night) for patients less than 65 years and 5mg daily for patients older than 65 years.**
Maintenance treatment: **If a patient's response is satisfactory and if a maintenance treatment is needed, the dose should be decreased so that each week the patient has 5 days treatment at the same daily dose and 2 successive drug free days. Treatment should be interrupted after 6 months and re-initiated only if the patient relapses. The recommended maximum dose is 10mg daily in adults and 5mg daily in children (40kg).**
Vertigo: **The recommended maximum dose is 10mg daily in adults and 5mg daily in children (40kg).**
Epilepsy: **An optimal therapeutic dosage in epileptic patients receiving other antiepileptic drugs is 15mg to 20mg daily in adults and 5 to 10mg daily in children.**
Peripheral vascular disorders: **The recommended daily dose is 5-10mg in the evening.**

Drug inter: Galactorrhea has been reported in few women on oral contraceptives within the first two months of flunarizine treatment. Hepatic enzyme inducers such as carbamazepine and phenytoin increase the metabolism of flunarizine and thus reduce its steady state level. So, an increase in dose of the drug may be required. Concomitant use of a calcium-channel blocker and amiodarone has been reported to result in sinus arrest and atrioventricular block. Excessive sedation can occur when alcobol, hypnotics or tranquilizers are taken simultaneously with flunarizine.



❖ **FLUNARIN Tab. Apex**
Flunarizine 5mg & 10mg/tablet.
5mg x 50's pack: 100.00 MRP
10mg x 30's pack: 90.00 MRP

❖ **FLURIUM Tab. Beximco**
Flunarizine 5mg & 10mg/tablet.
5mg x 30's pack: 60.00 IP
10mg x 30's pack: 90.00 IP

❖ **FLUVER Tab. ACI**
Flunarizine 5mg & 10mg/tablet.
5mg x 50's pack: 100.00 MRP
10mg x 30's pack: 90.00 MRP

❖ **IMIGRA Cap. Navana**
Flunarizine 5mg & 10mg/capsule.
5mg x 50's pack: 125.00 IP
10mg x 30's pack: 105.00 IP

❖ **MINIUM Tab. Opsonin**
Flunarizine 5mg & 10mg/capsule.
5mg x 50's pack: 150.00 MRP
10mg x 50's pack: 200.00 MRP

❖ **NORIUM Tab. SK+F**
Flunarizine 5mg & 10mg/capsule.
5mg x 100's pack: 200.00 MRP
10mg x 60's pack: 240.00 MRP

❖ **RIZELIUM Cap. UniMed/UniHealth**
Flunarizine 5mg & 10mg/capsule.
5mg x 30's pack: 75.00 MRP
10mg x 30's pack: 105.00 MRP

4. TRIGEMINAL NEURALGIA

The drugs commonly used in trigeminal neuralgia include: ***Carbamazepine, phenytoin-*** which are discussed in the section of anti-epileptic drugs.

5. DRUGS USED IN DENTAL PAIN

BENZOCAINE[42]

❖ **OROGEL Dental Gel Square**
Benzocaine is a local anesthetic. It is available as gel preparation containing benzocaine USP 20% w/w for dental use.
Mode of action: Local anesthetics inhibit conduction of nerve impulses from sensory nerves. This action results from an alteration of the cell membrane permeability to ions. Benzocaine has low solubility in water and it is absorbed too slowly to be toxic. Although poorly absorbed through the intact epidermis, this is absorbed from mucous membranes. When skin permeability has been increased by abrasions or ulcers, the absorption and, subsequently, the efficacy of local anesthetics improves; however, the incidence of side effects also increases.
Ind: For the temporary relief of pain due to minor injury or irritation of the mouth and gums like- toothache, sore gums, canker sores, braces, minor dental procedures, dentures.
C/I: In patients who are hypersensitive to this medication or to any of its ingredients, or to other 'caine' anesthetics.
S/E: Side effects are less common; these include, allergies, swelling in the mouth or throat etc.
Precaution: Not for prolonged use. The product should not be used more than 7 days unless directed by a physician or dentist. If condition persists or irritation develops, use of the product should be discontinued. Contact with eyes should be avoided. Food should not be taken for 1 hour after use of this medication in mouth. Some of these medications can block swallowing reflex if ingested which may cause the patient to choke.
Pregnancy & lactation: Bezocaine has not been

reported to cause birth defects or other problems in pregnant women, as well as, in nursing babies.
Dosage & admin: Apply to the affected area up to 4 times daily or as directed by the physician. Children under 12 years of age: should be supervised in the use of this product. Children under 2 years of age: should be consulted with a physician or dentist prior to the use of this product. A small amount of gel should be applied either by the tip of a finger or by the applicator to the affected area and wait for 2-3 minutes for the action of the drug. When pain is gone mouth cavity should be rinsed with water.
Drug inter: Information regarding durg interaction is not known.
5gm tube: 40.00 MRP

6. EMBROCATIONS

Analgesic & Muscle relaxants for topical use

CAPSAICIN[26]

CAPSAICIN: Cream
Topical capsaicin has been used to treat different types of pain. It is available as capsaicin USP 0.25mg/gm (i.e 0.025% w/w).

Mode of action: Topical capsaicin renders skin insensitive to pain by depleting and preventing reaccumulation of substance P in peripheral sensory neurons. Substance P is the principal chemomediator of pain impulses from the periphery to the central nervous system.
Ind: Rheumatoid arthritis, osteoarthritis, pain due to diabetic neuropathy, joint pain, post-herpetic neuralgia, post-surgical neuropathic pain, nerve pain, back pain, muscle pain, fibromyalgia, bursitis & pruritis (itching).
C/I: Capsaicin cream is contraindicated for use on broken or irritated skin or known hypersensitivity to this medication.
S/E: Capsaicin may cause transient burning on application. This burning is observed more frequently when the application schedules are more than 3-4 times daily. The burning can be enhanced if too much cream is used and if it is applied just before or after a bath or shower. But, this burning sensation generally disappears with regular use.
Precautions: Capsaicin cream should not be applied to broken or irritated skin or on mucous membranes or into eyes or on contact lenses. Applied area should not be tightly bandaged. Do not apply the cream on the heat treated area as this may increase the burning sensation.
Pregnancy & lactation: The safety of capsaicin during pregnancy or lactation has not been established in either humans or animals.

Dosage & admin: Persons 18 years of age and older: Apply a thin film of capsaicin cream to affected area 3 to 4 times daily. Use for 2 weeks provides optimum pain relief.

Drug inter: There are no reported drug interactions with topical capsaicin cream.

❖ **OSTOCIN Cream General**
Each gram of cream contains capsaicin USP 0.25mg (i.e 0.025% w/w).
20gm tube: 50.00 MRP

❖ **TOPICACIN Cream Incepta**
Each gram of cream contains capsaicin USP 0.25mg (i.e 0.025% w/w).
20gm tube: 50.00 MRP

METHYL SALICYLATE + MENTHOL[26]

METHYL SALICYLATE + MENTHOL: Cream
This is a specially formulated combined preparation of methyl salicylate and menthol available as topical cream.
Comp: See below under individual product.
Mode of action: The ingredients of this product penetrate into skin to provide fast relief from pain and stiffness of minor arthritis and muscle aches. This cream preparation is fast acting, strong medicine that penetrates deep down to provide long lasting and effective relief. Methyl salicylate has been shown that first pass metabolism exists in the skin and rapidly hydrolyzing salicylate ester to release the active salicylate in both epidermis and dermis. It alleviates pain and inflammation by inhibiting the synthesis of drugs when applied on the skin to give a faster onset of action. It dilates the blood vessels causing a sensation of coldness followed by an analgesic effect.
Ind: It is indicated for the fast relief of minor aches and pains of muscles and joints associated with- arthritis, bursitis, rheumatism, tendonitis, simple backache, strains, sprains, leg cramps.
C/I: Hypersensitivity to salicylate or any of its ingredients.
S/E: Redness or irritation may occur, specially in persons with sensitive skin. Adverse reactions possibly involved are mild to moderate local irritation, erythema, rash, desquamation, pruritis and relative local reaction at the application site.
Precautions: Avoid contact with the eyes and mucous membranes. Do not bandage tightly, wrap or cover until washing the area. It should not be applied to wounds or scraped, irritated or damaged skin and should not be used immediately after bath. Wash hand thoroughly after applying.
Pregnancy: Its safety in human pregnancy has not been established. This preparation should therefore be given to pregnant women only if clearly needed.

Use & application: For external use only. Adult & children 2 years of age and older: Apply a thin layer of cream to the affected area and gently massage until cream disappears; apply not more than 3 to 4 times daily.

❖ **ICYKOOL Cream Beximco**
Each gram of cream contains methyl salicylate BP 150mg (0.15gm or 15%) and menthol BP 100mg (0.10gm or 10%).
25gm tube: 40.00 IP

❖ **ICYKOOL MAX Cream Beximco**
Each gram of cream contains methyl salicylate BP 300mg (0.30gm or 30%) and menthol BP 80mg (0.08gm or 8%).
25gm tube: 60.00 IP

❖ **INSTACOOL Cream Medicon**
Each gram of 'Instacool cream' contains methyl salicylate BP 0.30gm (30%) and menthol BP 0.08gm (8%).
25gm tube: 60.00 MRP

❖ **P-COOL Cream Alco Pharma**
Each gram of cream contains methyl salicylate BP 150mg (0.15gm or 15%) and menthol BP 100mg (0.10gm or 10%).
10gm tube: 25.00 MRP
25gm tube: 40.00 MRP

❖ **PENRIF 15 Cream Square**
Each gram of 'Penrif 15 cream' contains methyl salicylate BP 0.15gm (15%) and menthol BP 0.10gm (10%).
20gm tube: 40.00 MRP

❖ **PENRIF 30 Cream Square**
Each gram of 'Penrif 30 cream' contains methyl salicylate BP 0.30gm (30%) and menthol BP 0.08gm (8%).
20gm tube: 60.00 MRP

❖ **SALINIX 15 Cream Incepta**
Each gram of 'Salinix 15 cream' contains methyl salicylate BP 0.15gm (15%) and menthol BP 0.10gm (10%).
20gm tube: 40.00 MRP

❖ **SALINIX 30 Cream Incepta**
Each gram of 'Salinix 30 cream' contains methyl salicylate BP 0.30gm and menthol BP 0.08gm.
20gm tube: 60.00 MRP

❖ **SALIRUB Cream Popular**
Each gram of 'Salirub cream' contains methyl salicylate BP 0.15gm (15%) and menthol BP 0.10gm (10%).
20gm tube: 35.00 IP

❖ **VISCON 15 Cream ACI**
Each gram of 'Viscon 15 cream' contains methyl salicylate BP 0.15gm (15%) and menthol BP 0.10gm (10%).
20gm tube: 40.00 MRP

❖ **VISCON 30 Cream ACI**
Each gram of 'Viscon 30 cream' contains methyl salicylate BP 0.30gm (30%) and menthol BP 0.08gm (8%).
20gm tube: 60.00 MRP

❖ **XENTHOL 30 Cream SK+F**
Each gram of 'Xenthol 30 cream' contains methyl salicylate BP 0.30gm (30%) and menthol BP 0.08gm (8%).
15gm tube: 40.00 MRP

CAMPHOR + EUCALYPTUS OIL + MENTHOL + THYMOL[132]

CAMPHOR + EUCALYPTUS OIL + MENTHOL + THYMOL: Ointment
This is a combined formulation of four ingredients, viz: camphor, eucalyptus oil, menthol & thymol; presented as vaporising ointment for topical use.
Comp: See below under individual product.

Ind: It can be used in all types of colds, flu, respiratory affections and as counter irritant in aches and pains.
C/I: Children under 3 years; history of convulsions.
Use & application: Rub on gently for 3-5 minutes on the chest & back 2-3 times daily & cover the rubbed area with warm clothes. Use as inhalation- 1 tsf of ointment tobe dissolved in boiled water and inhale the steam by mouth or nose as required.

❖ **LEO-RUBBING Balm Seema**
A combined topical preparation of camphor BP, menthol BP, eucalyptus oil BP & thymol BP: Balm.
25gm pack: 16.00 MRP

❖ **SINEX Oint. Cosmic**
Each 100gm contains camphor BP 10gm, menthol BP 2.5gm, eucalyptus oil BP 2.5gm & thymol BP 1gm: vaporising ointment
10gm x 12's pack: 120.00 MRP
25gm x 12's pack: 300.00 MRP

❖ **VAPOREX Oint. Hallmark**
Each 100gm contains camphor BP 10gm, menthol BP 2.5gm, eucalyptus oil BP 2.5gm & thymol BP 1gm: vaporising ointment
30gm pack: 30.00 MRP

OTHER PREPNS.

❖ **GACO RUB Oint. Gaco**
Vaporising ointment
Ind: For all types of colds, aches, pain & headache.
Use: Rub on gently 2-3 times daily or as reqd.
25gm pack: 17.00 MRP

Chapter-9
ANTIRHEUMATIC & ANTI-INFLAMMATORY DRUGS

ANTIRHEUMATIC & ANTI-INFLAMMATORY DRUGS[21]

Antirheumatic & anti-inflammatory drugs are discussed under the following headings:

1. **Drugs used in rheumatic diseaeses & gout.**
2. **Drugs used in neuromuscular disorders.**
3. **Drugs used in soft-tissue inflammation**

1. DRUGS USED IN RHEUMATIC DISEAESES & GOUT[21]

1.1 Non steroidal anti-in flammatory drugs
1.2 Corticosteroids
1.3 Drugs which suppress the rheumatic disease process
1.4 Drugs used in the treatment of gout & cytotoxic-induced hyperuricaemia

Non-steroidal anti-inflammatory drugs (NSAID)

The non-steroidal anti-inflammatory drugs (NSAIDs) that are used up to current time include: ***Aspirin, Aceclofenac, Acemetacin, Celecoxib, Dexibuprofen, Dexketoprofen, Diclofenac sodium, Diflunisal, Etodolac, Etoricoxib, Fenbufen, Fenoprofen, Flurbiprofen, Ibuprofen, Indomethacin, Ketoprofen, Lumiracoxib, Mefenamic acid, Meloxicam, Nabumetone, Naproxen, Piroxicam, Sulindac, Tenoxicam, Tiaprofenic acid.***

ASPIRIN

Aspirin and other salicylate preparations- see in the section of analgesics & antipyretics

ACECLOFENAC[26,42]

ACECLOFENAC: Tablet
Aceclofenac is a non-steroidal agent with antiinflammatory and analgesic properties. It is available as- Aceclofenac BP 100mg film-coated tablet.
Mode of action: Its mode of action is largely based on inhibition of prostaglandin synthesis. Aceclofenac is a potent inhibitor of the enzyme cyclooxygenase, which is involved in the production of prostaglandins. Aceclofenac penetrates into the synovial fluid, where the concentrations reach approximately 57% of those in plasma. The mean plasma elimination half-life is around 4 hours. It also stimulates cartilage matrix (glycosaninogly-cans) synthesis.
Ind: Aceclofenac is indicated for the relief of pain and inflammation in both acute and chronic pain like osteoarthritis, rheumatoid arthritis, ankylosing spondy-litis, dental pain, post-traumatic pain, low back pain, gynaecological pain etc.
C/I: Known hypersensitivity to aceclofenac or aspirin or other NSAIDs. Patients with active or suspected peptic ulcer or gastrointestinal bleeding and moderate to severe renal impairment.
S/E: Generally aceclofenac is well tolerated. The majority of side effects observed have been reversible and of a minor nature and include gastrointestinal disorders (dyspepsia, abdominal pain, nausea and diarrhoea) and occasional occurance of dizziness. Dermatological side effects include pruritus and rash. Abnormal hepatic enzyme levels and raised serum creatinine have occasionally been reported.
Precaution: Aceclofenac should be administered with caution to patients with symptoms indicative of gastrointestinal disorders, with a history of peptic ulceration, ulcerative colitis, Crohn's disease, hepatic porphyria, and coagulation disorders. Patients suffering from severe hepatic impairment must be monitored.
Pregnancy & lactation: There is no information on the use of aceclofenac during pregnancy & in nursing mother. Therefore, aceclofenac should not be administered during pregnancy & breast feeding, unless the potential benefits to the mother outweigh the possible risks to the fetus & child respectively. In that cases the lowest effective doses should be administered.
Dosage & admin: ***Adults & elderly:*** **The maximum recommended dose is 200mg daily, taken in two divided doses in the morning and in the evening.**
Children: **There is no clinical data on the use of aceclofenac in children.**
Renal insufficiency: **There is no evidence that the dosage of aceclofenac needs to be modified in patients with mild renal impairment.**
Hepatic insufficiency: **The dose of aceclofenac should be reduced in patients with hepatic impairment. An initial daily dose of 100mg should be administered.**
Drug inter: *Lithium & digoxin:* Aceclofenac, like other NSAIDs, may increase plasma concentrations of lithium and digoxin.
Diuretics: Aceclofenac, like other NSAIDs, may inhibit the activity of diuretics.
Anticoagulants: Like other NSAIDs, aceclofenac may enhance the activity of anticoagulants.
Quinolones: Convulsion may occur due to an interaction between quinolones and NSAIDs.
Other NSAIDs and steroids: Concomitant therapy with aspirin, other NSAIDs and steroids may increase the frequency of side effects.
Overdosage: There is no human data available on the consequences of aceclofenac overdosage. However, after any overdosage, following therapeutic measures to be taken- absorption should be prevented as soon as possible by means of gastric lavage and treatment with activated charcoal. Supportive and symptomatic treatment should be given for complications.

❖ **ACEBID Tab. Beacon**
Aceclofenac BP 100mg/tablet (f.c).
50's pack: 150.00 MRP

❖ **ACECLOBEN Tab. Benham**
Aceclofenac BP 100mg/tablet (f.c).
50's pack: 150.00 MRP

❖ **ACECOL Tab. Ziska**
Aceclofenac BP 100mg/tablet (f.c).
50's pack: 82.80 MRP

❖ **ACECLOFENAC Tab. Elixir**
Aceclofenac BP 100mg/tablet (f.c).
30's pack:

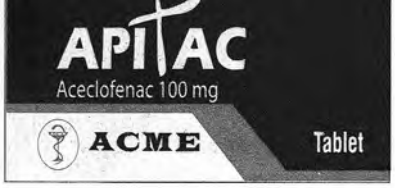
❖ **ACECLORA Tab. Marksman**
Aceclofenac BP 100mg/tablet (f.c).
50's pack: 95.00 MRP
❖ **ACEFENAC Tab. General**
Aceclofenac BP 100mg/tablet (f.c).
50's pack: 150.00 MRP
❖ **ACELOCK Tab. Bristol**
Aceclofenac BP 100mg/tablet (f.c).
50's pack: 150.00 MRP
❖ **ACELON Tab. CPL**
Aceclofenac BP 100mg/tablet (f.c).
100's pack: 300.00 MRP
❖ **ACENAC Tab. Medicon**
Aceclofenac BP 100mg/tablet (f.c).
50's pack: 150.00 MRP
❖ **ACEPRO Tab. White Horse**
Aceclofenac BP 100mg/tablet (f.c).
50's pack: 150.00 MRP
❖ **ACFLAM Tab. Apollo**
Aceclofenac BP 100mg/tablet (f.c).
30's pack: 90.00 IP
50's pack: 150.00 IP
❖ **ACLO Tab. Alco Pharma**
Aceclofenac BP 100mg/tablet (f.c).
100's pack: 250.00 MRP
❖ **ACLONAC Tab. Pharmasia**
Aceclofenac BP 100mg/tablet (f.c).
50's pack: 150.00 IP
❖ **ACLOPAIN Tab. RAK Pharma**
Aceclofenac BP 100mg/tablet (f.c).
100's pack: 300.00 MRP
❖ **ACLOVIX Tab. Aexim**
Aceclofenac BP 100mg/tablet (f.c)
50's pack: 125.00 MRP
❖ **AC PR Tab. Pacific**
Aceclofenac BP 100mg/tablet (f.c)
50's pack: 150.00 MRP
❖ **ALONA Tab. Chemico**
Aceclofenac BP 100mg/tablet (f.c)
50's pack: 150.00 MRP
❖ **ANALGEN Tab. Cosmo Pharma**
Aceclofenac BP 100mg/tablet (f.c).
50's pack: 150.00 MRP
❖ **APECLO Tab. Apex**
Aceclofenac BP 100mg/tablet (f.c).
100's pack: 150.00 MRP
❖ **APITAC Tab. Acme**
Aceclofenac BP 100mg/tablet (f.c)
100's pack: 300.00 MRP
❖ **AROS Tab. Globe**
Aceclofenac BP 100mg/tablet (f.c)
100's pack: 300.00 MRP
❖ **CECLOFEN Tab. Renata**
Aceclofenac BP 100mg/tablet (e.c)
50's pack: 150.00 MRP
❖ **CECONAC Tab. Hudson**
Aceclofenac BP 100mg/tablet (e.c)
100's pack: 300.00 MRP
❖ **CELOFEN Tab. ACI**
Aceclofenac BP 100mg/tablet (f.c)
50's pack: 150.00 MRP
❖ **CLOF Tab. Bio-pharma**
Aceclofenac BP 100mg/tablet (f.c)
100's pack: 250.00 MRP
❖ **CLOFENTA Tab. Amico**
Aceclofenac BP 100mg/tablet (f.c)
50's pack: 125.00 MRP
❖ **DOLONAC Tab. Cosmic**
Aceclofenac BP 100mg/tablet (f.c)
100's pack: 250.00 MRP

❖ **ECENA Tab. Edruc**
Aceclofenac BP 100mg/tablet (f.c)
50's pack: 150.00 MRP
❖ **ENA Tab. Asiatic**
Aceclofenac BP 100mg/tablet (f.c)
50's pack: 150.00 MRP
❖ **FLECO Tab. Ad-din**
Aceclofenac BP 100mg/tablet (f.c)
100's pack: 190.00 MRP
❖ **FLEXI Tab. Square**
Aceclofenac BP 100mg/tablet (f.c)
100's pack: 300.00 MRP
❖ **LOFENS Tab. Zenith**
Aceclofenac BP 100mg/tablet (f.c)
100's pack: 150.00 MRP
❖ **MACLO-100 Tab. Doctor's**
Aceclofenac BP 100mg/tablet (f.c)
50's pack: 125.00 MRP
❖ **MERVAN Tab. Aristopharma**
Aceclofenac BP 100mg/tablet (f.c)
100's pack: 300.00 MRP
❖ **MOTIFEN Tab. Pharmadesh**
Aceclofenac BP 100mg/tablet (f.c)
50's pack: 125.00 MRP
❖ **MOVEX Tab. Opsonin**
Aceclofenac BP 100mg/tablet (f.c)
100's pack: 300.00 MRP
❖ **MOVON Tab. Hallmark**
Aceclofenac BP 100mg/tablet (f.c)
50's pack: 125.00 MRP
❖ **NOAK Tab. Orion**
Aceclofenac BP 100mg/tablet (f.c)
50's pack: 150.00 MRP
❖ **NOFENAC Tab. Drug Inter.**
Aceclofenac BP 100mg/tablet (f.c)
100's pack: 275.00 MRP
❖ **NOSTRIN Tab. MonicoPharma**
Aceclofenac BP 100mg/tablet (f.c)
50's pack: 150.00 MRP
❖ **ORIFEN Tab. Silva**
Aceclofenac BP 100mg/tablet (f.c)
100's pack: 250.00 MRP
❖ **OSTOFLEX Tab. Somatec**
Aceclofenac BP 100mg/tablet (f.c)
100's pack: 300.00 MRP
❖ **PAINEX Tab. Chemist**
Aceclofenac BP 100mg/tablet (f.c)
50's pack: 150.00 MRP
❖ **PRESERVIN Tab. Ibn Sina**
Aceclofenac BP 100mg/tablet (f.c)
50's pack: 150.00 MRP
❖ **RESERVIX Tab. Incepta**
Aceclofenac BP 100mg/tablet (f.c)
100's pack: 300.00 MRP
❖ **RHEUMA 100 Tab. Mystic**
Aceclofenac BP 100mg/tablet (f.c)
100's pack: 280.00 MRP
❖ **SAPCLO Tab. SAPL**
Aceclofenac BP 100mg/tablet (f.c)
50's pack: 100.00 MRP
❖ **SENAC-A Tab. Seema**
Aceclofenac BP 100mg/tablet (f.c)
100's pack: 300.00 MRP
❖ **SERVEX Tab. Novo Healthcare**
Aceclofenac BP 100mg/tablet (f.c)
50's pack: 150.00 MRP
❖ **SYCLOFEN Tab. Syntho**
Aceclofenac BP 100mg/tablet (f.c)
100's pack: 300.00 MRP

❖ **TERNILLA Tab. Healthcare**
Aceclofenac BP 100mg/tablet (f.c)
50's pack: 175.00 MRP
❖ **TUFFOX Tab. SK+F**
Aceclofenac BP 100mg/tablet (f.c)
100's pack: 300.00 MRP
❖ **VAXTIN Tab. Sandoz/Novartis**
Aceclofenac BP 100mg/tablet (f.c)
60's pack: 300.00 MRP
❖ **XE FAST Tab. Desh Pharma**
Aceclofenac BP 100mg/tablet (f.c)
40's pack: 100.00 MRP
80's pack: 200.00 MRP
❖ **XERIFEN Tab. Peoples**
Aceclofenac BP 100mg/tablet (f.c)
100's pack: 300.00 MRP
❖ **XERIFLAM Tab. Kumudini**
Aceclofenac BP 100mg/tablet (f.c)
50's pack: 150.00 MRP
❖ **XPAIN Tab. Gaco**
Aceclofenac BP 100mg/tablet (f.c)
50's pack: 150.00 MRP
❖ **XYFEN Tab. Supreme**
Aceclofenac BP 100mg/tablet (f.c)
30's pack: 90.00 MRP
❖ **ZERODOL Tab. Navana**
Aceclofenac BP 100mg/tablet (f.c)
50's pack: 150.00 MRP
❖ **ZOLFIN Tab. Beximco**
Aceclofenac BP 100mg/tablet (f.c)
150's pack: 450.00 IP

CELECOXIB[26]

CELECOXIB: Capsule
Celecoxib is a non-steroidal anti-inflammatory agent (specific COX-2 inhibitor) having marked anti-inflammatory, analgesic and antipyretic properties with lower incidence of gastrointestinal adverse effects. It is available as celecoxib INN 100mg & 200mg capsule.
Mode of action: It is a selective COX-2 inhibitor.
Ind: Celecoxib is indicated for the relief of pain and inflammation of rheumatoid arthritis & osteoarthritis; it is also indicated to reduce the number of adenomatous colorectal polyps in familial adenomatous polyposis (FAP); as an adjunct to usual care (e.g endoscopic surveillance, surgery).
C/I: Known case of hypersensitivity to celecoxib; patients who have experienced asthma, urticaria or allergic type reactions after taking aspirin or other NSAIDs or sulfonamideslater period of pregnancy; nursing mother.
S/E: GI side-effects include- abdominal pain, diarrhoea, dyspepsia, flatulence and nausea. CNS side-effects include- dizziness, headache and insomnia. Other side-effects include- upper respiratory tract infection, skin rash, back pain and peripheral oedema.
Precautions: Celecoxib cannot be a substitute for any corticosteroid, or to treat any corticosteroid insufficiency. Celecoxib should be prescribed with extreme caution in patients with a prior



history of peptic ulcer disease or gastrointestinal bleeding, hepatic and renal insufficiency, heart failure, those taking diuretics and ACE inhibitors, pre-existing asthma, elderly patients.
Pregnancy & lactation: Celecoxib should be used during pregnancy only if the potential benefit justifies the potential risk to foetus. But in late pregnancy celecoxib should be avoided, because it may cause premature closure of ductus arteriosus. It is not known whether celecoxib is excreted in human milk or not, if excreted, it may cause serious adverse reaction in nursing infants, so decision shoud be made in such a case whether to discontinue nursing or to discontinue the drug, taking into account the inportance of the drug to the mother.
Dosage & Admin: Rheumatoid arthritis & osteoarthritis, the lowest dose of Celenta 100 should be sought for each patient. These doses can be given without regard to timing of meals.
Rheumatoid arthritis: **The recommended oral dose is 100-200mg twice daily.**
Osteoarthritis: **The recommended oral dose is 200mg per day as a single dose or as 100mg twice daily. These doses can be given without regard to timing of meals.**
Familial adenomatous polyposis (FAP): **To reduce the number of adenomatous colorectal polyps, the recommended oral dose is 400mg twice daily to be taken with food; usual medical care for FAP patients should be continued with 100mg dose.**
In moderate hepatic impairment, the daily recommended dose should be reduced approximately by 50%.
Children: **Not recommended below the age of 18 years.**

Over dosage: Patients should be managed by symptomatic and supportive care following an NSAID overdose. There is no specific antidote.

Drug inter: Celcoxib may diminish the antihypertensive effects of ACE inhibitors, reduces natriuretic effect of furosemide & thriazide, increase blood lithium level, accentuate the haematologic toxicity of methotrexate & increase the risk of bleeding while giving with warfarin and similar agents. Fluconazole increases plasma concentration of celecoxib.

❖ **ACICOX Cap. ACI**
Celecoxib INN 100mg/capsule
100mg x 30's pack: 120.00 MRP
❖ **CELECO Cap. Medimet**
Celecoxib INN 100mg & 200mg/capsule
100mg x 50's pack: 225.00 MRP
200mg x 30's pack: 240.00 MRP
❖ **CELENTA Cap. Incepta**
Celecoxib INN 100mg & 200mg/capsule
100mg x 50's pack: 225.00 MRP
200mg x 40's pack: 320.00 MRP
❖ **CELOX-R Cap. Renata**
Celecoxib INN 100mg & 200mg/capsule
100mg x 50's pack: 227.50 MRP
200mg x 50's pack: 404.50 MRP
❖ **COX B-100 Cap. Beximco**
Celecoxib INN 100mg/capsule
100mg x 50's pack: 225.00 IP
❖ **COX B-200 Cap. Beximco**
Celecoxib INN 200mg/capsule
200mg x 50's pack: 400.00 IP
❖ **COXIB Cap. Alco Pharma**
Celecoxib INN 100mg & 200mg/capsule
100mg x 50's pack: 202.50 MRP
200mg x 50's pack: 352.50 MRP
❖ **SELECOX Cap. Square**
Celecoxib INN 100mg & 200mg/capsule
100mg x 48's pack: 144.00 MRP
200mg x 48's pack: 240.00 MRP

DEXIBUPROFEN[87]

DEXIBUPROFEN: Tablet
Dexibuprofen is a non-steroidal anti-inflammatory drug (NSAID) and is the active form of ibuprofen with better pharmacological profile.
It is available as dexibuprofen INN 300mg and 400mg film-coated tablet.
Mode of action: Dexibuprofen reduces pain and inflammation by blocking the action of cyclo-oxygenase (COX) which is responsible for production of prostaglandins.

Ind: 1. For the relief of sign and symptoms of osteoarthritis, rheumatoid arthritis, musculoskeletal disorder such as ankylosing spondylitis, low back pain or other forms of mild to moderate pain. 2. Primary dysmenorrhoea. 3. Headache and fever.

C/I: Dexibuprofen is contraindicated in patients with previous history of hypersensitivity to dexibuprofen or any other component of the product. It is also contraindicated in patients with active or suspected hemorrhage, Crohn's disease or ulcerative colitis, patients with serious heart disease, renal impairment (GFR<30ml/min) and serious hepatic impairment.

S/E: Common side effects are- dyspepsia, diarrhoea, fatigue, headache, nausea, vomiting and abdominal pain.

Precautions: Dexibuprofen should be used with caution in patients with bronchial asthma or other chronic disease of the pulmonary tract as well as in persons prone to allergy. Caution is also required in patients with hepatic, renal or cardiac insufficiency and patients with peptic ulceration. Pregnancy & lactation: Although no teratogenic impact has been observed in the animal study, the use of dexibuprofen should be avoided during the pregnancy.
Very small amount of dexibuprofen may pass into breast milk. So, dexibuprofen should be used with caution in nursing mothers.

Dosage & admin: The recommended dose is 600-900mg per day in 2-3 divided doses. In severe cases the maximum recommended dose is 1200mg per day. In elderly patients, lowest effective dose is recommended.

Drug inter: Drug interactions are noticed with simultaneous use of anticoagulant, ACE inhibitors, beta-blockers, cyclosporine, corticosteroids, digoxin, methotrexate, phenytoin, probenecid, sulfonylurea and thiazide type diuretics.

❖ **ARTOFLEX Tab. Opsonin**
Dexibuprofen INN 300mg & 400mg/tablet.
300mg x 30's pack: 120.00 MRP
400mg x 30's pack: 150.00 MRP
❖ **DEX-I Tab. Edruc**
Dexibuprofen INN 300mg/tablet.
300mg x 20's pack: 60.00 IP
❖ **DEXIBU Tab. General**
Dexibuprofen INN 200mg, 300mg & 400mg/tablet.
200mg x 42's pack: 126.00 MRP
300mg x 35's pack: 140.00 MRP
400mg x 28's pack: 140.00 MRP
❖ **DEXIFEN Tab. Beximco**
Dexibuprofen INN 200mg, 300mg & 400mg/tablet.
200mg x 100's pack: 300.00 IP
300mg x 100's pack: 400.00 IP
400mg x 100's pack: 500.00 IP
❖ **DEXPRO Tab. Orion**
Dexibuprofen INN 300mg & 400mg/tablet.
300mg x 50's pack: 200.00 MRP
400mg x 30's pack: 150.00 MRP
❖ **DIP Tab. Alco Pharma**
Dexibuprofen INN 200mg & 400mg/tablet.
200mg x 50's pack: 150.00 MRP
400mg x 30's pack: 150.00 MRP
❖ **FENDEX Tab. Asiatic**
Dexibuprofen INN 300mg & 400mg/tablet.
300mg x 30's pack: 120.00 MRP
400mg x 20's pack: 100.00 MRP
❖ **FLAMEX DX Tab. ACI**
Dexibuprofen INN 200mg, 300mg & 400mg/tablet.
200mg x 50's pack: 150.00 MRP
300mg x 50's pack: 200.00 MRP
400mg x 30's pack: 150.00 MRP
❖ **PURIFEN Tab. Incepta**
Dexibuprofen INN 200mg, 300mg & 400mg/tablet.
200mg x 20's pack: 60.00 MRP
300mg x 20's pack: 80.00 MRP
400mg x 20's pack: 100.00 MRP
❖ **SERIFEN Tab. Silva**
Dexibuprofen INN 300mg & 400mg/tablet.
300mg x 50's pack: 200.00 MRP
400mg x 50's pack: 250.00 MRP
❖ **XFLAM Tab. Square**
Dexibuprofen INN 200mg, 300mg & 400mg/tablet.
200mg x 60's pack: 180.00 MRP
300mg x 48's pack: 192.00 MRP
400mg x 48's pack: 240.00 MRP

DEXKETOPROFEN[42]

DEXKETOPROFEN: Tablet
Dexketoprofen trometamol is available as dexketoprofen INN 25mg flim-coated tablet. Dexketoprofen is the S(+)-enantiomer of ketoprofen and is responsible for the analgesic and anti-inflammatory activity of ketoprofen. The inactive R(-)-enantiomer does not contribute to the therapeutic properties of ketoprofen but adds to the metabolic load.

Mode of action: Dexketoprofen has been formulated as a trometamol salt. Its high solubility in water means a rapid absorption through the gut wall which results in a more

rapid onset of action than ketoprofen. Peak plasma concentrations are attained more quickly than other widely used analgesics with an onset of action of 30 minutes.
The anti-inflammatory potency of dexketoprofen was always equivalent to that demonstrated by twice the dose of ketoprofen.
Ind: Symptomatic treatment of pain and inflammation of mild or moderate intensity, such as musculo-skeletal pain, menstrual pain & dental pain.
C/I: Dexketoprofen is not recommended in patients who are allergic to this product or aspirin or other NSAIDs; who have suffered attacks of asthma, brochospasm, acute rhinitis, nasal polyps, urticaria, angioedema (swollen face, eyes, lips, or tongue, or difficulty in breathing) after taking aspirin or other non-steroidal anti-inflammatory drugs; who have or previously suffered from a peptic ulcer or chronic gastro-intestinal disorders; who had previously gastro-intestinal haemorrhage (bleeding); who have suffered bronchial asthma; who have severe heart failure, moderate to severe renal dysfunction or severely impaired hepatic function; who have a bleeding disorder, a blood clotting disorder or are taking an anticoagulant; and who are pregnant or breast-feeding.
S/E: As with all medicines, dexketoprofen may cause some unwanted affects in some patients, which are characteristics of non-steroidal anti-inflammatory drugs. These are:
commonly (1-10%)- nausea, vomiting, diarrhoea, stomach pain or heartburn; rarely (0.1-1 %)- sleep disorders, nervousness, headache, dizziness, vertigo, palpitations, constipation, dry mouth, flatulence, skin rash, fatigue, hot flushes, shivering, general malaise; very rarely (0.01 0.1%)- stomach ulceration, gastric haemorrhage or perforation, pins and needles, high blood pressure, water retention, slowed breathing rate, hepatic enzymes increased, increased sweating. In isolated cases (<0.01 %)- blurred vision, ringing in the ear, low blood pressure, haematological reactions, hepatic or renal damage, dermatological and photosensitivity reactions, bronchospasm or anaphylaxis. In patients with systemic lupus erythematosus or mixed connective tissue disease, anti-inflammatory medicines may rarely cause isolated cases of fever, headache and rigidity of the nape (back of the neck).
Precautions: Precaution should be exercised during using dexketoprofen in patients who are allergic to any other NSAIDs; who have kidney disease, liver disease, heart disease or fluid retention conditions; and who have blood disorder, systemic lupus erythematosus or mixed connective tissue disease.

Pregnancy & lactation: The use of dexketoprofen during pregnancy or breast-feeding is not recommended.

Dosage & admin: The dose of dexketoprofen depends on the type, severity and duration of pain. The recommended dose is generally 25mg every 8 hours, with no more than 75mg (3 tablets) daily. The elderly and patients with renal or hepatic impairment should start treatment with a total daily dose of no more than 50mg (2 tablets). Normally it is recommended to take the tablets with food. In the case of acute pain, it is recommended to take at least 30 minutes before meals.
Child: Dexketoprofen is not recommended for children.
Drug inter: Any of the following drugs cannot be used at the same time while taking dexketoprofen: other NSAIDs; anticoagulant medicines; lithium; methotrexate; hydantoins; some sulphonamide antibiotics (e.g sulfamethoxazole); medications used to treat high blood pressure (ACE inhibitors, diuretics and beta-blockers); pentoxifylline; zidovudine; cyclosporine or tacrolimus; sulphonylureas; thrombolytic medicines; probenecid; cardiac glycosides; mifepristone; and quinolone antibiotics.

❖ **ACTIDEX Tab. Incepta**
Dexketoprofen trometamol equivalent to dexketoprofen INN 25mg/tablet.
50's pack: 200.00 MRP
❖ **KETRON D Tab. ACI**
Dexketoprofen trometamol equivalent to dexketoprofen INN 25mg/tablet.
50's pack: 200.00 IP
❖ **KITEX Tab. Square**
Dexketoprofen trometamol equivalent to dexketoprofen INN 25mg/tablet.
50's pack: 200.00 MRP
❖ **KYNOL D Tab. SK+F**
Dexketoprofen trometamol equivalent to dexketoprofen INN 25mg/tablet.
60's pack: 240.00 MRP

DICLOFENAC SODIUM[21,33]

DICLOFENAC SODIUM: Tablet/ Injection/Gel/Suppository
Diclofenac sodium is a non-steroidal anti-inflammatory agent having marked anti-inflammatory, analgesic and antipyretic properties.
Mode of action: Diclofenac sodium works by blocking the action of a substance (enzyme) in the body called cyclo-oxygenase. Cyclo-oxygenase is involved in the production of various chemicals in the body, some of which are known as prostaglandins. Prostaglandins are produced in response to injury or certain diseases and would otherwise go on to cause pain, swelling and inflammation.
Ind: Rheumatoid arthritis, osteoarthrosis, ankylosing spondylitis, acute gout; chronic juvenile arthritis. Relief of pain in musculoskeletal & soft-tissue inflammations such as sprains, strains, bruises, traumatic inflammation of tendons, ligaments, muscles & joints.
C/I: Active peptic ulcer; asthma, aspirin or any non-steroid anti-inflammatroy induced allergy
S/E: Mild and infrequent gastro-intestinal discomport, bleeeding, nausea, vertigo, headache, hearing disturbances such as tinnitus; thrombocytopenia; hypersensitivity reactions (bronchospasm, angioneurotic oedema, rashes).
Cautions: History of gastro- intestinal lesions; impaired renal function; asthma; pregnancy & lactation; concurrent administration of plasma protein-bound drugs, lithium, beta-blockers or frusemide.
Pregnancy & lactation: Diclofenac is not recommended for use in pregnancy, particularly the third trimester, unless considered essential by the physician.
The medicine passes into the breast milk, but at normal doses it is unlikely to harm the baby.

Dosage & admin: Adult: ***By mouth:*** **75-150mg as enteric-coated (e.c) tablet daily in 2 or 3 divided doses, preferably after food.**
Dosage of TR (timed release) capsule or SR (sustained release) capsule or tablet: **100mg (1 capsule or tablet) once daily, preferably with food.**
By deep i.m injection into the gluteal muscle: **Acute exacerbations and post-operative- 75mg once daily (twice daily in severe cases) for maximum of 2 days;**
Ureteric colic, 75mg then a further 75mg after 30 minutes if necessary.
Gel preparation: **Apply 3-4 times daily with gentle massage.**
By rectum as suppositories: **75-150mg daily in divided doses.**
Maximum total daily dose by any route 150mg.
Children & adolescents: **1-12 years, juvenile arthritis, by mouth or by rectum, 1-3mg/kg daily in divided doses (25mg tablets, 12.5mg and 25mg suppositories only).**

Drug inter: Diclofenac may increase the blood levels of lithium, digoxin and methotrexate. There may be an increased risk of bleeding from the gut if diclofenac is taken with blood thinning or anticlotting medicines such as warfarin.

❖ **A-FENAC Tab. Acme**
Diclofenac sodium 25mg & 50mg/tablet (e.c).
25mg x 100's pack: 54.00 MRP
50mg x 100's pack: 83.00 MRP
❖ **A-FENAC SR Tab. Acme**
Diclofenac sodium 100mg/tablet (s.r)
100's pack: 300.00 MRP
❖ **A-FENAC Inj. Acme**
Diclofenac sodium 25mg/ml; 3ml ampoule, for deep i.m injection.
10 amps. pack: 95.00 MRP
❖ **A-FENAC Plus Inj. Acme**
Diclofenac sodium 75mg & lidocaine hydrochloride 20mg/2ml ampoule: deep i.m injection
2ml amp x 10's pack: 95.00 MRP
❖ **A-FENAC Suppo. Acme**
Diclofenac sodium 12.5mg & 50mg/stick (suppository)
12.5mg x 10's pack: 60.00 MRP
50mg x 10's pack: 100.00 MRP
❖ **ALCOFEN Tab. Aexim**
Diclofenac sodium 50mg/tablet
50mg x 100's pack: 50.00 MRP
❖ **ALCOFEN SR Cap. Aexim**
Diclofenac sodium 100mg/capsule (s.r).
100's pack: 150.00 MRP
❖ **ANODYNE Tab. Ibn Sina**
Diclofenac sodium 50mg/tablet
100's pack: 83.00 IP
❖ **ANODYNE SR Cap. Ibn Sina**

Diclofenac sodium 100mg/tablet (s.r).
50's pack: 151.50 MRP

❖ **ANODYNE Gel Ibn Sina**
Diclofenac sodium 1% w/w (i.e 10mg/gm): gel
10gm tube: 12.90 MRP

❖ **ANODYNE Plus Inj. Ibn Sina**
Diclofenac sodium 75mg & lidocaine hydrochloride 20mg/2ml ampoule: deep i.m injection.
10 amps pack: 100.00 MRP

❖ **APAIN Tab. Chemico**
Diclofenac sodium 50mg/tablet
100's pack: 75.00 MRP

❖ **APAIN-TR Cap. Chemico**
Diclofenac sodium 100mg/capsule (t.r).
50's pack: 125.00 MRP

❖ **APNAC Tab. Supreme**
Diclofenac sodium 50mg/tablet
100's pack: 80.00 MRP

❖ **APNAC SR Cap. Supreme**
Diclofenac sodium 100mg/capsule (s.r)
50's pack: 150.00 MRP

❖ **BEONAC-50 Tab. Benham**
Diclofenac sodium 50mg/tablet
100's pack: 80.00 IP

❖ **C-FENAC Tab. Chemist**
Diclofenac sodium 50mg/tablet
100's pack: 30.00 MRP

❖ **C-FENAC Inj. Chemist**
Diclofenac sodium 75mg/3ml ampoule: deep i.m injection.
10 amps pack: 111.30 MRP

❖ **C-FENAC Plus Inj. Chemist**
Diclofenac sodium 75mg & lidocaine hydrochloride 20mg/2ml ampoule: deep i.m injection.
10 amps pack: 119.30 MRP

❖ **CLOFEN Tab. Cosmic**
Diclofenac sodium 50mg/tablet
50mg x 100's pack: 50.00 MRP

❖ **CLOFEN-TR Cap. Cosmic**
Diclofenac sodium 100mg/capsule (t.r).
50's pack: 150.00 MRP

❖ **CLOFENAC Tab. Square**
Diclofenac sodium 25mg & 50mg/tablet.
25mg x 100's pack: 54.00 MRP
50mg x 200's pack: 176.00 MRP

❖ **CLOFENAC SR Tab. Square**
Diclofenac sodium 100mg/tablet (s.r)
100's pack: 300.00 MRP.

❖ **CLOFENAC TR Cap. Square**
Diclofenac sodium 100mg/capsule (t.r).
50's pack: 150.00 MRP

❖ **CLOFENAC Inj. Square**
Diclofenac sodium 75mg/3ml ampoule: deep i.m injection.
10 amps pack: 95.00 MRP

❖ **CLOFENAC Plus Inj. Square**
Diclofenac sodium 75mg & lidocaine hydrochloride 20mg/2ml ampoule: deep i.m injection.
10 amps pack: 95.00 MRP

❖ **CLOFENAC Suppo. Square**
Diclofenac sodium 12.5mg, 25mg & 50mg/stick (suppository)
12.5mg x 10's pack: 60.00 MRP
25mg x 10's pack: 80.00 MRP
50mg x 10's pack: 100.00 MRP

❖ **CLONAC Tab. Somatec**
Diclofenac sodium 50mg/tablet
100's pack: 82.00 IP

❖ **CLONAC TR Cap. Somatec**
Diclofenac sodium 100mg/capsule (t.r)
50's pack: 150.00 IP

❖ **COSFENAC SR Cap. Cosmo**
Diclofenac sodium 100mg/capsule (s.r)
50's pack: 150.00 MRP

❖ **DCF Tab. Decent**
Diclofenac sodium 50mg/tablet
100's pack: 60.00 MRP

❖ **DECAFEN Tab. Renata**
Diclofenac sodium 50mg/tablet (e.c)
100's pack: 84.00 MRP

❖ **DECAFEN SR Tab. Renata**
Diclofenac sodium 100mg/tablet (s.r)
100's pack: 288.00 MRP

❖ **DENAC-50 Tab. Desh Pharma**
Diclofenac sodium 50mg/tablet
100's pack: 80.00 MRP

❖ **DICLO-50 Tab. Apollo**
Diclofenac sodium 50mg/tablet
50mg x 50's pack: 40.00 MRP

❖ **DICLOFEN Tab. Opsonin**
Diclofenac sodium 25mg & 50mg/tablet
25mg x 100's pack: 52.00 MRP
50mg x 100's pack: 60.00 MRP

❖ **DICLOFEN-SR Tab. Opsonin**
Diclofenac sodium 100mg/tablet (s.r)
100's pack: 300.00 MRP

❖ **DICLOFEN Gel Opsonin**
Diclofenac sodium 1% w/w (i.e 10mg/gm): gel
10gm tube: 12.91 MRP

❖ **DICLOFEN Inj. Opsonin**
Diclofenac sodium 75mg/3ml ampoule, for deep i.m injection.
3ml amp x 10's pack: 95.00 MRP

❖ **DICLOFEN Plus IM Inj. Opsonin**
Diclofenac sodium 75mg & lidocaine hydrochlor. 20mg/2ml ampoule: for deep i.m injection.
2ml amp x 15's pack: 42.50 MRP

❖ **DICLOFEN Suppo. Opsonin**
Diclofenac sodium 12.5mg, 25mg & 50mg/stick suppository
12.5mg x 25's pack: 150.00 MRP
25mg x 10's pack: 80.00 MRP
50mg x 25's pack: 250.00 MRP

❖ **DICLON Tab. CPL**
Diclofenac sodium 50mg/tablet
50mg x 100's pack: 50.00 MRP

❖ **DICLON SR Tab. CPL**
Diclofenac sodium 100mg/tablet (s.r)
100's pack: 300.00 MRP

❖ **DICLONAC 50 Tab. Ziska**
Diclofenac sodium 50mg/tablet
50mg x 100's pack: 83.00 MRP

❖ **DICLONAC 100 TR Cap. Ziska**
Diclofenac sodium 100mg/capsule (t.r).
50's pack: 100.00 MRP

❖ **DICLONAC Inj. Ziska**
Diclofenac sodium 75mg/3ml ampoule: deep i.m injection.
10 amps pack: 60.00 MRP

❖ **DICLONAC Plus Inj. Ziska**
Diclofenac sodium 75mg & lidocaine hydrochloride 20mg/2ml ampoule: deep i.m injection.
10 amps pack: 75.00 MRP

❖ **DICLONIL Tab. Zenith**
Diclofenac sodium 50mg/tablet (e.c).
50mg x 100's pack: 80.00 MRP

❖ **DICLONIL SR Tab. Zenith**
Diclofenac sodium 100mg/tablet (s.r).
100's pack: 300.00 MRP

❖ **DICLORA 50 Tab. Marksman**
Diclofenac sodium 50mg/tablet
50mg x 100's pack: 80.00 MRP

❖ **DICLORA TR Cap. Marksman**
Diclofenac sodium 100mg/capsule (t.r)
50's pack: 150.00 MRP

❖ **DICLOREX Tab. Medimet**
Diclofenac sodium 25mg & 50mg/tablet
25mg x 100's pack: 54.00 MRP
50mg x 100's pack : 85.00 MRP

❖ **DICLOREX Rtd. Tab. Medimet**
Diclofenac sodium 100mg/tablet (retard)
50's pack: 150.00 MRP

❖ **DICLOREX Inj. Medimet**
Diclofenac sodium 75mg/3ml ampoule, for deep i.m injection.
10 amps pack: 55.00 MRP

❖ **DICLO-TR Cap. Apollo**
Diclofenac sodium 100mg/capsule (t.r)
50's pack: 150.00 IP

❖ **DIFEN-50 Tab. Peoples**
Diclofenac sodium 50mg/tablet
100's pack: 80.00 MRP

❖ **DIFENAC Tab. Rephco**
Diclofenac sodium 50mg/tablet
100's pack: 35.00 MRP

❖ **DIFENAC-CR Cap. Rephco**
Diclofenac sodium 100mg/capsule (c.r)
100's pack: 250.00 MRP

❖ **DIFENAC Inj. Rephco**
Diclofenac sodium 75mg/3ml ampoule: deep i.m injection.
5 amps pack: 25.00 MRP

❖ **DIFENAC Plus Inj. Rephco**
Diclofenac sodium 75mg & lidocaine hydrochlor. 20mg/2ml ampoule: for deep i.m injection.
2ml amp x 10's pack: 100.00 MRP

❖ **DILOCK 50 Tab. Bristol**
Diclofenac sodium 50mg/tablet
100's pack: 50.00 MRP

❖ **DILOCK-TR Cap. Bristol**
Diclofenac sodium 100mg/capsule (t.r)
50's pack: 100.00 MRP

❖ **DINAC-TR Cap. Navana**
Diclofenac sodium 100mg/capsule (t.r)
100's pack: 200.00 IP

❖ **DIX Plus Inj. Apex**
Diclofenac sodium 75mg & lidocaine hydrochlor. 20mg/2ml ampoule: for deep i.m injection.
2ml amp x 10's pack: 95.00 MRP

❖ **DIX-TR Cap. Apex**
Diclofenac sodium 100mg/capsule (t.r)
100's pack: 200.00 MRP

❖ **EDIFENAC Tab. Edruc**
Diclofenac sodium 50mg/tablet
100's pack: 85.00 IP

❖ **EDIFENAC TR Cap. Edruc**
Diclofenac sodium 100mg/capsule (t.r)
50's pack: 90.00 IP

❖ **EDIFENAC Inj. Edruc**
Diclofenac sodium 75mg/3ml ampoule: deep i.m injection.

8 amps pack: 76.00 IP

❖ **EDIFENAC Plus Inj. Edruc**
Diclofenac sodium 75mg & lidocaine hydrochlor. 20mg/2ml ampoule: for deep i.m injection.
2ml amp x 10's pack: 100.00 IP

❖ **E-FENAC Tab. Elixir**
Diclofenac sodium 50mg/tablet (e.c)
100's pack: 50.00 MRP

❖ **ERDON 100 TR Cap. Aristopharma**
Diclofenac sodium 100mg/capsule (t.r)
100's pack: 300.00 MRP

❖ **ERDON-Plus Inj. Aristopharma**
Diclofenac sodium 75mg & lidocaine hydrochloride 20mg/2ml ampoule: deep i.m injection
2ml amp x 10's pack: 100.00 MRP

❖ **ERDON Gel Cream Aristopharma**
Diclofenac sodium 1% w/w (i.e 10mg/gm): gel
10gm tube: 12.90 MRP

❖ **FENAC Tab. Sonear**
Diclofenac sodium 50mg/tablet
100's pack: 80.00 MRP

❖ **FENGEL Gel Pharmadesh**
Diclofenac sodium 1% w/w: gel preparation.
15gm tube: 19.60 MRP

❖ **FENTAB Tab. Pharmadesh**
Diclofenac sodium 50mg/tablet
50mg x 100's pack: 41.00 MRP

❖ **FENTAB SR Tab. Pharmadesh**
Diclofenac sodium 100mg/ tablet (s.r)
50's pack: 125.00 MRP

❖ **FENUM-TR Cap. Belsen**
Diclofenac sodium 100mg/capsule (t.r)
50's pack: 150.00 MRP

❖ **FICLON 50 Tab. Sanofi-aventis**
Diclofenac sodium 50mg/tablet
100's pack: 86.00 MRP

❖ **FICLON SR Cap. Sanofi-aventis**
Diclofenac sodium 100mg/capsule (s.r)
50's pack: 202.50 MRP

❖ **FICLON Inj. Sanofi-aventis**
Diclofenac sodium 75mg/3ml ampoule: i.m injection.
10 amps pack: 151.70 MRP
50mg x 10's pack: 120.00 MRP

❖ **G-DICLOFENAC Tab. Gonoshastha.**
Diclofenac sodium 50mg/tablet
100's pack: 60.00 MRP

❖ **G-DICLOFENAC Inj. Gonoshastha.**
Diclofenac sodium 75mg/3ml ampoule: i.m injection.
5 amps pack: 45.00 MRP

❖ **GENAC-50 Tab. Globe**
Diclofenac sodium 50mg/tablet
100's pack: 50.00 MRP

❖ **GENAC Inj. Globe**
Diclofenac sodium 75mg/3ml ampoule: deep i.m injection.
10 amps pack: 114.00 MRP

❖ **GENAC-Plus Inj. Globe**
Diclofenac sodium 75mg & lidocaine hydrochloride 20mg/2ml ampoule: deep i.m injection.
2ml amp x 10's pack: 100.00 MRP

❖ **HI-FENAC Tab. Hudson**
Diclofenac sodium 50mg/tablet
100's pack: 50.00 IP

❖ **HI-FENAC-TR Cap. Hudson**
Diclofenac sodium 100mg/capsule (t.r)
100's pack: 300.00 MRP

❖ **HITFLAM Tab. Ambee**
Diclofenac sodium 50mg/tablet
100's pack: 84.00 MRP

❖ **HITFLAM-SR Tab. Ambee**
Diclofenac sodium 100mg/tablet (s.r)
50's pack: 151.50 MRP

❖ **HITFLAM Gel Ambee**
Diclofenac sodium 1% w/w (i.e 10mg/gm): gel
10gm tube: 12.91 MRP

❖ **HITFLAM Inj. Ambee**
Diclofenac sodium 75mg/3ml ampoule: deep i.m injection.
10 amps pack: 66.75 MRP

❖ **INTAFENAC 50 Tab. Incepta**
Diclofenac sodium 50mg/tablet
200's pack: 150.00 MRP

❖ **INTAFENAC Inj. Incepta**
Diclofenac sodium 75mg/3ml ampoule: deep i.m injection.
10 amps pack: 95.00 MRP

❖ **INTAFENAC Plus Inj. Incepta**
Diclofenac sodium 75mg & lidocaine hydrochloride 20mg/2ml ampoule: deep i.m injection.
2ml amp x 10's pack: 95.00 MRP

❖ **J-FENAC TR Cap. Ad-din**
Diclofenac sodium 100mg/capsule (t.r)
50's pack: 150.00 MRP

❖ **LARDON-TR Cap. Desh Pharma**
Diclofenac sodium 100mg/capsule (t.r)
100's pack: 300.00 MRP

❖ **LOCOPAIN Tab. Asiatic**
Diclofenac sodium 50mg/tablet
100's pack: 40.00 MRP

❖ **LOCOPAIN-TR Cap. Asiatic**
Diclofenac sodium 100mg/capsule (t.r)
100's pack: 300.00 MRP

❖ **MEDIFEN Tab. Medicon**
Diclofenac sodium 50mg/tablet
100's pack: 84.00 MRP

❖ **MEDIFEN-TR Cap. Medicon**
Diclofenac sodium 100mg/capsule (t.r)
50's pack: 150.00 MRP

❖ **MEGAFEN Tab. Jayson**
Diclofenac sodium 50mg/tablet
100's pack: 80.00 IP

❖ **MEGAFEN-SR Tab. Jayson**
Diclofenac sodium 100mg/tablet (s.r)
50's pack: 150.00 IP

❖ **MEGAFEN Inj. Jayson**
Diclofenac sodium 75mg/3ml ampoule: deep i.m injection.
20 amps pack: 202.20 IP

❖ **MEGAFEN Plus Inj. Jayson**
Diclofenac sodium 75mg & lidocaine hydrochloride 20mg/2ml ampoule: deep i.m injection.
2ml amp x 10's pack: 101.20 MRP

❖ **MICLOFEN-50 Tab. Millat**
Diclofenac sodium 50mg/tablet
100's pack: 83.00 MRP

❖ **MICLOFEN-100 TR Cap. Millat**
Diclofenac sodium 100mg/capsule (t.r)
50's pack: 150.00 MRP

❖ **MOBIFEN Tab. ACI**
Diclofenac sodium 50mg/tablet
50mg x 100's pack: 88.00 MRP

❖ **MOBIFEN SR Cap. ACI**
Diclofenac sodium 75mg & 100mg/capsule (s.r)
75mg x 100's pack: 250.00 IP
100mg x 100's pack: 300.00 IP

❖ **MOBIFEN Plus Inj. ACI**
Diclofenac sodium 75mg & lidocaine hydrochloride 20mg/2ml ampoule: deep i.m injection.
10 amps. pack: 95.00 MRP

❖ **MOOV Tab. Proteety**
Diclofenac sodium 50mg/tablet
50mg x 100's pack: 50.00 MRP

❖ **MOOV SR Cap. Proteety**
Diclofenac sodium 100mg/capsule (s.r)
50's pack: 125.00 MRP

❖ **NASIDA SR Cap. Delta**
Diclofenac sodium 100mg/capsule (s.r)
50's pack: 150.00 MRP

❖ **NEOFENAC Tab. Ad-din**
Diclofenac sodium 50mg/tablet
50mg x 100's pack: 40.00 MRP

❖ **NEOFENAC Tab. Modern**
Diclofenac sodium 50mg/tablet
50mg x 100's pack: 84.00 MRP

❖ **NEOFENAC SR Cap. Modern**
Diclofenac sodium 100mg/capsule (s.r)
40's pack: 120.00 MRP

❖ **NORFEN Tab. Kumudini**
Diclofenac sodium 50mg/tablet
50mg x 100's pack: 83.00 MRP

❖ **NORFEN SR Cap. Kumudini**
Diclofenac sodium 100mg/capsule (s.r)
50's pack: 150.00 MRP

❖ **NOVARIN SR Cap. Amico**
Diclofenac sodium 100mg/capsule (s.r)
100's pack: 225.00 MRP

❖ **NOVARIN Gel Amico**
Diclofenac sodium 1% w/w (i.e 10mg/gm): gel
10gm tube: 12.90 MRP

❖ **ORAFEN SR Tab. Rangs**
Diclofenac sodium 100mg/tablet (s.r)
50's pack: 150.00 MRP

❖ **ORAFEN Plus IM Inj. Rangs**
Diclofenac sodium 75mg & lidocaine hydrochloride 20mg/2ml ampoule: deep i.m injection.
2ml amp x 10's pack: 95.00 MRP

❖ **ORFENAC Tab. Orion**
Diclofenac sodium 50mg/tablet.
100's pack: 80.00 MRP

❖ **ORFENAC TR Cap. Orion**
Diclofenac sodium 100mg/capsule (t.r)
50's pack: 150.00 MRP

❖ **ORFENAC Plus Inj. Orion**
Diclofenac sodium 75mg & lidocaine hydrochloride 20mg/2ml ampoule: deep i.m injection.
2ml amp x 10's pack: 90.00 MRP

❖ **PAIN ZERO TR Cap. Elixir**
Diclofenac sodium 100mg/capsule (t.r)
50's pack: 150.00 MRP

❖ **PANFRE SR Cap. Pacific**
Diclofenac sodium 100mg/capsule (s.r)
50's pack: 150.00 MRP

❖ **PENAC-50 Tab. A.P.C Pharma**
Diclofenac sodium 50mg/tablet.
100's pack: 75.00 MRP

❖ **PENAC-TR Cap. A.P.C Pharma**

Diclofenac sodium 100mg/capsule (t.r)
50's pack: 150.00 IP

❖ **PROFENAC Inj. Popular**
Diclofenac sodium 75mg/3ml ampoule: deep i.m injection.
5 amps pack: 47.50 IP

❖ **PROFENAC L Inj. Popular**
Diclofenac sodium 75mg & lidocaine hydrochloride 20mg/2ml ampoule: deep i.m injection.
2ml amp x 5's pack: 47.50 IP

❖ **PROFENAC Gel Popular**
Diclofenac sodium 1% w/w (i.e 10mg/gm): gel
10gm tube: 12.90 MRP

❖ **PROFLAM Tab. Novo Healthcare**
Diclofenac sodium 50mg/tablet
100's pack: 65.00 MRP

❖ **PROFLAM SR Tab. Novo Healtbcare**
Diclofenac sodium 100mg/tablet (s.r)
100's pack: 300.00 MRP

❖ **PROFLAM Lido Inj. Novo Healthcare**
Diclofenac sodium 75mg & lidocaine hydrochloride 20mg/2ml ampoule: deep i.m injection.
5 amps. pack: 47.50 MRP

❖ **PROLADIN Tab. Alco Pharma**
Diclofenac sodium 50mg/tablet.
100's pack: 75.00 MRP

❖ **PROLADIN-TR Cap. Alco Pharma**
Diclofenac sodium 100mg/capsule (t.r)
50's pack: 150.00 MRP

❖ **PRONAC-SR Tab. Hallmark**
Diclofenac sodium 100mg/tablet (s.r)
50's pack: 125.00 MRP

❖ **REFAIN Tab. MonicoPharma**
Diclofenac sodium 50mg/tablet.
100's pack: 83.00 MRP

❖ **REFAIN TR Cap. MonicoPharma**
Diclofenac sodium 100mg/capsule (t.r)
48's pack: 144.00 MRP

❖ **RENAC-50 Tab. Rasa**
Diclofenac sodium 50mg/tablet (e.c).
100's pack: 75.00 MRP

❖ **RENAC-TR Cap. Reman**
Diclofenac sodium 100mg/capsule (t.r)
50's pack: 150.00 MRP

❖ **REUTREN-50 Tab. Gaco**
Diclofenac sodium 50mg/tablet.
50mg x 100's pack: 82.15 MRP

❖ **REUTREN-SR Tab. Gaco**
Diclofenac sodium 50mg/tablet (s.r)
100's pack: 299.45 MRP

❖ **REUTREN-100-SR Tab. Gaco**
Diclofenac sodium 100mg/tablet (s.r)
50's pack: 149.73 MRP

❖ **REUTREN Inj. Gaco**
Diclofenac sodium 75mg/3ml ampoule: deep i.m injection.
1 amppack: 7.74 MRP

❖ **REUTREN Plus Inj. Gaco**
Diclofenac sodium 75mg & lidocaine hydrochloride 20mg/2ml ampoule: deep i.m injection.
2ml ampoule: 12.00 MRP

❖ **RONAC TR Cap. General**
Diclofenac sodium 100mg/capsule (t.r)
50's pack: 150.00 MRP

❖ **ROTAFEN Cap. Salton**
Diclofenac sodium 50mg/capsule
200's pack: 164.00 MRP

❖ **ROTAFEN-TR Cap. Salton**
Diclofenac sodium 100mg/capsule (t.r)
100's pack: 300.00 MRP

❖ **SAFENAC-TR Cap. SAPL**
Diclofenac sodium 100mg/capsule (t.r)
50's pack: 90.00 MRP

❖ **S-FENAC Tab. Seema**
Diclofenac sodium 50mg/tablet.
100's pack: 89.00 MRP

❖ **S-FENAC-TR Cap. Seema**
Diclofenac sodium 100mg/capsule (t.r)
100's pack: 300.00 MRP

❖ **SIFEN TR Cap. Silva**
Diclofenac sodium 100mg/capsule (t.r)
100's pack: 250.00 MRP

❖ **SUNAC Tab. Syntho**
Diclofenac sodium 50mg/tablet
150's pack: 120.00 MRP

❖ **TOLFENAC SR Cap. Globex**
Diclofenac sodium 100mg/capsule (s.r)
100's pack: 300.00 MRP

❖ **ULTARAN Tab. Skylab**
Diclofenac Sodium 25mg & 50mg/tablet
25mg x 100's pack: 54.00 MRP
50mg x 100's pack: 80.00 MRP

❖ **ULTRAFEN Tab. Beximco**
Diclofenac sodium 25mg & 50mg/tablet
25mg x 100's pack: 54.00 IP
50mg x 200's pack: 166.00 IP

❖ **ULTRAFEN-100 SR Tab. Beximco**
Diclofenac sodium 100mg/tablet (s.r)
100's pack: 300.00 IP

❖ **ULTRAFEN Suppo. Beximco**
Diclofenac sodium 12.5mg & 50mg/stick: suppository
12.5mg x 10's pack: 70.00 IP
50mg x 10's pack: 120.00 IP

❖ **VOLCAN Tab. Bio-pharma**
Diclofenac sodium 50mg/tablet
100's pack: 80.00 MRP

❖ **VOLCAN SR Tab. Bio-pharma**
Diclofenac sodium 100mg/tablet (s.r)
50's pack: 125.00 MRP

❖ **VOLCAN TR Cap. Bio-pharma**
Diclofenac sodium 100mg/capsule (t.r)
100's pack: 300.00 MRP

❖ **VOLMAX SR Tab. SK+F**
Diclofenac sodium 100mg/tablet (s.r)
60's pack: 180.00 MRP

❖ **VOLPRO 50 Tab. Mystic**
Diclofenac sodium 50mg/tablet
100's pack: 80.00 MRP

❖ **VOLTALIN Tab. Novartis**
Diclofenac sodium 25mg/tablet
100's pack: 303.00 MRP

❖ **VOLTALIN Forte Tab. Novartis**
Diclofenac sodium 50mg/tablet
100's pack: 600.00 MRP

❖ **VOLTALIN SR 75 Tab. Novartis**
Diclofenac sodium 75mg/tablet (s.r)
50's pack: 450.00 MRP

❖ **VOLTALIN SR 100 Tab. Novartis**
Diclofenac sodium 100mg/tablet (s.r)
50's pack: 607.00 MRP

❖ **VOLTALIN Inj. Novartis**
Diclofenac sodium 75mg/3ml ampoule: for deep i.m injection
5 amps pack: 425.00 MRP

❖ **VOLTALIN Suppo. Novartis**
Diclofenac sodium 12.5mg & 50mg/stick: suppository
12.5mg x 10's pack: 200.00 MRP
50mg x 10's pack: 350.00 MRP

❖ **VOLTAROL Inj. Techno Drugs**
Diclofenac sodium 75mg/3ml ampoule, for deep i.m injection.
5 amps pack: 45.00 MRP

❖ **VOLTID-50 Tab. Pharmasia**
Diclofenac sodium 50mg/tablet
100's pack: 60.00 IP

❖ **VOLTID-SR Cap. Pharmasia**
Diclofenac sodium 100mg/capsule (s.r)
50's pack: 150.00 IP

DICLOFENAC FREE ACID[21,33]

DICLOFENAC FREE ACID: Dispersible tablet
Diclofenac free acid, available as 46.5mg dispersible tablet (corresponding to 50mg of diclofenac sodium).
Ind: Dispersible tablets are suitable for short-term use in acute painful condisions, such as, painful syndromes of vertebral column, myalgia, sprains & strains, fractures, wounds & injuries, non-articular rheumatism, acute gout, dental or orthopaedic surgery, primary dysmenorrhoea or adnexitis; as an adjuvant in severe infections of the ear, nose or throat.
C/I; S/E; Caution: See under diclofenac sodium; but it's gastric irritation is less as it disperses immediately (within 15 seconds) & acts speedily (20-30 min) due to it's quick absorption.
Dosage: adults: The recommended initial daily dosage is 2-3 dispersible tablets; in milder cases & for children over 14 years of age, 2 dispersible tablets daily are usually sufficient. In dysmenorrhoea 2 to max. 4 tablets (if necessary) may be given per day.
Children: Not recommended below 14 years.

❖ **CLOFENAC DT Tab. Square**
Diclofenac free acid 46.5mg (corresponding to 50mg of diclofenac sodium)/tablet (dispersible).
100's pack: 300.00 MRP

❖ **VOLTALIN D Tab. Novartis**
Diclofenac free acid 46.5mg (corresponding to 50mg of diclofenac sodium)/tablet (dispersible).
100's pack: 556.00 MRP

DICLOFENAC POTASSIUM[21,54]

DICLOFENAC POTASSIUM: Tablet
Diclofenac potassium BP 25mg and 50mg tablet.
Ind: Short-term treatment in the following acute conditions: post-traumatic & post-operative pain and inflammation, dysmenorrhoea, adnexitis and non-articular rheumatism; rheumatoid arthritis; osteoarthritis; ankylosing spondylitis; acute gout; disorders of the muscles and skeleton, such as tendinitis, sprains, strains, dislocations, fractures; lower back pain; pain relief in migraine; as an adjuvant in severe infections of the ear, nose or throat.

C/I; S/E; Cautions: See under the text of diclofenac sodium.
Pregnancy & lactation: See under the text of diclofenac sodium.
Dosage: Usual dosage, 100-150mg daily in divided doses. In mild cases, 75-100mg daily in divided doses. In primary dysmenorrhoea, initially 50-100mg daily in divided doses; if necessary, dose can be increased during the course of several cycles to a maximum of 200mg/day.
Drug inter: See under the text of diclofenac sodium.

❖ **A-FENAC-K Tab. Acme**
Diclofenac potassium 50mg/tablet
50mg x 50's pack: 100.00 MRP
❖ **CATAFLAM Tab. Novartis**
Diclofenac potassium 25mg & 50mg/tablet
25mg x 50's pack: 150.00 MRP
50mg x 50's pack: 250.00 MRP
❖ **INTAFENAC K Tab. Incepta**
Diclofenac potassium 50mg/tablet
50mg x 50's pack: 150.00 MRP
❖ **NOPAIN Tab. Drug Inter.**
Diclofenac potassium 25mg & 50mg/ tablet
25mg x 100's pack: 200.00 MRP
50mg x 100's pack: 400.00 MRP

DICLOFENAC DIETHYL AMMONIUM SALT[21,54]

DICLOFENAC DIETHYLAMMO-NIUM Salt: Gel Preparation
Ind: Relief of pain in musculoskeletal & soft-tissue inflammations such as sprains, strains, bruises, traumatic inflammation of tendons, ligaments, muscles & joints; soft tissue rheumatism, osteoarthrosis; periarthropathy etc.
C/I: Hypersensitivity to diclofenac sodium or aspirin & other drugs opposing prostaglandin synthesis.
S/E: Small rashes, itching, redness or smarting at the site.
Cautions: For NSAIDs asthma warning. Avoid contact with eyes mucous membranes & injured or broken skin.
Use: Apply 3-4 times daily with gentle massage. Therapy should be reviewed after 14 days.

❖ **A-FENAC Gel Acme**
Diclofenac diethylammonium salt 1.16% (equivalent to diclofenac sodium 1% i.e 10mg/gm): gel preparation.
10gm tube: 13.00 MRP
❖ **CLOFENAC Gel Square**
Diclofenac diethylammonium salt 1.16% (equivalent to diclofenac sodium 1% i.e 10mg/gm): gel preparation.
10gm tube: 12.90 MRP
❖ **EMOV Gel Edruc**
Diclofenac diethylammonium salt 1.16% (equivalent to diclofenac sodium 1% i.e 10mg/gm): gel preparation.
25gm tube: 25.00 IP
❖ **MOOV Gel Proteety**
Diclofenac diethylammonium salt 1.16% (equivalent to diclofenac sodium 1% i.e 10mg/gm): gel preparation.
25gm tube: 45.00 MRP
❖ **REUTREN Gel Gaco**
Diclofenac diethylammonium salt 1.16% (equivalent to diclofenac sodium 1%): gel preparation.
10gm tube: 12.14 MRP
❖ **ULTRAFEN Gel Beximco**
Diclofenac diethylammonium salt 1.16% (equivalent to diclofenac sodium 1%): gel preparation
10gm tube: 13.00 IP
25mg tube: 35.00 IP

ETODOLAC[26]

ETODOLAC: Tablet/Capsule
Etodolac is a nonsteroidal anti-inflammatory drug (NSAIDs) that exhibits anti-inflammatory, analgesic and antipyretic activities. It is available as etodolac BP 300mg capsule & etodolac USP 600mg extended release (ER) tablet.
Mode of action: Like that of other NSAIDs, the mechanism of action of etodolac is also mediated through inhibition of prostaglandin synthesis.
Ind: For acute and long-term use in the management of signs and symptoms of 1. Osteoarthritis, 2. Rheumatoid arthritis; for the management of acute pain in acute gout.
C/I: Etodolac is contraindicated in patients with known hypersensitivity to etodolac. Etodolac should not be given to patients who have experienced asthma, urticaria or other allergic-type reactions after taking aspirin or other NSAIDs.
S/E: Like other NSAIDs etodolac also causes gastrointestinal symptoms, such as- abdominal pain, constipation, diarrhea, dyspepsia, flatulence, heartburn, nausea, GI ulcers, vomiting. Other events include- abnormal renal function, anemia, dizziness, edema, elevated liver enzymes, headache, increased bleeding time, pruritis, rashes, tinnitus etc.
Precautions: Etodolac should be given with caution in patients with severe hepatic reactions, pre-existing asthma, fluid retention, hypertension or heart failure. If clinical sings and symptoms consistent with liver disease develop, or if systemic manifestations occur (e.g. eosinophilia, rash etc.), it should be discontinued.
Pregnancy & lactation: There are no adequate and well-controlled studies in pregnant women. It should be used in pregnancy only if the potential benefit justifies the potential risk to the fetus. It is not known whether etodolac is excreted in human milk. A decision should be made whether to discontinue nursing or to discontinue the drug taking into account the importance of the drug to the mother.
Dosage & admin: Adults & over 18 years: 300mg capsule, 2 capsule (600mg) daily in 1-2 divided doses; Or, Etodolac 600mg ER tablet once daily.
Children: Below 18 years, not recommended.
Drug inter: Reports suggest that NSAIDs may diminish the antihypertensive effect of ACE-inhibitors. This interaction should be given consideration in patients taking NSAIDs concomitantly with ACE-inhibitors. As with other NSAIDs, concomitant administration of etodolac and aspirin is not recommended because of the potential of increased adverse effects.

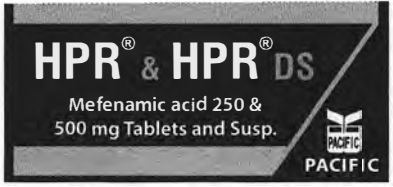
❖ **EDOPAIN Cap. Incepta**
Etodolac BP 300mg/capsule
300mg x 30's pack: 240.00 MRP
❖ **EDOPAIN 600 ER Tab. Incepta**
Etodolac USP 600mg/tablet (extended release)
600mg x 20's pack: 360.00 MRP
❖ **PANODIN SR Tab. Square**
Etodolac USP 600mg/tablet (sustained release)
600mg x 30's pack: 450.00 MRP

ETORICOXIB[34]

ETORICOXIB: Tablet
Etoricoxib is a non-steroidal anti-inflammatory drug available as etoricoxib INN 60mg, 90mg & 120mg film-coated tablet.
Mode of action: It is a selective COX-2 inhibitor.
Ind: Acute pain and inflammation, chronic musculo-skeletal pain, osteoarthritis, rheumatoid arthritis, acute gouty arthritis, primary dysmenorrhoea, ankylosing spondylitis.
C/I: Patients with known hypersensitivity to etoricoxib or any ingredient of the product. Active peptic ulceration or gastro-intestinal bleeding, severe hepatic dysfunction. Children and adolescents under 16 years of age. Patients with inflammatory bowel disease and severe congestive heart failure.
S/E: Common side effects are dizziness, headache, gostro-intestinal disorders (e.g abdominal pain, flatulence, heartburn), diarrhoea, dyspepsia, nausea, asthenia, fatigue, flu-like symptoms. Rare side effects are oedema, weight gain, anxiety, blurred vision, hypertension, epistaxis, dyspnoea, constipation, vomiting, muscle cramps, chest pain.
Precautions: Decreased kidney function and liver function, dehydration, hypertension, history of heart failure, perforation, and people over 65 years of age.
Pregnancy & lactation: Not recommended.
Dosage & admin: Adult and adolescent over 16 years: Arthritis/osteoarthritis- 60mg once daily; Rheumatoid arthritis- 90mg once daily; Acute gouty arthritis- 120mg once daily; Analgesia, acute pain associated with dental surgery- 120mg once daily; Primary dysmenorrhoea, chronic musculo-skeletal pain, including chronic low back pain- 60mg once daily.

Drug inter: Warfarin, ACE inhibitors, rifampicin, lithium, birth control pills, methotrexate, digoxin.

❖ **COXIA Tab. ACI**
Etoricoxib INN 60mg, 90mg & 120mg/tablet
60mg x 30's pack: 210.00 IP
90mg x 30's pack: 360.00 IP
120mg x 20's pack: 280.00 IP
❖ **COXITOR Tab. Beacon**
Etoricoxib INN 60mg & 90mg/tablet
60mg x 30's pack: 210.00 MRP
90mg x 20's pack: 240.00 MRP
❖ **ECOX Tab. Alco Pharma**



Etoricoxib INN 60mg & 90mg/tablet
60mg x 30's pack: 180.00 MRP
90mg x 20's pack: 180.00 MRP

❖ **EFLAM Tab. Apex**
Etoricoxib INN 60mg, & 90mg/tablet
60mg x 30's pack: 150.00 MRP
90mg x 20's pack: 140.00 MRP

❖ **ETO Tab. Delta**
Etoricoxib INN 60mg, 90mg & 120mg/tablet
60mg x 30's pack: 180.00 MRP
90mg x 20's pack: 180.00 MRP
120mg x 20's pack: 240.00 MRP

❖ **ETOCOX Tab. General**
Etoricoxib INN 60mg, 90mg & 120mg/tablet
60mg x 30's pack: 210.00 MRP
90mg x 20's pack: 240.00 MRP
120mg x 10's pack: 140.00 MRP

❖ **ETORIX Tab. SK+F**
Etoricoxib INN 60mg, 90mg & 120mg/tablet
60mg x 40's pack: 280.00 MRP
90mg x 30's pack: 360.00 MRP
120mg x 20's pack: 280.00 MRP

❖ **ETOX Tab. Hallmark**
Etoricoxib INN 60mg & 90mg/tablet
60mg x 30's pack: 210.00 MRP
90mg x 30's pack: 300.00 MRP

❖ **ETOXIB Tab. Globe**
Etoricoxib INN 60mg & 90mg/tablet
60mg x 30's pack: 180.00 MRP
90mg x 30's pack: 270.00 MRP

❖ **ORICOX Tab. Incepta**
Etoricoxib INN 60mg, 90mg & 120mg/tablet
60mg x 30's pack: 210.00 MRP
90mg x 30's pack: 360.00 MRP
120mg x 20's pack: 280.00 MRP

❖ **RITO Tab. Opsonin**
Etoricoxib INN 60mg, 90mg & 120mg/tablet
60mg x 30's pack: 210.00 MRP
90mg x 30's pack: 360.00 MRP
120mg x 20's pack: 280.00 MRP

❖ **TORY Tab. Square**
Etoricoxib INN 60mg, 90mg & 120mg/tablet
60mg x 30's pack: 210.00 MRP
90mg x 30's pack: 360.00 MRP
120mg x 20's pack: 280.00 MRP

IBUPROFEN[21,33]

IBUPROFEN: Tablet/Capsule/ Suspension
Ind: Rheumatoid arthritis (including still's disease), osteoarthrosis, anylosing spondylitis, non-rheumatoid arthropathies, peri-articular disorders, frozen shoulder (capsulitis), bursitis, tendinitis and low back pain, soft tissue inflammation such as sprains and strains .
C/I: Active peptic ulceration.
S/E: Gastro- intestinal discomport and bleeding; precipitation of bronchial asthma or allergic diseases.
Cautions: Asthma; pregnancy; aspirin/anti-inflammatroy induced allergies.
Dosage & admin: Adult: 600-1200 mg daily in divided doses. Max. 2400mg daily. Children: usual dose 20mg/kg in divided doses, which may be achieved as: 1-2 yrs. half tsf 3-4 times daily; 3-7 yrs. 1 tsf 3-4 times daily; 8-12 yrs. 2 tsf 3-4 times daily; below 1 year, not indicated. Dose should not exceed 500mg daily for children weighing less than 30kg.

❖ **ANAFEN Tab. Nipa**
Ibuprofen 400mg/tablet.
100's pack: 142.00 MRP

❖ **ANAFLAM Tab. Asiatic**
Ibuprofen 400mg/tablet.
100's pack: 143.00 MRP

❖ **ARAFA Tab. Hudson**
Ibuprofen 400mg/tablet.
100's pack: 100.00 MRP

❖ **BUFEN-SR Cap. Drug Inter.**
Ibuprofen 300mg/capsule (sustained release).
100's pack: 405.00 MRP

❖ **CHEMOFEN-400 Tab. Chemist**
Ibuprofen 400mg/tablet
400mg x200's pack: 100.00 MRP

❖ **CPFEN Tab. Cosmo Pharma**
Ibuprofen 400mg/tablet
400mg x100's pack: 131.00 MRP

❖ **DEFLAM-400 Tab. Desh Pharma**
Ibuprofen 400mg/tablet.
100's pack: 140.00 MRP

❖ **EROFEN Tab. Edruc**
Ibuprofen 400mg/tablet
100's pack: 135.00 MRP

❖ **FLAM Tab. Skylab**
Ibuprofen 400mg/tablet
100's pack: 140.00 MRP

❖ **FLAMEX Tab. ACI**
Ibuprofen 200mg & 400mg/tablet
200mg x 100's pack: 88.00 MRP
400mg x100's pack: 142.00 MRP

❖ **FLAMEX Susp. ACI**
Ibuprofen BP 100mg/5ml: suspension.
100ml bot: 18.58 MRP

❖ **FLAMPEN Tab. Alco Pharma**
Ibuprofen 400mg/tablet
100's pack: 130.00 MRP

❖ **IBEN Tab. CPL**
Ibuprofen 400mg/tablet
100's pack: 120.00 MRP

❖ **IBEN Tab. Zenith**
Ibuprofen 400mg/tablet
100's pack: 130.00 MRP

❖ **IBUAID Tab. Marksman**
Ibuprofen 400mg/tablet
100's pack: 140.00 MRP

❖ **IBUPROFEN Tab. A.P.C Pharma**
Ibuprofen 400mg/tablet
100's pack: 100.00 MRP

❖ **IBUREX Tab. Medimet**
Ibuprofen 200mg & 400mg/tablet.
200mg x 100's pack: 88.00 MRP
400mg x100's pack: 143.00 MRP

❖ **IBUTAB Tab. Chemico**
Ibuprofen 400mg/tablet
100's pack: 140.00 MRP

❖ **IFEN Tab. Cosmic**
Ibuprofen 400mg/tablet
100's pack: 140.00 MRP

❖ **INFLAM Tab. Sanofi-aventis**
Ibuprofen 200mg & 400mg/tablet
200mg x 100's pack: 88.00 MRP
400mg x 100's pack: 142.00 MRP

❖ **IRUFEN 400 Tab. Zisks**
Ibuprofen 400mg/tablet.
400mg x 100's pack: 100.00 MRP

❖ **NEOFLAM Tab. Aexim**
Ibuprofen 400mg/tablet (f.c).
400mg x 100's pack: 140.00 MRP

❖ **NEUROFEN Tab. Globe**
Ibuprofen 400mg/tablet (f.c).
400mg x 100's pack: 100.00 MRP

❖ **PEFLAM Susp. A.P.C Pharma**
Ibuprofen BP 100mg/5ml: suspension.
100ml bot: 18.00 MRP

❖ **PROFEN Tab. Acme**
Ibuprofen 400mg/tablet (f.c).
100's pack: 142.00 MRP

❖ **PROFEN Susp. Acme**
Ibuprofen BP 100mg/5ml: suspension.
100ml bot: 18.50 MRP

❖ **RAPOFEN Tab. Pharmadesh**
Ibuprofen 400mg/tablet (f.c).
100's pack: 133.00 MRP

❖ **REBUFEN-400 Tab. Rephco**
Ibuprofen 400mg/tablet (f.c).
400mg x 100's pack: 125.00 MRP

❖ **REBUPROFEN Tab. Renata**
Ibuprofen 400mg/tablet (f.c).
400mg x 100's pack: 145.00 MRP

❖ **REUFEN Tab. Gaco**
Ibuprofen 200mg & 400mg/tablet
200mg x 100's pack: 39.75 MRP
400mg x 100's pack: 131.18 MRP

❖ **REUFEN Susp. Gaco**
Ibuprofen BP 100mg/5ml: suspension.
60ml bot: 12.49 MRP
100ml bot: 18.58 MRP

❖ **REUMAFEN Tab. Beximco**
Ibuprofen 200mg & 400mg/tablet
200mg x 100's pack: 88.00 MRP
400mg x 100's pack: 142.00 MRP

❖ **REUMAFEN Susp. Beximco**
Ibuprofen 100mg/5ml BP: suspension.
100ml bot: 18.58 MRP

❖ **ROFLAM Tab. Rasa**
Ibuprofen 400mg/tablet
400mg x 100's pack: 150.00 MRP

❖ **SIFLAM Tab. Silva**
Ibuprofen 400mg/tablet
100's pack: 120.00 MRP

❖ **TRUFEN 400 Tab. Modern**
Ibuprofen 400mg/tablet
100's pack: 126.00 MRP

❖ **TYFLAM 400 Tab. Proteety**
Ibuprofen 400mg/tablet
100's pack: 140.00 MRP

❖ **UNIFLAM 400 Tab. Bristol**
Ibuprofen 400mg/tablet
100's pack: 100.00 MRP

INDOMETHACIN[21,33]

INDOMETHACIN: Capsule/ Suppository.
Ind: Rheumatoid arthritis, osteoarthrosis, ankylosing spondylitis, acute gout, degenerative joint diseases of the hip and serious acute peri-articular disorders. Lumbago, and other musculo-skeletal disorders (e.g. bursitis, tendinitis, synovitis etc), orthopaedic procedures, dysmenorrhoea.
C/I: Active peptic ulcer, history of gastro-intestinal lesions; aspirin/ anti-inflammatory induced allergy; recent proctitis; pregnancy and lactation

S/E: Headache, dizziness , nausea, vomiting, epigastric and abdominal pain and discomfort, diarrhoea, ulceration of oesophagus, stomach & duodenum including haemorrhage or even perforation; hepatitis, jaundices; raised blood pressure; haematuria; dermatological hypersensitivity reactions. Acute resp. distress including sudden dyspnoea and asthma; Leucopenia, purpura, aplastic and haemolytic anaemia and thrombocytopenia; rarely ophthalmological problems & deafness.
Cautions: Renal or hepatic insufficiency; discontinue if gastro- intestinal bleeding or persistent headache occurs; carry out periodic ophthalmoligical examination during long -term therapy.

Dosage & admin: Adult: Oral, 50-200mg daily in divided doses with food, milk or antacid. Dysmenorrhoea, up to 75mg daily. Suppository, 1 at night plus one in the morning if necessary or 1 at night supplemented during the day with caps or suspn. upto a total of 200mg daily. Child: Not recommended.

Overdose: Over dosage may be managed by gastric lavage. Antacids may be helpful.

❖ **IMET Cap. Pacific**
Indomethacin 25mg/capsule.
100's pack: 60.00 MRP
❖ **IMET SR Cap. Pacific**
Indomethacin 75mg/capsule (sustained release)
50's pack: 150.00 MRP
❖ **INDO-A Suppo. Acme**
Indomethacin 100mg/stick: suppository.
10's pack: 70.00 MRP
❖ **INDOCAP Cap. Asiatic**
Indomethacin 25mg/capsule.
100's pack: 60.00 MRP
❖ **INDOMAX Cap. Ziska**
Indomethacin 25mg/capsule
100's pack: 60.00 MRP
❖ **INDOMET Cap. Opsonin**
Indomethacin 25mg/capsule
100's pack: 60.00 MRP
❖ **INDOMET SR Cap. Opsonin**
Indomethacin 75mg/capsule (sustained release)
50's pack: 150.00 MRP
❖ **INDOMET Suppo. Opsonin**
Indomethacin 100mg/stick: suppository.
25's pack: 175.00 MRP
❖ **INDOMETHACIN Cap. Bristol**
Indomethacin 25mg/capsule.
100's pack: 50.00 MRP
❖ **INDOMIN Cap. Elixir**
Indomethacin 25mg/capsule.
100's pack: 60.00 MRP
❖ **INDOREX Cap. Medimet**
Indomethacin 25mg/capsule
100's pack: 63.00 MRP
❖ **INDOSEEM Cap. Seema**
Indomethacin 25mg/capsule
100's pack: 70.00 MRP
❖ **INDOXYL Cap. Jayson**
Indomethacin 25mg/capsule.
100's pack: 63.00 IP
❖ **INFLACIN Cap. Rephco**
Indomethacin 25mg/capsule
100's pack: 62.00 MRP
❖ **METHACIN Cap. Nipa**
Indomethacin 25mg/capsule.
100's pack: 61.00 MRP
❖ **METHOCID Cap. Gaco**
Indomethacin 25mg/capsule.
100's pack: 55.65 MRP
❖ **METROCIN Cap. Salton**
Indomethacin 25mg/capsule.
100's pack: 60.00 MRP
❖ **REUMACAP Cap. Aristopharma**
Indomethacin 25mg/capsule
100's pack: 62.00 MRP
❖ **REUMACAP SR Cap. Aristopharma**
Indomethacin 75mg/capsule (sustained release)
50's pack: 150.00 MRP
❖ **RHEUMET Cap. Pharmadesh**
Indomethacin 25mg/capsule.
100's pack: 62.00 MRP
❖ **SERVIMETA Cap. Sandoz/Novartis**
Indomethacin 25mg/capsule.
100's pack: 100.00 MRP

KETOPROFEN[21,35,79]

KETOPROFEN: Capsule/Tablet/ Injection/ Gel/ Suppositories
Ind: Rheumatoid arthritis, osteoarthrosis, ankylosing spondylitis, acute articular and peri-articular disorders; soft tissue inflammation; dysmenorrhoea.
C/I: Active peptic ulcer or history of recurrent peptic ulcer; asthma; recent proctitis; aspirin or any non-steroidal anti- inflammatory induced allergy.
S/E: Gastro-intestinal discomport or haemorrhage (rare), skin rash.
Cautions: Impaired hepatic function; pregnancy & lactation; concurrent administration of plasma protein-bound drugs.

Pregnancy & lactation: Exercise caution during pregnancy & lactation.

Dosage & admin: ***Oral preparations:*** ***Plain capsule or tablet:*** **Rheumatic disease, 100-200mg daily in 2-4 divided doses with food; pain & dysmenorrhoea, 50mg upto 3 times daily with food.**
CR/SR/TR capsules: **100-200mg capsule once daily with food. These preparations are more adventageous, because, acid environment in the stomach prevents release of active drug, thus minimising gastric irritation. The pellets release ketoprofen in solution only when they reach the alkaline environment of the intestine. The continuous slow release, sustained release or timed release capsules ensure full 24 hours relief of symptoms.**
By deep i.m injection into the gluteal muscle: **50-100mg every 4 hours (maximum 200mg in 24 hours) for upto 3 days.**
By rectum in suppositories: **Rheumatic disease, 100mg at bed time. Combined oral & rectal treatment, max. total daily dose 200mg. Child: not recommended.**
Use of gel preparation: **Adults & children over 5 years- to be applied several times daily to skin in the painful & inflammed region. Apply gently but massage well to ensure gel penetration. Should be avoided in children under 5 years of age. The gel can be used with occlusive dressing.**

❖ **FASTUM Gel Menarini/ Pacific**
Ketoprofen 2.5% w/w: gel preparation.

Ind: Inflammatory periarticular nusculoskeletal conditions & mild trauma due to sports injuries, sprains, tendinitis, musculotendinous contusions & oedema.

C/I: Should be avoided in patients with exudative dermatoses, eczema, sores & infected skin lesions or broken skin. Do not apply to the mucous membranes or eyes.
S/E: Mild skin reactions including pruritis & localised erythema may occur namely & disappears after cessation of application of gel.
Precautions: if skin rash appears, treatment should be stopped.

Dosage & admin: See above under the text.
30gm pack: 103.75 MRP

❖ **KEFEN Inj. Techno Drugs**
Ketoprofen 100mg/2ml ampoule:i.m injection
10 amps pack: 150.00 MRP
❖ **KETO-A Tab. Acme**
Ketoprofen 50mg & 100mg/tablet.
50mg x 50's pack: 150.00 MRP
100mg x 50's pack: 250.00 MRP
❖ **KETO-A Inj. Acme**
Ketoprofen 100mg/2ml ampoule: i.m injection
10 amps pack: 180.00 MRP
❖ **KETO-A Suppo. Acme**
Ketoprofen 100mg/stick: suppository.
10's pack: 120.00 MRP
❖ **KETONAC Tab. Navana**
Ketoprofen 50mg & 100mg/tablet
50mg x 50's pack: 125.00 MRP
100mg x 50's pack: 250.00 MRP
❖ **KETO-SR Cap. Hudson**
Ketoprofen 100mg/capsule (s.r).
100's pack: 350.00 MRP
❖ **KETRON Tab. ACI**
Ketoprofen 50mg/tablet
50mg x 50's pack: 175.00 IP
❖ **KETRON SR Cap. ACI**
Ketoprofen 100mg & 200mg/capsule (s.r).
100mg x 50's pack: 350.00 IP
200mg x 30's pack: 300.00 IP
❖ **KONTROL TR 100 Cap. Silva**
Ketoprofen 100mg/capsule (timed release).
100mg x 30's pack: 180.00 MRP
❖ **KOP Tab. Square**
Ketoprofen 50mg/tablet
50mg x 50's pack: 175.00 MRP
❖ **KOP SR Cap. Square**
Ketoprofen 100mg & 200mg/capsule (s.r)
100mg x 50's pack: 350.00 MRP
200mg x 30's pack: 300.00 MRP

❖ **KOP IM Inj. Square**
Ketoprofen 100mg/2ml ampoule: i.m injection
10 amps pack: 200.00 MRP

❖ **KOP Gel Square**
Ketoprofen 2.5% w/w gel, also containing ethyl alcohol, triethanolamine & lavender oil: gel
Dosage & admin: See above under the text.
20gm tube: 58.00 MRP

❖ **KYNOL TR Cap. SK+F**
Ketoprofen 100mg & 200mg/capsule (t.r).
100mg x 50's pack: 350.00 MRP
200mg x 30's pack: 300.00 MRP

❖ **ORKET Inj. Orion**
Ketoprofen 100mg/2ml ampoule: i.m injection
5 amps pack: 75.00 MRP

❖ **PROFENID-E Tab. Sanofi-aventis**
Ketoprofen 50mg & 100mg/tablet (e.c).
50mg x 50's pack: 250.00 MRP
100mg x 50's pack: 425.00 MRP

❖ **PROFENID CR Cap. Sanofi-aventis**
Ketoprofen 100mg & 200mg/capsule (constant release).
100mg x 50's pack: 505.50 MRP
200mg x 50's pack: 910.50 MRP

❖ **PROFENID Inj. Sanofi-aventis**
Ketoprofen 100mg/2ml ampoule: i.m injection
10 amps pack: 450.00 MRP

❖ **PROFENID Gel Sanofi-aventis**
Ketoprofen 2.5% w/w gel, also containing ethyl alcohol, triethanolamine & lavender oil: gel
Dosage & admin: See above under the text.
30gm tube: 101.15 MRP

❖ **TOP Tab. Bio-pharma**
Ketoprofen 50mg & 100mg/tablet.
50mg x 50's pack: 175.00 MRP
100mg x 30's pack: 180.00 MRP

❖ **TOPAIN Tab. Sonear**
Ketoprofen 50mg/tablet.
50mg x 50's pack: 200.00 MRP

❖ **WAKOFLEX Tab. Incepta**
Ketoprofen 50mg & 100mg/tablet.
50mg x 50's pack: 175.00 MRP
100mg x 50's pack: 300.00 MRP

❖ **WAKOFLEX Gel Incepta**
Ketoprofen 2.5% w/w gel, also containing ethyl alcohol, triethanolamine & lavender oil: gel.
Dosage & admin: See above under the text.
30gm tube: 80.00 MRP

❖ **WAKOFLEX Inj. Incepta**
Ketoprofen 100mg/2ml ampoule: i.m injection
5 amps pack: 100.00 MRP

❖ **XYNOFEN SR Cap. Beximco**
Ketoprofen 100mg/capsule (sustained release).
50's pack: 375.00 MRP

MEFENAMIC ACID[21.33]

MEFENAMIC ACID: Capsule/Syrup.
Ind: Mild to moderate pain in rh. arthritis (including still's disease); osteoarthritis; headache; dysmenorrhoea. Menorrhagia (including IUD users).

C/I: Peptic ulcerations, inflammatory bowel disease; Renal or hepatic impairment; pregnancy.
S/E: Drowsiness, dizziness; g.i disturbances, beeding, nausea, occasional ulceration. Withdraw treatment in severe diarrhoea, hypersensitivity , bronchospasm, rashes, cholestatic jaundice, thrombocytopenia, haemolytic anaemia.
Cautions: Bron. asthma & allergic disorders. Concurrent admin. of plasma protein- bound drugs specially coumarin anticoagulants. Elderly patient.

Dosage & admin: Adult: 500mg 3 times daily after food; Incase of menorrhagia starting on first day of menses.
Child: Use paed. suspen. Under 6 months not recommended; Over 6 months, 25 mg/kg daily in divided doses for not longer than 7days, except in juvenile chronic arthritis (still's disease), after food.

❖ **FENAMIC Cap. Beximco**
Mefenamic acid 250mg & 500mg/capsule
250mg x 100's pack: 200.00 IP
500mg x 30's pack: 114.00 IP

❖ **FENAMIC Susp. Beximco**
Mefenamic acid 50mg/5ml: suspension.
60ml bot: 15.00 IP

❖ **FENATON Tab. Drug Inter.**
Mefenamic acid 500mg/tablet
100's pack: 150.00 MRP

❖ **FLAMIC Tab. Globe**
Mefenamic acid 250mg & 500mg/tablet.
250mg x 100's pack: 125.00 MRP
500mg x 100's pack: 250.00 MRP

❖ **FLAMIC Susp. Globe**
Mefenamic acid 50mg/5ml: suspension.
60ml bot: 22.00 MRP

❖ **HPR Tab. Pacific**
Mefenamic acid 250mg/tablet
100's pack: 280.00 MRP

❖ **HPR-DS Tab. Pacific**
Mefenamic acid 500mg/tablet
50's pack: 250.00 MRP

❖ **HPR Susp. Pacific**
Mefenamic acid 50mg/5ml: suspension
60ml bot: 28.00 MRP

❖ **MEFA Tab. Salton**
Mefenamic acid 250mg/tablet
100's pack: 125.00 MRP

❖ **MEFA Susp. Salton**
Mefenamic acid 50mg/5ml: suspension
60ml bot: 14.00 MRP

❖ **MEFALGIN Tab. Cosmic**
Mefenamic acid 250mg & 500mg/tablet
250mg x 100's pack: 120.00 MRP
500mg x 100's pack: 250.00 MRP

❖ **MEFALGIN Susp. Cosmic**
Mefenamic acid 50mg/5ml: suspension
60ml bot: 18.00 MRP

MELOXICAM[21.42]

MELOXICAM: Tablet
Meloxicam is a non-steroidal anti-inflammatory drug (NSAID) of the oxicam family, with anti-inflammatory, analgesic and antipyretic properties.
Ind: Osteoarthritis (short-term treatment), rheumatoid arthritis (long-term teratment), ankylosing spondylitis.

C/I & Precaution: Meloxicam is contraindicated to patients hypersensitive to it. Meloxicam should not be given to patients who have developed signs of asthma, nasal polyps, angioneurotic oedema or urticaria following the administration of aspirin or NSAIDs. Meloxicam is also contraindicated to patients with active peptic ulcer during the last six months or a history of recurrent peptic ulcer disease, severe hepatic failure, non-dialysed severe renal failure, gastrointestinal bleeding, cerebrovascular bleeding or other bleeding disorders.
Pregnancy & lactation: It is advisable to avoid meloxicam during pregnancy & breast-feeding.

S/E: Nausea, vomiting, abdominal pain, dyspepsia, constipation or diarrhoea may occur. Ulcers or gastrointestinal bleeding may rarely occur. Skin rash or urticaria may occur in some individuals. Oedema of the lower limbs may occur during treatment. Onset of an asthma attack has been reported in certain individuals allergic to aspirin or to other NSAIDs. Headache, vertigo, or drowsiness may occur.
Dosage & admin: Adults: ***Osteoarthritis:*** **7.5mg/day; if necessary, may be increased to 15mg/day.** ***Rheumatoid arthritis:*** **15mg/day; in elderly patients the recommended dose for long term treatment is 7.5mg/day.** ***Ankylosing spondylitis:*** **15mg/day; in elderly patients the recommended dose is 7.5mg/day.**
Do not exceed the dose of 15mg/day. The total daily amount should be taken as a single dose. Patients with increased risks for adverse reactions should start treatment with 7.5mg/day. In dialysis patients with severe renal failure the dose should not exceed 7.5mg/day. Children: The pharmacokinetics of meloxicam in paediatric patients under 18 years of age has not been established.
Drug inter: Administration of other NSAIDs together may increase the risk of ulcers and gastrointestinal bleeding, via a synergistic effect. Concomitant use of oral anticoagulants, heparin and ticlopidine incresase the risk of bleeding via inhibition of platelet function and damage to the gastroduodenal mucosa. Use of lithium or methotrexate with NSAIDs increase their levels in the blood, which may then reach toxic values. NSAIDs appear to decrease the efficacy of intrauterine contraceptive devices.

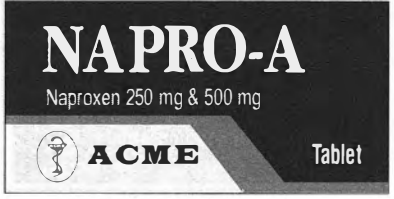
❖ **MELCAM Tab Square**
Meloxicam BP 7.5mg & 15mg/tablet.
7.5mg x 100's pack: 250.00 MRP
15mg x 50's pack: 200.00 MRP

NAPROXEN[21,33,52]

NAPROXEN SODIUM: Tablet/Capsule/Gel/Suspension/Suppositories.
Ind: Rheumatoid arthritis, osteoarthrosis, ankylosing spondylitis; acute gout.
C/I: Active peptic ulcer; aspirin or any non-steroid anti- inflammatory induced allergy.
S/E: Mild and infrequent gastro-intestinal discomport, bleeeding, nausea, vertigo, headache, hearing disturbances such as tinnitus; thrombocytopenia; hypersensitivity reactions (bronchospasm, angioneurotic oedema, rashes).
Precutions: History of gastro-intestinal lesions; impaired renal function; asthma; pregnancy & lactation; concurrent admin. of plasma protein-bound drugs, lithium, beta-blockers or frusemide.
Dosage & admin: Adult: ***Rheumatoid arthritis, osteoarthritis, ankylosing spondylitis:*** **The usual dose is 250-500mg twice daily or as a single dose of 500mg tablet or 500mg SR tablet daily in the morning or evening after meal.**
Acute gout: **750mg initially then 250mg eight hourly until the attack subsides.**
Juvenile arthritis: **10mg/kg daily in divided doses.**
Acute musculo-skeletal disorders: **500mg initially, then 250mg every 6-8 hours as required.**
Child: Under 5 years, not recommended; for the treatment of juvenile rheumatoid arthritis in children over 5 years of age, the usual dosage is 10mg/kg body-wt daily in two divided doses. Naproxen is not recommended for use in any other indication in children under 16 years of age.
SR Preparation: **500mg SR tablet once daily in the morning or evening after meal.**
Gel preparation: **Gel is to be applied locally 2-6 times a day as required with gentle massage and is not recommended for use in children.**

❖ **ANAFLEX Tab. ACI**
Naproxen sodium 250mg & 500mg/tablet
250mg x 50's pack: 250.00 MRP
500mg x 30's pack: 270.00 MRP
❖ **ANAFLEX SR Tab. ACI**
Naproxen sodium 500mg/tablet (s.r)
500mg x 20's pack: 280.00 IP
❖ **ANAFLEX Gel ACI**
Naproxen 10% w/w: gel preparation
15gm pack: 62.00 MRP
❖ **ARNEX Tab. Silva**
Naproxen sodium 500mg/tablet
500mg x 30's pack: 180.00 MRP
❖ **BPXEN Tab. Bristol**
Naproxen sodium 250mg & 500mg/tablet
250mg x 50's pack: 200.00 MRP
500mg x 50's pack: 375.00 MRP
❖ **COSNAP Tab. Cosmo Pharma**
Naproxen sodium 250mg/tablet
250mg x 50's pack: 150.00 MRP
❖ **DIPROXEN Tab. Drug Inter.**
Naproxen sodium 250mg & 500mg/tablet
250mg x 100's pack: 420.00 MRP
500mg x 50's pack: 350.00 MRP
❖ **DIPROXEN CR-500 Tab. Drug Inter.**
Naproxen sodium 500mg/tablet (c.r)
500mg x 30's pack: 300.00 MRP
❖ **DIPROXEN Gel Drug Inter.**
Naproxen 10% w/w gel preparation
Use: Apply locally 3-4 times daily with gentle massage.
15gm pack: 60.00 MRP
❖ **FRITT Tab. Somatec**
Naproxen sodium 250mg & 500mg/tablet
250mg x 50's pack: 200.00 MRP
500mg x 50's pack: 350.00 MRP
❖ **NAID Tab. Pacific**
Naproxen sodium 250mg & 500mg/tablet
250mg x 50's pack: 200.00 MRP
500mg x 50's pack: 376.00 MRP
❖ **NAPASIN Tab. Skylab**
Naproxen sodium 250mg/tablet
50's pack: 210.00 MRP
❖ **NAPEC Tab. UniHealth/UniMed**
Naproxen sodium 250mg & 500mg/tablet
250mg x 30's pack: 120.00 MRP
500mg x 30's pack: 240.00 MRP

❖ **NAPIUM Tab. Kumudini**
Naproxen sodium 250mg & 500mg/tablet
250mg x 50's pack: 200.00 MRP
500mg x 30's pack: 210.00 MRP
❖ **NAPIX-500 Tab. Modern**
Naproxen sodium 500mg/tablet
500mg x 30's pack: 140.00 MRP
❖ **NAPREN Tab. Alco Pharma**
Naproxen sodium 250mg/tablet
50's pack: 150.00 MRP
❖ **NAPRO Tab. Aristopharma**
Naproxen sodium 250mg & 500mg/tablet
250mg x 50's pack: 210.00 MRP
500mg x 30's pack: 210.00 MRP
❖ **NAPRO-A Tab. Acme**
Naproxen sodium 250mg & 500mg/tablet
250mg x 100's pack: 400.00 MRP
500mg x 30's pack: 210.00 MRP
❖ **NAPROBEN 500 Tab. Benham**
Naproxen sodium 500mg/tablet
500mg x 30's pack: 180.00 IP
❖ **NAPROCID Tab. Gaco**
Naproxen sodium 250mg & 500mg/tablet
250mg x 30's pack: 120.05 MRP
500mg x 30's pack: 210.00 MRP
❖ **NAPROSON Tab. Jayson**
Naproxen sodium 275mg/tablet
50's pack: 202.00 IP
❖ **NAPROSYN Tab. Roche**
Naproxen sodium 250mg & 500mg/tablet
250mg x 50's pack: 331.50 MRP
500mg x 50's pack: 629.50 MRP
❖ **NAPROX Tab. SK+F**
Naproxen sodium 250mg & 500mg/tablet
250mg x 50's pack: 250.00 MRP
500mg x 50's pack: 400.00 MRP
❖ **NAPROX Susp. SK+F**
Naproxen sodium 125mg/5ml: suspension
50ml bot: 30.00 MRP
❖ **NAPROX Gel SK+F**
Naproxen 10% w/w gel preparation
Use: Apply locally 3-4 times daily with gentle massage.
15gm pack: 60.00 MRP
❖ **NAPROXEN Tab. Amico**
Naproxen sodium 500mg/tablet
500mg x 30's pack: 210.00 MRP
❖ **NAPROXIN Tab. Ambee**
Naproxen sodium 250mg & 500mg/tablet
250mg x 30's pack: 127.20 MRP
500mg x 30's pack: 206.70 MRP
❖ **NAPRYN Tab. Healthcare**
Naproxen sodium 250mg & 500mg/tablet
250mg x 50's pack: 275.00 MRP
500mg x 30's pack: 270.00 MRP
❖ **NAPSOD Tab. UniHealth/UniMed**
Naproxen sodium 275mg & 550mg/tablet
275mg x 30's pack: 120.00 MRP
550mg x 30's pack: 240.00 MRP
❖ **NAPTODIN-500 Tab. Desh Pharma**
Naproxen sodium 500mg/tablet
500mg x 50's pack: 350.00 MRP
❖ **NASOX Tab. Seema**
Naproxen sodium 250mg & 500mg/tablet
250mg x 100's pack: 400.00 MRP



500mg x 50's pack: 350.00 MRP

❖ **NASPRO Tab. Popular**
Naproxen sodium 250mg & 500mg/tablet
250mg x 50's pack: 250.00 MRP
500mg x 30's pack: 270.00 MRP

❖ **NAXIN Tab. Opsonin**
Naproxen sodium 250mg & 500mg/tablet
250mg x 50's pack: 200.00 MRP
500mg x 30's pack: 210.00 MRP

❖ **NAXO Tab. Navana**
Naproxen sodium 250mg & 500mg/tablet
250mg x 50's pack: 200.00 MRP
500mg x 50's pack: 350.00 MRP

❖ **NOOZE 500 Tab. Syntho**
Naproxen sodium 500mg/tablet
500mg x 30's pack: 180.00 MRP

❖ **NUPRAFEN Tab. Beximco**
Naproxen sodium 250mg & 500mg/tablet
250mg x 100's pack: 420.00 IP
500mg x 50's pack: 392.50 IP

❖ **PAIROX Tab. Asiatic**
Naproxen sodium BP 250mg & 500mg/tablet
250mg x 50's pack: 200.00 MRP
500mg x 30's pack: 210.00 MRP

❖ **PROXEN 250 Tab. MonicoPharma**
Naproxen sodium 250mg/tablet
250mg x 50's pack: 212.00 MRP

❖ **RANOXEN Tab. Rangs Pharma**
Naproxen sodium 250mg & 500mg/tablet
250mg x 50's pack: 200.00 IP
500mg x 30's pack: 210.00 IP

❖ **RELEVE Tab. General**
Naproxen sodium 500mg/tablet
500mg x 50's pack: 350.00 MRP

❖ **REPRO 500 Tab. Doctor's**
Naproxen sodium 500mg/tablet
500mg x 30's pack: 210.00 MRP

❖ **ROXEN 250 Tab. Hallmark**
Naproxen sodium 250mg/tablet
250mg x 50's pack: 200.00 MRP

❖ **SERVINAPROX Tab. Sandoz/Novartis**
Naproxen sodium 250mg & 500mg/tablet.
250mg x 50's pack: 250.00 MRP
500mg x 30's pack: 270.00 MRP

❖ **SONAP Tab. Square**
Naproxen sodium 250mg & 500mg/tablet
250mg x 50's pack: 200.00 MRP
500mg x 30's pack: 210.00 MRP

❖ **SONAP Suppo. Square**
Naproxen sodium 500mg/suppository.
500mg x 10's pack: 120.00 MRP

❖ **SONAP Gel Square**
Naproxen 10% w/w: gel preparation
Use: Apply locally 3-4 times daily with gentle massage.
15gm pack: 60.00 MRP

❖ **SUXEN Gel Supreme**
Naproxen 10% w/w: gel preparation
Use: Apply locally 3-4 times daily with gentle massage.
15gm pack: 62.00 MRP

❖ **TICOFLEX Tab. Incepta**
Naproxen sodium 250mg & 500mg/tablet
250mg x 50's pack: 200.00 MRP
500mg x 50's pack: 350.00 MRP

❖ **TICOFLEX SR Tab. Incepta**
Naproxen sodium 500mg/tablet (s.r)
30's pack: 240.00 MRP

❖ **TICOFLEX Susp. Incepta**
Naproxen sodium 125mg/5ml: suspension
50ml bot: 35.00 MRP

❖ **TICOFLEX Gel Incepta**
Naproxen 10% w/w: gel preparation
Use: Apply locally 3-4 times daily with gentle massage.
15gm pack: 60.00 MRP

❖ **TOFA Tab. Chemico**
Naproxen sodium 250mg & 500mg/tablet
250mg x 50's pack: 200.00 MRP
500mg x 50's pack: 350.00 MRP

❖ **XENAPRO Tab. Renata**
Naproxen sodium 250mg & 500mg/tablet
250mg x 50's pack: 200.00 MRP
500mg x 30's pack: 240.00 MRP

❖ **XPRO Tab. Apex**
Naproxen sodium 500mg/tablet
500mg x 30's pack: 150.00 MRP

OXAPROZIN[52]

OXAPROZIN: Tablet
Oxaprozin is a non-steroidal anti-inflammatory drug that exhibits anti-inflammatory, analgesic and antipyretic properties. Oxaprozin is available as oxaprozin USP 600mg film coated tablet.
Mode of action: The mechanism of action of oxaprozin is like that of other NSAIDs, that are related to prostaglandin synthesis.
Ind: Oxaprozin is indicated for relief of the signs and symptoms of: osteoarthritis, rheumatoid arthritis & juvenile rheumatoid arthritis, ankylosing spondylitis, tendonitis, bursitis & acute gout.
C/I: Oxaprozin is contraindicated in patients with known hypersensitivity to any of the components of the formulation. It should not be given to patients who have experienced asthma, urticaria, or allergic-type reactions after taking aspirin or other NSAIDs. Oxaprozin should be avoided in those with a history of peptic ulcer or G.I bleeding.
S/E: The more frequent reactions are nausea, vomiting, abdominal discomfort and epigastric distress, skin rashes, urticaria, tinnitus, edema, headache, insomnia, cognitive dysfunction, anemia etc. The more serious reactions like gastrointestinal bleeding, peptic ulceration, haemorrhage, perforation, colitis etc may occur occasionally.
Precautions & warnings: General: Oxaprozin cannot be expected to substitute for corticosteroids or to treat corticosteroid insufficiency. Abrupt discontinuation of corticosteroids may lead to disease exacerbation. Patients on prologed cortiosteroid therapy should have their therapy tapered slowly if a decision is made to discontinue corticosteroids. Hepatic effects: Borderline elevations of one or more liver tests may occur in up to 15% of patients taking NSAIDs including oxaprozin. Notable elevations of ALT or AST (approximately three or more times the upper limit of normal) have been reported in approximately 1% of patients in NSAIDs. Renal effects: Caution should be used when initiating treatment with oxaprozin in patients with considerable dehydration. It is advisable to rehydrate patients first and then start therapy with oxaprozin. Caution is also recommended in patients with preexisting kidney disease. Fluid retention and edema: Fluid retention and edema have been observed in some patients taking NSAIDs. Therefore, as with other NSAIDs, oxaprozin should be used with caution in patients with fluid retention, hypertension or heart failure. Warnings: Serious G.I toxicity, such as peptic ulceration, perforation and G.I bleeding, sometimes severe and occasionally fatal, can occur at any time, with or without symptoms in patients treated with oxaprozin.
Pregnancy & lactation: There are no adequate or well-controlled studies in pregnant women. So, oxaprozin should be used during pregnancy only if the potential benefits justify the potential risks to the fetus. It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, therefore oxaprozin is not recommended for lactating mothers.
Dosage & admin: Adult: Rheumatoid arthritis, 1200mg (two 600mg tablets) once daily; Osteoarthritis, 1200mg (two 600mg tablets) once daily.
Children: Juvenile rheumatoid arthritis (6-16 years of age), the recommended dose based on the body weight is given bellow:
Child's weight 22-31 kg, 600mg once daily; 32-54 kg, 900mg once daily; >55 kg, 1200mg once daily.
The maximum recommended total daily dose of oxaprozin in adults is 1800mg (or 26mg/kg, whichever is lower), to be given in divided doses. In children, doses greater than 1200mg have not been studied. Patients of low body weight and patients with severe renal impairment or on dialysis should initiate therapy with 600mg once daily.
Drug inter: Oxaprozin and other NSAIDs can reduce the anti-hypertensive effect of propranolol and other beta-blockers. The natriuretic effects of frusemide have been reported to be inhibited by some drugs of this class. Concurrent administration of methotrexate may enhance its toxicity due to reduce tubular secretion. Animal studies indicate that the prompt administration of activated charcoal in adequate amounts would tend to reduce markedly the absorption of the drug.
Overdose: In cases of accidental overdoses, patients should be managed by symptomatic and supportive care following an NSAID overdose.
Storage: Store in a cool dry place. Protect from light.

❖ **DAYPROX Tab. SK+F**
Oxaprozin USP 600mg/tablet (film coated).
600mg x 30's pack: 210.00 IP

❖ **DEMARIN Tab. ACI**
Oxaprozin USP 600mg/tablet (film coated).
600mg x 30's pack: 210.00 IP

PIROXICAM[21,33]

PIROXICAM: Capsule/ Injection/ Suppository
Ind: Rheumatoid arthritis, osteoarthrosis,

ankylosing spondylitis, acute musculo-skeletal disorders and acute gout.
C/I: Active peptic ulcer, history of recurrent ulceration; recent proctitis, aspirin or any non-steroidal anti-inflammatory induced allergy.
S/E: See under Naproxen; also rarely oedema.
Cautions: Pregnancy, lactation, impaired hepatic function; oedematous states; concurrent admin. of plasma protien-bound drugs; proctitis & haemorrhoids
Dosage & admin: ***By mouth:*** **Adult, general use- 20mg daily as a single dose.**
Musculo-skeletal disorders: **Initially 40mg daily for 2 days then 20mg. daily for 7-14 days. Gout, initially 40mg, as a single dose, then 40mg, daily in single or divided doses for next 4-6 days**
Juvenile arthritis: **Less than 15 kg body wt. 5mg daily; 16-25kg 10mg daily; 20-45kg 15mg daily; over 46kg, 20mg daily.**
Child: Not recommended.
By deep i.m injection:
Rheumatic disease: **Initially 20mg daily, maintenance 10-30mg daily, in single or divided doses.**
Juveenile RA: **Child- >46kg body wt. 20mg daily, 26-45kg body wt. 15mg once daily, 16-25kg body wt. 10mg once daily, <15kg body wt. 5mg once daily.**
Acute musculoskeletal disorders: **40mg daily in single or divided doses for 2 days, then 20mg daily for 7-14 days; child not recommended.**
Actue gout: **40mg initially, then 40mg daily in single or divided doses for 4-6 days; child not recommended.**

❖ **FLEXICAM Cap. Renata**
Piroxicam 10mg/capsule
100's pack: 167.00 MRP
❖ **FLEXICAM I.M Inj. Renata**
Piroxicam 40mg/2ml ampoule: i.m injection
2ml amp x 1's pack: 14.67 MRP
❖ **RHEUDENE Cap. Gaco**
Piroxicam 10mg/capsule
100's pack: 174.90 MRP
❖ **RHEUDENE Inj. Gaco**
Piroxicam 40mg/2ml ampoule: i.m injection
2ml amp x 1's pack: 14.67 MRP

SULINDAC[133]

SULINDAC: Tablet
Sulindac is a non-steroidal antirheumatic agent possessing anti-inflammatory, analgesic and anti-pyretic properties. It is available as sulindac BP 100mg tablet.
Ind: Sulindac is indicated for the symptomatic treatment of the rheumatoid arthritis, osteoarthritis, ankylosing spondylitis, periarticular inflammatory disorders, acute painful shoulder (acute subacromial bursitis/supraspinatus tendinitis), and acute gouty arthritis.
C/I: Patients with known allergy to sulindac. Patients in whom acute asthmatic attacks, urticaria or rhinitis have been precipitated by aspirin or other NSAIDs. Sulindac is also contraindicated in patients with a history of active gastro-intestinal bleeding or peptic ulceration.
S/E: Gastro-intestinal side effects are the most common and consist of abdominal pain, nausea and constipation. Gastro-intestinal ulceration and bleeding may also occur. The most frequently reported central nervous system side effects are drowsiness, dizziness, headache and nervousness. Other adverse effects include depression, tinnitus, confusion, light-headedness, insomnia, psychiatric disturbances, syncope, convulsions, coma, peripheral neuropathy, blurred vision and other ocular effects, oedema and mass gain, hypertension, hematuria, skin rashes, pruritus, urticaria, stomatitis, alopecia and hypersensitivity reactions. A hypersensitivity syndrome consisting of fever and chills, skin rashes or other cutaneous manifestations, hepatotoxicity, renal toxicity (including renal failure), leukopenia, thrombocytopenia, eosinophilia, inflamed glands or lymph nodes, and arthralgia has been reported.
Precautions: Patients intolerant to one of the non-steroidal anti-inflammatory analgesics, including aspirin, may be intolerant to sulindac. Sulindac should be administered with caution to patients with impaired renal function and to those with bleeding disorders, epilepsy, Parkinsonism or psychiatric disorders. In the presence of liver function impairment the halflife of sulindac is prolonged and a reduction of daily dosage may be required.
Pregnancy & lactation: Sulindac should be used during the first two trimesters of pregnancy only if the potential benefit justifies the potential risk to the foetus. Use of sulindac during the third trimester of pregnancy is not recommended. It is not known whether sulindac is excreted in human milk. So, a decision should be made whether to discontinue nursing or discontinue the medicine taking into acconut the importance of the medicine to the mother.
Dosage & admin: The usual dosage is 100mg to 200mg twice a day; although dosages should be optimized for each individual. The maximal daily dose is 400mg. Therapy for 7 days in acute gouty arthritis and for 7 to 14 days in acute painful shoulder is usually sufficient. After a satisfactory response has been achieved, the dosage may be reduced according to the response. Sulindac should be taken with food.
Drug inter: Sulindac and its sulphide metabolite are highly protein bound. Patients should be monitored carefully until it is certain that no change in their anticoagulant or hypoglycaemic dosage is required.

❖ **LINDAC Tab. Popular**
Sulindac BP 100mg/tablet.
100mg x 50's pack: 150.00 MRP
❖ **SULIDAC Tab. SK+F**
Sulindac BP 100mg/tablet.
100mg x 50's pack: 150.00 MRP
❖ **SULIN Tab. Alco Pharma**
Sulindac BP 100mg/tablet.
100mg x 100's pack: 250.00 MRP

TENOXICAM[50]

TENOXICAM: Tablet
Tenoxicam is a non-steroidal agent with antiinflammatory and analgesic properties. It is available as- Tenoxicam 20mg tablet.
Ind: Symptomatic treatment of the following painful inflammatory and degenerative disorders of the musculoskeletal system- rheumatoid arthritis, osteoarthritis, arthrosis, ankylosing spondylitis; extra-articular disorders, e.g tendinitis, bursitis, periarthritis of shoulders (shoulder-hand syndrome) or hips, strains & sprains.
C/I: Known hypersensitivity to the drug. Patients in whom salicylates or other nonsteroidal anti-inflammatory drugs (NSAIDs) induce symptoms of asthma, rhinitis or urticaria. Patients who are suffering or have suffered from severe dseases of the upper gastrointestinal tract, including gastritis, gastric and duodenal ulcer. Concurrent treatment with salicylates or other NSAIDs should be avoided.
S/E: Tenoxicam was found well tolerated in the recommended dosage.
Undesirable effects that reported were mild and transient. Frequency greater than 1%:
Gastrointestinal tract- gastric, epigastric and abdominal discomfort, dyspepsia, heartburn, nausea; Central nervous system- dizziness, headache.
Frequency less than 1%: Gastrointestinal tract- constipation, diarrhea, stomatitis, gastritis, vomiting, ulcers, GI-bleeding including haematemesis and melena; Central nervous system- fatigue, sleep disturbances, appetite loss, dry mouth, vertigo; Skin- itching, erythema, exanthema, rash, urticaria; Urinary tract and kidneys- increase in BUN or creatinine, edema; Liver and biliary tract- increased liver enzyme activity; Cardiovascular system- palpitations. In a small proportion of patients the interruption of treatment due to undesirable effects was necessary.
Precautions: Monitor cardiac and renal function in patients with conditions that could increase their risk of developing renal failure, suh as pre-existing renal
disease, impaired renal function in diabetics, hepatic cirrhosis, congestive heart failure, volume depletion or concomitant treatment with potentially nephrotoxic drugs, diuretics and corticosteroids. Patients having coagulation disorders or receiving drug therapy that interferes with haemostasis. Any patient with symptoms of gastrointestinal disease should be closely monitored. If peptic ulceration or gastrointestinal bleeding occurs, tenoxicam should be immediately withdrawn. If severe skin reactions (e.g Lyell's or Stevens-Johnosn syndrome) occur, the treatment should be discontinued immediately.
Pregnancy & lactation: Chronic treatment during the third trimester of pregnancy should be avoided. Infants should be weaned or the drug discontinued.
Dosage & admin: 20mg at the same time of the day.

❖ **OXICAM Tab. ACI**
Tenoxicam 20mg/tablet.
20mg x 30's pack: 240.00 IP

❖ **TILCOTIL Tab. Roche**
Tenoxicam 20mg/tablet.
20mg x 50's pack: 850.50 MRP

TOLFENAMIC ACID[65]

TOLFENAMIC ACID: Tablet
Tolfenamic acid is an NSAID with anti-inflammatory, analgesic and antipyretic effects. It is available as tolfenamic acid BP 200mg tablet
Mode of action: Tolfenamic acid acts by inhibiting prostaglandin and leukotriene synthesis.
Ind: Acute migraine.
C/I: Tolfenamic acid is contraindicated in active peptic ulceration, significantly impaired kidney or liver function and in patients in whom attacks of asthma, urticaria or acute rhinitis are precipitated by aspirin or other NSAIDs.
S/E: Tolfenamic acid is well tolerated at the recommended dosage. The side effects include-diarrhoea, nausea, epigastric pain, vomiting, dyspepsia, isolated reports of gastric ulceration, drug exanthema, erythema, pruritus, urticaria and occasional harmless dysuria in the form of smarting during urination in males. The occurrence is correlated with the concentration of a metabolite and is most probably due to local irritation of the urethra. Increased consumption of liquid or reduction of the dose diminishes the risk of smarting. The urine may, due to coloured metabolites, become a little more lemon-coloured. As is the case with the use of other NSAIDs, the occasional side effects includde headache, vertigo, tremor, euphoria, fatigue, isolated cases of dyspnoea, pulmonary infiltration, bronchospasm and asthma attack, isolated cases of thrombocytopenia, anemia and leucopenia, isolated cases of reversible liver function disturbances and toxic hepatitis.
Precautions: As is the case with other NSAIDs, tolfenamic acid should be used with caution in patients with a history of gastrointestinal ulceration, or impaired liver or kidney function.
Pregnancy & lactation: Studies in pregnant women are not available. As is the case with the use of other NSAIDs, tolfeamic acid should not be given in the last trimester, due to risks of premature closure of the ductus arteriosus and prolonged parturition. Tolfenamic acid is excreted to such a very small extent in mothers' milk that it should be without risk to the breast-fed baby.
Dosage & admin: Adults: 200mg when the first symptoms of migraine appear. The treatment can be repeated once after 1-2 hours if a satisfactory response in not obtained.
Elderly: **Normal adult dose.**
Children: **Paediatric use yet not been established.**
Drug inter: In patients treated with anticoagulants, close monitoring of blood coagulation is recommended. The effect of loop diuretics may be reduced. The effect of lithium may be increased.

❖ **TOLMIC Tab. Beximco**
Tolfenamic acid BP 200mg/tablet
200mg x 30's pack: 240.00 MRP
❖ **TUFNIL Tab. SK+F**
Tolfenamic acid BP 200mg/tablet
200mg x 40's pack: 320.00 MRP

Combined Preparations

DICLOFENAC SODIUM + MISOPROSTOL[48]

DICLOFENAC SODIUM +MISOPROSTOL: Tablet
It is a combination product containing diclofenac sodium, a nonsteroidal anti-inflammatory drug (NSAID) with analgesic properties, and misoprostol, a gastrointestinal mucosal protective prostaglandin El analog.
The combined preparations are available as enteric-coated tablets in two strengths, viz: i. tablets containing diclofenac sodium BP 50mg in the core surrounded by an outer mantle of misoprostol INN 200mcg; ii. tablets containing diclofenac sodium BP 75mg in the core surrounded by an outer mantle of misoprostol INN 200mcg.
Mode of action: The mechanism of action of diclofenac sodium, like other NSAIDs, is not completely understood but may be related to prostaglandin synthetase inhibition. NSAIDs inhibit prostaglandin synthesis. A deficiency of prostaglandins within the gastric and duodenal mucosa may lead to diminish bicarbonate and mucous secretion and may contribute to the mucosal damage caused by NSAIDs. Misoprostol can increase bicarbonate and mucous production & prevents gastric and duodenal ulcers.
Ind: This combination is indicated for treatment of the signs and symptoms of osteoarthritis or rheumatoid arthritis in patients at high risk of developing NSAID-induced gastric and duodenal ulcers and their complications.
C/I: Diclofenac sodium and misoprostol combination, because of the abortifacient property of the misoprostol component, is contraindicated in women who are pregnant.
S/E: The most common reported side-effects are abdominal pain, diarrhoea and other g.i symptoms. Diarrhoea and abdominal pain developed early in the course of therapy, and are usually self-limited (resolve after 2 to 7 days). Rare instances of profound diarrhoea leading to severe dehydration have been reported in patients receiving misoprostol.
Precautions: Patients with an underlying condition such as inflammatory bowel disease, or those in whom dehydration should be monitored carefully if diclofenac sodium and misoprostol combination is prescribed.
Geriatric use: No overall differences in safety or effectiveness were observed between these subjects and younger subjects, and other reported clinical experience has not identified differences in responses between the elderly and younger patients, but greater sensitivity of some older individuals cannot be ruled out. As with any NSAID, the elderly are likely to tolerate adverse events less well than younger patients.
Pregnancy & lactation: Diclofenac sodium has been found in the milk of nursing mothers. It is unlikely that misoprostol is excreted into milk since the drug is rapidly metabolized throughout the body. Excretion of the active metabolite (misoprostol acid) into milk is possible, but has not been studied. Because of the potential for serious adverse reactions in nursing infants, diclofenac sodium and misoprostol combination is not recommended for use by nursing mothers.
Dosage & admin: ***Osteoarthritis:*** **The recommended dosage for maximal g.i mucosal protection is diclofenac sodium 50mg plus misoprostol 200mcg 3 times daily. For patients who experience intolerance, diclofenac sodium 75mg plus misoprostol 200mcg 2 times daily or diclofenac sodium 50mg plus misoprostol 200mcg 2 times daily can be given.**
Rheumatoid arthritis: **The recommended dosage is diclofenac sodium 50mg plus misoprostol 200mcg 3 or 4 times daily. For patients who experience intolerance, diclofenac sodium 75mg plus misoprostol 200mcg 2 times daily or diclofenac sodium 50mg plus misoprostol 200mcg 2 times daily can be given.**
Paediatric use: **Safety and effectiveness of diclofenac sodium and misoprostol combination in paediatric patients have not been established.**
Drug inter: *Aspirin:* Concomitant administration with aspirin is not recommended because diclofenac sodium is displaced from its binding sites by aspirin, resulting in lower plasma concentrations, peak plasma levels and AUC values. *Digoxin:* Elevated digoxin levels have been reported in patients receiving digoxin and diclofenac sodium. *Antihypertensive:* NSAIDs can inhibit the activity of antihypertensives, including ACE inhibitors. Thus, caution should be taken when administering it with such agents. *Warfarin:* The effects of warfarin and NSAIDs on G.I bleeding are synergistic, such that users of both drugs together have a risk of serious

bleeding greater than users of either drug alone. Oral *hypoglycaemics:* Diclofenac sodium does not alter glucose metabolism in healthy people nor it alters the effects of oral hypoglycaemics. There are rare reports, however, from marketing experience, of changes in effects of insulin or oral hypoglycaemics in the presence of diclofenac sodium that necessitated change in the doses of such agents. Both hypo- and hyperglycaemic effects have been reported. A direct causal relationship has not been established, but physicians should consider the possibility that diclofenac sodium may alter a diabetic patient's response to insulin or oral hypoglycaemics. *Antacids:* Antacids reduce the bioavailability of misoprostol acid. Antacids may also delay absorption of diclofenac sodium. Magnesium-containing antacids exacerbate misoprostol-associated diarrhea. So, it is not recommended to be coadministered with magnesium-containing antacids. *Diuretics:* The diclofenac sodium component like other NSAIDs, can inhibit the activity of diuretics. Concomitant therapy with potassium-sparing diuretics may be associated with increased serum potassium levels.

❖ **ARTHROFEN 50 Tab. Healtbcare**
Diclofenac sodium BP 50mg + misoprostol INN 200mcg/tablet
30's pack: 300.00 MRP
❖ **ARTHROFEN 75 Tab. Healtbcare**
Diclofenac sodium BP 75mg + misoprostol INN 200mcg/tablet
30's pack: 360.00 MRP
❖ **CLOFINA Tab. RAK Pharma**
Diclofenac sodium BP 50mg + misoprostol INN 200mcg/tablet
30's pack: 300.00 MRP
❖ **DIX Extra Tab. Apex**
Diclofenac sodium BP 50mg + misoprostol INN 200mcg/tablet
30's pack: 300.00 MRP
❖ **ERDON SUPER-50 Tab. Aristopharma**
Diclofenac sodium BP 50mg + misoprostol INN 200mcg/tablet
30's pack: 300.00 MRP
❖ **ERDON SUPER-75 Tab. Aristopharma**
Diclofenac sodium BP 75mg + misoprostol INN 200mcg/tablet
30's pack: 330.00 MRP
❖ **MICLOFENAC 50 Tab. Square**
Diclofenac sodium BP 50mg + misoprostol INN 200mcg/tablet
30's pack: 300.00 MRP
❖ **MICLOFENAC 75 Tab. Square**
Diclofenac sodium BP 75mg + misoprostol INN 200mcg/tablet
30's pack: 330.00 IP
❖ **MISOCLO Tab. General**
Diclofenac sodium BP 50mg + misoprostol INN 200mcg/tablet
20's pack: 200.00 MRP
❖ **MISOCLO-75 Tab. General**
Diclofenac sodium BP 75mg + misoprostol INN 200mcg/tablet
20's pack: 220.00 MRP
❖ **MISOFEN Tab. Somatec**
Diclofenac sodium BP 75mg + misoprostol INN 200mcg/tablet
30's pack: 330.00 IP
❖ **PANFRE Plus 50 Tab. Pacific**
Diclofenac sodium BP 50mg + misoprostol INN 200mcg/tablet
30's pack: 300.00 MRP
❖ **PROFENAC Plus Tab. Popular**
Diclofenac sodium BP 50mg + misoprostol INN 200mcg/tablet
20's pack: 200.00 IP
❖ **ULTRAFEN Plus Tab. Beximco**
Diclofenac sodium BP 50mg + misoprostol INN 200mcg/tablet
50's pack: 500.00 IP
❖ **ULTRAFEN Plus 75 Tab. Beximco**
Diclofenac sodium BP 75mg + misoprostol INN 200mcg/tablet
30's pack: 330.00 IP

Corticosteroids

Systemic and local corticosteroids used in rheumatic & inflammatory musculoskeletal disaeses such as, dexamethasone, hydrocortisone, prednisolone & methyl prednisolone, triamcinolone discussed in the section of corticosteroid drugs under endocrine system & dermatological products.

Drugs which suppress the rheumatic disease process[21] *or Disease-modifying antirheumatic drug*

There are some drugs such as, *gold, penicillamine, hydroxychloroquine, chloroquine, & immunosuppressants (e.g leflunomide)* may suppress the disease process in rheumatic arthritis. They are sometimes known as second-line or disease-modifying antirheumatic drugs. Unlike NSAIDs they do not produce an immediate therapeutic effect but require 4-6 months of treatment for a full response. If one of these drugs does not lead to objective benefit within 6 months, it should be discontinued.

HYDROXYCHLOROQUINE[26]

HYDROXYCHLOROQUINE SULPHATE: Tablet
Hydroxychloroquine sulphate is a synthetically produced derivative of quinine, acting as an immunosuppressant. It is available as hydroxy-chloroquine sulphate BP 200mg tablet (f.c).
Mode of action: Hydroxychloroquine sulphate acts as an immunosuppressant by inhibiting production of rheumatoid and acute phase reactants. It also accumulates in white blood cells, stabilizing lysosomal membranes and inhibiting the activity of many enzymes, including collagenase and the proteases that cause cartilage breakdown. It also acts by disrupting cell walls of infected red blood cells and kills the developing malarial parasites.
Ind: 1. Acute and chronic rheumatoid arthritis, 2. Systemic lupus erythematosus (SLE), 3. Malaria.
C/I: The presence of retinal or visual field changes attributable to any 4-aminoquinoline compound; patients with known hypersensitivity to 4-aminoquinoline compounds; long term therapy in children.
S/E: Generally hydroxychloroquine sulphate is well tolerated. However, few side effects like nausea, vomiting, stomach upset, loss of appetite, diarrhea, tiredness, weakness or headache and visual problem may occur the first several days.
Precautions: Children are specially sensitive to the 4-aminoquinoline compounds. Patients should be strongly warned to keep these drugs out of the reach of children. Opthalmologic examination requires in every 12 months.
Pregnancy & lactation: During pregnancy, this drug should be used only if clearly needed. Since small amount of this drug is found in the breast milk, it should not be given a nursing mother without consulting the concerned physician.
Dosage & admin: Hydroxychloroquine sulphate tablets are taken orally with food to avoid stomach upset.
***Acute and chronic rheumatoid arthritis:* 400 to 600mg daily. When good response is obtained (usually 4-8 wks.), dose can be reduced to 50%.**
***Systemic Lupus Erythematosus (SLE):* 400mg once or twice daily for several weeks or months depending on response of the patients. Maintenance dose is 200 to 400mg daily.**
Malaria: Adults, an initial dose of 800mg followed by 400mg in 6-8 hours and 400mg on each of two consecutive days. Children, a total dose calculating 25mg/kg is administered in 3 days as follows: First dose- 10mg base/kg (but not exceeding a single dose of 620mg base); Second dose- 5mg base/kg (but not exceeding a single dose of 310mg base) 6 hours after first dose; Third dose- 5mg base/kg 18 hours after second dose; Fourth dose- 5mg base/kg 24 hours after third dose.
*** Hydroxychloroquine sulphate BP 200mg equivalent to 155mg of base.**
Overdosage: Symptoms of overdose consist of headache, drowsiness, visual disturbances, cardiovascular collapse, and convulsions, followed by sudden and early respiratory and cardiac arrest. Gastric lavage until the stomach is completely emptied.
Drug inter: Antibiotics, neostigmine, chloroquine, antacids.

❖ **RECONIL Tab. Incepta**
Hydroxychloroquine sulphate BP 200mg/ tablet
30's pack: 360.00 MRP
❖ **REQUIN Tab. Zenith**
Hydroxychloroquine sulphate BP 200mg/ tablet
30's pack: 360.00 MRP

LEFLUNOMIDE[26]

LEFLUNOMIDE: Tablet
Leflunomide is an isoxazole immunomodulatory agent which acts on the immune system, has been introduced recently as a disease-modifying antirheumatic drug (DMARD).
Mode of action: In rheumatoid arthritis, inflammation and subsequent degradation of synovial tissues are initiated by the influx of

lymphocytes (B cells, CD4+, and CD8+ T cells) into the synovial tissue.
Leflunomide inhibits lymphocyte proliferation by blocking dihydroorotate dehydrogenase, an enzyme involved in de novo pyrimidine production necessary for DNA synthesis. In this way, leflunomide inhibits the lymphocyte proliferation associated with the clonal expansion of T cells in rheumatoid arthritis.
Ind: Leflunomide is indicated in adults for the treatment of active 'rheumatoid arthritis' to reduce signs and symptoms and to retard structural damage as manifested by x-ray erosions and joint space narrowing.
C/I: Known hypersensitivity to leflunomide or any of the other components; hepatic impairment; severe uncontrolled infections; and bone marrow dysplasia.
S/E: Adverse reactions associated with the use of leflunomide include- diarrhea, nausea, vomiting, abdominal pain, headache, respiratory infection, bronchitis, elevated liver enzymes, aggravation of pre-existing hypertension, alopecia, and rash.

Precautions: Caution should be taken for those female with child bearing potential who are not using reliable contraception and for the subject of renal insufficiency. Leflunomide should be stopped before becoming pregnant. Liver function should be monitored before starting treatment.

Pregnancy & lactation: Leflunomide is not recommended for pregnant women. Pregnancy must be avoided during leflunomide treatment or prior to the completion of the drug elimination procedure after leflunomide treatment. It is not known whether leflunomide is excreted in human milk, but there is a potential for serious adverse reactions in nursing infants from leflunomide. Therefore, leflunomide should not be used by nursing mothers. Incase of therapeutic importance of the drug to the mother, a decision should be made whether to proceed with nursing or initiate treatment with leflunomide.

Dosage & admin: Initially a loading dose of 100mg once daily for 3 days. Then a maintenance dose of 20mg once daily. The dose may be decreased to 10mg daily if tolerability issues arise.
Children: Not recommended for children below 18 years of age.

Drug inter: Cholestyramine and activated charcoal help rapid elimination of leflunomide from the body. Increased side effects may occur when leflunomide given concomitantly with hepatotoxic substances.

Overdosage: There is no human experience regarding leflunomide overdosage. In the event of a significant overdose or toxicity, cholestyramine or charcoal administration is recommended to accelerate elimination.

❖ **AROLEF Tab. General**
Leflunomide INN 20mg & 100mg/tablet (f.c)
20mg x 50's pack: 225.00 MRP
100mg x 3's pack: 60.00 MRP

❖ **MOTORAL Tab. ACI**
Leflunomide INN 20mg & 100mg/tablet (f.c).
20mg x 50's pack: 250.00 IP
100mg x 10's pack: 200.00 IP

❖ **NODIA Tab. Incepta**
Leflunomide INN 10mg, 20mg & 100mg/tablet (f.c).
10mg x 100's pack: 300.00 MRP
20mg x 50's pack: 250.00 MRP
100mg x 3's pack: 60.00 MRP

METHOTREXATE

Methotrexate preparations are discussed under cytotoxic antimetabolites in the chapter-16 for carcinochemotherapy.

OTHER PRODUCTS

Chloroquine: See under anti-malarial drugs
Sulphasalazine: See under antibacterial chemotherapeutics

Drugs used in Gout

ALLOPURINOL[21,33]

ALLOPURINOL: Tablet.
Ind: Gout; primary and secondary hyperuricaemia; prophylaxis of uric acid and calcium oxalate stones
C/I: Acute gout.
S/E: Rashes, sometimes with fever, gastro-intestinal disordesr, drowsiness; rarely malaise, headache, vertigo, taste disturbances; hypertension; symptomless zanthine deposists in muscle; alopecia; hepatitis; (Sometimes rashes may be the sign of impending hypersensitivity reaction- withdraw therapy but when rash is mild reintroduce cautiously, discontinue immediately on recurrence).
Caution: Pregnancy; renal or hepatic dysfunction. When initiating therapy also give colchicine or an anti-inflammatory agent for 1 month. Concurrent admin. of anticoagulants, 6-mercaptopurine or azathioprine.
Dosage & admin: Adult: initially 100-300mg daily in divided doses; maintenance, 200-600mg daily in divided doses.
Child: Not recommended.

❖ **ALORIC Tab. Gaco**
Allopurinol 100mg/tablet
100mg x 100's pack: 250.43 MRP

❖ **ALURIC Tab. Sonear**
Allopurinol 100mg/tablet
100mg x 100's pack: 250.00 MRP

❖ **ALUROL Tab. Incepta**
Allopurinol 100mg/tablet
100mg x 100's pack: 400.00 MRP

❖ **DURIC Tab. Opsonin**
Allopurinol 100mg & 300mg/tablet
100mg x 50's pack: 200.00 MRP
300mg x 30's pack: 240.00 MRP

❖ **ESLORIC Tab. Square**
Allopurinol 100mg & 300mg/tablet
100mg x 100's pack: 400.00 MRP
300mg x 30's pack: 240.00 MRP

❖ **GOUTEX Tab. Bio-pharma**
Allopurinol 100mg/tablet
100mg x 100's pack: 250.00 MRP

❖ **UCOREX Tab. Healthcare**
Allopurinol 100mg/tablet.
100mg x 50's pack: 227.00 MRP

PROBENECID[21,33]

PROBENECID: Tablet
Ind: Gout (prophylaxis), hyperuricaemia, reduction of tubular excretion of penicillins and certain cephalosporins.
C/I: Acute attack of gout; concurrent admin. of salicylates; history of blood dyscrasias; renal uric acid stones.
S/E: Infrequent; nausea, vomiting, urinary frequency, headache, flushing, dizziness, rashes, rarely hypersensitivity, nephrotic syndrome, hepatic necrosis, aplastic anaemia.
Precautions: History of peptic ulcer; renal impairment; pregnancy; adequate fluid intake; concurrent admin. of sulphonamides, penicillins, cephalosporins, indomethacin & methotrexate.
Dosage & admin: Adult: 250mg twice daily after food for first week, then increase after a week to 500 mg. twice daily, then up to 2gm daily in 2-4 divided doses according to plasma uric acid concentration and reduce for maintenance.
Child: Not recommended.

❖ **BENEMID Tab. MSD**
Probenecid 500mg/tablet
100's pack:
Preparation: May not be available.

2. DRUGS USED IN NEUROMUSCULAR DISORDERS

2.1 Drugs which enhance neuromuscular transmission
- **i. Drugs used in myasthenia gravis**
- **ii. Drugs used in cerebral palsy**

2.2 Skeletal muscle relaxants:
- **i. Centrally acting skeletal muscle relaxants.**
- **ii. Locally acting skeletal muscle relaxants.**

Drugs used in Myasthenia gravis

These include:

1. **Anticholinesterases:** These drugs enhance neuromuscular transmission in voluntary and involuntary muscle in myasthenia gravis, such as: ***Edrophonium, Neostigmine & Pyridostigmine.***
2. Corticosteroids & other immunosuppressants, viz: ***Prednisolone, Cyclosporin.***
3. Cytotoxic immunosuppressants, viz: ***Azathioprine, Mycophenolate mofetil.***

NEOSTIGMINE[21,33]

NEOSTIGMINE: Tablet/Injection.
Ind: Treatment & diagnosis of Myasthenia gravis; Reversal of nondepolarising neuromuscular blockade, for surgical anaesthetic procedures.

C/I: Intestinal or urinary obstruction.

S/E: Nausea, vomiting, increased salivation, diarrhoea, abdominal cramps; signs of overdoses are increased g.i. discomfort, bronchial secretions & sweating, involuntary defaecation & micturition, miosis, nystagmus, bradycardia, hypotension, agitation, excessive dreaming & weakness eventually leading to fasciculation & paralysis.

Precautions: Asthma, bradycardia, recent myocardial infarction, epilepsy, hypotension, parkinsonism, vagotonia, pregnancy, peptic ulcer; atropine or other antidote to muscarinic effect may be necessary (particularly when neostigmine given by i.m. injection) but it should not be given routinely as it may mask the signs of over dosage.

Dosage & admin: *By mouth:* Adult: Neostigmine bromide 75 -300mg daily in divided doses.
Cbildren: Neonate, 1 -5mg 4 bourly; Others, 15 -60mg daily in divided doses.

***By Injection:* Adult: Neostigmine methyl sulphate 1-2.5mg i.m or s.c daily in divided doses.**
Children: Neonate, 0.05 -0'2 5 mg i.m or s.c 4 hourly; Others, 0.2-0.5mg daily.

Preparations: See under muscle relaxants in the chapter of Anaesthetics.

Drugs used in Cerebral palsy

Cerebral palsy is the name given to a set of illnesses where damage to special areas of the brain makes it very hard or impossible to control the muscles. Sometimes, this is caused by the body making a mistake as it grows. Other times, it is caused by a brain injury when a baby is being born, such as- birth asphyxia.
There are several main kinds of cerebral palsy, which have different problems, viz: spasticity, athetosis, ataxia, mixed cerebral palsy.

Some children may have mild cerebral palsy with minor problem- just a slight limp. But, some may develop really big problems like scissoring of the legs, or bent elbows and wrists, some walking on their toes or bending a lot at the knees. This is because their joints have become stiff or their muscles are growing slower than their bones. Although there is no cure for cerebral palsy, recently a purified neurotoxin complex ***(Botulinum toxin type A)*** has been specially developed to treat the muscle rigidity that comes with cerebral palsy. Many of the symptoms of cerebral palsy, like muscle stiffness & toe walking can be greatly relieved, sometimes almost eliminated. Because, muscles will then grow naturally, and the child may be able to play and even draw pictures and do many things that they could never do before.

BOTULINUM TOXIN TYPE A[143]

❖ BOTOX Inj. Allergan Pharma/City Overseas
Botox is a natural, highly purified protien preparation of botulinum toxin type A, a neurotoxin complex, specially developed to treat the muscle rigidity that comes with cerebral palsy and for cosmetic treatment of facial wrinkles and frowning. It is available as botulinum toxin type A injection, 100units in vial.
Mode of action: Botox blocks the signals between the nerve & its muscle. When this happens a lot of the limb tightness disappears which in turn, allows the muscle a better chance to grow normally. Just as important, botox therapy can put off surgery a little longer. By encouraging normal movement, child's body is given the chance to grow.
Ind: 1. Treatment of the muscle rigidity that comes with cerebral palsy. 2. Cosmetic treatment of facial wrinkles and frowning. (discussed in the chapter of dermatological products).
S/E: Treatment with botox is well accepted by most children with cerebral palsy. Some children may experience side effects specially during the first few weeks following injections. Usually, these side effects are gentle and short-term. The most common side effects include a feeling of fever and pain at the place of the injection and a general weakness.
Dosage & admin: First, the doctor must check if this treatment is suitable for the individual child. After the child has been studied by a team of doctors & carers, a plan will be carefully arranged with the parent & the carer for each child, so that the goals we set and the result we can expect are in line. Botox injection are given in very small doses into the affected muscle. Several places within the selected muscle may be injected during each treatment. This will depend on which muscle is affected, and its size. Botox injections relax the muscle. About one hour before the injection a special anaesthetic cream is put on the place for the injection, or in some young, anxious or unco-operative children, a light sedative may also be used. Some doctors may prefer to use a light general anaesthetic for the injection process. After about 3 to 4 months or sometimes longer, when the effect of the last injection has worn off, another botox injection may be given.
Following Botox injection it is very important to have physiotherapy. This helps, not only to get the most out of the botox injection, but also makes the injection effect last longer.

Prognosis of botox therapy: The result of the botox injection is controlled by how badly the child has cerebral palsy, the age of the child, the careful choice of children for this therapy, and the amount of physiothrerapy following the injection. About 2 to 4 weeks after the injection, there is usually a change for the better in movement. The best result is after 4-6 weeks. Botox therapy is most successful when used near the beginning of child's problem and often has a lasting, and in some cases, permanent effect. Although many children will need corrective surgery, botox injection allow surgery to be

delayed until the child is older and able to receive simpler operation.
Note: For more information please consult manufacturer's literature.
100 units vial x 1's pack: 26815.28 TP

Skeletal Muscle Relaxants[21]

1. **Centrally acting skeletal muscle relaxants.**
2. **Locally acting skeletal muscle relaxants.**

Centrally acting skeletal muscle relaxants.

These groups of muscle relaxants are used for the relief of chronic or persistent muscle spasm or spasticity & not indicated for spasm associated with minor injuries. These include: ***Baclofen, Dantrolene, Diazepam & Tizanidine.***
They act mainly on the central nervous system except dantrolene which acts peripherally. This group of muscle relaxants differs from the muscle relaxants used during anaesthesia by their mode of action, wich block transmission at the neuromuscular junction.

BACLOFEN[54,138]

BACLOFEN: Tablet
Baclofen is a centrally acting skeletal muscle relaxant & an antispastic agent with a spinal site of action. It is available as baclofen BP 10mg & 25mg/tablet.
Mode of action: Baclofen inhibits both monosynaptic & polysynaptic reflexes at the spinal level by stimulating the GABAB-receptors, which inhibits the release of glutamate & aspartate. It may also act at intraspinal sites producing CNS depression. Neuromascular transmission is not affected by baclofen. Baclofen also exerts an antinoceptive effect.
Ind: Skeletal-muscle spasticity of spinal and cerebral origin.
C/I: Hypersensitivity to baclofen.
S/E: Side-effects mostly mild and transient. Frequent- sedation drowsiness, nausea; occasional- respiratory depression, diminished cardiovascular functions; rare- urinary retention.
Precautions & warnings: Pregnancy, epilepsy, psychiatric disorders, cerebrovascular or respiratory insufficiency. Caution in road users. Avoid abrupt discontinuation.
Dosage & admin: Adult: Starting dose- 15mg/day; maintenance dose- 30mg to 80mg/day in divided doses.
Children: Starting dose- 0.3mg/kg/day; maintenance dose- 0.75mg to 2.5mg/kg/day. Patients under haemodialysis- 5mg/day.
Drug inter: CNS depressants, antihypertensives, levodopa.

❖ **BACLOFEN Tab. Apex**
Baclofen BP 10mg/tablet.
20's pack: 120.00 MRP
❖ **BACLON Tab. Orion**
Baclofen BP 10mg/tablet.
30's pack: 240.00 MRP
❖ **BECLO Tab. Opsonin**
Baclofen BP 5mg, 10mg & 25mg/tablet.
5mg x 30's pack: 135.00 MRP
10mg x 30's pack: 240.00 MRP
25mg x 20's pack: 400.00 MRP
❖ **BECLOVAN Tab. Aristopharma**
Baclofen BP 10mg/tablet.
30's pack: 240.00 MRP
❖ **FENOBAC 10 Tab. SK+F**
Baclofen BP 10mg/tablet.
30's pack: 240.00 MRP
❖ **FLEXIBAC Tab. Beacon**
Baclofen BP 5mg & 10mg/tablet.
5mg x 50's pack: 225.00 MRP
10mg x 30's pack: 240.00 MRP
❖ **LIORESAL Tab. Novartis**
Baclofen BP 10mg & 25mg/tablet.
10mg x 50's pack: 485.00 MRP
25mg x 50's pack: 1123.00 MRP

DIAZEPAM

Preparations: See in the section of CNS drugs.

EPERISONE[107]

EPERISONE: Tablet
Ind: Improvement of muscular hypertonic symptoms in the following diseases- cervical syndrome, periarthritis of the shoulder, lumbago. Improvement of spastic paralysis in the following diseases- cerebrovascular disease, spastic spinal paralysis, cervical spondylosis, postoperative sequelae (including cerebrospinal tumor), sequelae to trauma (spinal trauma, head injury etc), amyotrophic
lateral sclerosis, cerebral palsy, spinocerebellar degeneration, spinal vascular diseases and other encephalomyelopathies.
C/I: Hypersensitivity to any of its ingredients. Pregnancy & Lactation: The safety of eperisone has not been established in pregnant women, therefore, it should only be used in pregnant women if the expected therapeutic benefits are evaluated to outweigh the possible risks of treatment. The drug should not be used during lactation.
S/E: The side-effects of eperisone are very rare. Only a few cases have been observed and none of them were of serious nature, these are excessive relaxation, stomach ache, nausea, vertigo, anorexia, drowsiness, skin rashes, diarrhea, vomiting, indigestion, other gastrointestinal disturbances, insomnia, headache, constipation etc.
Dosage & Admin: Adults- usually 150mg daily in 3 divided doses after each meal; the dosage should be adjusted depending on the patient's age and severity of symptoms.
Children: Yet not recommended.

❖ **EPREL Tab. Orion**
Eperisone hydrochloide 50mg/tablet
50's pack: 150.00 MRP
❖ **MYONIL Tab. Square**
Eperisone hydrochloide 50mg/tablet
50's pack: 150.00 MRP

TIZANIDINE[54]

TIZANIDINE: Tablet
Tizanidine hydrochloride is an alpha2-adrenoceptor agonist, recently introduced as skeletal muscle relaxant for painful muscle spasm associated with static & functional disorders of the spine and following spinal cord injury or surgery.
Ind: Painful muscle spasm associated with static and functional disorders of the spine (cervical and lumbar syndromes) and following surgery, e.g for herniated intervertebral disc or for osteoarthritis of the hip. Spasticity due to neurological disoders, such as multiple sclerosis, chronic myelopathy, degenerative diseases of the spinal cord, cerebrovascular accidents, and cerebral palsy.
C/I: Known hypersensitivity to tizanidine hydrochloride.
S/E: With low doses, as recommended for the relief of painful muscle spasm- drowsiness, fatigue, dizziness, dry mouth. nausea, gastrointestinal disturbances and slight reduction in blood pressure. With higher doses, as recommended for spasticity, in addition- muscle weakness and insomnia, hypotension, bradycardia, transient increases in serum tmsaminases.
Cautions: Patients with impaired kiney or liver function; when patients drive a vehicle or operate machinery; in pregnancy and breast-feeding; in children.
Dosage: Painful muscle spasm- 2mg thrice daily. Spasticity due to neurological disorders- maximum initial dose 6mg/day in 3 divided doses, then increase stepwise to 12mg to 36mg/day.
Drug Inter: Antihypertensives including diuretics, alcohol and sedatives.
Note: For further information please consult manufacturer's full prescribing information.

❖ **RELENTUS Tab. Beximco**
Tizanidine hydrochloride equivalent to tizanidine base 2mg/tablet.
50's pack: 250.00 IP

❖ **SIRDALUD Tab. Novartis**
Tizanidine hydrochloride 2.288mg equivalent to tizanidine base 2mg/tablet.
30's pack: 225.00 MRP

❖ **TIZADIN Tab. ACI**
Tizanidine hydrochloride equivalent to tizanidine base 2mg/tablet.
50's pack: 250.00 IP

Locally acting Skeletal muscle relaxants.

This group of skeletal muscle relaxants relieves skeletal muscle spasm of local origin without interfering with muscle function.
The available formulation is cyclobenzaprine hydrochloride.

CYCLOBENZAPRINE[26]

CYCLOBENZAPRINE HCl: Tablet
Cyclobenzaprine hydrochloride is a skeletal muscle relaxant, which relieves muscle spasm of local origin without interfering with muscle function. In property it displays atropine-like action. It is available as cyclobenzaprine hydrochloride USP 10mg tablet.
Ind: Cyclobenzaprine hydrochloride is indicated as an adjunct to rest and physical therapy for relief of muscle spasm associated with acute, painful musculoskeletal condition.
Improvement is manifested by relief of muscle spasm and its associated signs and symptoms, such as- pain, tenderness, limitation of motion, and restriction in activities of daily living.
C/I: Hypersensitivity to any component of this product. Concomitant use of MAO inhibitors or within 14 days after their discontinuation. Hyperpyretic crisis seizures, and deaths have occurred in patients receiving cyclobenzaprine (or structurally similar tricyclic antidepressants) concomitantly with MAO inhibitor drugs. Acute recovery phase of myocardial infarction, and patients with arrhythmias, heart block or conduction disturbances, or congestive heart failure. Hyperthyroidism.
S/E: The adverse reactions reported most frequently with cyclobenzaprine are drowsiness, dry mouth and dizziness. The incidence of these common adverse reactions is lower in the surveillance program than in the controlled clinical studies.
Precautions: Because of its atropine-like action, cyclobenzaprine hydrochloride should be used with caution in patients with a history of urinary retention, angle-closure glaucoma, increased intraocular pressure, and in patients taking anticholinergic medication.

Pregnancy & lactation: Cyclobenzaprine should be used during pregnancy only if clearly needed. Caution should be exercised when this drug is administered to a nursing mother.

Dosage & admin: ***Adult and adolescents of age 15 years and over:*** **The usual dose is 10mg 3 times daily orally. The daily dose should not exceed 60mg. Treatment for more than 2 or 3 weeks is not recommended.**
Dose in elderly: **Therapy with cyclobenzaprine in the elderly should be initiated with a 5mg dose and titrated slowly upward.**
Dose in hepatic impairment: **Cyclobenzaprine should be used with caution in subjects with mild hepatic impairment starting with a 5mg dose and titrating slowly upward. The use of cyclobenzaprine in subjects with moderate to severe impairment is not recommended.**
Pediatric use: **Safety and effectiveness of cyclobenzaprine hydrochloride in pediatric patients below 15 years of age have not been established.**

Drug inter: Cyclobenzaprine hydrochloride may have life-threatening interactions with MAO inhibitors. Cyclobenzaprine may enhance the effects of alcohol, barbiturates, and other CNS depressants.

❖ **CYRIN Tab. Hallmark**
Cyclobenzaprine hydrochloride USP 10mg/tablet.
10mg x 50's pack: 150.00 MRP

❖ **FLEXERIN Tab. Somatec**
Cyclobenzaprine hydrochloride USP 10mg/tablet.
10mg x 100's pack: 300.00 MRP

❖ **FLEXOR Tab. Incepta**
Cyclobenzaprine hydrochloride USP 5mg & 10mg/tablet.
5mg x 100's pack: 200.00 MRP
10mg x 100's pack: 300.00 MRP

3. DRUGS USED IN SOFT-TISSUE INFLAMMATION

3.1 Enzymes
3.2 Rubefacients and other topical antirheumatics
3.3 Indigenous preparations for soft-tissue inflammation

Enzymes

❖ **KONTAB Tab. Efroze/City Overseas**[21,80]
Tablet contains bromelains (similar to chymotrypsin) & trypsin- a proteolytic anti-inflammatory enzyme combination.
Mode of action: This combination acts selectively on the soft fibrin in the inflammatory region & removes coagulated blood, exudate & necrotic tissue by proteolytic enzyme action.
Ind: Treatment of soft tissue inflammation & oedema associated with traumatic injury, fractures & surgical & gynaecological conditions.
Dosage: initially 2 tablets 3 times daily; maintenance 1 tablet 3 times daily preferably before meals.
50's pack: 200.00 TP

Chapter-10
DRUGS USED IN ALLERGIC DISORDERS

ANTIHISTAMINES

Antihistamine preparations are discussed here in below under the following groups:

1. Sedating antihistamines: such as *Alimemazine (Trimeprazine), Brompheniramine, Chlorpheniramine, Clemastine, Cyproheptadine, Diphenhydramine, Diphenylpyraline, Doxylamine, Hydroxyzine, Mequitazine, Pheniramine, Promethazine, Triprolidine.*
2. Non-sedating newer antihistamines: such as *Acrivastine, Cetirizine, Desloratadine, Fexofenadine, Levocetirizine, Loratadine, Mizolastine, Terfenadine.*

Sedating Antihistamines

CHLORPHENIRAMINE MALEATE[21,33]

CHLORPHENIRAMINE MALEATE: Tablet/Syrup/Injection.
Ind: Nasal allergy and congestion, urticaria, symptomatic relief of allergic emergencies, angio-oedema, acute anaphylaxis. insect bite, stings, hay fever.
S/E: Drowsiness, dryness of mouth, gastro-intestinal disturbances.
Caution: If drowsiness, patient should not drive or operate machinery requiring alertness. Alcohol and certain other CNS depressants can potentiate the sedative effect of anti-histaminics and patients should be warned of these effect.

Dosage & admin: ***Adults:*** **By mouth: 12mg daily in divided (3 or 4) doses.**
By injection: In allergic emergencies, by s.c, i.m or slow i.v injection, 10-20mg to a max. of 40mg in 24 hours.

Children: **By mouth: Upto 1year 1mg (2.5ml) twice daily; 1-5 years 1-2mg (2.5-5ml) 3 times daily; over 5 years 2-4mg (5-10ml) 3 or 4 times daily.**
By injection: Not recommended.

❖ **ALERJESS Tab. Ad-din**
Chlorpheniramine maleate 4mg/tablet
200's pack: 20.00 MRP

❖ **ALERJESS Syp. Ad-din**
Chlorpheniramine maleate 2mg/5ml: syrup
100ml bot: 12.00 MRP

❖ **ALLERMINE Syp. Renata**
Chlorpheniramine maleate 2mg/5ml: syrup
100ml bot: 14.14 MRP

❖ **ANTI-HIST Tab. Chemico**
Chlorpheniramine maleate 4mg /tablet
500's pack: 100.00MRP

❖ **ANTI-HIST Syp. Chemico**
Chlorpheniramine maleate 2mg/5ml: syrup
100ml bot: 14.00 MRP.

❖ **ANTISTA Syp. Square**
Chlorpheniramine maleate 2mg/5ml: syrup
100ml bot: 14.14 MRP

❖ **BIOCIN Tab. Biopharma**
Chlorpheniramine maleate 4mg/tablet
100's pack: 20.00 MRP

❖ **BIOCIN Syp. Biopharma**
Chlorpheniramine maleate 2mg/5ml: syrup
100ml bot: 14.00 MRP

❖ **CENTAGAN Syp. CPL**
Chlorpheniramine maleate 2mg/5ml: syrup
100ml bot: 10.00 MRP

❖ **CLOMIN Syp. Alco Pharma**
Chlorpheniramine maleate 2mg/5ml: syrup
60ml bot: 9.60 MRP
100ml bot: 13.00 MRP

❖ **CLORAMIN Syp. Orion**
Chlorpheniramine maleate 2mg/5ml: syrup
100ml bot: 13.00 MRP

❖ **DENAMINE Tab. Desh Pharma**
Chlorpheniramine maleate 4mg/tablet
500's pack: 80.00 MRP

❖ **DENAMINE Syp. Desh Pharma**
Chlorpheniramine maleate 2mg/5ml: syrup
60ml bot: 8.75 MRP

❖ **DISTAMIN Syp. Doctor's.**
Chlorpheniramine maleate 2mg/5ml: syrup
100ml bot: 14.00 MRP

❖ **DOLCIN Tab. Skylab.**
Chlorpheniramine maleate 4mg/tablet
500's pack: 100.00 MRP

❖ **DOLCIN Syp. Skylab**
Chlorpheniramine maleate 2mg/5ml: syrup
60ml bot: 8.10 MRP
100ml bot: 14.50 MRP

❖ **ELICIN Tab. Elixir**
Chlorpheniramine maleate 4mg/tablet
500's pack:

❖ **ELICIN Syp. Elixir**
Chlorpheniramine maleate 2mg/5ml: syrup
60ml bot:

❖ **ERAMIN Tab. Pharmadesh**
Chlorpheniramine maleate 4mg/tablet
500's pack: 80.00 MRP

❖ **ERAMIN Syp. Pharmadesh**
Chlorpheniramine maleate 2mg/5ml: syrup
60ml bot: 8.10 MRP
100ml bot: 12.50 MRP

❖ **EXPILIN Tab. Gaco**
Chlorpheniramine maleate 4mg/tablet
100's pack: 19.88 MRP
500's pack: 99.38 MRP
1000's pot: 50.35 MRP

❖ **EXPILLIN Syp. Gaco**
Chlorpheniramine maleate 2mg/5ml: syrup
60ml bot: 9.00 MRP

❖ **G-ANTIHISTAMINE Tab. Gonoshas**
Chlorpheniramine maleate 4mg/tablet
100's pack: 20.00 MRP
1000's pot: 70.00 MRP

❖ **G-ANTIHISTAMINE Syp. Gonoshas**
Chlorpheniramine maleate 2mg/5ml: syrup
100ml bot: 12.00 MRP

❖ **HISNUL Tab. Somatec**
Chlorpheniramine maleate 4mg/tablet
500's pack: 100.00 MRP

❖ **HISNUL Syp. Somatec**
Chlorpheniramine maleate 2mg/5ml: syrup
60ml. bot: 8.00 MRP
100ml. bot: 12.75 MRP

❖ **HISTACIN Tab. Jayson**
Chlorpheniramine maleate 4mg/tablet
500's pack: 100.00 MRP

❖ **HISTACIN Syp. Jayson**
Chlorpheniramine maleate 2mg/5ml: syrup
100ml bot: 12.59 MRP
60ml bot: 8.09 MRP

❖ **HISTACIN Inj. Jayson**
Chlorpheniramine maleate 10mg/1ml ampoule: injection
10 amps pack: 32.70 MRP

❖ **HISTACO Tab. Supreme**
Chlorpheniramine maleate 4mg/tablet
500's pack: 100.00 MRP

❖ **HISTACO Syp. Supreme**
Chlorpheniramine maleate 2mg/5ml: syrup
60ml bot: 9.00 MRP

❖ **HISTADYL Tab. Rephco**
Chlorpheniramine maleate 4mg/tablet
500's pack: 100.00 MRP

❖ **HISTADYL Syp. Rephco**
Chlorpheniramine maleate 2mg/5ml: syrup
60ml bot: 9.60 MRP

❖ **HISTAL Syp. Opsonin**
Chlorpheniramine maleate 2mg/5ml: syrup
60ml bot: 9.60 MRP

❖ **HISTALEX Tab. Acme**
Chlorpheniramine maleate 4mg/tablet.
100's pack: 20.00 MRP

❖ **HISTALEX Syp. Acme**
Chlorpheniramine maleate 2mg/5ml: syrup
100ml bot: 14.00 MRP

❖ **HISTALOCK Tab. Sonear**
Chlorpheniramine maleate 4mg/tablet.
100's pack: 20.00 MRP
500's pack: 100.00 MRP

❖ **HISTAMED Tab. Rasa Pharma**
Chlorpheniramine maleate 4mg/tablet.
500's pack: 105.00 MRP

❖ **HISTANOL Tab. Chemist**
Chlorpheniramine maleate 4mg/tablet
500's pack: 105.00 MRP

❖ **HISTANOL Syp. Chemist**
Chlorpheniramine maleate 2mg/5ml: syrup
100ml bot: 13.30 MRP

❖ **HISTASEEM Tab. Seema**
Chlorpheniramine maleate 4mg/tablet
500's pack: 100.00 MRP

❖ **HISTASEEM Syp. Seema**
Chlorpheniramine maleate 2mg/5ml: syrup
100ml bot: 16.00 MRP

❖ **HISTASON Tab. Hudson**
Chlorpheniramine maleate 4mg/tablet
500's pack: 90.00 MRP

❖ **HISTASON Syp. Hudson**
Chlorpheniramine maleate 2mg/5ml: syrup
100ml bot: 12.00 MRP

❖ **HISTATAB Tab. Bristol**
Chlorpheniramine maleate 4mg/tablet
500's pack: 100.00 MRP

❖ **HISTIN Tab. Apollo**
Chlorpheniramine maleate 4mg/tablet
500's pack: 105.00 MRP

❖ **HISTOSIN Tab. Aexim**
Chlorpheniramine maleate 4mg/tablet
500's pack: 80.00 MRP

❖ **HISTOSIN Syp. Aexim**
Chlorpheniramine maleate 2mg/5ml: syrup
100ml bot: 12.00 MRP

❖ **HITAGEN Tab. General**
Chlorpheniramine maleate 4mg/tablet.
500's pack: 100.00 MRP

❖ **HITAGEN Syp. General**
Chlorpheniramine maleate 2mg/5ml: syrup
60ml bot: 8.00 MRP
100ml bot: 13.98 MRP

❖ **MYCETRA Syp. Mystic**
Chlorpheniramine maleate 2mg/5ml: syrup
100ml bot: 14.14 MRP

❖ **PENAMIN Tab. A.P.C Pharma**
Chlorpheniramine maleate 4mg/tablet
500's pack: 100.00 MRP

❖ **PHERAMIN Tab. Amico**
Chlorpheniramine maleate 4mg/tablet
500's pack: 75.00 MRP

❖ **PHERAMIN Syp. Amico**
Chlorpheniramine maleate 2mg/5ml: syrup
60ml bot: 8.00 MRP

❖ **PIRITON Tab. GlaxoSmithKline**
Chlorpheniramine maleate 4mg/tablet
500's pack: 101.36 MRP

❖ **PIRITON Syp. GlaxoSmithKline**
Chlorpheniramine maleate 2mg/5ml: syrup
100ml bot: 14.15 MRP

❖ **REMACIN Tab. Reman**
Chlorpheniramine maleate 4mg/tablet
200's pack: 38.00 MRP

❖ **SAFAMIN Syp. Benham**
Chlorpheniramine maleate 2mg/5ml: syrup
100ml bot: 13.65 MRP

❖ **SALTAMIN Tab. Salton**
Chlorpheniramine maleate 4mg/tablet
500's pack: 100.00 MRP

❖ **SALTAMIN Syp. Salton**
Chlorpheniramine maleate 2mg/5ml: syrup
100ml bot: 13.00 MRP

❖ **SEDILUX-M Tab. Modern**
Chlorpheniramine maleate 4mg/tablet
500's pack: 100.00 MRP

❖ **SEDILUX-M Syp. Modern**
Chlorpheniramine maleate 2mg/5ml: syrup
60ml bot: 9.60 MRP
100ml bot: 13.33 MRP

❖ **SINAMIN Tab. Ibn Sina**
Chlorpheniramine maleate 4mg/tablet
500's pack: 100.00 MRP

❖ **SINAMIN Syp. Ibn Sina**
Chlorpheniramine maleate 2mg/5ml: syrup
100ml bot: 14.00 MRP

❖ **SYMIN Syp. Syntho**
Chlorpheniramine maleate 2mg/5ml: syrup
60ml bot: 9.50 MRP

❖ **TYMIN Tab. Proteety**
Chlorpheniramine maleate 4mg/tablet
200's pack: 40.00 MRP

❖ **TYMIN Syp. Proteety**

Chlorpheniramine maleate 2mg/5ml: syrup
60ml bot: 9.00 MRP

❖ **WINKOL Tab. Globe**
Chlorpheniramine maleate 4mg/tablet
500's pack: 90.00 MRP

❖ **WINKOL Syp. Globe**
Chlorpheniramine maleate 2mg/5ml: syrup
60ml bot: 8.00 MRP
100ml bot: 12.00 MRP

❖ **Z-HISTAMINE Tab. Ziska**
Chlorpheniramine maleate 4mg/tablet
500's pack: 120.00 MRP

❖ **ZISTACIN Syp. Zenith**
Chlorpheniramine maleate 2mg/5ml: syrup
60ml bot: 9.00 MRP
100ml bot: 13.90 MRP

CYPROHEPTADINE[36]

CYPROHEPTADINE HCl: Tablet
Cyproheptadine hydrochloride USP 4mg/tablet.
Mode of action: Cyproheptadine hydrochloride is a serotonin and histamine antagonist with anticholinergic and sedative effects.
Ind: Rash and pruritus in a variety of conditions; appetite stimulation, anorexia nervosa; Cushing's and Nelson's syndrome, carcinoid syndrome, acromegaly and hyperprolactinemia; migraine; antidepressant-induced inorgasmia.
C/I: Cyproheptadine is contraindicated in- i. patients undergoing therapy for an acute asthmatic attack, ii. concurrent use with monoamine oxidase inhibitors, iii. glaucoma, iv. elderly, and v. debilitated patients.
S/E: Prolonged therapy may cause blood dyscrasias. Anaphylactic reactions and hepatitis have been reported.
Precautions: This product may cause drowsiness and somnolence. Patients receiving this drug should not drive or operate machinery unless it has been shown that their physical and mental capacity remains unaffected.
Pregnancy & lactation: Studies in pregnant women have not shown that cyproheptadine increases the risk of abnormalities when administered during the first, second and third trimesters of pregnancy. No teratogenic effects have been observed in any of the newborns. Nevertheless, because the studies in human cannot rule out the possibility of harm, cyproheptadine should be used during pregnancy only if clearly needed.
In nursing mother, it is not recommended.
Dosage & admin: ***Usual adult & adolescent dose:*** **4mg every 8 huors, the dosage may be increased as needed. For most patients the therapeutic range is 4-20mg a day. However, doses up to 32mg a day have been used occasionally.**
Appetite stimulation: **4mg 3 times a day with meals (treatment period to promote weight gain should not exceed six months).**
Vascular headache suppression: Initial dose, 4mg at the start of the attack, repeated after thirty minutes if necessary; maintenance, 4mg every four to six hours.
Usual paediatric dose: **Children 2-6 years of age: 2mg every 8-12 hours as needed, not to exceed 12mg per day. Children 6-14 years of age: 4mg every 8-12 hours as needed, not to exceed 16mg per day.**
Appetite stimulation: **Children 2-6 years of age: initially 2mg 2-3 times a day with meals, the dosage may be increased if necessary, but not to exceed 8mg a day; children 6-14 years of age: initially 2mg every 3-4 times a day with meals; the usual maintenance dose is 4mg 2-3 times a day, the dosage may be increased if necessary, but not to exceed 16mg a day (treatment period to promote weight gain should not exceed 3 months). Below age 2 years- not recommended.**
Drug inter: MAO inhibitors prolong and intensify the anticholinergic effects of cyproheptadine. Antihistamines may have additive effects with alcohol and other CNS depressants, e.g hypnotics, sedatives, trnquillizers and anti-anxiety agents.

❖ **REACTIN Tab. Orion**
Cyproheptadine hydrochloride USP 4mg/tablet.
100's pack: 200.00 MRP

❖ **XCITIN Tab. Renata**
Cyproheptadine hydrochloride USP 4mg/tablet.
30's pack: 60.00 MRP

DIPHENHYDRAMINE HCl[21,33]

DIPHENHYDRAMINE HCl: Tablet/Syrup
Ind: Allergic conditions; nasal allergy & congestion, urticaria. hay fever, angioneurotic oedema; drug reaciton or hypersensitivity; sedation, nausea & vomiting; sedative and drying effects in anaesthesia and obstetrics; symptomatic relief of cough and cold (specially in children); bronchial asthma.
S/E: Drowsiness; dryness of mouth & skin; gastro-intestinal disturbances.
Precautions: If drowsiness, patient should not drive or operate machinery requiring alertness. Alcohol and certain other CNS depressants can potentiate the sedative effect of anti-histaminics and patient should be warned of these effects.
Dosage & admin: ***Adults:*** **25mg 3 times daily with 50mg at bedtime.**
Children: **Before 6 years, not recommended; 6-12 years, 25mg 3 to 4 times daily..**

❖ **ADRYL Syp. Square**
Diphenhydramine hydrochloride 10mg/5ml: syrup
100ml bot: 22.50 MRP

❖ **DIDRYL Syp. Gaco**
Diphenhydramine hydrochloride 10mg/5ml: syrup
100ml bot: 22.50 MRP

❖ **DIFIN Syp. Nipa**
Diphenhydramine hydrochloride 10mg/5ml: syrup
100ml bot: 22.50 MRP

❖ **DORENTA Tab. SK+F**
Diphenhydramine hydrochloride 50mg/tablet.
50's pack: 125.00 MRP

❖ **DORENTA Syp. SK+F**
Diphenhydramine hydrochloride 10mg/5ml: syrup
100ml bot: 20.00 MRP

❖ **PEDEAMIN Syp. Beximco**
Diphenhydramine hydrochloride 10mg/5ml: syrup
100ml bot: 20.00 IP

❖ **PEDILAR Syp. Popular**
Diphenhydramine hydrochloride 10mg/5ml: syrup
100ml bot: 20.00 IP

❖ **PHENADRYL Syp. Acme**
Diphenhydramine hydrochloride 10mg/5ml: syrup
100ml bot: 22.50 MRP

❖ **PHENDRIN Syp. Salton**
Diphenhydramine hydrochloride 10mg/5ml: syrup
100ml bot: 20.00 MRP

❖ **RODAMIN Syp. Rasa**
Diphenhydramine hydrochloride 10mg/5ml: syrup
100ml bot: 20.00 MRP

❖ **RYMIN Tab. Opsonin**
Diphenhydramine hydrochloride 50mg/tablet.
50's pack: 125.00 MRP

❖ **RYMIN Syp. Opsonin**
Diphenhydramine hydrochloride 10mg/5ml: syrup
100ml bot: 20.00 MRP

HYDROXYZINE[109]

❖ **ATARAX Tab. UCB India/ACI**
Hydroxyzine hydrochloride USP 10mg & 25mg/tablet.
Mode of action: It is an antiallergic-anxiolytic preparation, with potent H1 receptor blocking action.
Ind: Generalized anxiety disorders. Pruritus and other allergic conditions, such as chronic idiopathic urticaria, atopic and contact dermatitis, neurodermatitis and in histamine mediated pruritus. Aches/pains of unknown origin. Peptic ulcers/gastritis/IBS, where anxiety coexists.
C/I: Pregnancy & Breast-feeding; known allergy to hydroxyzine; certain difficulties in urinary tract (urethral or prostate disorders); and certain types of glaucoma.
S/E: In certain persons, hydroxyzine may give rise to varying degrees of unpleasant effects mild to moderate in nature- such as constipation, difficulty in urination, dry mouth, drowsiness, visual disturbances, excitation, mental confusion in elderly patients.
Precautions: Drowsiness may affect performance of skilled tasks (e.g driving and using machinery). Sedating effect is enhanced by alcohol. The potentiating action of hydroxyzine must be considered when it is used in conjunction with CNS depressants.
Dosage & admin: ***Adult: Generalized anxiety disorders*****: the usual dose for the short-term management of anxiety is 50mg per day at bedtime or in divided doses; increased if necessary to 50-100mg four times daily.**
Symptomatic treatment of various allergic manifestations: **Pruritus, 10-25mg is initiated at bedtime and increased if necessary to 10-25mg four times daily; Chronic urticaria, usual starting dose is 10-25mg four times daily.**
Atopic dermatitis: **10mg two times daily to 25mg four times daily & increased if necessary**
Acute contact dermatitis: **10-25mg two to four times daily.**
Children: **For children over 6 years- the initial dose is 15-25mg daily, increased if necessary to 50-100mg daily in divided doses; 6 months to 6 years- the initial dose is 5-15mg daily, increased if necessary to 50mg daily in divided**

doses. The pre- and post-operative sedative dose in children is 600mcg/kg body weight.
10mg x 250's pack: 282.50 MRP
25mg x 250's pack: 480.00 MRP

MEBHYDROLIN[21,33]

MEBHYDROLIN: Tablet/Suspension.
Ind: Hayfever; rhinitis; urticaria; allergic asthmas; drug rash and other allergic condition;
S/E; Caution: See above under the text of diphenhydramine.
Dosage & admin: Adult: 50 or 100mg 3 times daily.
Child: Upto 1 yr. 50-100mg daily; 2-5 yrs, 50-150 mg daily ; 5-10 yrs. 100-200mg daily.
All in divided doses after meals.

❖ **BEXIDAL Tab. Beximco**
Mebhydrolin napadisylate 50mg/tablet
200's pack: 400.00 IP
❖ **DAYHISTA Tab. Medimet**
Mebhydrolin napadisylate 50mg/tablet.
100's pack: 200.00 MRP
❖ **MEBIDAL Tab. SK+F**
Mebhydrolin napadisylate 50mg/tablet.
200's pack: 341.88 MRP
❖ **MEBOLIN Tab. Acme**
Mebhydrolin napadisylate 50mg/tablet.
100's pack: 200.00 MRP
❖ **MEDROLIN Tab. Opsonin**
Mebhydrolin 50mg/tablet
100's pack: 150.00 MRP

PHENIRAMINE MALEATE[21,41]

PHENIRAMINE MALEATE: Tablet/ Syrup/ Injection .
Ind: Allergic conditions; nasal allergy & congestion, urticaria, hay fever, angioneurotic oedema; drug reaciton or hypersensitivity; sedation, nausea & vomiting; sedative and drying effects in anaesthesia and obstetrics; symptomatic relief of cough and cold.
S/E; Caution: See above under the text of diphenhydramine.
Dosage & admin: Adult: Oral- 75mg at bedtime. If patients suffering in the daytime, 75mg may be taken in the morning. In severe cases 150mg at night or twice daily. Injection- In acute conditions, 25 to 50mg i.m. or slow i.v. once or twice daily Child: Oral- syrup is preparable; upto 1 year 7. 5mg 2 to 3 times daily; 1-5 yrs 7.5-15mg 2 to 3 times daily; 6-12 yrs. 15 to 22. 5mg 2 to 3 times daily. Injection- 12.5 to 25mg 1-2 times i.m or slow i.v daily.

❖ **AEROVIL Syp. Beximco**
Pheniramine maleate 15mg/5ml: syrup
100ml bot: 20.00 IP
❖ **ALERVIL Syp. Incepta**
Pheniramine maleate 15mg/5ml: syrup
100ml bot: 20.00 MRP
❖ **AVIL Tab. Sanofi-aventis**
Pheniramine maleate 22.7mg/tablet
500's pack: 235.00 MRP
❖ **AVIL Syp. Sanofi-aventis**
Pheniramine maleate 15mg/5ml: syrup
100ml bot: 15.17 MRP

PROMETHAZINE HCl.[21,33]

PROMETHAZINE HCl: Tablet/Syrup/ Injection
Ind: Allergic conditions; nasal allergy & congestion, urticaria, hay fever, angioneurotic oedema; drug reaciton or hypersensitivity; sedation, nausea & vomiting; sedative and drying effects in anaesthesia and obstetrics; symptomatic relief of cough and cold (specially in children); Bronchial asthma.
S/E; Caution: See above under the text of dimethothiazine.
Dosage & admin: ***Adult:*** **By mouth: 10 to 20mg 2 or 3 times daily, or 25mg at night, increased to 50mg if necessary.**
By injection: 25 to 50mg deep i.m injection or slow i.v injection after dilution.
Children: **By mouth: Under 6 months not recommended; 6 months - 1 year, 5-10mg; 1-5 years, 5-15mg; over 5 years, 10-25mg. If two doses in 24 hours required, use lower amount stated.**
By injection: Under 5 years, not recommended; over 5 years, 6.25-12.5mg by deep i.m injection.

❖ **ALLPHEN Syp. Medimet**
Promethazine hydrochloride 5mg/5ml: syrup
50ml bot: 10.11 MRP
100ml bot: 15.44 MRP
❖ **CURAL Syp. Sonear**
Promethazine hydrochloride 5mg/5ml: syrup
60ml bot: 10.00 MRP
100ml bot: 14.00 MRP
❖ **FLUMIN Syp. Cosmic**
Promethazine hydrochloride 5mg/5ml: syrup
60 ml bot: 11.00 MRP
100ml bot: 15.00 MRP
❖ **HISTAPHEN Syp. Seema**
Promethazine hydrochloride 5mg/5ml: syrup
60ml bot: 8.60 MRP
100ml bot: 12.00 MRP
❖ **HISTAVIL Syp. Pacific**
Promethazine hydrochloride 5mg/5ml: syrup
60ml bot: 10.00 MRP
❖ **HISTERZIN Syp. Edruc**
Promethazine hydrochloride 5mg/5ml: syrup
60ml bot: 10.00 MRP
❖ **HISTIN Syp. Apollo**
Promethazine hydrochloride 5mg/5ml: syrup
60ml bot: 9.86 MRP
100ml bot: 15.17 MRP
❖ **MITARGAN Syp. Millat**
Promethazine hydrochloride 5mg/5ml: syrup
100ml bot: 14.25 MRP.
❖ **OTOSIL Tab. Opsonin**
Promethazine hydrochloride 10mg & 25mg/tablet.
10mg x 100's pack: 30.00 MRP
25mg x 100's pack: 40.00 MRP
❖ **OTOSIL Syp. Opsonin**
Promethazine hydrochloride 5mg/5ml: syrup
60ml bot: 10.00 MRP
100ml bot: 14.00 MRP
❖ **PHENEREX Syp. Jayson**
Promethazine hydrochloride 5mg/5ml: syrup
100ml bot: 14.57 MRP
❖ **PHENEREX Inj. Jayson**
Promethazine hydrochloride 25mg/1ml ampoule & 50mg/2ml ampoule: injection.
1ml amp x 10's pack: 22.80 MRP
2ml amp x 10's pack: 41.50 MRP
❖ **PROGAN Syp. Ambee**
Promethazine hydrochloride 5mg/5ml: syrup
100ml bot: 15.44 MRP
❖ **PROMA Syp. Rasa Pharma**
Promethazine hydrochloride 5mg/5ml: syrup
60ml bot: 14.00 MRP
125ml bot: 15.94 MRP
❖ **PROMALEX-M Syp. Modern**
Promethazine hydrochloride 5mg/5ml: syrup
60ml bot: 11.13 MRP
100ml bot: 14.56 MRP
❖ **PROMERGAN Tab. Gaco**
Promethazine hydrochloride 10mg/tablet.
10mg x 50's pack: 20.70 MRP
10mg x 100's pack: 41.38 MRP
❖ **PROMERGAN Syp. Gaco**
Promethazine hydrochloride 5mg/5ml: syrup
60ml bot: 10.11 MRP
❖ **PROMESTIN Syp. Pharmadesh**
Promethazine hydrochloride 5mg/5ml: syrup
60ml bot: 9.94 MRP
100ml bot: 13.98 MRP
❖ **PROMEZIN Syp. Beximco**
Promethazine hydrochloride 5mg/5ml: syrup
100ml bot: 14.00 IP
❖ **PROMODIN Syp. Chemist**
Promethazine hydrochloride 5mg/5ml: syrup
100ml bot: 14.55 MRP
❖ **PROZEN Tab. Zenith**
Promethazine hydrochloride 25mg/tablet.
25mg x 500's pack: 210.00 MRP

Non-sedating newer Antihistamines

CETIRIZINE[26,42]

CETIRIZINE Dihydrochloride: Tablet/Syrup/ Drop
Cetitrizine, a piperazine derivative, is a newer antihistamine. It is a long acting antihistamine & unlike conventional or 1st generation antihistamines it causes less sedation & psychomotor impairment and as well causes no behavioural changes (as other newer antihistamines).
It is available as tablet syrup & pediatric drop.
Mode of action: Cetitrizine is a potent histamine H1 receptor antagonist. In usual dosages cetirizine (& other newer antihistamines) penetrate the blood brain barrier only to a slight extent, and that is why cetitrizine & other newer antihistamines do not cause central sedation & psychomotor impairment (& also do not alleviate pruritus of non-allergic origin).
Cetirizine inhibits the histamine mediated 'early' phase of the allergic reaction and also reduces the migration of inflammatory cells and the release of mediators associated with the 'late' phase of the allergic reaction. Cetirizine also provides a protective effects from bronchospasm induced by inhaled histamine in asthmatics.
Ind: Cetitrizine is indicated for the prevention and symptomatic relief of allergic manifestations, such as seasonal allergic rhinitis, perennial allergic rhinitis, chronic idiopathic urticaria, hayfever, itching, as well as ocular itching &

burning etc. It is also used in allergen induced asthma. Cetitrizine is a safe antihistamine for pediatric, young, elderly and even for pregnant women patients.

C/I: Cetirizine is contraindicated in patients who have shown hypersensitivity or idyosyncrasy to it or to its parent compound, hydroxyzine.

S/E: Cetirizine seems to cause an incidence of sedation similar to that observed with placebo and with other 'non-sedating' antihistamines such as astemizole and terfenadine and causes a lower incidence of sedation than that observed with ketotifen, clemastine, pheniramine, chlorpheniramine or mequitazine. Cetirizine does not produce anticholinergic effects.

Precautions: Caution should be exercised when driving a car or operating a heavy machinery. Concurrent use of cetirizine with alcohol or other CNS depressants should be avoided because additional reduction in alertness and CNS performance may occur.

Pregnancy & lactation: There are no adequate and well-controlled studies in pregnant women using cetirizine. Therefore, cetirizine should be used in pregnancy only if clearly needed. Cetirizine has been reported to be excreted in human milk and thus, use of cetirizine in lactating mother is not recommended.

Dosage & admin: Adult and Child over 6 years, 10mg (1 tablet or 2 tsf) once daily or 5mg (1 tsf) twice daily; Child 2-6 years, 5mg daily or 2.5mg twice daily.

In patients with decreased renal function (Creatinine clearance 11-31ml/min), patients on haemodialysis, (Creatinine clearance less than 7ml/min) and in hepatically impaired patients, a dose of 5mg once daily is recommended.

Drug inter: No clinically significant drug interactions have been found with theophylline, azithromycin, pseudoephedrine, ketoconazole or erythromycin and with some other drugs.

❖ **ACITRIN Tab. ACI**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 250.00 MRP

❖ **ACITRIN Syp. ACI**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 16.00 MRP

❖ **ACTIZEN Tab. Ambee**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 202.00 MRP

❖ **ACTIZEN Syp. Ambee**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 16.00 MRP

❖ **ALAREX Syp. Popular**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 16.00 IP

❖ **ALATROL Tab. Square**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 250.00 MRP

❖ **ALATROL Syp. Square**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 16.00 MRP

❖ **ALATROL Drop Square**
Cetirizine dihydrochloride 2.5mg/1ml: drop
15ml bot: 15.00 MRP

❖ **ALETRIN Tab. Reman**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 250.00 MRP

❖ **ALLERCET Tab. Marksman**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 250.00 MRP

❖ **ALLERCET Syp. Marksman**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 14.80 MRP

❖ **ALLERNIL Tab. Chemico**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 250.00 MRP

❖ **ALLERNIL Syp. Chemico**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 16.00 MRP

❖ **ANTRIN Tab. CPL**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 200.00 MRP

❖ **ASITROL Tab. Asiatic**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 200.00 MRP

❖ **ASITROL Syp. Asiatic**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 19.00 MRP

❖ **ATRIZIN Tab. Beximco**
Cetirizine dihydrochloride 10mg/tablet
150's pack: 375.00 MRP

❖ **ATRIZIN Syp. Beximco**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 16.00 IP

❖ **ATRIZIN Drop Beximco**
Cetirizine dihydrochloride 2.5mg/1ml: drop
15ml bot: 15.00 IP

❖ **ATROL Tab. Ziska**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 115.00 MRP

❖ **BPTROL Tab. Bristol**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 200.00 MRP

❖ **CESIL Tab. Silva**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 250.00 MRP

❖ **CESIL Syp. Silva**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 16.00 MRP

❖ **CETIRIZINE Tab. A.P.C Pharma**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 250.00 IP

❖ **CETIRIZINE Syp. A.P.C Pharma**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 16.00 IP

❖ **CETIZIN Tab. Acme**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 200.00 MRP

❖ **CETRA Tab. Cosmo Pharma**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 202.00 MRP

❖ **CETRIL Tab. Chemist**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 252.00 MRP

❖ **CETRIL Syp. Chemist**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 17.19 MRP

❖ **CETRIN Tab. Drug Inter.**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 275.00 MRP

❖ **CETZIN Tab. Cosmic**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 150.00 MRP

❖ **CETZIN Syp. Cosmic**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 15.00 MRP

❖ **CEZIN Tab. Medicon**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 250.00 MRP

❖ **CEZIN Syp. Medicon**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 16.00 MRP

❖ **CIPZIN Tab. Seema**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 200.00 MRP

❖ **CIPZIN Syp. Seema**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 16.00 MRP

❖ **CIRIZIN Tab. Ad-din**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 171.00 MRP

❖ **CIRIZIN syp. Ad-din**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 14.85 MRP

❖ **CITIN Tab. Opsonin**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 250.00 MRP

❖ **CITIN Syp. Opsonin**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 16.00 MRP

❖ **CITIZEN Tab. Zenith**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 200.00 MRP

❖ **CITROL Tab. Rasa Pharma**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 250.00 MRP

❖ **CIZIN Tab. Nipa**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 200.00 MRP

❖ **CIZIN Syp. Nipa**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 15.17 MRP

❖ **CTZ Tab. Delta**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 100.00 MRP

❖ **DYNO Tab. Rephco**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 200.00 MRP

❖ **DYZIN Tab. Amico**
Cetirizine dihydrochloride 10mg/tablet
50's pack: 125.00 MRP

❖ **DYZIN Syp. Amico**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 16.00 MRP

❖ **ELITRIZINE Tab. Elixir**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 250.00 MRP

❖ **ETIZIN Tab. Edruc**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 152.00 IP

❖ **ETIZIN Syp. Edruc**
Cetirizine dihydrochloride 5mg/5ml: syrup
100ml bot: 16.00 IP
❖ **FLUSTAT Tab. Decent**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 200.00 MRP
❖ **FLUSTAT Syp. Decent**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 16.00 MRP
❖ **HISTACET Tab. Medimet**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 200.00 MRP
❖ **HISTACET Syp. Medimet**
Cetirizine dihydrochloride 5mg/5ml: syrup
50ml bot: 15.50 MRP
❖ **HI-TROL Tab. Hudson**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 200.00 IP
❖ **MOSET Tab. MonicoPharma**
Cetirizine dihydrochloride 10mg/tablet
50's pack: 125.00 MRP
❖ **MYSTACIN Tab. Mystic**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 250.00 MRP
❖ **NOLER Tab. Alco Pharma**
Cetirizine dihydrochloride 10mg/tablet
60ml bot: 16.00 MRP
❖ **ORGY Tab. Kumudini**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 200.00 MRP
❖ **ORGY Syp. Kumudini**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 16.00 MRP
❖ **PROCET Tab. Somatec**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 200.00 IP
❖ **PROCET Syp. Somatec**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 16.00 IP
❖ **PROLER Tab. Hallmark**
Cetirizine dihydrochloride 10mg/tablet
50's pack: 125.00 MRP
❖ **RHINIL Tab. Aristopharma**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 250.00 MRP
❖ **RHINIL Syp. Aristopharma**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 16.00 MRP
❖ **RIZ Tab. Orion**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 250.00 MRP
❖ **RIZ Syp. Orion**
50's pack: 127.00 MRP
❖ **TRIN Tab. Globe Pharma**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 200.00 MRP
❖ **TRIN Syp. Globe Pharma**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 15.00 MRP
❖ **TRIZIN Tab. Navana**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 250.00 IP
❖ **TRIZIN Syp. Navana**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 16.00 IP
❖ **TYTROL Tab. Proteety**
Cetirizine dihydrochloride 10mg/tablet
50's pack: 100.00 MRP
❖ **TYTROL Syp. Proteety**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 16.00 MRP
❖ **ZINAL Tab. UniHealth**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 250.00 MRP
❖ **ZINAL Syp. UniHealth**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 20.00 MRP
❖ **ZYRTEC Tab. Desh Pharma**

50's pack: 125.00 MRP
❖ **NOLER Syp. Alco Pharma**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 16.00 MRP
❖ **NORIZ Tab. Skylab**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 220.00 MRP
❖ **NORIZ Syp. Skylab**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 16.00 MRP
100ml bot: 25.00 MRP
❖ **NOSEMIN Tab. Ibn Sina**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 253.00 IP
❖ **NOSEMIN Syp. Ibn Sina**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 16.18 IP
❖ **NOTROL Tab. Aexim**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 150.00 MRP
❖ **ONTIN Tab. SK+F**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 250.00 MRP
❖ **ONTIN Syp. SK+F**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 16.00 MRP
❖ **RIZIN Tab. Gaco**
Cetirizine dihydrochloride 10mg/tablet
50's pack: 125.00 MRP
❖ **RIZIN Syp. Gaco**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 15.67 MRP
❖ **SARTEC Tab. Rangs Pharma**
Cetirizine dihydrochloride 10mg/tablet
50's pack: 100.00 IP
❖ **SARTEC Syp. Rangs Pharma**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 16.00 IP
❖ **SATROL Tab. SAPL**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 150.00 MRP
❖ **SYTROL Tab. Syntho**
Cetirizine dihydrochloride 10mg/tablet
100's pack: 250.00 MRP
❖ **SYTROL Syp. Syntho**
Cetirizine dihydrochloride 5mg/5ml: syrup
60ml bot: 16.00 MRP
❖ **TIRAMINE Tab. Renata**
Cetirizine dihydrochloride 10mg/tablet
Cetirizine dihydrochloride 10mg/tablet
100's pack: 250.00 MRP

FEXOFENADINE[26,120]

FEXOFENADINE: Tablet
Fexofenadine hydrochloride is a non-sedating newer antihistamine. It is active metabolite of terfenadine. It is available as fexofenadine INN 30mg, 60mg, 120mg & 180mg tablet.
Mode of action: Fexofenadine hydrochloride plays its antihistaminic role by its selective peripheral H1-receptor antagonist activity. It inhibits histamine release from peritoneal mast cells. No anticholinergic, alpha-adrenergic or beta-adrenergic-receptor blocking effects were observed. No sedative or other central nervous system effects were observed. Fexofenadine does not cross the blood-brain barrier.
Ind: Seasonal allergic rhinitis in adults and children of 6 years of age and older. Symptoms treated effectively are sneezing, rhinorrhea, itchy nose/palate/throat, itchy/watery/red eyse. Skin manifestations of chronic idiopathic urticaria in adults and children of 6 years of age and older.

It also significantly reduces pruritus and the number of wheals & flare.
C/I: Known hypersensitivity to any of its ingredients.
S/E: Adverse effects with fexofenadine treatment are almost similar to placebo treated patients. The adverse effects that may be observed are headache, dyspepsia, fatigue, drowsiness, dizziness, nausea, chest tightness, dyspnoea etc.
Precautions: Because of the limited data available in the elderly and renally or hepatically impaired patients, fexofenadine should be administered with care in these special groups.
Pregnancy & lactation: There are no adequate and well-controlled studies in pregnancy & nursing mother. Therefore, fexofenadine should be used during pregnancy & lactation only if the potential benefit justifies the potential risk to the fetus & baby.
Dosage & admin: Seasonal and perennial allergic rhinitis, chronic idiopathic urticaria & other allergic symptoms: Children 6 months-2 years- 15mg or 2.5ml ($^1/_2$ tsf) twice daily; 2 to 11 years- 30mg or 5ml (1 tsf) twice daily, (a dose of 30mg once daily is recommended as the starting dose in pediatric patients & in patients with decreased renal function). Adults & children 12 years & older- 60mg (2 tsf) twice daily, (a dose of 60mg once daily is recommended as the starting dose), or 120mg once daily; in severe cases, 180mg once daily may be given.
Drug inter: Co-administration of fexofenadine hydrochloride with ketoconazole & erythromycin led to increased plasma levels of fexofenadine. Administration of fexofenadine with aluminium and magnesium containing antacids 15 minutes prior to fexofenadine caused a reduction in bioavailability, most likely due to binding in the gastrointestinal tract. It is advisable to leave 2 hours between administration of fexofenadine and aluminium & magnesium hydroxide containing antacids.

❖ **ALAGRA Tab. Alco Pharma**
Fexofenadine hydrochloride INN 30mg, 120mg & 180mg/tablet.
30mg x 30's pack: 135.00 MRP
120mg x 30's pack: 180.00 MRP
180mg x 30's pack: 210.00 MRP

❖ **AXODIN Tab. Beximco**
Fexofenadine hydrochloride INN 60mg, 120mg & 180mg/tablet.
60mg x 50's pack: 250.00 IP
120mg x 30's pack: 195.00 IP
180mg x 30's pack: 240.00 IP

❖ **FENADIN Tab. Renata**
Fexofenadine hydrochloride INN 30mg, 60mg, 120mg & 180mg/tablet.
30mg x 50's pack: 125.00 MRP
60mg x 30's pack: 105.00 MRP
120mg x 20's pack: 140.00 MRP
180mg x 20's pack: 180.00 MRP

❖ **FENADIN Susp. Renata**
Fexofenadine hydrochloride INN USP 30mg/5ml: suspension.
50ml bot: 48.00 MRP

❖ **FENOFEX Tab. Incepta**
Fexofenadine hydrochloride INN USP 60mg, 120mg & 180mg/tablet.
60mg x 30's pack: 105.00 MRP
120mg x 20's pack: 140.00 MRP
180mg x 20's pack: 180.00 MRP

❖ **FENOFEX Susp. Incepta**
Fexofenadine hydrochloride INN USP 30mg/5ml: suspension.
50ml bot: 48.00 MRP

❖ **FEXO Tab. Square**
Fexofenadine hydrochloride INN USP 60mg, 120mg & 180mg/tablet.
60mg x 30's pack: 105.00 MRP
120mg x 30's pack: 195.00 MRP
180mg x 30's pack: 240.00 MRP

❖ **FEXO Susp. Square**
Fexofenadine hydrochloride INN USP 30mg/5ml: suspension.
50ml bot: 48.00 MRP

❖ **FEXODIN Tab. Pacific**
Fexofenadine hydrochloride INN 120mg/tablet.
120mg x 30's pack: 210.00 MRP

❖ **FEXOFEN Tab. Somatec**
Fexofenadine hydrochloride INN 120mg & 180mg/tablet.
120mg x 30's pack: 180.00 IP
180mg x 20's pack: 140.00 IP

❖ **FEXOFEN Susp. Somatec**
Fexofenadine hydrochloride INN USP 30mg/5ml: suspension.
50ml bot: 48.00 MRP

❖ **FIXAL Tab. Opsonin**
Fexofenadine hydrochloride INN USP 120mg & 180mg/tablet.
120mg x 20's pack: 140.00 MRP
180mg x 20's pack: 180.00 MRP

❖ **TELFAST Tab. Sanofi-aventis**
Fexofenadine hydrochloride INN USP 120mg & 180mg/tablet.
120mg x 30's pack: 210.00 MRP
180mg x 20's pack: 180.00 MRP

LEVOCETIRIZINE[26,120]

LEVOCETIRIZINE: Tablet.
Levocetirizine is a third generation H1-receptor antagonist. It is a highly effective and well-tolerated non-sedating antihistamine with potent antiallergic properties. It is an active (levo) isomer of cetirizine. It has a rapid and long-lasting action, allowing once-a-day administration.

Mode of action: Levocetirizine has a two-fold higher affinity for H1-receptors than cetirizine. It acts by blocking H1-receptor. It has a fast onset of action. It does not prevent the actual release of histamine from mast cells, but prevents binding to its receptor. This inturn prevents the release of other allergic chemicals and increased blood supply to the area and provides relief from the typical symptoms of hay fever.

Ind: Treatment of symptoms associated with allergic conditions such as seasonal allergic rhinitis, perennial allergic rhinitis and chronic idiopathic urticaria.
C/I: Severe renal impairment (creatinine clearance less than 10ml/min); known hypersensitivity to levocetirizine or any of its component.
S/E: Generally levocetirizine is well tolerated. However, a few side effects may occur such as- headache, nausea, dry mouth, skin rash, fatigue, weakness or loss of strength etc.

Precaution: Levocetirizine should be advised with caution in renal impairment (please see below under the dosage & administration); hepatic insufficiency; angle-closure glaucoma
Pregnancy & lactation: In pregnancy, the safety of levocetirizine has not been established. On the other hand, in nursing mother levocetirizine passes into the breast milk. Therefore, it should be used with caution during pregnancy and breast feeding, only if the benefits to the mother outweigh any risks to the fetus & the child respectively.

Dosage & admin: ***Adults & children over 6 years of age:*** **Levocetirizine dihydrochloride 5mg once daily.**
Patients with renal impairment: **In moderate renal impairment, recommended dose is 5mg in every alternate day. In severe renal impairment, the dose interval should be increased to every third day. Levocetirizine should not be given in patients with end-stage renal disease.**
Pediatric use: **Not recommended for use in children less than 6 years of age.**
Overdosage: No clinically relevant adverse events have been reported in case of over dosages. However, in the event of over dosage, symptomatic & supportive treatment is recommeded.

Drug inter: There may be a risk of drowsiness if levocetirizine is taken with any of the following- alcohol; tricyclic anti-depressants e.g amitryptyline; narcotics e.g morphine, codeine; benzodiazepines e.g diazepam; sedative anti-histamines e.g chlorpheniramine; other sleeping pills.

❖ **ALCET Tab. Healthcare**
Levocetirizine dihydrochloride INN 5mg/tablet.
100's pack: 252.00 MRP

❖ **CLARIGEN Tab. Drug Inter.**
Levocetirizine dihydrochloride INN 5mg/tablet.
100's pack: 200.00 MRP

❖ **CURIN Tab. Beximco**
Levocetirizine dihydrochloride INN 5mg/tablet.
100's pack: 200.00 MRP

❖ **ENACET Tab. Somatec**
Levocetirizine dihydrochloride INN 5mg/tablet.
100's pack: 200.00 MRP

❖ **LECET Tab. Pacific**
Levocetirizine dihydrochloride INN 5mg/tablet.
50's pack: 100.00 MRP

❖ **LECETRIN Tab. Delta**
Levocetirizine dihydrochloride INN 5mg/tablet.
100's pack: 199.94 MRP

❖ **LECITIN Tab. Zenith**
Levocetirizine dihydrochloride INN 5mg/tablet.
100's pack: 200.00 MRP

❖ **LEREX Tab. Asiatic**
Levocetirizine dihydrochloride INN 5mg/tablet.
50's pack: 100.00 MRP

❖ **LEVOCET Tab. Alco Pharma**
Levocetirizine dihydrochloride INN 5mg/tablet.
50's pack: 100.00 MRP

❖ **LEVOREX Tab. Popular**
Levocetirizine dihydrochloride INN 5mg/tablet.
100's pack: 200.00 IP

❖ **LINGIN Tab. Sandoz/Novartis**
Levocetirizine dihydrochloride INN 5mg/tablet.
50's pack: 150.00 MRP

❖ **LISET Tab. Syntho**
Levocetirizine dihydrochloride INN 5mg/tablet.
50's pack: 100.00 MRP

❖ **LUPRON Tab. Kumudini**
Levocetirizine dihydrochloride INN 5mg/tablet.
100's pack: 200.00 MRP

❖ **MEGATROL Tab. Peoples**
Levocetirizine dihydrochloride INN 5mg/tablet.
100's pack: 200.00 MRP

❖ **POLAN Tab. Globe**
Levocetirizine dihydrochloride INN 5mg/tablet.
50's pack: 100.00 MRP

❖ **SEASONIX Tab. Incepta**
Levocetirizine dihydrochloride INN 5mg/t ablet.
100's pack: 200.00 MRP

❖ **VOCET Tab. Apex**
Levocetirizine dihydrochloride INN 5mg/tablet.
50's pack: 100.00 MRP

LORATADINE[21,42,71]

LORATADINE: Tablet
Loratadine is a newer potent long acting tricyclic antihistamine. It causes less sedation and psychomotor impairment (as other newer antihistamines) because it only penetrates the blood brain barrier to a slight extent (and that is why the newer antihistamines do not alleviate pruritus of non-allergic origin).

Ind: Relief of symptoms associated with allergic rhinitis, hayfever, urticaria, itching, as well as ocular itching & burning.

C/I; Cautions: See under antihistamines mentioned above; pregnancy (toxicity at high doses in animals study) & breast-feeding.

S/E: See under antihistamines mentioned above; like other newer antihistamines incidence of sedation & antimuscarinic effects considerably low.

Dosage & admin: Adult: 10mg once daily. Children: 2-12 years under 30kg 5mg daily; over 30kg 10mg daily.
Below 2 years, safety & efficacy of loratadine has not been established.

❖ **ALERT Tab. Apollo**
Loratadine INN 10mg/tablet
50's pack: 136.50 IP
100's pack: 273.00 IP

❖ **ALEZE Tab. UniHealth**
Loratadine INN 10mg/tablet
50's pack: 125.00 MRP

❖ **ALEZE Syp. UniHealth**
Loratadine INN 5mg/5ml: syrup
60ml bot: 26.00 MRP

❖ **ANALOR Tab. Techno Drugs**
Loratadine INN 10mg/tablet
50's pack: 150.00 MRP

❖ **DIN-10 Tab. Millat**
Loratadine INN 10mg/tablet
100's pack: 300.00 MRP

❖ **ELADIN Tab. Jayson**
Loratadine INN 10mg/tablet
50's pack: 152.00 IP

❖ **ELADIN Susp. Jayson**
Loratadine INN 5mg/5ml: suspension
60ml bot: 26.30 IP

❖ **ELO Tab. Edruc**
Loratadine INN 10mg/tablet
100's pack: 250.00 MRP

❖ **ENCILOR Tab. Incepta**
Loratadine INN 10mg/tablet
100's pack: 300.00 MRP

❖ **ERADEX Tab. Doctor's**
Loratadine INN 10mg/tablet
50's pack: 136.50 MRP

❖ **KEVIL Tab. Chemico**
Loratadine INN 10mg/tablet
100's pack: 300.00 MRP

❖ **KEVIL Susp. Chemico**
Loratadine INN 5mg/5ml: suspension
60ml bot: 26.00 MRP

❖ **LODIN Tab. Amico**
Loratadine INN 10mg/tablet
100's pack: 300.00 MRP

❖ **LORA Tab. Opsonin**
Loratadine INN 10mg/tablet
100's pack: 250.00 MRP

❖ **LORA Susp. Opsonin**
Loratadine INN 5mg/5ml: suspension
60ml bot: 25.00 MRP

❖ **LORACIL Tab. Ziska**
Loratadine INN 10mg/tablet
100's pack: 250.00 MRP

❖ **LORADIN Tab. Aristopharma**
Loratadine INN 10mg/tablet
50's pack: 150.00 MRP

❖ **LORAT Tab. Drug Inter.**
Loratadine INN 10mg/tablet
100's pack: 300.00 MRP

❖ **LORATEC Tab. Desh Pharma**
Loratadine INN 10mg/tablet
100's pack: 200.00 MRP

❖ **LORATIN Tab. Square**
Loratadine INN 10mg/tablet
100's pack: 300.00 MRP

❖ **LORATIN Susp. Square**
Loratadine INN 5mg/5ml: suspension
60ml bot: 30.00 MRP

❖ **LORATIN Fast Tab. Square**[42]
Loratadine INN 10mg/tablet (orally dispersible)
Loratin (loratadine) fast is a orally dispersible fast tablet that dissolves or disintegrates rapidly in the oral cavity usually within a few seconds when placed upon the tongue, without the need of water or chewing.
Ind: Loratadine fast tablet is essential to achieve faster relief from allergic symptoms than conventional dosage forms, and is very effective for the treatment of seasonal allergic rhinitis, perennial allergic rhinitis, skin allergies including chronic urticaria.
Dosage: 10mg (1 tablet) once daily.
100's pack: 300.00 MRP

❖ **LOREN Tab. Pharmadesh**
Loratadine INN 10mg/tablet
100's pack: 100.00 MRP

❖ **LORFAST Tab. Bio-pharma**
Loratadine INN 10mg/tablet
50's pack: 150.00 MRP

❖ **LORFAST Susp. Bio-pharma**
Loratadine INN 5mg/5ml: suspension
60ml bot: 26.00 MRP

❖ **LORIN Tab. General**
Loratadine INN 10mg/tablet
100's pack: 300.00 MRP

❖ **LORIN Susp. General**
Loratadine INN 5mg/5ml: suspension
60ml bot: 26.00 MRP

❖ **LTDIN Tab. Modern**
Loratadine INN 10mg/tablet
100's pack: 250.00 MRP

❖ **NOSERAL Tab. Peoples Pharma**
Loratadine INN 10mg/tablet
50's pack: 150.00 MRP

❖ **ORADIN Tab. SK+F**
Loratadine INN 10mg/tablet
100's pack: 300.00 MRP

❖ **ORADIN Susp. SK+F**
Loratadine INN 5mg/5ml: suspension
60ml bot: 30.00 MRP

❖ **ORADIN FT Tab. SK+F**[42]
Loratadine INN 10mg/tablet (flash tablet i.e orally dispersible)
Oradin (loratadine) FT tablet is a orally dispersible tablet that dissolves or disintegrates rapidly in the oral cavity usually within a few seconds when placed upon the tongue, without the need of water or chewing.
Ind: Loratadine flash tablet is essential to achieve faster relief from allergic symptoms than conventional dosage forms, and is very effective for the treatment of seasonal allergic rhinitis, perennial allergic rhinitis, skin allergies including chronic urticaria.
Dosage: 10mg (1 tablet) once daily.
40's pack: 120.00 MRP

❖ **ORIN Tab. Acme**
Loratadine INN 10mg/tablet
100's pack: 300.00 MRP

❖ **PRETIN Tab. Beximco**
Loratadine INN 10mg/tablet
100's pack: 300.00 IP

❖ **RELOR Tab. Rephco**
Loratadine INN 10mg/tablet
50's pack: 125.00 MRP

❖ **SALORA Tab. SAPL**
Loratadine INN 10mg/tablet
50's pack: 150.00 MRP
❖ **SILORA Tab. Ibn Sina**
Loratadine INN 10mg/tablet
50's pack: 125.00 IP

DESLORATADINE[21,26]

DESLORATADINE: Tablet
Introduction & Mode of action: Desloratadine is a long-acting tricyclic histamine antagonist with selective H1-receptor antagonist activity. It is an active metabolite of loratadine. It belongs to non-sedating newer antihistamine group. Desloratadine has effects on the chronic inflammatory response to allergens and lacks effects on the QT interval of ECG, unlike some other non-sedating antihistamines.
Ind: *Allergic rhinitis-* desloratadine is indicated for the relief of nasal and non-nasal symptoms of allergic rhinitis (seasonal and perennial).
Chronic idiopathic urticaria- symptomatic relief of pruritus, reduction in the number of hives and size of hives, in patients with chronic idiopathic urticaria.
C/I: Hypersensitivity to desloratadine or to any of its ingredients or to loratadine.
S/E: Desloratadine is generally well tolerated. However, dry mouth, fatigue, somnolence and myalgia are commonly reported side-effects. Less common side-effects may include dizziness, headache and nausea. Rarely rash, pruritus and urticaria may occur.
Pregnancy & lactation: As there are no adequate and well-controlled studies in pregnant women, desloratadine should be used in pregnancy only if clearly needed. Incase of lactation desloratadine passes into breast milk, therfore a decision should be made whether to discontinue nursing or to discontinue desloratadine, taking into account the importance of the drug to the mother.
Dosage & admin: ***Adults and adolescents of 12 years or over:*** **Desloratadine 5mg once daily at any time with no regard to meal.**
Patients with liver or renal impairment- **a starting dose of 5mg every alternate day is recommended.**
Children: **6-11 years, 2.5mg (5ml syrup) once daily; 2-5 years, 1.25mg (2.5ml syrup) once daily.**
Drug inter: No clinically important drug interactions have been reported.

❖ **ALERTADIN Tab. Beacon**
Desloratadine INN 5mg/tablet
100's pack: 125.00 MRP
❖ **ALORAN Tab. Alco Pharma**
Desloratadine INN 5mg/tablet
50's pack: 125.00 MRP
❖ **ASLOR Tab. Drug Inter.**
Desloratadine INN 5mg/tablet
100's pack: 250.00 MRP
❖ **CLAREX Tab. Asiatic**
Desloratadine INN 5mg/tablet
50's pack: 125.00 MRP
❖ **DELORIN Tab. Proteety**
Desloratadine INN 5mg/tablet
30's pack: 75.00 MRP
❖ **DELOT Tab. Apex**
Desloratadine INN 5mg/tablet
50's pack: 100.00 MRP
❖ **DERAT Tab. Pacific**
Desloratadine INN 5mg/tablet
50's pack: 125.00 MRP
❖ **DES Tab. Opsonin**
Desloratadine INN 5mg/tablet
50's pack: 125.00 MRP
❖ **DES Syp. Opsonin**
Desloratadine INN 2.5mg/5ml: syrup
60ml bot: 25.00 MRP
❖ **DESATROL Tab. Navana**
Desloratadine INN 5mg/tablet
100's pack: 280.00 IP
❖ **DESATROL Syp. Navana**
Desloratadine INN 2.5mg/5ml: syrup
50ml bot: 20.00 IP
❖ **DESLOR Tab. Orion**
Desloratadine INN 5mg/tablet
100's pack: 250.00 MRP
❖ **DESLOR Syp. Orion**
Desloratadine INN 2.5mg/5ml: syrup
60ml bot: 25.00 MRP
❖ **DESLORIN Tab. ACI**
Desloratadine INN 5mg/tablet
100's pack: 225.00 MRP
❖ **DESLORIN Syp. ACI**
Desloratadine INN 2.5mg/5ml: syrup
60ml bot: 25.00 MRP
❖ **DESMARK Tab. Hallmark**
Desloratadine INN 5mg/tablet
50's pack: 100.00 MRP
❖ **DESODIN Tab. SK+F**
Desloratadine INN 5mg/tablet
50's pack: 150.00 MRP
❖ **DESODIN Syp. SK+F**
Desloratadine INN 2.5mg/5ml: syrup
60ml bot: 25.00 MRP
❖ **DESOL Syp. Zenith**
Desloratadine INN 2.5mg/5ml: syrup
100ml bot: 25.00 MRP
❖ **DESTA 5 Tab. White Horse**
Desloratadine INN 5mg/tablet
50's pack: 125.00 MRP
❖ **DESTACIN Tab. Rangs Pharma**
Desloratadine INN 5mg/tablet
50's pack: 125.00 MRP
❖ **DORA Tab. Mystic**
Desloratadine INN 5mg/tablet
50's pack: 125.00 MRP
❖ **DORA Syp. Mystic**
Desloratadine INN 2.5mg/5ml: syrup
60ml bot: 25.75 MRP
❖ **LARA Tab. Hudson**
Desloratadine INN 5mg/tablet
100's pack: 300.00 MRP
❖ **LORADES Tab. Novo Healthcare**
Desloratadine INN 5mg/tablet
50's pack: 125.00 MRP
❖ **LORADES Syp. Novo Healthcare**
Desloratadine INN 2.5mg/5ml: syrup
60ml bot: 25.00 MRP
❖ **MOMENTO Tab. Beximco**
Desloratadine INN 5mg/tablet
100's pack: 250.00 IP
❖ **MOMENTO Syp. Beximco**
Desloratadine INN 2.5mg/5ml: syrup
60ml bot: 25.00 IP
❖ **NEOCILOR Tab. Incepta**
Desloratadine INN 5mg/tablet
100's pack: 250.00 MRP
❖ **NEOCILOR Syp. Incepta**
Desloratadine INN 2.5mg/5ml: syrup
50ml bot: 25.00 MRP
❖ **NEOLOR Tab. Supreme**
Desloratadine INN 5mg/tablet
50's pack: 120.00 MRP
❖ **REELART Tab. Syntho**
Desloratadine INN 5mg/tablet
50's pack: 100.00 MRP
❖ **RELERGY Tab. General**
Desloratadine INN 5mg/tablet
50's pack: 125.00 MRP
❖ **SARINEX Tab. Delta**
Desloratadine INN 5mg/tablet
50's pack: 125.00 MRP
❖ **SARINEX Syp. Delta**
Desloratadine INN 2.5mg/5ml: syrup
60ml bot: 25.00 MRP
❖ **SEDNO Tab. Square**
Desloratadine INN 5mg/tablet
100's pack: 250.00 MRP
❖ **SEDNO Syp. Square**
Desloratadine INN 2.5mg/5ml: syrup
60ml bot: 25.00 MRP

MIZOLASTINE[52]

MIZOLASTINE: Tablet
Mizolastine is a non-sedating, newer long acting antihistamine with faster onset of action. It is available as mizolastine 10mg tablet.
Mode of action: Mizolastine has 5 different ways of action. It primarily acts by preventing excess release of histamine & also blocking its binding with H1-receptor. Mizolastine secondarily prevents the release of other allergic chemicals such as- leukotrienes, TNF α, GM CSF etc. It also prevents migration of neutrophil & eosinophil, thus prevents aggarvation of allergic symptons.
Ind: Mizolastine is indicated for the symptomatic relief of the following conditions: Seasonal allergic rhinoconjunctivitis (hay fever), perennial allergic rhinoconjunctivitis, and urticaria.
In most cases allergic rhinitis is associated with nasal congestion. Mizolastine possesses both the antihistaminic property & distinct nasal decongestant property.
S/E: Muzolastine is well tolerated in the recommended doses. The usual side effects are dry mouth, diarrhoea, abdominal pain, nausea, drowsiness, headache, dizziness, raised liver enzymes, hypotension, tachycardia and palpitations. Bronchospasm and aggravation of asthma were reported, but in view of the high frequency of asthma in the treated patient population, a causality relationship remains uncertain.

Precautions: Patients should be warned that small number of individuals may experience sedation. It is therefore advisable to determine individual response before driving or performing complicated task.

Pregnancy & lactation: The safety of mizolastine for use in human pregnancy has not been established. However, it should be avoided in pregnancy (particularly the 1st trimester).

Mizolastine is excreted into breast milk, therefore it is not recommended during lactation.
Dosage & admin: ***Adult & children above 12 years:*** **The usual recommended dose is 10mg daily.** ***Children below 12 years:*** **Not recommnded.**

❖ **MASTEL Tab. ACI**
Mizolastine 10mg/tablet
30's pack: 150.00 IP

OTHER PREPARATIONS

CINNARIZINE: Tablet
For detail- see under the 'Drugs use in nausea, vomiting & vertigo' in the CNS chapter.

KETOTIFEN FUMERATE: Tablet/ Syrup
Ind: Allergic rhinitis, conjunctivitis, prophylaxis of bronchial asthma.
S/E: Drowsiness, impaired reactions, dry mouth, dizziness.
Dosage & admin: Adult: 1-2mg twice daily with food.
Child: under 2 years not recommended; over 5 years, half adult dose.
Preparations: See under antiastbmatic drugs in the respiratory system.

Antihistamine-Decongestant Combination Preparation

LORATADINE + PSEUDOEPHEDRINE[21,48,52]

LORATADINE + PSEUDOEPHEDRINE: Tablet
A uniquely formulated extended release combined tablet preparation of loratadine and pseudoephedrine is available in two fixed presentations, viz;
1. Loratadine INN 5mg for immediate release and pseudoephedrine hydrochloride BP 120mg for slow release.
2. Loratadine INN 10mg for immediate release and pseudoephedrine hydrochloride BP 240mg for slow release.
Pseudoephedrine hydrochloride which is released slowly allowing once-daily administration.
Mode of action: Loratadine, as a selective peripheral histamine H1 receptor antagonist, it blocks the effects of histamine, a naturally occurring substance that causes swelling, itching, sneezing, nasal discharge and congestion, and other symptoms of an allergic reaction.
Pseudoephedrine is an orally active sympathomimetic amine, which exerts a decongestant action on the nasal mucosa by narrowing and constricting blood vessels to reduce the blood flow to swollen nasal passages, which reduces nasal secretions, shrinks swollen nasal mucous membranes, and improves airflow through the nasal passages.
Ind: This combination is indicated for the relief of symptoms of seasonal and perennial allergic rhinitis. The preparation should be administered when both the antihistaminic properties of loratadine and the nasal decongestant activity of pseudoephedrine are desired in patients 12 years of age and older. This also temporarily relieves runny nose, sneezing, itch, watery eyes, nasal congestion, itching of the nose or throat due to allergic rhinitis or other upper respiratory allergies, symptoms of common cold, and nasal congestion & sinus pressure associated with sinusitis.
C/I: This combined preparation is contraindicated in patients who are hypersensitive to any of its ingredients. This product, due to its pseudoephedrine component, is contraindicated in patients with narrow-angle glaucoma or urinary retention, and in patients receiving monoamine oxidase (MAO) inhibitor therapy or within 14 days of stopping such treatment. It is also contraindicated in patients with severe hypertension, severe coronary artery disease, and in those who have shown hypersensitivity or idiosyncrasy to adrenergic agents, or to other drugs of similar chemical structure.
S/E: In general it is well tolerated. Clinical trials suggest a very low rate of adverse effects associated with its administration. Among these commonly reported are- dry mouth, somnolence, insomnia, pharyngitis, dizziness, coughing, fatigue, nausea, nervousness, anorexia, dysmenorrhea and headache. Other less common are- increase sweating, thirst, back pain, chest pain, malaise, palpitations, hypertension, tachycardia, abdominal distension, altered taste, flatulence, myalgia. dry throat, agitation, micturation frequency etc.
Precautions: Loratadine/pseudoephedrine combination should be used with caution in patients with hypertension, diabetes mellitus, ischemic heart disease, increased intraocular pressure, hyperthyroidism, renal impairment, or prostatic hypertrophy. Central nervous system stimulation with convulsions or cardiovascular collapse with accompanying hypotension may be produced by sympathomimetic amines.
Use in patients approximately 60 years of age and older- the safety and efficacy in patients greater than 60 years old have not been investigated in placebo-controlled clinical trials; the elderly are more likely to have adverse reactions to sympathomimetic amines.
Pregnancy & lactation: No evidence of risk in human pregnancy is reported. It is not known whether this combination product is excreted in human milk. However, both loratadine and pseudoephedrine when administered alone passes into breast milk, therefore a decision should be made either to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.
Dosage & admin: ***Combination 5/120:*** **In adults and children of 12 years and over- the recommended dose is one tablet twice daily (every 12 hours).**
Combination 10/240: **In adults and children of 12 years and over- the recommended dose is one tablet once daily & to be taken in tbe morning instead of night, because pseudoephedrine which may cause agitation and insomnia as its side effects.**
Patients with renal insufficiency (GFR<30ml/min) should be given a lower initial dose.
Pediatric use: **Safety and effectiveness in children below the age of 12 years have not been established.**
Drug inter: Loratadine/pseudoephedrine combination is contraindicated in patients taking monoamine oxidase inhibitors and for 2 weeks after stopping use of an MAO inhibitor. The antihypertensive effects of beta-adrenergic blocking agents, methyldopa, reserpine, and veratrum alkaloids may be reduced by sympathomimetics. Increased ectopic pacemaker activity can occur when pseudoephedrine is used concomitantly with digitalis. Concomitant administration of erythromycin, ketoconazole, & cimetidine increased the plasma concentration of both loratadine and descarboethoxyloratadine. But there were no clinically relevant changes in the safety profile of loratadine.

❖ **CODERIN 5 Tab. ACI**
Loratadine USP 5mg & pseudoephedrine hydrochloride USP 120mg/tablet (extended release).
50's pack: 200.00 IP
❖ **CODERIN 10 Tab. ACI**
Loratadine USP 10mg & pseudoephedrine hydrochloride USP 240mg/tablet (extended release).
50's pack: 300.00 IP
❖ **EPHEDROL Tab. General**
Loratadine INN 10mg & pseudoephedrine hydrochloride BP 240mg/tablet (extended release).
30's pack: 180.00 MRP
❖ **LORA Plus 120 Tab. Opsonin**
Loratadine USP 5mg & pseudoephedrine hydrochloride USP 120mg/tablet (extended release).
50's pack: 200.00 MRP
❖ **LORA Plus 240 Tab. Opsonin**
Loratadine USP 10mg & pseudoephedrine hydrochloride USP 240mg/tablet (extended release).
30's pack: 180.00 MRP
❖ **LORATIN Plus Tab. Square**
Loratadine INN 10mg & pseudoephedrine hydrochloride BP 240mg/tablet (extended release).
30's pack: 180.00 MRP
❖ **ORADIN Plus Tab. SK+F**
Loratadine INN 10mg & pseudoephedrine hydrochloride BP 240mg/tablet (extended release).
40's pack: 240.00 MRP
❖ **PRETIN D Tab. Beximco**

Loratadine INN 10mg & pseudoephedrine hydrochloride BP 240mg/tablet (extended release).
50's pack: 300.00 MRP

❖ **SUDOLOR 120 Tab. Incepta**
Loratadine USP 5mg & pseudoephedrine hydrochloride USP 120mg/tablet (extended release).
50's pack: 175.00 MRP

❖ **SUDOLOR 240 Tab. Incepta**
Loratadine USP 10mg & pseudoephedrine hydrochloride USP 240mg/tablet (extended release).
50's pack: 300.00 IP

❖ **SUDO PLUS Tab. Alco Pharma**
Loratadine INN 10mg & pseudoephedrine hydrochloride BP 240mg/tablet (extended release).
30's pack: 105.00 MRP

DESLORATADINE + PSEUDOEPHEDRINE[48,52,124]

DESLORATADINE + PSEUDOEPHEDRINE: Tablet
This is a combined preparation of desloratadine and pseudoephedrine hydrochloride. It is available as extended release tablet in two fixed-dose formulation, viz-1. Desloratadine INN 2.5mg and pseudoephedrine hydrochloride BP 120mg per tablet; 2. Desloratadine INN 5mg and pseudoephedrine hydrochloride BP 240mg per tablet.
Mode of action: In this combined formulation, desloratadine is a long acting triyclic histamine antagonist with selective H_1-receptor antagonist activity. Pseudoephedrine hydrochloride is an orally active sympathomimetic amine acts as decongestant on the nasal mucosa.
Ind: This combined preparation is indicated for the relief of nasal and non-nasal symptoms of seasonal allergic rhinitis including nasal congestion, in patients 12 years of age and older. This preparation should be administered when the antihistaminic properties of desloratadine and the nasal decongestant properties of pseudoephedrine are desired.
C/I: This combined preparation is contraindicated in patients who are hypersensitive to this product or to any of its imgredients. Due to its pseudoephedrine hydrochloride component, it is contraindicated in patients with narrow-angle glaucoma or urinary retention. It is also contraindicated in patients with severe hypertension, severe coronary artery disease and in those who have shown hypersensitivity or idiosyncrasy to its components, to adrenergic agents or to other drugs of similar chemical structures.
S/E: Manifestations of patient idiosyncrasy to adrenergic agents include- insomnia, dizziness, weakness, tremor or arrhythmias and nausea. However, dry mouth, fatigue, somnolence and myalgia are commonly reported side-effects. Rarely rash, pruritus and urticaria may occur.
Precautions: This combined preparation should generally be avoided in patients with hepatic and renal impairment. Patients should be advised not to increase the dose or frequency as studies have not demonstrated increased effectiveness; rather, at higher doses somnolence may occur. Patients should also be advised against the concurrent use of this combined preparation with over-the-counter antihistamines and decongestants. Patients should be instructed not to break or chew the tablet, swallow it whole.
Pregnancy & lactation: See above under the text of 'loratadine & pseudoephedrine' combined preparation.
Dosage & admin: ***Combination 2.5/120:*** **In adults and children of 12 years and over- the recommended dose is one tablet twice daily, administred approximately 12 hours apart with or without meal.**
Combination 5/240: **In adults and children of 12 years and over- the recommended dose is one tablet once daily with or without meal & to be taken in the morning instead of night, because pseudoephedrine which may cause agitation and insomnia as its side effects.**
Pediatrie use: **Safety and effectiveness in children below the age of 12 years have not been established.**
Drug inter: This combined preparation should not be given in a patient concurrently who receives monoamine oxidase (MAO) inhibitor therapy or within 14 days of stoppig such treatment.

❖ **DESLORIN Plus 2.5 Tab. ACI**
Desloratadine INN 2.5mg & pseudoephedrine hydrochloride BP 120mg/tablet (extended release).
50's pack: 175.00 IP

❖ **DESLORIN Plus 5 Tab. ACI**
Desloratadine INN 5mg & pseudoephedrine hydrochloride BP 240mg/tablet (extended release).
50's pack: 275.00 IP

❖ **D- PLUS 5 Tab. Popular**
Desloratadine INN 5mg & pseudoephedrine sulfate BP 240mg/tablet (extended release).
30's pack: 210.00 MRP

❖ **SARINEX D 2.5 Tab. Delta**
Desloratadine INN 2.5mg & pseudoephedrine hydrochloride BP 120mg/tablet (extended release).
30's pack: 90.01 MRP

❖ **SARINEX D 5 Tab. Delta**
Desloratadine INN 5mg & pseudoephedrine hydrochloride BP 240mg/tablet (ext. release).
20's pack: 100.00 MRP

Chapter-11
DRUGS ACTING ON THE SKIN

DRUGS ACTING ON THE SKIN

Drugs used in different skin conditions are discussed in the following groups:

1. **Topical Antihistamines, Antipruritics & Local anesthetics**
2. **Topical Anti-infective prepns.**
3. **Topical Anti-infective & Anesthetic combined prepns.**
4. **Topical Corticosteroid & combined prepns.**
5. **Preparations for Eczema & Psoriasis**
6. **Preparations for Warts & Calluses**
7. **Drugs for Acne & Rosacea**
8. **Drugs for Ichthyosis & Scaly skin conditions**
9. **Drugs for Skin scars**
10. **Drugs for Hyperpigmentation**
11. **Drugs for Vitiligo**
12. **Protection of Skin from Solar radiation**
13. **Shampoos & other Scalp prepns.**
14. **Antiseptics & Skin disinfectants**
15. **Dressing products for Wounds, Burn & Ulcers**
16. **Cosmetic treatment of facial Wrinkles & Frowning.**

1. TOPICAL ANTIHISTAMINES, ANTIPRURITICS & LOCAL ANESTHETICS:

1.1 Topical Antihistamines
1.2 Topical Antipruritics
1.3 Local anesthetics

Topical Antihistamines

❖ **ANTHISAN Cream Sanofi-aventis**[21,35]
Mepyramine maleate 2% cream.
Ind: Treatment of topical allergic conditions, anaphylactic and sensitization reactions; insect bites & stings, burns and scalds.
C/I: Eczema.
Caution: May cause hypersensitivity; avoid in eczema, photosensitivity.
Use & Adult & Child: Apply locally two or three times daily for up to 3 days.
15gm tube: 34.90 MRP

❖ **BENDIL Cream Alco Pharma**[12]●
Diphenhydramine hydrochloride USP 20mg & zinc acetate BP 1mg/gm: cream for topical application.
Mode of action: Diphenhydrmine is an antihistamine and works as a topical anti-allergic & analgesic by blocking the release of histamine at its source. Zinc is used as a skin protectant.
Ind: This combined topical preparation is used to relieve pain and itching associated with insect bites, minor burns, sunburn, minor skin irritation, minor cuts, scrapes, rashes due to poison ivy, poison oak, and poison sumac. It also dries the oozing and weeping of posion ivy, poison oak, and poison sumac.
C/I: Use of cream is contraindicated in individuals with a known allergy to its

components, other pyrethroids, or pyrethrins.
S/E: Contact dermatitis with mild erythematous vesicular lesoins and papules has occasionally been reported.
Precautions: For external use only. Flammable, keep away from fire or flame. Do not use on large areas of the body with any other product cotaining diphenhydramine, even once taken by mouth. Consult with the physician before use on chicken pox, on measles. When using this product, avoid contact with eyes.
Pregnancy & lactation: In the absence of specific studies in pregnant women its use in pregnancy should only follow medical advice. However, teratogenic effects would not be anicipated. Although caution should be exercised in administration of diphenhydramine to nursing mothers, levels in breast milk following topical application are likely to be very low.
Dosage & admin: ***Adults & children above 2 years:*** **Apply to the affected area 3 to 4 times daily. Before application of cream, the skin should be clean, cool an dry. Should not have a hot shower or bath before applying. Apply the cream to the whole body for the neck down, rubbing lightly into the skin until the cream disappears. It is important to include all skin surfaces, such as between the fingers and toes, under the nails and on the soles of the feet.**
For babies under 2 years: **Initially consult with the physician, if it is recommended, apply to the face, neck, ears and scalp as well, only avoiding the area immediately around the eyes and mouth.**
Leave cream on for at least 8 hours, before washing ff. Reapply to any area that may be washed during the 8 hours treatment time (such as after washing the hands).
Drug inter: None is known.
5gm tube: 20.00 MRP
10gm tube: 35.00 MRP
30gm tube: 55.00 MRP

Local Antipruritics

CALAMINE: Lotion[21,33]
Ind: Pruritus caused by systemic disease like drug hypersensitivity, obstructive jaundice, endocrine disease, certain malignant & as well as skin disease (e.g. psoriasis, eczema, urticaria, and scabies).

❖ CALAMINE Lotion Amico
100ml contains Calamine 15gm, Zinc oxide 5gm, glycerine 5mg & water.
Use: apply 3-4 times daily fo up to 3-5 days.
100ml bot: 23.00 MRP

Local Anesthetics[21,33]

LIGNOCAINE

LIGNOCAINE HCl: Cream/Gel/Jelly/ Oint.
Ind: Relief of local pain; herpes zoster; insect bite, sting. Local anaesthesia before urethral catheterization, venepuncture, split skin grafting; before genital wart removal.
S/E: Includes transient paleness, redness and oedema.
Cautions: Not for wounds, mucous membranes (except genital warts in adults) or atopic dermatitis; avoid use near eyes or middle ear.
Use & admin: Anaesthesia before e.g. venepuncture (not for infants), apply a thick layer under an occlusive dressing 1-5 hours before procedure; split skin grafting, apply a thick layer under an occlusive dressing 2-5 hours before procedure; genital warts (not for children), apply up to 10gm 5-10 minutes before removal.

❖ JASOCAINE 2% Jelly Jayson
Lignocaine hydrochloride 2%: jelly.
30gm tube: 50.00 IP
❖ XYLOCAINE Cream Astra
Lignocaine 2.5%, prilocaine 2.5%; 5gm & 30gm tube: cream.
Preparation: May not be available.
❖ XYLOCAINE Gel Astra
Gel, anhydrous lignocaine hydrochloride 2%, chlorhexidine gluconate solution 0.25% in a sterile lubrieant basis.
Ind: Urethral catheterization.
Use: into urethra, men 10ml followed by 3-5ml; women 3-5ml.
Prepns: May not be available.
❖ XYLOCAINE Ointment Astra
Lignocaine 5% in a water-miscible basis: ointment.
Ind: Local use as surface anaesthetic.
Use: Surface anaesthesia, maximum 35gm in 24 hours.
Prepns: May not be available.

2. TOPICAL ANTI-INFECTIVE PREPNS.

2.1 Topical antibiotic prepns.
2.2 Topical antiviral prepns.
2.3 Topical anti-fungal prepns.
2.4 Parasiticidal prepns.

Topical Antibiotic prepns.

TETRACYCLINE GROUP & COMBINED PREPNS.[21,33]

TETRACYCLINE or OXYTETRACYCLINE + POLYMYXIN B-SULPHATE: Ointment
Preparations are available as- 1. Tetracycline 3% skin ointment; 2. Oxytetracycline 3% w/w & polymyxin B-sulphate BP 0.013% w/w ointment; Or, Oxytetracycline 30mg & polymyxin B-sulphate 10,000 units per 1gm of ointment.
Ind: Superficial skin infections (such as pyoderma, wound infection and burns.)
Use & application: Adult & child: Apply to the affected area on sterile gauze 2 or 3 times daily.

❖ G-TETRACYCLINE Oint. Gonoshas.
Tetracycline 3% skin ointment.
20gm tube: 17.70 MRP
❖ PETRACIN Oint. Peoples Pharma
Oxytetracycline 3% w/w & polymyxin B-sulphate BP 0.013% w/w ointment.
5gm tube: 9.10 MRP
❖ POLYTETRA Oint. Pharmadesh
Oxytetracycline 3% w/w & polymyxin B-sulphate BP 0.013% w/w ointment.
5gm tube: 11.00 MRP
❖ RENAMYCIN Topical Oint. Renata
Oxytetracycline 3mg & polymyxin B-sulphate 10,000 units per 1gm of ointment.
5gm tube: 12.58 MRP

GENTAMICIN PREPNS.[21,33]

GENTAMICIN: Cream & Ointment
Gentamicin 0.1% & 0.3% cream or ointment for topical use & application.
Ind: Infected skin conditions, including impetigo, skin ulcers, burns, folliculitis, wounds.
Use & Application: Adult & child- apply 3 or 4 times daily.

❖ GENACYN Oint. Square
Gentamicin 0.1% ointment
10gm tube: 12.00 MRP
❖ GENTASONE Oint. Chemist
Gentamicin 0.3% ointment
15gm tube x 10's pack: 130.00 MRP
❖ GENTIN Cream Opsonin
Gentamicin 0.3% cream.
10gm tube: 11.00 MRP
❖ GENTO Oint. Gaco
Gentamicin 0.3% ointment
5gm tube: 9.10 MRP
❖ GENTOSEP Cream Beximco
Gentamicin 0.3% cream.
15gm tube: 17.45 MRP
❖ G-GENTAMICIN Oint. Gonoshas
Gentamicin 0.3% skin ointment
25gm tube: 19.71 MRP
❖ MONAMYCIN Cream Amico
Gentamicin 0.3% cream.
15gm tube: 16.75 MRP

MUPIROCIN[26,83]

MUPIROCIN: Ointment
Mupirocin is a broad-spectrum antibacterial agent, available as 2% w/w (or 20mg/gm) topical ointment, in a water soluble polyethylene glycol base.
Mupirocin is active against majority of the organisms responsible for the skin infections, e.g staphylococcus aureus, including methicillin-resistant strains, other staphylococci and streptococci. It is also active against gram-negative pathogens, such as E.coli and H.influenzae.
Mode of action: Mupirocin is bactericidal at concentrations achieved by topical administration.
Ind: Topical treatment of primary and secondary bacterial skin infection.
C/I: Hypersensitivity to mupirocin ointment or its base polyethylene glycol; evidence of moderate or severe renal impairment; not suitable for ophthalmic or intranasal use.
S/E: Mupirocin is generally well tolerated; there may be occasionally itching, burning, erythema, stinging and dryness at the site of application; cutaneous sensitisation reaction reported rarely.

Caution: When ointrment is used on the face, care should be taken to avoid the eyes. Polyethylene glycol can be absorbed from open wounds and damaged skin. In the rare event of possible sensitisation reaction or severe local irritation occurring with the medi-cation, treatment should be discontinued.
Pregnancy & lactation: Studies on experimental animals have shown mupirocin to be without teratogenic effect. However, this drug should be used during pregnancy only if clearly needed. It is not known whether this drug is excreted in human milk. So, caution should be exercised when mupirocin ointment is administered to a nursing woman.
Dosage & Admin: Adult & childen- apply a small amount of ointment to the affected area 3 times a day for upto 10 days depending on the response. The area may be covered with a qauze dressing, patients not showing a clinical response within 7 days should be re-evaluated.

❖ **BACTODERM Oint. UniHealth**
Mupirocin 2% w/w in a water soluble polyethylene glycol base: topical ointment
10gm tube: 140.00 MRP
❖ **BACTROBAN Oint. GlaxoSmithKline**
Mupirocin 2% w/w in a water soluble polyethylene glycol base: topical ointment
15gm tube: 140.00 MRP
❖ **BACTROCIN Oint. Square**
Mupirocin 2% w/w in a water soluble polyethylene glycol base: topical ointment
10gm tube: 130.00 MRP
❖ **DERMOBAN Oint. Opsonin**
Mupirocin 2% w/w in a water soluble polyethylene glycol base: topical ointment
10gm tube: 120.00 MRP
❖ **MUPI Oint. Alco Pharma**
Mupirocin 2% w/w in a water soluble polyethylene glycol base: topical ointment
5gm tube: 60.00 MRP
10gm tube: 120.00 MRP
❖ **MURODERM Oint. General**
Mupirocin 2% w/w in a water soluble polyethylene glycol base: topical ointment
10gm tube: 140.00 MRP
❖ **MURON Oint. Drug Inter.**
Mupirocin 2% w/w in a water soluble polyethylene glycol base: topical ointment
15gm tube: 130.00 MRP
❖ **TREGO Oint. Incepta**
Mupirocin 2% w/w in a water soluble polyethylene glycol base: topical ointment
10gm tube: 120.00 MRP

NEOMYCIN + BACITRACIN Or NEOMYCIN + BACITRACIN + POLYMYXIN B[42]

NEOMYCIN + BACITRACIN Or NEOMYCIN + BACITRACIN + POLYMYXIN B: Ointment/Powder
These are combination preparations of double or triple antibiotics for topical use, containing neomycin sulphate, zinc bacitracin and polymyxin B sulphate.
Comp: See below under individual preparation.

Mode of action: The spectrum of action of triple combination encompasses virtually all pathogenic bacteria found topically and the three antibiotics are bactericidal. Polymyxin B sulphate attacks gram-negative bacilli including clinically-isolated strains of pseudomonas aeruginosa. This organism is conspicuously absent from the spectra of the most other antibiotic agents, but it is highly susceptible to polymyxin B sulphate, whichis acknowledged to be most effective agent known for the treatment and prophylaxis of pseudomonas infections. Neomycin provides bactericidal action against various gram-positive organisms and gram-negative organisms including many strains of proteus. Neomycin is considered by various authorities to be the most effective antibiotic aganist staphylococcus aureus which is among the more common aetiological organisms in topical bacterial infections. Zinc bacitracin is highly active against gram-positive bacilli and cocci and extends the spectrum to include haemolytic streptococci. Thus, this combined preparation completes the antibacterial range, moreover there is overlapping of the bactericidal spectra of these tree antibiotics, there by providing increased activity by synergistic action.
Ind: These combination preparations are useful in the treatment of infected skin wounds, burns or skin grafts; treatment of furuncles, carbuncles, pyoderma, sycosis barbae, impetigo and acne; treatment of secondary infected skin lesions, such as scabies, pediculosis, tinea pedis, contact and allergic dermatitis. These are also of value in the local treatment of chronic varicose or other indolent ulcers.
C/I: These preparations should not be used in individuals who have shown sensitivity to any of the ingredients.
As there is possibility of increased absorption of the components of the preparation, it is not recommended for use in neonates.
Precautions: Preparations containing neomycin, bacitracin with or without polymyxin B are not intended for sterile use in surgical procedures, where abdominal or thoracic cavities are involved. Because, when neomycin comes in contact with peritoneal or pleural tissues, this can potentiate neuromuscular block in patients under the influence of muscle relaxants, and may cause respiratory paralysis. As with other antibiotic preparations, prolonged use may result in overgrowth of non-susceptible organisms. Prolonged or repeated use of neomycin may develop ototoxicity.
Pregnancy & lactation: There is little information to demonstrate the possible effect of topically applied neomycin in pregnancy and lactation. However, neomycin present in maternal blood can cross the placenta and may give rise to a theoretical risk of foetal toxicity, thus these preparations are not recommended in pregnancy and lactation.
Dosage & admin: The preparations should be applied thinly over the affected area after clening it.
Neomycin &bacitracin preparation: 2 to 4 times daily.
Neomycin, bacitracin & polymyxim B preparation: 1 to 3 daily applications should be continued until the infection is controlled and healing complete.
Children: Both the preparations are suitable for use in children at the same doses as adults, but the dose should be reduced in infants.
Neonates: Not recommended for use in neonates.

❖ **BIVACYN Aerosol Powder**
Lek/Sandoz/Novartis
Each pressurized container of 150ml (aerosol) contains 165,000 i.u of neomycin sulphate & 12,500 i.u of bacitracin.
Use & application: Shake the aerosol can vigorously prior to application & spray the powder to the affected area once or several times daily from a distance of 20-25 cm.
150ml container: 254.80 MRP
❖ **B-MYCIN T Oint. Gaco**
Neomycin sulphate 0.25% & bacitracin 0.50%: topical ointment.
10gm tube: 12.95 MRP
❖ **B-MYCIN Pulv. Gaco**
Neomycin sulphate 0.25% & bacitracin 0.50%: powder preparation
5gm pack: 9.71 MRP
❖ **MEBALON Powder Medicon**
Neomycin sulphate 5mg + bacitracin zinc 4.56mg/gm: powder
5gm powder: 10.50 MRP
❖ **NEBACIN Oint. Pharmadesh**
Neomycin sulphate & bacitracin zinc prepn: topical ointment
10gm tube: 18.70 MRP
❖ **NEBANOL Oint. Square**
Neomycin sulphate 5mg + bacitracin zinc 500 i.u/gm: ointment
20gm tube: 43.90 MRP
❖ **NEBANOL Powder Square**
Neomycin sulphate 5mg + bacitracin zinc 4.56mg/gm: powder
10gm powder: 20.00 MRP
❖ **NEBANOL Plus Oint. Square**
Neomycin sulphate 3.5mg + bacitracin zinc 400 i.u + polymyxin B sulphate 5000 i.u/gm: ointment
10gm tube: 30.00 MRP
❖ **NENOL Powder Alco Pharma**
Neomycin sulphate & bacitracin zinc prepn: powder
5gm powder: 9.82 MRP
❖ **NEO-B Oint. Drug Inter.**
Neomycin sulphate 5mg + bacitracin zinc 10mg/gm: ointment
10gm tube: 14.50 MRP
❖ **NEOBACIN Oint. Chemico**
Neomycin sulphate 5mg + bacitracin zinc 10mg/gm: ointment
10gm tube: 13.00 MRP
❖ **NEOBACRIN Oint. GlaxoSmithKline**
Neomycin sulphate 5mg & zinc bacitracin 500 i.u/gm: ointment.
20gm tube: 43.90 MRP
❖ **NEOCIN Oint/Powder Opsonin**
Neomycin sulphate & bacitracin zinc prepn: ointment & powder.
10gm tube: 11.00 MRP
25gm powder: 253.75 MRP
❖ **NEOCITRIN Powder ACI**
Neomycin sulphate 0.5% w/w & bacitracin zinc 0.456% w/w prepn: powder
5gm powder: 10.30 MRP

❖ **NEOGEN Plus Oint. General**
Neomycin sulphate 3.5mg + bacitracin zinc 400 i.u + polymyxin B sulphate 5000 i.u/gm: ointment
10gm tube: 30.00 MRP

❖ **NEOTRACIN Powder Acme**
Neomycin sulphate 5mg & Bacitracin 4.56mg/gm: Powder
5gm pack: 10.11 MRP

❖ **NEOTRACIN Skin Oint. Acme**
Neomycin sulphate 5mg & Bacitracin 500 i.u/gm: ointment
10gm tube: 17.36 MRP

❖ **NSB Oint. Mystic**
Neomycin sulphate BP and bacitracin zinc BP 1%: ointment
10gm tube: 12.55 MRP

❖ **NUBA Oint. Bio-pharma**
Neomycin sulphate 5mg + bacitracin zinc 10mg/gm: ointment
20gm tube: 40.00 MRP

❖ **TYBAC Powder Somatec**
Neomycin sulphate & bacitracin zinc prepn: powder.
5gm pack: 10.00 MRP

NITROFURAZONE[21,33]

❖ **FURASEP Cream Beximco**
Nitrofurazone 0.2% cream.
Ind: Bacterial infections in wounds, burns, ulcers; skin graft donor sites.
Use: Apply locally as required.
20gm tube: 17.00 IP

❖ **NIFURA Cream Supreme**
Nitrofurazone 0.2% cream.
Ind: Bacterial infections in wounds, burns, ulcers; skin graft donor sites.
Use: Apply locally as required.
20gm tube: 17.00 MRP

SODIUM FUSIDATE[21,73]

SODIUM FUSIDATE: Cream/Ointment
Sodium fusidate 20mg/gm (2% w/w) in ointment & cream base.
Ind: Gram-positive, particularly staphylococcal skin infections such as, abscess, boils, curbuncles, impetigo, varicose ulcers, skin grafts.
Use & application: Adult & Child: Apply 2 or 3 times daily. Less frequent application if dressing used.

❖ **FACID Cream/Oint. SK+F**
Sodium fusidate 20mg/gm (2% w/w): cream/ ointment.
15gm tube (cream): 85.00 MRP
15gm tube (oint.): 85.00 MRP

❖ **FUCIDIN Cream/Leo Pharma/Kapricorn**
Sodium fusidate 20mg/gm (2% w/w): cream.
15gm tube (cream): 257.10 MRP

❖ **FUSIDATE Oint. Aristopharma**
Sodium fusidate 20mg/gm (2% w/w): cream.
20gm tube (oint.): 85.00 MRP

❖ **FUSIMED Oint. Medicon**
Sodium fusidate 20mg/gm (2% w/w): cream.
20gm tube (oint.): 85.00 MRP

SULPHONAMIDE PREPNS[21,33]

SILVER SULPHADIAZINE: 1% Cream.
Ind: Treatment of burns of all degrees & extents; Skin grafts donor sites; wounds; infected leg ulcers & pressure sores.
C/I: Pre-mature & newborn infants; also not recommended in pregnancy, but if the burnt area covers more than 20% of total body surfac area or if the benefit of Dermazin for the burnt patient is greater than the possible risk to (of kernicterus) the foetus.
S/E: In prolonged treatment serum conc. of sulphonamide rises & same side- effects of systemic sulphonamide therapy may be menifested.
Precautions: Hypersensitivity; Inborn deficiency of Glucose-6- phosphate dehydrogenase since haemolysis may occur after an application of the cream to large areas of the body; impaired renal or hepatic function.
Use & appli: Adults: Apply in layer 3-5 mm thick. Change dressing 3 times a week for ulcers & daily for burns.
Child: Upto 3 months, not recommended; others, same as adult.

❖ **BENTOL Cream Doctor's**
Silver sulphadiazine 1% cream.
10gm tube: 11.38 MRP

❖ **BURNSIL Cream Beximco**
Silver sulphadiazine 1% cream.
25gm tube: 35.00 MRP

❖ **DAZINE Cream Alco Pharma**
Silver sulphadiazine 1% cream.
25gm tube: 24.50 MRP
250gm pack: 202.29 MRP
500gm pack: 380.00 MRP

❖ **DERSA Cream SAPL**
Silver sulphadiazine 1% cream.
25gm tube: 24.00 MRP

❖ **FLAMZIN Cream Cosmic**
Silver sulphadiazine 1% cream.
25gm tube: 25.00 MRP

❖ **SILBURN Cream Pharmadesh**
Silver sulphadiazine 1% cream.
20gm tube: 28.30 MRP

❖ **SILCREAM Cream Jayson**
Silver sulphadiazine 1% cream.
25gm tube: 300.00 IP
250gm pot: 225.00 IP

❖ **SILVADAZIN Cream Aristopharma**
Silver sulphadiazine 1% cream.
25gm tube: 30.00 MRP
250gm tube: 225.00 MRP

❖ **SILVAZIN Cream Chemist**
Silver sulphadiazine 1% cream.
25gm tube: 24.00 MRP

❖ **SILVERZINE Cream Gaco**
Silver sulphadiazine 1% cream.
10gm tube: 11.50 MRP
25gm tube: 26.00 MRP
250gm pack: 202.29 MRP

Topical Anti-viral prepns.

ACYCLOVIR CREAM[21,47]

ACYCLOVIR: 5% Cream
Ind: Topical use in herpes simplex infection of skin & mucous membrane & genital herpes.
C/I; S/E; Cautions: See under systemic antimicrobial drugs.
Use: Adult & child, apply 5 times daily at 4 hourly intervals for 5 days.

❖ **NOVIRAX Cream Drug Inter.**
Acyclovir 5% (50mg/gm): cream preparation.
5gm tube: 40.00 MRP

❖ **VIROXI Cream SK+F**
Acyclovir 5% (50mg/gm): cream preparation.
5gm tube: 40.00 MRP

❖ **VIRUX Cream Square**
Acyclovir 5% (50mg/gm): cream preparation.
5gm tube: 40.00 MRP

DOCOSANOL[26]

❖ **LAFROST Cream Incepta**
Docosanol INN 100mg/gm (10%): cream
Mode of action: Docosanol is a 22-carbon, straight chain saturated alcohol that works by inhibiting fusion between the human cell plasma membrane and the herpes simplex virus envelope, thereby preventing viral entry into the cells and subsequent viral replication.

Ind: Treatment of acute and recurrent oral-facial herpes simplex episodes (herpes labialis or cold sores or fever blisters).

C/I: Hypersensitivity to docosanol or any other components of the formulation.

S/E: Generally docosanol is well tolerated. Rarely burning, dryness of skin, itching, rash, swelling & headache are seen after administration of docosanol.

Precautions: 1. Cream should only be applied to the lips and face. Avoid application in or near the eyes. Emphasize hand washing following application. Do not touch the lesion to prevent spread to others or to other parts of the body. 2. Herpes infection is a recurring disease. Viral reactivation may be triggered by ultraviolet radiation or sun exposure, stress, fatigue chilling. Other possible triggers include fever, injury, menstruation dental work and infectious diseases (cold, flu). 3. Patients are advised to notify health care professionals if lesions do not heal in 14 days, or if fever, rash or swollen lymph nodes occur.

Pregnancy & lactation: There are no adequate and well-controlled studies in pregnant women. However, this medicine has not been shown to cause any birth defects or other problems in animal studies using rats or rabbits. It is also not known whether docosanol is excreted in breast milk or not. Therefore, consideration should be given to discontinue nursing temporarily or withhold the drug while the mother is nursing.

Dosage & admin: Adults and children of 12 years of age and older:
Apply 5 times a day until healed. Treatment should be started at earliest signs or symptoms of herpes infection (blisters, open sores, pain in the infected area, itching, burning tingling or numbness).

Drug inter: There are no known drug interactions with docosanol.
5gm tube: 50.00 MRP

Topical Anti-fungal prepns.

Topical antifungal preparations belong to different groups:[21]

1. **Topical Polyene antifungals: such as-** ***Nystatin.***
2. **Topical Imidazole antifungals: such as-** ***Clotrimazole, Econazole, Ketoconazole, Miconazole, Sulconazole & Tioconazole.***
3. **Other topical antifungals: such as-** ***Amorolfine, Benzoic acid, Benzoyl peroxide, Butenafine (?), Salicylic acid, Terbinafine, Tolnaftate, Undecenoates etc.***

Topical Polyene Antifungalså

NYSTATIN[21,33]

NYSTATIN: Ointment
Nystatin is a polyene antifungal, available as ointment preparation for topical use.
Ind: Skin infection due to candida spp.
Use & admin: Apply 2-4 times daily continuing for 7 days after lesion have healed.
Preparation: Recently not available.

Imidazole Antifungals

CLOTRIMAZOLE[21,33]

CLOTRIMAZOLE: Cream/Solution.
Ind: Fungal skin infection including tinea, paronychia, intertrigo. Also gram-positive bacterial infection of the skin and nails.
S/E: Occasional skin irritation and sensitivity.
Use: Adult & child, apply sparingly 2-3 times daily continuing for 14 days after lesion have healed.
Nail infection, apply daily under occlusive dressing.

❖ **AFUN Cream Square**
Clotrimazole 1%: cream
10gm tube: 25.00 MRP
❖ **CANTEN Cream Pharmadesh**
Clotrimazole 1%: cream
10gm tube: 26.00 MRP
❖ **CANTRIM Cream Rephco**
Clotrimazole 1%: cream
10gm tube: 28.00 MRP
❖ **CLODAL Cream Globe**
Clotrimazole 1%: cream
10gm tube: 25.00 MRP
❖ **CLODERM Cream General**
Clotrimazole 1%: cream
10gm tube: 32.00 MRP
❖ **CLOSTEN Cream Alco Pharma**
Clotrimazole 1%: cream
10gm tube: 20.00 MRP
❖ **CLOTRIM Cream Acme**
Clotrimazole 1%: cream
5gm tube: 18.25 MRP
10gm tube: 28.50 MRP
❖ **CLOTRIZOLE Cream Reman**
Clotrimazole 1%: cream
10gm tube: 22.75 MRP
❖ **CLOZOL Cream Chemist**
Clotrimazole 1%: cream
10gm tube x 10's pack: 250.00 MRP
❖ **CLOZOX Cream UniMed/UniHealth**
Clotrimazole 1%: cream
10gm tube x 1's pack: 25.00 MRP
❖ **DERMASIM Soln. ACI**
Clotrimazole 1%: solution
20ml pack: 50.00 MRP
❖ **DERMASIM Cream ACI**
Clotrimazole 1%: cream
10gm cream: 34.97 IP
❖ **FUNGIN Cream Ibn Sina**
Clotrimazole 1%: cream
10gm cream: 30.00 MRP
❖ **FUSTEN Cream Kumudini**
Clotrimazole 1%: cream
10gm cream: 25.00 MRP
❖ **KANIS Cream Gaco**
Clotrimazole 1%: cream.
10gm tube: 30.00 MRP
❖ **MARET Cream Mystic**
Clotrimazole 1%: cream.
10gm tube: 30.00 MRP
❖ **NEOSTEN Cream Beximco**
Clotrimazole 1%: cream.
20gm tube: 40.00 IP
❖ **TINATRIM Cream GlaxoSmithKline**
Clotrimazole 1%: cream.
10gm tube: 34.97 MRP
❖ **TINAZOL Cream Popular**
Clotrimazole 1%: cream.
10gm tube: 25.00 IP
❖ **TRIMAZOLE Cream Opsonin**
Clotrimazole 1%: eam.
10gm tube: 25.00 MRP
❖ **ZENESTEN Cream Doctor's**
Clotrimazole 1%: cream.
10gm tube: 25.00 MRP
20gm tube: 31.27 MRP

ECONAZOLE / MICONAZOLE[21,33]

ECONAZOLE / MICONAZOLE: Cream
Econazole and miconazole are the members of the synthetic imidazole class of antifungal agents.They are broad-spectrum antifungal agents active against different types of pathogenic dermatophytes and yeasts. They are also found active against different gram-positive bacteria, such as- many strains of streptococcus and staphylococcus.
Ind: Fungal skin infection including tinea, paronychia, intertrigo.
S/E: Occasional skin irritation and sensitivity.
Use & appli: Apply 2-3 times daily continuing for 14 days after lesion have healed.
Nail infection, apply daily under occlusive dressing.

❖ **ECODERM Cream Rephco**
Econazole nitrate 1%: cream.
10gm tube: 28.00 MRP
❖ **ECOMET Cream Medimet**
Econazole nitrate 1%: cream.
15gm tube: 28.00 MRP
❖ **ECONAL Cream Chemico**
Econazole nitrate 1%: cream.
10gm tube: 32.00 MRP
❖ **ECONATE Cream Incepta**
Econazole nitrate 1%: cream.
10gm tube: 28.00 MRP
❖ **ECOREN Cream ACI**
Econazole nitrate 1%: cream.
10gm tube: 30.00 IP
❖ **ECOZOL Cream Opsonin**
Econazole nitrate 1%: cream.
10gm tube: 32.00 MRP
30gm tube: 70.00 MRP
❖ **FUNGIDAL Cream Square**
Miconazole nitrate 2% (20mg/gm): cream
10gm tube: 35.00 MRP
❖ **FUNGIMIN Cream Kumudini**
Miconazole nitrate 2% (20mg/gm): cream
10gm tube: 30.00 MRP
❖ **G-MICONAZOLE Cream Gonoshas.**
Miconazole mitrate 2% (20mg/gm): cream.
5gm tube: 18.21 MRP
10gm tube: 34.39 MRP
❖ **MIC Cream Globe**
Miconazole nitrate 2% (20mg/gm): cream
10gm tube: 35.00 MRP
❖ **MICONEX Cream ACI**
Miconazole nitrate 2% (20mg/gm): cream
10gm tube: 35.00 MRP
❖ **MICOZOL Topical Cream Gaco**
Miconazole nitrate 2% (20mg/gm): cream
10gm tube: 30.00 MRP
❖ **PEVARYL Cream Sanofi-aventis**
Econazole nitrate 1%: cream.
10gm tube: 32.37 MRP

* * *

MICONAZOLE: Oral Gel
Miconazole oral gel is available as miconazole base USP 2% w/w. Miconazole is a broad-spectrum synthetic imidazole class of antifungal agent.
Ind: Treatment and prevention of fungal infection & gram positive bacterial superinfection of the oropharynx and gastro-intestinal tract.
C/I: No known contraindication.

S/E: No significant side-effect is experienced in using miconazole oral gel. Occasional mild gastrointestinal side-effect is seen.

Pregnancy & lactation: Like other imidazole, miconazole should be avoided during pregnancy.

Use & admin: Adult: 1-2 tsf 4 times daily. Above 6 years: 1 tsf 4 times daily. 2-6 years: 1 tsf 2 times daily. Below 2 years: ½ tsf 2 times daily.

❖ **GELORA Oral Gel Square**
Miconazole base USP 2% w/w: Oral gel.
15gm tube: 50.00 MRP
❖ **MICODERM-Gel Drug Inter.**
Miconazole base USP 2% w/w: Oral gel.
15gm tube: 50.00 MRP
❖ **MICORAL Oral Gel ACI**
Miconazole base USP 2% w/w: Oral gel.
15gm tube: 50.00 IP
❖ **MIZOL Oral Gel Medicon**
Miconazole base USP 2% w/w: Oral gel.
15gm tube: 50.00 MRP
❖ **MYCON Oral Gel Aristopharma**
Miconazole base USP 2% w/w: Oral gel.
15gm tube: 50.00 MRP

KETOCONAZOLE

❖ **NIZORAL Shampoo Janssen-Cilag/UniMed**
Ketoconazole 2% (20mg/ml): shampoo preparation.
Note: This preparation has given under anti-dandruff preparation.

TIOCONAZOLE[21,46,62]

TIOCONAZOLE: Dermal cream
Tioconazole is available as 1% dermal cream for topical use.
Tioconazole is a member of the imidazole class of antifungal agents.
Ind: Fungal infections (dermatophytes & yeasts); infections such as tinea pedis, t. cruris, t. corporis & t. unguium; & in those conditions complicated by susceptible gm+ve bacteria.
C/I: Hypersensitivity to imidazole antifungal agents.
S/E: Occasional local transient & mild irritation; if hypersensitivity reaction develop, treatment should be discontinued & appropriate therapy should be instituted.
Cautions: Not for ophthalmic use.
Use: Apply & massage gently into the affected & surrounding skin area once or twice a day. In intertriginous areas, apply sparingly & smoothed in well to avoid macerating effects. Duration: 1-6 weeks.

❖ **CONASYD Cream Renata**
Tioconazole 1% dermal cream.
10gm tube: 47.54 MRP
❖ **TYCON Cream Acme**
Tioconazole 1% dermal cream.
10gm tube: 46.00 MRP

Other Antifungal prepns.

BENZOIC ACID + SALICYLIC ACID (Whitfield)[21,33]

BENZOIC ACID + SALICYLIC ACID: Ointment.
Ind: Ringworm or teneasis, eczema, fungal infection of the groin, barber's itch.
Use: adult & child- apply locally on the affected area two or three times daily.

❖ **BENSAL Oint. Gaco**
Benzoic acid 6% & salicylic acid 3%: ointment.
10gm pack: 5.54 MRP
30gm pack: 9.35 MRP
❖ **BENZALIC Oint. CPL**
Benzoic acid 6% & salicylic acid 3%: ointment.
20gm pack: 14.00 MRP
❖ **BEXSUL Oint. Edruc**
Benzoic acid 6% & salicylic acid 3%: ointment.
25gm tube: 13.30 MRP
❖ **DARMOL Oint. Cosmic**
Benzoic acid 6% & salicylic acid 3%: ointment.
15gm x 12's pack: 72.00 MRP
❖ **DERMIN Oint. Jayson**
Benzoic acid 6% & salicylic acid 3%: ointment.
25gm pack: 13.30 MRP
❖ **ENSAL Oint. Renata**
Benzoic acid 6% & salicylic acid 3%: ointment.
1kg pack: 265.00 MRP
❖ **FUNGALIN Oint. Chemist**
Benzoic acid 6% & salicylic acid 3%: ointment.
10gm pot x 1's pack: 9.50 MRP
❖ **G-BENZOSAL Skin Oint. Gonoshas**
Benzoic acid 6% & salicylic acid 3%: ointment.
25gm pot: 10.00 MRP
❖ **SIBEX Oint. Elixir**
Benzoic acid 6% & salicylic acid 3%: ointment.
30gm pack:
❖ **WHITFIELD Oint. Asiatic**
Benzoic acid 6% & salicylic acid 3%: ointment.
30gm x 1's pack: 13.00 MRP
❖ **WHITFIELDS Oint. Modern**
Benzoic acid 6% & salicylic acid 3%: ointment.
15gm pot: 8.00 MRP
25gm pot: 11.00 MRP
❖ **WHITFIELD Oint. Seema**
Benzoic acid 6% & salicylic acid 3%: ointment.
25gm pot: 8.60 MRP
❖ **WHITFIELD Oint. Unique**
Benzoic acid 6% & salicylic acid 3%: ointment.
30gm pack: 9.00 MRP
(Price could not be revised).

BUTENAFINE[48]

BUTENAFINE: Cream
Butenafine hydrochloride 1% cream.
Butenafine hydrochloride is a broad-spectrum antifungal agent.
Mode of action: Butenafine hydrochloride is hypothesized to act by inhibiting the epoxidation of squalene, thus blocking the biosynthesis of ergosterol, an essential component of fungal cell membrane.
Ind: Butenafine cream is indicated for the topical treatment of the following superficial dermatophytosis, viz: Interdigital tinea pedis (athlete's foot), tinea corporis (ringworm of the body) & tinea cruris (ringworm of the groin- jock itch) due to E. floccosum, T. mentagrophytes. T. rubrum, and T. tonsurans.
C/I: Butenafine is contraindicated in individuals who have known or suspected sensitivity to butenafine cream or any of its components.
S/E: Rarely local mild burning or irritation may be experienced. Hypersensitivity reactions may occur.
Precautions & warnings: Butenafine hydrocholride is not for ophthalmic, oral, or intravaginal use. Butenafine cream is for external use only. If irritation or sensitivity develops with the use of butenafine cream, treatment should be discontinued and appropriate therapy instituted.
Dosage & application: In the treatment of interdigital tinea pedis, butenafine should be applied twice daily for 7 days or once daily for 4 weeks. Patients with tinea corporis or tinea cruris should apply butenafine once daily for two weeks. Sufficient butenafine cream should be applied to cover affected areas and immediately surrounding skin of patients with interdigital tinea pedis, tinea corporis and tinea cruris.

❖ **TENAFIN Cream Beximco**
Butenafine hydrochloride 1% cream preparation.
15gm tube: 50.00 MRP

TERBINAFINE[21,42,54]

TERBINAFINE: Cream
Terbinafine is an allylamine which has a broad spectrum antifungal activity. At low concentration terbinafine is fungicidal against dermatophytes, moulds and certain dimorphic fungi. The activity against yeasts is fungicidal or fungistatic depending on the species.
Mode of action: Terbinafine interferes specially with fungal sterol biosynthesis at an early step. This leads to a deficiency in ergosterol and to an intracellular accumulation of squalene, resulting in fungal cell death. Terbinafine acts by inhibition of squalene epoxidase in the fungal cell membrane.
Ind: Fungal infections of the skin and nails caused by dermatophytes such as Trichophyton, Microsporum canis & Epidermophyton floccosum. Yeast infections of the skin principally those caused by the genus Candida (e.g C. albicans). Pityriasis (tinea) versicolor due to Pityrosporum orbiculare (also known as Malassezia furfur).
C/I: Hpersensitivity to terbinafine.
S/E: Redness, itching, or stinging; rarely allergic reactions (discontinue)
Cautions: pregnancy, breast-feeding; avoid contact with eyes.
Dosage & Admin: Terbinafine can be applied once or twice daily. Cleanse and dry the affected areas thoroughly before application. Apply the cream to the affected skin and surrounding area in thin layer and rub lightly: Tinea corporis & cruris- 1 to 2 weeks; Tinea pedis- 1 week; Cutaneous candidiasis- 2 wks; Pityriasis versicolor- 2 weeks.
Relief of clinical symptoms usually occurs within a few days. Irregular use or premature discontinuation of treatment carries the risk of recurrence. If there are no sign of improvement after two weeks, the diagnosis should be verified.

❖ **ANPAR Cream Doctor's**
Terbinafine hydrochloride 1% cream preparation.
5gm tube: 35.00 MRP
❖ **DERBICIL Cream Incepta**
Terbinafine hydrochloride 1% cream preparation.
5gm tube: 50.00 MRP
❖ **DERFIN Cream Alco Pharma**
Terbinafine hydrochloride 1% cream preparation.
10gm tube: 30.00 MRP
❖ **FINATER Cream Popular**
Terbinafine hydrochloride 1% cream preparation.
5gm tube: 50.00 IP
❖ **INFUD Cream General**
Terbinafine hydrochloride 1% cream preparation.
5gm tube: 30.00 MRP
❖ **MYCOFIN Cream SK+F**
Terbinafine hydrochloride 1% cream preparation.
5gm tube: 50.00 MRP
❖ **SKINABIN Cream ACI**
Terbinafine hydrochloride 1% cream preparation.
15gm tube: 50.00 MRP
❖ **TELFIN Cream UniMed/UniHealth**
Terbinafine hydrochloride 1% cream preparation.
5gm tube: 22.00 MRP
10gm tube: 40.00 MRP

❖ **TERBEX Cream Beximco**
Terbinafine hydrochloride 1% cream preparation.
5gm tube: 35.00 IP
❖ **TERBIFIN Cream Aristopharma**
Terbinafine hydrochloride 1% cream preparation.
5gm tube: 35.00 MRP
❖ **TERMIDER Cream Bio-pharma**
Terbinafine hydrochloride 1% cream preparation.
5gm tube: 30.00 MRP
10gm tube: 50.00 MRP
❖ **XFIN Cream Square**
Terbinafine hydrochloride 1% cream preparation.
5gm tube: 50.00 MRP

TOLNAFTATE[21,71]

❖ **TINAFATE Cream Pharmadesh**
Tolnaftate 1% cream: topical preparation.
Ind: Teneasis (t. capitis, t. corporis, t. barbae, t. pedis, t. cruris. t. versicoler); onychomycosis.
Use & application: Apply the cream to the affected skin and surrounding areas, including the toes & interdigital webs (if any) in thin layer and rub lightly 2 to 3 times daily for 2 or 3 weeks.
10gm pack: 26.00 MRP
Note: *Systemic antifungal agents which can be used in cutaneous infestations- see under antimicrobial drugs.*

Parasiticidal prepns.

Anti-Scabies drugs

BENZYL BENZOATE[21,33]

BENZYL BENZOATE: Emulsion.
Ind: Scabies; pediculosis.
S/E: Irritant to the skin, burning sensation especially on genitalia and excoriations; occasionally rashes.
Precautions: Children; avoid contact with eye and mucous membrane.
Adult: Scabies- after a hot bath apply to whole body except head and face.
Repeat the same within five days. Or, apply for 3 consecutive days at 12 hourly intervals (morning & night) to the whole body except head & face. Change the clothes & sheets every morning to clean; the patient should have no bathduring the period, but a hot bath 12 hours after the last application.
Pediculosis- apply to the affected area and cleanse after 24 hours. Repeat two or three times if necessary.
Child: infants, use diluted with 3 parts water; others, use diluted with an equal quantity of water.

❖ **ASCAB Emul. Hudson**
Benzylbenzoate 25%: emulsion
60ml bot: 12.13 MRP
100ml bot: 18.00 MRP
❖ **BENOSOL Emul. Amico**
Benzylbenzoate 25%: emulsion
100ml bot: 18.00 MRP
❖ **CABISOL Emul. Chemist**
Benzylbenzoate 25%: emulsion
100ml bot: 18.50 MRP
❖ **G-B. BENZOATE Emul. Gonoshas**
Benzylbenzoate 25%: emulsion.
100ml bot: 18.21 MRP
❖ **S-BIOL Emul. Seema**
Benzyl benzoate 25%: emulsion
60ml bot: 14.00 MRP
100ml bot: 20.00 MRP
❖ **SCABEX Emul. Supreme**
Benzyl benzoate 25%: emulsion.
100ml bot: 18.00 MRP
❖ **SCABICID Emul. Aexim**
Benzyl benzoate 25%: emulsion.
60ml bot: 12.13 MRP
❖ **SCABICON Emul. Medicon**
Benzyl benzoate 25%: emulsion.
100ml bot: 21.00 MRP
❖ **SCABISOL Emul. Jayson**
Benzyl benzoate 25%: emulsion.
100 ml bot: 18.20 MRP
❖ **SCANIL Emul. Renata**
Benzyl benzoate 25%: emulsion.
450ml bot: 115.00 MRP
❖ **SKYBIOL Emul. Skylab**
Benzyl benzoate 25%: emulsion.
60ml bot: 12.70 MRP
120ml bot: 20.50 MRP

CROTAMITON

CROTAMITON: Cream/Lotion
Crotamiton 10% w/v: topical cream & lotion.
Ind: Scabies, pruritus.
C/I: Acute exudative dermatoses.
Caution: Avoid use near eyes.
Use: Scabies- apply over the whole body omitting the head, neck & eyes, after a hot bath, and remove by washing on the following day. The application may be repeated 24 hours later, but a bath should not be taken until the following day.

❖ **CRODEX Cream Gaco**
Crotamiton 10% w/v: topical cream.
20gm tube: 55.00 MRP
❖ **CRONIX Lotion UniMed/UniHealth**
Crotamiton BP 10% w/v: lotion.
60ml pack: 66.00 MRP
❖ **CUREX Cream Kumudini**
Crotamiton 10% w/v: topical cream.
20gm tube: 53.00 MRP

IVERMECTIN[124]

IVERMECTIN: Tablet
Ivermectin is a newer oral antiscabietic drug, that is as safe and effective as the topical antiscabietics. It is available as ivermectin BP 3mg & 6mg film-coated tablets.
Mode of action: Ivermectin is a selective anti-parasitic agent due to high affinity for glutamate-gated chloride ion channels found in the peripheral nervous system and muscle cells of parasites. The binding of ivermectin to this ion channel results in increased permeability of the cell membrane to chloride ions, leading to hyperpolarization with subsequent paralysis and death of the parasites. It may also impair normal intrauterine development of parasites and may inhibit their release from the uteri of gravid female parasites.
Ind: Ivermectin is used in the treatment of scabies caused by Sarcoptes scabiei and filariasis caused by Wuchereria bancrofti.
C/I: It is contraindicated in bronchial asthma and patients who are hypersensitive to any component of this product.
S/E: Common side effects are as nausea, vomiting or decreased appetite, diarrhoea or constipation, muscle or joint pain, swelling of the lymph nodes, fever, tiredness, dizziness, tremor, itching, eye-lid swelling or eye redness.
Precautions: Stop taking ivermectin and seek emergency medical attention if there is symptoms of a rare but serious allergic reaction including swelling of the lips, tongue or face.
Pregnancy & lactation: Safety and efficacy have not been established for pregnant or lactating women.
Dosage & admin: Scabies: 150mcg/kg of body weight as a single dose for one treatment. Treatment may be repeated two weeks after the first dose for immunocompromised patient. Filariasis: 20 to 200mcg/kg of body weight as a single dose have been used.
Childern: Safety and efficacy have not been established for children less than 15kg.
Drug inter: Concomitant use of ivermectin with diazepam and related tranquilizers as well as any monoamine oxidase (MAO) inhibitors exaggerated the sedation and adverse neurologic effects.

❖ **IVACTIN Tab. Aristopharma**
Ivermectin BP 3mg/tablet (film-coated).
3mg x10's pack: 60.00 MRP
❖ **SCABO Tab. Delta**
Ivermectin BP 3mg & 6mg/tablet (film-coated).
3mg x10's pack: 30.00 MRP
6mg x10's pack: 50.00 MRP

MONOSULFIRAM[21,52]

MONOSULFIRAM: Solution
Monosulfiram 25% in alcoholic solution.
Ind: Scabies.
Caution: Avoid alcohol before and 48 hours after application.
Adult & Child: Dilute with two or three parts water and after through cleansing apply to whole body except head and face. If necessary repeat for two or three days.

❖ **MONOSOL Soln. Gaco**
Monosulfiram 25% in alcoholic solution.
30ml bot: 50.58 MRP
❖ **TETRASOL Soln. ACI**
Monosulfiram 25% in alcoholic solution.
30ml bot: 50.00 MRP

PERMETHRIN[21,47]

PERMETHRIN: Cream
Permethrin cream is a topical preparation for treatment of scabies.
Ind: Scabies.
S/E: Pruritus, erythema, & stinging; rarely rashes & oedema.
Cautions: Avoid contact with eyes; do not use on broken or secondarily infected skin;

pregnancy and breast-feeding; children aged 2 months to 2 years, medical supervision requires for dermal use (scabies).

Use & Application: scabies, apply over whole body and wash off after 8-24 hours; child, apply over whole body including face, neck, scalp and ears. If hands are washed with soap and water within 8 hours of application, cream should be reapplied.

Note- manufacturer advices application to the body but excludes the head, face and neck. However, in the case of young children, application may need to be extended to the scalp, neck, face and ears. This extended application may also be necessary for the elderly, for the immunocompromised and for those who have experienced treatment failure.

❖ **AROTRIX Cream Aristopharma**
Permethrin 5% w/w: cream preparation
15gm tube: 25.00 MRP
30gm tube: 40.00 MRP

❖ **DELICE Cream Amico**
Permethrin 5% w/w: cream preparation
30gm tube: 40.00 MRP

❖ **DEORIX Cream Popular**
Permethrin 5% w/w: cream preparation
30gm tube: 40.00 IP

❖ **DERMANIX Cream Novo Healthcare**
Permethrin 5% w/w: cream preparation
30gm tube: 40.00 MRP

❖ **ELIMATE Cream Incepta**
Permethrin 5% w/w: cream preparation
30gm tube: 40.00 MRP

❖ **ERMITE Cream Jayson**
Permethrin 5% w/w: cream preparation
30gm tube: 40.00 IP

❖ **FLORIX Cream Cosmic**
Permethrin 5% w/w: cream preparation
15gm tube: 24.00 MRP
30gm tube: 40.00 MRP

❖ **LICERIN Cream Drug Inter.**
Permethrin 5% w/w: cream preparation
15gm tube: 25.00 MRP

❖ **LORIX Cream Opsonin**
Permethrin 5% w/w: cream preparation
30gm tube: 40.00 MRP

❖ **LOTRIX Cream GlaxoSmithKline**
Permethrin 5% w/w: cream preparation
30gm tube: 55.00 MRP

❖ **MITHIN Cream Edruc**
Permethrin 5% w/w: cream preparation
15gm tube: 25.00 IP
30gm tube: 40.00 IP

❖ **NEEPER Cream Chemico**
Permethrin 5% w/w: cream preparation
15gm tube: 28.00 MRP
30gm tube: 40.00 MRP

❖ **NOSCAB Cream Beximco**
Permethrin 5% w/w: cream preparation
25gm tube: 35.00 IP

❖ **PERLS Cream Globe**
Permethrin 5% w/w: cream preparation
30gm tube: 40.00 MRP

❖ **PERMA Cream Alco Pharma**
Permethrin 5% w/w: cream preparation
15gm tube: 24.00 MRP
30gm tube: 35.00 MRP

❖ **PERMENIN Cream Medicon**
Permethrin 5% w/w: cream preparation
15gm tube: 24.00 MRP
30gm tube: 40.00 MRP

❖ **PERMIN Cream Acme**
Permethrin 5% w/w: cream preparation
15gm tube: 25.00 MRP
30gm tube: 40.00 MRP

❖ **PERMISOL Cream ACI**
Permethrin 5% w/w: cream preparation
30gm tube: 40.00 MRP

❖ **PEROSA Cream SK+F**
Permethrin 5% w/w: cream preparation
30gm tube: 40.00 MRP

❖ **REMATHRIN Cream Reman**
Permethrin 5% w/w: cream preparation
30gm tube: 40.00 MRP

❖ **SCABEX Cream Square**
Permethrin 5% w/w: cream preparation
15gm tube: 25.00 MRP
30gm tube: 40.00 MRP

❖ **SCABID Cream Chemist**
Permethrin 5% w/w: cream preparation
15gm tube: 28.32 MRP
30gm tube: 40.46 MRP

❖ **SCAPER Cream Bio-pharma**
Permethrin 5% w/w: cream preparation
15gm tube: 25.00 MRP
30gm tube: 40.00 MRP

❖ **SCARIN Cream Ibn Sina**
Permethrin 5% w/w: cream preparation
15gm tube: 25.00 MRP
30gm tube: 40.00 MRP

❖ **SKILIN Cream General**
Permethrin 5% w/w: cream preparation
15gm tube: 25.00 MRP
30gm tube: 40.00 MRP

❖ **UNIX Cream UniHealth/UniMed**
Permethrin 5% w/w: cream preparation
30gm tube: 40.00 MRP

❖ **ZUNEX Cream Rephco**
Permethrin 5% w/w: cream preparation
15gm tube: 28.00 MRP

PERMETHRIN + CROTAMITON[129]

❖ **UNIX-C Lotion UniHealth/UniMed**
Permethrin BP 5% & crotamiton BP 10% combined lotion preparation with permethrin's parasiticidal and crotamiton's antipruritic action. The lotion is pleasant flavoured, suitable for children and adults and easy to apply.

Ind: Treatment of scabies with pruritus.

Dosage & admin: Adult: Apply once. If necessay, a second application may be given not less than 7 days after the initial application. Other members of the family should use this lotion as preventive in the same way due to its highly contagious effects. Children aged 2 months to 2 years: Apply over whole body under doctor's supervision.

Note: For further information please consult manufacturer's literature.
60ml bot: 80.00 MRP

3. TOPICAL ANTI-INFECTIVE & ANESTHETIC COMBINED PREPNS.

NEOMYCIN + POLYMYXIN B + PRAMOXINE[120]

NEOMYCIN + POLYMYXIN B + PRAMOXINE: Cream
This is a combination preparation of three components for topical use, containing two antibiotics, neomycin sulphate & polymyxin B sulphate and one anesthetic agent, pramoxine hydrochloride.

Comp: Each gm of cream contains neomycin sulphate BP 5.84mg, polymyxin B sulphate BP 10,000 units & pramoxine hydrochloride BP 10mg.

Mode of action: Neomycin sulphate is an aminoglycoside. It is bactericidal in action. It dose this by causing the bacteria to produce defective proteins which are essential for their growth. Once the bacteria have been killed, tissue can be repaired by the normal healing process. Polymyxin B sulphate has a bactericidal action against almost all gram-negative bacilli expect the proteus group. Polymyxin increases the permeability of bacterial cell membrance. It is the sulphate salt of polymyxin B1 & B2.
Pramoxine hydrochloride is a topical anesthetic agent which provides temporary relief from itching & pain. It acts by stabilizing the neuronal membrane of nerve endings with which it comes into contact.

Ind: First aid to prevent infection and for temporary relief of pain or discomfort from minor cuts, scrapes, burns.

C/I: History of hypersensitivity to any of the components of the preparation.

S/E: May cause itching, skin rash, redness, swelling, or other sing of irritation not present before use of this medicine. Rarely, any loss of hearing.

Cautions & warnings: Do not use in the eyes or apply over large areas of the body in case of deep or puncture wounds, animal bites or serious burns. Consult a physician if the condition persists or gets worse or if a rash or other allergic reaction develops. Do not use longer than 1 week unless directed by a physician.

Pregnancy & lactation: Neomycin, polymyxine B and pramoxine topical preparetion have not been studied in pregnant women. However, this medicin has not been shown to cause birth defects or other problems in human.
It is also not known whether topical neomycin, polymyxin B and pramoxine combination pass into breast milk. However, this medicine has been reported to cause problems in nursing babies.

Doses & admin: Adults & children of 2 years older: Clean the affected area, apply a small amount of this product on the area 1 to 3 times daily, may be coverd with a sterile bandage. Children under 2 years of age: consult with the physician.

❖ **NUPRIN Cream Alco Pharma**
Each gm of nuprin cream contains neomycin sulphate BP 5.84mg, polymyxin B sulphate BP 10,000 units & pramoxine hydrochloride BP 10mg: cream for topical use.
5gm tube: 40.00 MRP
10gm tube: 75.00 MRP
30gm tube: 140.00 MRP

4. TOPICAL CORTICOSTEROIDS & COMBINED PREPNS.[21,33,42]

4.1 Topical Steroid prepns.
4.2 Topical Steroid & combined prepns.

TOPICAL STEROID PREPNS.

TOPICAL STEROID PREPNS: Cream/ Ointment

Topical steroid preparations, available since earlier period to recent time are: Hydrocortisone, Alclometasone, Beclometasone, Betamethasone, Clobetasol & Clobetasone, Desoximetasone, Diflucortolone, Fludroxycortide, Fluocinolone, Fluocinonide, Fluocortolone, Fluticasone, Halcinonide, Mometasone, Triamcinolone etc.

Ind: See under individual drugs or preparations.

C/I: Topical steroid preparations should not be used on acne (including rosacea), peri-oral dermatitis, scabies, leg ulcers, tuberculosis, ring worm or viral skin disease or in fungal or bacterial infections unless used in conjunction with appropriate chemotherapy. They should not be applied extensively i.e in large amounts or for prolonged periods in pregnancy. Topical steroids must never be used continuously as a prophylactic measure. Sudden with drawal of prolonged therapy can produce rebound exacerbation of a condition. The strength and/or frequency of application of steroid should therefore be reduced gradually on termination of prolonged therapy.

S/E: Percutaneous absorption of steroids can cause cushingoid changes and adrenal suppression. Local side-effects of steroid therapy include skin atrophy, striae and telangiectasia, areas particularly vulnerable are the face, thin skin and occluded areas (including flexures and under nappies etc). In infants, long term therapy should be avoided whenever possible; adrenal suppression can occur, even without occlusion (plastic paints may be sufficient to occlude).

Precautions: The least potent steroid appropriate to the diagnosis and severity of the condition should be used. It is always advisable to use the smallest amount of preparation practicable and the weakest which will bring about a satisfactory response. Therapy should cease as soon as possible. Where a very potent steroid is used, a maximum of 50 gm weekly should be applied if systemic effects are to be avoided. Prescriptions should not be repeated without clinical assessment of the condition at fortnightly intervals, or less if a very potent preparation is used.

Pregnancy & lactation: There are no adequate and well-controlled studies in pregnant women on teratogenic effects from topically applied corticosteroids. Therefore, topical corticosteroids should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. Drugs of this class should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time.
It is not known whether topical administration of corticosteroids could result in sufficient systemic absorption to produce detectable amounts in breast milk. (Systemically administered corticosteroids are secreted into breast milk in quantities not likely to have a deleterious effect on the infant). Nevertheless, caution should be exercised when topical corticosteroids are administered to a nursing women.

Choice of preparations: The preparation containing the least potent drug at the lowest strength which is effective is the one of choice, but dilution should be avoided whenever possible. There is no good evidence that it is of any benefit to prescribe a potent topical corticosteroid for initial treatment; it is probably just as useful to 'ascend' in potency as it is to 'descend'. It should be noted that if a patient ceases to respond to a particular topical corticosteroid another of similar potency ought to be prescribed, not a more potent one. In general, the most potent topical corticosteroids should be reserved for recalcitrant dermatoses such as chronic discoid lupus erythematosus, lichen simplx chronicus, hypertrophic lichen planus, and palmar plantary pustulosis. With rare exceptions, potent corticosteroids should not be usd on the face as they may precipitate a rosacea-like disorder and aggravate pre-existing rosacea.
Considerable caution must be exercised in the use of potent topical corticosteroids in children.

Topical corticosteroid potencies:[21]

Mildly potent:	Such as- *Hydrocortisone 1%*
Moderately potent:	Such as- *Clobetasone butyrate 0.05%*
Potent:	Such as- *Betamethasone valerate 0.1%; Hydrocortisone butyrate*
Very potent:	Such as- *Clobetasol propionate 0.05%, Mometasone furoate 0.1%.*

Intradermal corticosteroid injections are more effective than the very potent topical corticosteroid preparations and they should be reserved for severe cases where there are localisd lesions (such as keloid scars or hypertrophic lichen planus) and topical treatment has failed. Their effects may last for several weeks or even months. Particular care is needed to inject superficially in order to avoid severe skin atrophy.

Use in children: Children, specially babies, are particularly susceptible to side-effects. The more potent corticosteroids should be avoided in paediatric treatment or if necessary used with great care for short periods; a mild corticosteroid such as hydrocortisone is useful for treating napkin rash and for infantile eczemas.

Betamethasone & Combined prepns.

BETAMETHASONE[21,33]

BETAMETHASONE DIPROPIONATE Or VALERATE: Cream/Ointment

Betamethasone dipropionate or valerate 0.1% & 0.05%: cream/ointment.

Mode of action: Betamethasone dipropionate or valerate is a potent topical corticosteroid with anti-inflammatory, antipruritic and vasoconstrictive actions. Clotrimazole is a broad spectrum antimycotic, which inhibits fungal growth by inhibiting ergosterol synthesis.

Ind: Lichen simplex and planus, eczema, otitis externa, prurigo, seborrhoeic dermatitis and contact dermatitis; psoriasis (excluding wide spread plaque psoriasis).

C/I; S/E; Precautions: See above under the text of topical steroid preparations.

Pregnancy & lactation: See above under the text of topical steroid preparations.

Use & application: Adult & Child: apply sparingly 2 or 3 times daily (cream for moist or wheeping surfaces, ointment for dry lichenified & scaly lesions).

❖ **BESONE Oint. Pharmadesh**
Betamethasone valerate 0.1%: ointment.
5gm (oint) tube: 13.00 MRP

❖ **BETAVATE Cream Drug Inter.**
Betamethasone valerate 0.1%: cream.
15gm (cream) tube x 1's pack: 19.30 MRP

❖ **BETNIOSON Oint. Chemist**
Betamethasone valerate 0.1%: ointment.
10gm (oint) tube x 10's pack: 200.00 MRP

❖ **BETNOSON Oint. Hudson**
Betamethasone valerate 0.1%: ointment.
15gm (oint) tube: 30.00 MRP

❖ **BETNOVATE Cream/Oint. GlaxoSmithKline**
Betamethasone valerate 0.1%: cream/ointment.
15gm (cream) tube: 33.43 MRP
15gm (oint) tube: 35.87 MRP

❖ **DIPROBET Cream/Oint. Square**
Betamethasone valerate 0.05%: cream/ointment.
15gm (cream) tube: 33.00 MRP
15gm (oint) tube: 35.00 MRP

❖ **METHOVATE Oint. Gaco**
Betamethasone valerate 0.1%: ointment.
15gm (oint) tube: 30.04 MRP

❖ **MEXIDERM Cream/Oint. Bio-pharma**
Betamethasone valerate 0.1%: cream/ointment.
15gm (cream) tube: 25.00 MRP
15gm (oint) tube: 28.00 MRP

❖ **SINACORT Cream Ibn Sina**
Betamethasone valerate 0.1%: cream/ointment.
10gm (cream) tube: 19.00 MRP
10gm (oint) tube: 19.00 MRP

BETAMETHASONE+ANTIBIOTICS[21,33]

BETAMETHASONE + NEOMYCIN: Cream/Ointment

Betamethasone dipropionate or valerate 0.1% (1mg/gm) & neomycin sulphate 0.5% (5mg/gm): cream and ointment preperation.

Ind: Inflammatory dermatoses (e.g atopic eczema, seborrhoeic dermatitis, psoriasis, sunburns, discoid eczema, contact dermatitis, discoid lupus erythematosus, stasis eczema, lichen simplex chronicus), where bacterial infection is present or suspected.

Use: Adult & child, apply sparingly 2 or 3 times daily

❖ **BACTOVATE Cream RAK Pharma**
Betamethasone dipropionate 0.1% (1mg/gm) &

neomycin sulphate 0.5% (5mg/gm): cream.
5gm tube (cream): 18.44 MRP
❖ **BESONE-N Skin Oint. Pharmadesh**
Betamethasone dipropionate 0.1% (1mg/gm) & neomycin sulphate 0.5% (5mg/gm): ointment.
5gm tube (oint): 16.00 MRP
❖ **BETAMESON-N Cream Square**
Betamethasone dipropionate 0.1% (1mg/gm) & neomycin sulphate 0.5% (5mg/gm): cream.
10gm tube (cream): 22.00 MRP
❖ **BETAMYCIN Oint. Supreme**
Betamethasone valerate 0.1% & neomycin sulphate 0.5%: ointment.
5gm tube: 15.30 MRP
❖ **BETASON-N Skin Oint. Reman**
Betamethasone valerate 0.1% & neomycin sulphate 0.5%: ointment.
5gm tube: 12.50 MRP
❖ **BETAVATE-N Cream Drug Inter.**
Betamethasone dipropionate 0.1% (1mg/gm) & neomycin sulphate 0.5% (5mg/gm): cream.
10gm tube (cream): 21.55 MRP
❖ **BETNOVATE-N Cream/Oint.**
GlaxoSmithKline
Betamethasone valerate 0.1% & neomycin sulphate 0.5%: cream/ointment.
5gm tube (cream): 18.44 MRP
5gm tube (oint): 18.47 MRP
❖ **BETSON-N Cream Opsonin**
Betamethasone valerate 0.1% & neomycin sulphate 0.5%: cream.
5gm tube: 15.22 MRP
❖ **METHOVATE-N Cream/Oint. Gaco**
Betamethasone valerate 0.1% & neomycin sulphate 0.5%: cream/ointment
5gm tube (cream): 15.34 MRP
10gm tube (cream): 19.99 MRP
5gm tube (oint): 13.00 MRP
❖ **MEXIDERM-N Cream/Oint. Bio-pharma**
Betamethasone valerate 0.1% & neomycin sulphate 0.5%: cream/ointment.
5gm tube (cream): 15.00 MRP
5gm tube (oint): 14.80 MRP
❖ **NEOBET Cream Acme**
Betamethasone valerate 0.1% & neomycin sulphate 0.5%: cream.
5gm tube: 15.22 MRP
10gm tube: 18.21 MRP
❖ **NEOCORT Cream/Oint. Ibn Sina**
Betamethasone valerate 0.1% & neomycin sulphate 0.5%: cream/ointment.
5gm tube (cream): 15.00 MRP
5gm tube (oint): 18.44 MRP

❖ ❖ ❖

BETAMETHASONE + FUSIDIC ACID: Cream/Ointment
Betamethasone valerate 0.1% & fusidic acid 2%: cream & ointment
Ind: Inflammatory dermatoses (e.g atopic eczema, seborrhoeic dermatitis, psoriasis, sunburns, discoid eczema, contact dermatitis, discoid lupus erythematosus, stasis eczema, lichen simplex chronicus), where bacterial infection is present or suspected.
C/I; S/E: Cautions: See under 'topical steroid preparations'.
Adult & Child: Uncovered lesions- apply sparingly 2-3 times daily; covered lesions-less frequent applications may be adequate.

❖ **FUCICORT Cream Leo Pharma/Kapricorn**
Betamethasone valerate 0.1% & fusidic acid 2%: cream
15gm tube: 351.02 MRP

BETAMETHASONE + ANTIFUNGALS[21,33]

BETAMETHASONE + CLOTRIMAZOLE: Cream/ Ointment[21,42,127]
This combined preparation is available as topical cream and ointment of clotrimazole 1% & betamethasone dipropionate or valerate 0.05% or 0.1%.
Ind: Short-term topical treatment of the following dermal infections: Tinea pedis, tinea cruris, tinea corporis due to trichophyton rubrun, tinea mentagrophytes, epidermophyton floccosum candidiasis due to candida albicans.
C/I; S/E: Cautions: See under 'topical steroid preparations'.
Pregnancy & lactation: See above under the text of topical steroid preparations.
Dosage & admin: Gently massage sufficient amount of this cream into the affected and surrounding skin areas twice daily, in the morning and evening for two weeks in tinea cruris, tinea corporis and candidiasis and four weeks in tinea pedis. Clinical improvement, with relief of erythema and pruritus, usually occurs within the first 3 to 5 days of treatment. If a patient with tinea cruris, tinea corporis or candidiasis shows no clinical improvement after one week of treatment with this combination, the diagnosis should be reviewed. Similarly in tinea pedis diagnosis should be reviewed if no improvement is shown after two weeks of treatment.
Children: **The safety and effectiveness of this combination has not been established in children below 12 years.**

❖ **BETAVATE-CL Oint. Drug Inter.**
Betamethasone valerate 0.1% & clotrimazole BP 1%: ointment.
10gm tube: 25.00 MRP
❖ **BETNOVATE CL Oint. GlaxoSmithKline**
Betamethasone valerate 0.1% & clotrimazole BP 1%: ointment.
10gm tube: 29.20 MRP
❖ **CLOSON Cream Medicon**
Betamethasone valerate 0.05% & clotrimazole BP 1.0%: cream.
10gm tube: 25.00 MRP
❖ **CLOZOSON Cream UniMed/UniHealth**
Betamethasone dipropionate 0.05% & clotrimazole BP 1%: cream.
10gm tube: 25.00 MRP
❖ **FUNGIN-B Cream Ibn Sina**
Betamethasone valerate 0.1% & clotrimazole BP 1% w/w: topical cream.
10gm tube: 25.00 MRP
❖ **ONI Cream Square**
Betamethasone valerate 0.05% & clotrimazole BP 1%: cream.
10gm tube: 25.00 MRP

Clobetasol/Clobetasone & Combined Prepns.[21,33]

CLOBETASOL[21,33]

CLOBETASOL PROPIONATE: Cream/ Ointment
Clobetasol propionate 0.05% w/w: cream & ointment preparations.
Ind: Short-term treatment only of severe resistant inflammatory skin disorders such as recalcitrant eczemas unresponsive to less potent corticosteroids; Psoriasis (potent topical corticosteroids should be avoided in psoriasis-can only be given under special supervision, because, although they may suppress the psoriasis in the short-term, relapse or vigorous rebound occurs on withdrawal).
C/I; S/E: Cautions: See above under 'topical steroid preparations'.
Pregnancy & lactation: See above under the text of topical steroid preparations.
Use & application: Apply thinly 2-3 times daily, reducing frequency as condtion responds.

❖ **CLOBEDERM Cream Drug Inter.**
Clobetasol propionate 0.05% w/w: cream
10gm tube (cream): 45.00 MRP
❖ **CLOBENATE Cream/Oint. RAK Pharma**
Clobetasol propionate 0.05% w/w: cream/ointment
10gm tube (cream): 45.00 MRP
10gm tube (oint.): 50.00 MRP
❖ **CLOBESOL Cream/Oint. Aristopharma**
Clobetasol propionate 0.05% w/w: cream/ointment
10gm tube (cream): 45.00 MRP
10gm tube (oint.): 50.00 MRP
❖ **CLOVATE Cream/Oint. ACI**
Clobetasol propionate 0.05% w/w: cream/ointment
10gm tube (cream): 45.00 MRP
10gm tube (oint.): 50.00 MRP
❖ **DERMACORT Cream/Oint. Ibn Sina**
Clobetasol propionate 0.05% w/w: cream/ointment
10gm tube (cream): 45.00 MRP
10gm tube (oint): 50.00 MRP
❖ **DERMASOL Cream/Oint. Square**
Clobetasol propionate 0.05% w/w: cream/ointment
10gm tube (cream): 45.00 MRP
20gm tube (cream): 70.00 MRP
10gm tube (oint.): 50.00 MRP
20gm tube (oint.): 75.00 MRP
❖ **DERMATAS Cream Kumudini**
Clobetasol propionate 0.05% w/w: cream
10gm tube (cream): 35.00 MRP
❖ **DERMEX Cream/Oint. Opsonin**
Clobetasol propionate 0.05% w/w: cream/ointment
10gm tube (cream): 43.80 MRP
10gm tube (oint.): 48.70 MRP
❖ **DERMOVATE Cream/Oint. GlaxoSmithKline**
Clobetasol propionate 0.05% w/w: cream/ointment

10gm tube (cream): 58.00 MRP
10gm tube (oint): 68.00 MRP

❖ **ECLO Cream/Oint. General**
Clobetasol propionate 0.05% w/w: cream/ointment.
10gm tube (cream): 45.00 MRP
10gm tube (oint): 40.00 MRP

❖ **EXOVATE Cream/Oint. Beximco**
Clobetasol propionate 0.05% w/w: cream/ointment
10gm tube (cream): 45.00 IP
10gm tube (oint.): 50.00 IP

❖ **NYCLOBATE Cream Incepta**
Clobetasol propionate 0.05% w/w: cream/ ointment
10gm tube (cream): 45.00 MRP
10gm tube (oint): 50.00 MRP

❖ **SKINOVAT Cream Gaco**
Clobetasol propionate 0.05% w/w: cream preparation
10gm tube (cream): 35.00 MRP

❖ **SYNOVATE Cream Popular**
Clobetasol propionate 0.05% w/w: cream preparation
10gm tube (cream): 50.00 IP

❖ **XDERM Cream/Oint. Bio-pharma**
Clobetasol propionate 0.05% w/w: cream/ ointment
10gm tube (cream): 45.00 MRP
10gm tube (oint): 50.00 MRP

❖ **XENOCORT Cream/Oint. Orion**
Clobetasol propionate BP 0.05% w/w: cream/ointment
10gm tube (cream): 40.00 MRP
10gm tube (oint): 50.00 MRP

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❖ **DERMOVATE Scalp Appli. GlaxoSmithKline**
Clobetasol propionate 0.05% w/w: slightly gelled transparent lotion for scalp application.
Ind: Steroid responsive dermatoses of the scalp such as- psoriasis, recalcitrant eczemas.
C/I; S/E: Cautions: See above under 'topical steroid preparations'.
Pregnancy & lactation: See above under the text of topical steroid preparations.
Dosage & admin: Apply sparingly to the scalp at night and morning until improvement occurs. As with other highly active topical steroid preparations, therapy should be discontinued when control is achieved. Repeated short courses of dermovate scalp application may be used to control exacerbation. If continuous steroid treatment is necessary, a less potent preparation should be used.
Instructions for use: **This preparation has been specially produced for application directly on to the scalp from the squeeze bottle. Remove the cap, then introduce the nozzle through the hair and on to the affected area of scalp. Squeeze the bottle gently allowing the liquid to spread until the affected area is completely covered. A cooling sensation will be experienced by the patient as the liquid evaporates leaving the active medicament on the scalp. Patients hair will be unaffected. If necessary, dermovate scalp application may be massaged into the scalp using the tips of the fingers. Apply twice daily to the affected area of scalp or as required. When washing or shampooing the hair, apply dermovate scalp application after this procedure has been carried out. Application to parts of the body other than the scalp should be made only on the advice of the concerned physician. During application keep the dermovate lotion away from the eyes. As it is flammable, it should not use or dry the hair near a fire or naked flame.**
30ml bottle 250.00 MRP

CLOBETASONE[21,47]

CLOBETASONE BUTYRATE: Cream/ Ointment
Clobetasone butyrate 0.05% w/w: cream & ointment preparations.
Ind: Eczema & dermatitis of different types; maintenance between courses of more potent corticosteroids.
C/I; S/E; Caution: See under topical steroid preparations.
Use & admin: Apply thinly 1-2 times daily.

❖ **EUMOVATE Cream/Oint. GlaxoSmithKline**
Clobetasone butyrate 0.05% w/w: cream/ointment
10gm tube (cream): 40.00 MRP
10gm tube (oint): 40.00 MRP

❖ **EZEX Cream/Oint. Square**
Clobetasone butyrate 0.05% w/w: cream/ ointment
25gm tube (cream): 75.00 MRP
25gm tube (oint): 75.00 MRP

❖ **MICLO Cream/Oint. General**
Clobetasone butyrate 0.05% w/w: cream/ ointment
10gm tube (cream): 35.00 MRP
10gm tube (oint): 35.00 MRP

CLOBETASOL + ANTIBIOTIC + ANTIFUNGALS[21,45]

CLOBETASOL + NEOMYCIN + NYSTATIN: Cream
Clobetasol propionate 0.05% w/w, neomycin sulphate 0.5% w/w and nystatin 100,000 units/gm: cream
Ind: As clobetasol is a highly active topical corticosteroid, this triple combination is indicated in more resistant dermatoses such as recalcitrant eczemas, neurodermatoses, and psoriasis (excluding widespread plaque psor-iasis) where secondary bacterial or candidal infection is present, suspected or likely to occur, as when using occlusive dressings.
C/I; S/E; Cautions: For clobetasol propionate see under topical steroids (above) & for antifungal & antibacterial ingredients see under the respective preparation (above or below).
Pregnancy & lactation: There is little information to demonstrate the possible effect of topically applied neomycin in pregnancy and lactation. However, neomycin present in maternal blood can cross the placenta and may give rise to a theoretical risk of fetal toxicity, thus the use of this preparation is not recommended in pregnancy & lactation. The safe use of clobetasol propionate during lactation has not been established.
Dosage & admin: ***Adults and children over 2 years:*** **Apply sparingly to the affected area once or twice daily until improvement occurs. In very resistant lesions, specially where there is hyperkeratosis, the anti-inflammatory effect of this preparation can be enhanced, if necessary, by occluding the treatment area with polythene. Treatment should not be continued for more than 7 days without medical supervision. If a longer course is necessary, it is recommended that treatment should not be continued for more than 4 weeks without the patient's condition being reviewed.**
Elderly: **This preparation is suitable for use in the elderly. Caution should be exercised in cases where a decrease in renal function exists and significant systemic absorption of neomycin sulphate may occur.**
Children: **This preparation is suitable for use in children (2 years and over) at the same dose as adults. A possibility of increased absorption exists in very young children, thus this is not recommended for use in neonates and infants (younger than 2 years).**
Note: For further information, please consult respective manufacturer's literature.

❖ **CLOBEON Cream RAK Pharma**
Clobetasol propionate BP 0.05% w/w, neomycin sulphate BP 0.5% w/w and nystatin USP 100,000 units/gm: cream
10gm tube: 60.00 MRP

❖ **CLOVATE-N Cream/Oint. ACI**
Clobetasol propionate 0.05% w/w, neomycin sulphate 0.5% w/w and nystatin 100,000 units/gm: cream/ointment.
10gm tube (cream): 60.00 MRP
15gm tube (oint): 65.00 IP

❖ **DERMASOL-N Cream/Oint. Square**
Clobetasol propionate 0.05% w/w, neomycin sulphate 0.5% w/w and nystatin 100,000 units/gm: cream/ointment.
15gm tube (cream): 60.00 MRP
15gm tube (oint): 65.00 MRP

❖ **DERMEX NN Cream Opsonin**
Clobetasol propionate 0.05% w/w, neomycin sulphate 0.5% w/w and nystatin 100,000 units/gm: cream
10gm tube: 55.00 MRP

❖ **EXOVATE N Cream Beximco**
Clobetasol propionate 0.05% w/w, neomycin

sulphate 0.5% w/w and nystatin 100,000 units/gm: cream
25gm tube: 75.00 IP

❖ **NYCLOBATE NN Cream Incepta**
Clobetasol propionate 0.05% w/w, neomycin sulphate 0.5% w/w and nystatin 100,000 units/gm: cream
10gm tube: 60.00 MRP

❖ **VESOL-N Cream Novo Healthcare**
Clobetasol propionate 0.05% w/w, neomycin sulphate 0.5% w/w & nystatin 100,000 units/gm: cream
10gm tube: 60.00 MRP

Fluocinolone & Combined Prepns.

FLUOCINOLONE[21,52]

FLUOCINOLONE ACETONIDE: Cream/Ointment
Fluocinolone acetonide 0.025% cream & ointment.
Ind: Steroid responsive dermatoses (without infection).
C/I; S/E; Cautions: See above under the text of 'topical steroid preparations'.
Adult & Child: Apply two or three times daily.

❖ **ALOR Cream Gaco**
Fluocinolone acetonide 0.025% cream.
5gm tube: 30.00 MRP

❖ **CINODERM Cream Drug Inter.**
Fluocinolone acetonide 0.025% cream.
5gm tube x 1's pack: 45.00 MRP
10gm tube x 5's pack: 225.00 MRP

❖ **DERMIDEX Cream Amico**
Fluocinolone acetonide 0.025% cream.
5gm tube: 30.00 MRP

❖ **FUNGAKIL Cream/Oint. Ambee**
Fluocinolone acetonide 0.025% w/w: cream/ointment
5gm tube (cream): 28.00 MRP
5gm tube (oint): 28.00 MRP

❖ **SKINALAR Cream/Oint. ACI**
Fluocinolone acetonide 0.025% w/w: cream/ointment
5gm tube (cream): 30.00 MRP
5gm tube (oint): 30.00 MRP

FLUOCINOLONE + NEOMYCIN

FLUOCINOLONE + NEOMYCIN: Cream/Ointment
Fluocinolone acetonide 0.025% and neomycin sulphate 0.5%: cream /ointment.
Ind: Steroid responsive dermatoses where bacterial infection is present or suspected.
C/I; S/E; Cautions: For fluocinolone acetonide see under topical steroids (above) & for neomycin see under the respective preparation (above).
Pregnancy & lactation: There is little information to demonstrate the possible effect of topically applied neomycin in pregnancy and lactation. However, neomycin present in maternal blood can cross the placenta and may give rise to a theoretical risk of fetal toxicity, thus the use of this preparation is not recommended in pregnancy and lactation. The safe use of fluocinolone acetonide during lactation has not been established.
Use: Adult & Child: Apply 2 or 3 times daily.

❖ **SKINALAR-N Cream/Oint. ACI**
Fluocinolone acetonide 0.025% and neomycin sulphate 0.5%: cream /ointment.
5gm tube (cream): 30.00 MRP
5gm tube (oint): 30.00 MRP

FLUTICASONE PROPIONATE[21,47]

FLUTICASONE PROPIONATE: Cream/ Ointment
Fluticasone propionate 0.05% cream & 0.005% ointment.
Ind: Inflammatory skin disorders such as dermatitis and eczemas unresponsive to less potent corticosteroids
C/I; S/E; Cautios: See above under the text of 'topical steroid preparations'.
Use: Apply thinly, cream once daily or ointment twice daily.

❖ **CUTISONE Cream/Oint. General**
Fluticasone propionate BP 0.05% cream & 0.005% ointment.
10gm tube (cream): 96.00 MRP
10gm tube (oint): 50.00 MRP

❖ **CUTIVATE Cream/Oint. GlaxoSmithKline**
Fluticasone propionate BP 0.05% cream & 0.005% ointment.
10gm tube (cream): 96.09 MRP
10gm tube (oint): 75.86 MRP

❖ **FLUTIDERM Oint. Drug Inter.**
Fluticasone propionate BP 0.005% ointment.
10gm tube (oint): 80.00 MRP

❖ **FLUTIVATE Cream RAK Pharma**
Fluticasone propionate BP 0.05% w/w cream
10gm tube (cream): 96.00 MRP

❖ **LUTISONE Oint. Incepta**
Fluticasone propionate BP 0.005% ointment.
10gm tube (oint): 50.00 MRP

❖ **TICAS Cream/Oint. Square**
Fluticasone propionate BP 0.05% cream & 0.005% ointment.
10gm tube (cream): 90.00 MRP
10gm tube (oint): 40.00 MRP

❖ **TICASON Cream/Oint. Asiatic**
Fluticasone propionate BP 0.05% cream & 0.005% ointment.
10gm tube (cream): 90.00 MRP
10gm tube (oint): 40.00 MRP

HALCINONIDE[21,33]

HALCINONIDE: Cream
Halcinonide 0.1% cream preparation.
Ind: Short-term treatment only of severe resistant inflammatory skin disorders such as recalcitrant eczemas unresponsive to less potent corticosteroids; Psoriasis (potent topical corticosteroids should be avoided in psoriasis- can only be given under special supervision, because, although they may suppress the psoriasis in the short-term, relapse or vigorous rebound occurs on withdrawal).
C/I; S/E; Caution: See above, under the text of 'topical steroid preparations'.
Use: Apply thinly 2-3 times daily, reducing frequency as condtion responds.

❖ **CINON Cream Ambee**
Halcinonide 0.1% cream prepn.
5gm tube: 16.00 MRP

❖ **DERMALOG Cream Jayson**
Halcinonide 0.1% cream prepn.
10gm tube: 30.34 IP

❖ **VOLOG Cream Squibb/Kapricorn**
Halcinonide 0.1% cream prepn.
15gm tube: 66.10 MRP

❖ **ZEMALOG Cream Gaco**
Halcinonide 0.1% cream prepn.
5gm tube: 17.99 MRP

Hydrocortisone & Combined prepns.

HYDROCORTISONE[21,33,52]

HYDROCORTISONE ACETATE: Cream/ Ointment
Hydrocortisone acetate BP 1%: cream/ointment
Ind: Eczema-dermatoses, seborrhoeic dermatitis, anogenital pruritus.
C/I; S/E; Caution: See above, under the text of 'topical steroid preparations'.
Pregnancy & lactation: See above, under the text of 'topical steroid preparations'.
Use: Adult & Child: Apply two or three times daily leaving a light surface layer; cover with dressing.

❖ **CORTIDER Cream SK+F**
Hydrocortisone acetate BP 1%: cream
10gm tube: 28.00 MRP

❖ **CORTIMET Cream Medimet**
Hydrocortisone acetate BP 1%: cream
10gm tube: 28.00 MRP

❖ **GENACORT Oint. General**
Hydrocortisone acetate BP 1%: ointment
5gm tube: 15.00 MRP

❖ **HYDROCORT Cream Alco Pharma**
Hydrocortisone acetate BP 1%: cream
10gm tube: 28.00 MRP

❖ **INTASONE Cream Incepta**
Hydrocortisone acetate BP 1%: cream
10gm tube: 30.00 MRP

❖ **TOPICORT Cream. Square**
Hydrocortisone acetate BP 1%: cream
10gm tube: 28.00 MRP

❖ **UNICORT Cream. Gaco**
Hydrocortisone acetate BP 1%: cream
5gm tube: 16.01 MRP

❖ **ZOCORT Cream ACI**
Hydrocortisone BP 1%: cream
15gm tube: 38.00 MRP

HYDROCORTISONE + ANTIBIOTICS

HYDROCORTISONE + NEOMYCIN: Cream/Ointment
Hydrocortisone acetate BP 0.5% & neomycin sulphate BP 0.5%: cream/ointment.
Ind: Infected eczema-dermatoses, seborrhoeic

dermatitis, anogenital pruritus.
C/I; S/E; Cautions: For hydrocortisone acetate see under topical steroids (above) & for neomycin see under the respective preparation (above).
Pregnancy & lactation: There is little information to demonstrate the possible effect of topically applied neomycin in pregnancy and lactation. However, neomycin present in maternal blood can cross the placenta and may give rise to a theoretical risk of fetal toxicity, thus the use of this preparation is not recommended in pregnancy and lactation. The safe use of hydrocortisone acetate during lactation has not been established.
Use: Adult & child: Apply two or three times daily leaving a light surface layer; cover with dressing.

❖ **UNICORT-N Oint. Gaco**
Hydrocortisone acetate BP 0.5% & neomycin sulphate BP 0.5%: ointment.
10gm tube: 16.01 MRP
❖ **REMACORT-N Cream Reman**
Hydrocortisone acetate BP 0.5% & neomycin sulphate 0.5% cream for topical use
15gm tube: 18.85 MRP

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HYDROCORTISONE + FUSIDIC ACID: Cream/Ointment
Hydrocortisone acetate 1% & fusidic acid 2%: cream/ointment
Ind: Eczema dermatoses, seborrhoeic dermatitis. anogenital pruritus and other inflammatory conditions where bacterial infection is present or suspected.
C/I; S/E; Caution: See above, under the text of 'topical steroid preparations'.
Adult & child: Apply two to three times daily.

❖ **FACID HC Cream SK+F**
Hydrocortisone acetate BP 1% & fusidic acid BP 2%: cream
10gm tube: 125.00 MRP
❖ **FORTISON Cream Incepta**
Hydrocortisone acetate BP 1% & fusidic acid BP 2%: cream
10gm tube: 125.00 MRP
❖ **FUCORT Cream Novo Healthcare**
Hydrocortisone acetate BP 1% & fusidic acid BP 2%: cream
10gm tube: 125.00 MRP
❖ **FUSIBAC-H Cream Drug Inter.**
Hydrocortisone acetate 1% & fusidic acid 2%: cream
10gm tube: 110.00 MRP
❖ **FUSIDATE H Cream Aristopharma**
Hydrocortisone acetate 1% & fusidic acid 2%: cream
10gm tube: 125.00 MRP
❖ **FUSIDIC Plus Oint. Beximco**
Hydrocortisone acetate 1% & fusidic acid 2%: ointment.
10gm tube: 125.00 IP
❖ **FUSITRIM Cream Asiatic**
Hydrocortisone acetate 1%, fusidic acid 2%: cream
10gm tube: 125.00 MRP

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HYDROCORTISONE + GENTAMICIN: Cream/Ointment
Hydrocortisone acctate 1% & gentamicin sulphate 0.3%: cream/ointment
Ind: Infected inflammatory and allergic skin conditions (including infected eczema).
C/I; S/E; Caution: See above, under the text of 'topical steroid preparations'.
Adult & Child: apply 3 or 4 times daily.

❖ **GENTICIN HC Cream Nicholas**
Hydrocortisone acctate 1% & gentamicin sulphate 0.3%: cream.
15gm tube: 111.10 MRP
Prepn: May not be available; price could not be revised.
❖ **GENTO-HC Cream Gaco**
Hydrocortisone acctate 1% & gentamicin sulphate 0.3%: cream.
10gm tube: 28.32 MRP

HYDROCORTISONE + ANTIFUNGALS

HYDROCORTISONE + CLOTRIMAZOLE: Cream[33,42,127]
This combination preparation is available as a topical cream of clotrimazole 1% & hydrocortisone 1%. Clotrimazole is a broad spectrum antimycotic and hydrocortisone is a naturally occuring glucocorticoid, which is now available synthetically as topical steroid.
Mode of action: See above under the text of betamethasone & clotrimazole preparation.
Ind: Topical treatment of the following dermal infections: Tinea pedis, tinea cruris, tinea corporis due to trichophyton rubrun, tinea mentagrophytes, epidermophyton floccosum candidiasis due to candida albicans.
C/I; S/E; Precaution & warnings: See above under the text of betamethasone & clotrimazole preparation.
Pregnancy & lactation: See above under the text of betamethasone & clotrimazole preparation.
Dosage: Apply locally 2-3 times daily.

❖ **H-TRIMAZOLE Cream Opsonin**
Hydrocortisone 1% & clotrimazole 1% w/w: cream prepn.
10gm tube: 35.50 MRP
❖ **NEOSTEN HC Cream Beximco**
Hydrocortisone 1% & clotrimazole 1% w/w: cream prepn.
10gm tube: 35.00 IP
20gm tube: 55.00 IP

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HYDROCORTISONE + MICONAZOLE: Cream[21,33,42]
This combination preparation is available as a topical cream of miconazole nitrate 2% & hydrocortisone 1%.
Miconazole nitrate is an imidazole broad-spectrum antifungal agent with gram-positive antibacterial activity. Hydrocortisone is a naturally occuring glucocorticoid, which is now available synthetically as topical steroid.
Ind: Inflamed dermatoses with infection e.g intertrigo and infected eczema. Moist or dry eczema or dermatitis including atopic eczema, primary irritant or contact allergic eczema or seborrhoeic eczema including that associated with acne. Also for intertriginous eczema including inflammatory intertigo, perianal and genital dermatitis. Organisms which are susceptible to miconazole are dermatophytes and pathogenic yeasts (e.g candida spp) also many gram-positive bacteria including many strains of streptococcus and staphylococcus.
C/I: This product is contraindicated in patients who are hypersensitive to any of the ingredients. In should not be used in tubercular or viral infections of the skin or those caused by gram-negative bacteria.
S/E: Raely local sensitivity may occur. Topically applied corticosteroids can be absorbed in sufficient amounts to procduce systemic effects.
Precautions & warnings: It should be used with caution when applied to extensive surface areas or under occlusive dressings including baby napkins. Application to extensive surface areas of the face should be avoided.
In infants long term continuous therapy should be avoided. Adrenal suppression can occur even without occlusion.
Dosage & admin: It should be applied topically to the affected areas 2 or 3 times daily. The same dosage applies to both adults and children. In infants, long term continuous topical corticosteroid therapy should be avoided. Occlusive dressing is usually only necessary in the case of nail lesions.
Drug inter: Amphotericin antagonises effect of miconazole.

❖ **FUNGIDAL-HC Cream Square**
Miconazole nitrate 20mg (or 2%) & hydrocortisone 10mg (or 1%)/gm: cream
10gm tube: 40.00 MRP
❖ **GEMISON Cream General**
Miconazole nitrate 20mg (or 2%) & hydrocortisone 10mg (or 1%)/gm: cream
10gm tube: 40.00 MRP
❖ **MIC-HC Cream Globe**
Miconazole nitrate 20mg (or 2%) & hydrocortisone 10mg (or 1%)/gm: cream
10gm tube: 37.00 MRP
❖ **MICONIL Cream Nipa**
Miconazole nitrate 20mg (or 2%) &

hydrocortisone 10mg (or 1%)/gm: cream
10gm tube: 40.00 MRP

❖ **MICOSONE Cream/Oint. ACI**
Miconazole nitrate 2% and hydrocortisone 1% w/w: cream & ointment prepn.
10gm pack (cream): 37.00 MRP
10gm pack (oint.): 37.00 MRP

❖ **MICOZOL-HC Cream Gaco**
Miconazole nitrate 2% and hydrocortisone 1% w/w: cream prepn.
10gm pack (cream): 38.00 MRP

❖ **MIKI-H Cream Orion**
Miconazole nitrate 2% and hydrocortisone 1% w/w: cream prepn.
10gm pack (cream): 40.00 MRP

MOMETASONE[21,71]

❖ **MOMETA Cream Popular**
Mometasone furoate 0.1%: skin cream.
Ind: Severe inflammatory & pruritic skin disorders such as eczema, psoriasis & other dermatoses responsive to corticosteroid.
C/I; S/E; Caution: See under topical steroid preparations at the beginning.
Dosage & admin: Apply thinly to the affected areas once daily until the lesion heals or for a duration of 3 weeks, whichever is sooner.
5gm tube: 100.00 MRP
10gm tube: 180.00 MRP

Triamcinolone & Combined prepns.

TRIAMCINOLONE[21,36]

TRIAMCINOLONE ACETONIDE: Cream/ Ointment/Oral paste.
Triamcinolone acetonide BP 0.1%, skin cream & ointment preparation.
Ind: Severe inflammatory skin disorders such as eczema, psoriasis & recalcitrant dermatoses (e.g chronic discoid lupus erythematosus, lichen simplex chronicus, hypertrophic lichen planus & palmoplantar pustulosis).
C/I; S/E; Caution: See under topical steroid preparations at the beginning.
Although there is no adequate and well-controlled studies in pregnant women on teratogenic effect from topically active corticosteroid, yet caution should be excercised when topical steroids are administered to a nursing woman.
Dose: Apply thinly to the affected areas 2-4 times daily.

❖ **ARISTOCORT Cream/Oint. Aristopharma**
Triamcinolone acetonide BP 0.1% skin cream & ointment.
10gm tube (cream): 20.00 MRP
10gm tube (oint): 20.00 MRP

❖ **SKINADERM Oint. Chemico**
Triamcinolone acetonide BP 0.1%: skin ointment
10gm tube: 20.00 MRP

❖ **STELONE Oint. General**
Triamcinolone acetonide BP 0.1%: ski n ointment
10gm tube: 20.00 MRP

❖ **TRIALON Oral Paste Drug Inter.**
Triamcinolone acetonide USP 0.1%: oral paste
10gm tube: 100.00 MRP

TRIAMCINOLONE + ANTIFUNGALS[26,33,42]

TRIAMCINOLONE + ECONAZOLE: Cream[26,33,42]
This combined preparation is available as a topical cream of econazole nitrate 1% & triamcinolone acetonide 0.1%. Econazole nitrate is an imidazole broadspectrum antifungal agent with gram-positive antibacterial activity. Triamcinolone is a topical steroid with rapid anti-inflammatory, anti-pruritic and anti-allergic properties.
Ind: Inflammatory skin conditions with fungal infections such as, eczematous mycosis, eczema marginatum hebecae, herpes circinatum, folliculitis trichophytica, mycosis barbae, onychomycoses.
C/I; S/E; Precaution & warnings: See above under the text of hydrocortisone & miconazole preparation.
Adult & Child: Apply a thin film to the affected areas 2 to 3 times daily. Continue the applications for 2 weeks or as directed by the physician.
Drug inter: Amphotericin antagonises effect of econazole.

❖ **ARISTOCORT Plus Cream Aristopharma**
Econazole nitrate 1% & triamcinolone 0.1% cream.
5gm tube: 20.00 MRP
10gm tube: 34.00 MRP

❖ **AVISON Cream Orion**
Econazole nitrate 1% & triamcinolone 0.1% cream.
10gm tube: 35.00 MRP

❖ **DICOT Cream Drug Inter.**
Econazole nitrate 1% & triamcinolone 0.1% cream.
10gm tube: 35.00 MRP

❖ **ECODERM-TA Cream Rephco**
Econazole nitrate 1% & triamcinolone 0.1% cream.
10gm tube: 35.00 MRP

❖ **ECONATE Plus Cream Incepta**
Econazole nitrate 1% & triamcinolone 0.1% cream.
10gm tube: 34.00 MRP

❖ **ECOREN-T Cream ACI**
Econazole nitrate 1% & triamcinolone 0.1% cream.
10gm tube: 32.50 IP

❖ **ECOSONE Cream Pharmadesh**
Econazole nitrate 1% & triamcinolone 0.1% cream.
10gm tube: 30.00 MRP

❖ **ECOTRIM Cream Beximco**
Econazole nitrate 1% & triamcinolone 0.1% cream.
10gm tube: 34.50 IP

❖ **ECOZOL Plus Cream Opsonin**
Econazole nitrate 1% & triamcinolone 0.1% cream.
10gm tube: 34.00 MRP

❖ **ELOCON Cream Amico**
Econazole nitrate 1% & triamcinolone 0.1% cream.
10gm tube: 34.00 MRP

❖ **ENAZOL Plus Cream Bio-pharma**
Econazole nitrate 1% & triamcinolone 0.1% cream.
10gm tube: 34.00 MRP

❖ **FUNGISON Cream Chemist**
Econazole nitrate 1% & triamcinolone 0.1% cream.
10gm tube: 31.80 MRP

❖ **PEVICORT Cream Cosmic**
Econazole nitrate 1% & triamcinolone 0.1% cream.
10gm tube: 34.00 MRP

❖ **PEVISIA Cream Asiatic**
Econazole nitrate 1% & triamcinolone 0.1% cream.
10gm tube: 34.00 MRP

❖ **PEVISONE Cream Sanofi-aventis**
Econazole nitrate 1% & triamcinolone 0.1% cream.
10gm tube: 41.00 MRP
20gm tube: 75.00 MRP

❖ **PEVITIN Cream Square**
Econazole nitrate 1% & triamcinolone 0.1% cream.
10gm tube: 34.00 MRP

❖ **SECOTAL Cream SAPL**
Econazole nitrate 1% & triamcinolone 0.1% cream.
10gm tube: 34.00 MRP

❖ **TINACORT Cream Chemico**
Econazole nitrate 1% & triamcinolone 0.1% cream.
10gm tube: 34.00 MRP

❖ **TRICODERMA Cream General**
Econazole nitrate 1% & triamcinolone 0.1% cream.
10gm tube: 31.80 MRP

❖ **TRIOZOL Cream Novo Healthcare**
Econazole nitrate 1% & triamcinolone 0.1% cream.
10gm tube: 34.00 MRP

TRIAMCINOLONE + ANTIBIOTICS+ ANTIFUNGALS[21,33]

TRIAMCINOLONE + NEOMYCIN + NYSTATIN + GRAMICIDIN: Cream/Oint.
Triamcinolone acetonide 1mg, neomycin sulphate 2.5mg, nystatin 10,000 units & gramicidin 0.25mg/gm: cream/ointment
Ind: Cutaneous candidiasis with superficial bacterial infections; infantile eczema, lichen simplex chronicus; when skin lesions (e.g atopic eczematoid, dermatitis etc) are compli-cated with candida or bacterial infection.
C/I; S/E; Cautions: For triamcinolone acetonide see under topical steroids & for antifungal & antibacterial ingredient see above.
Use: Adult & Child: Apply a thin layer of film to the affected areas 2-3 times daily.

❖ **FUNGISTAT Cream Drug Inter.**
Triamcinolone acetonide 1mg, neomycin sulphate 2.5mg, nystatin 10,000 units & gramicidin 0.25mg/gm: cream
10gm tube: 30.00 MRP

❖ **FUNGISTAT Oint. Drug Inter.**
Triamcinolone acetonide 1mg, neomycin sulphate 2.5mg, nystatin 10,000 units & gramicidin 0.25mg/gm: ointment
5gm tube: 18.90 MRP
10gm tube: 30.00 MRP

❖ **GANACOMB Cream Gaco**
Triamcinolone acetonide 1mg, neomycin sulphate 2.5mg, nystatin 10,000 units & gramicidin 0.25mg/gm: cream
5gm tube: 18.80 MRP

❖ **MONACOM Cream Amico**
Triamcinolone acetonide 1mg, neomycin sulphate 2.5mg, nystatin 10,000 units & gramicidin 0.25mg/gm: cream
5gm tube: 18.60 MRP
10gm tube: 29.67 MRP

❖ **TETRACOMB Cream/Oint. Pharmasia**
Triamcinolone acetonide 1mg, neomycin sulphate 2.5mg, nystatin 10,000 units & gramicidin

0.25mg/gm: cream/ointment.
5gm tube (cream): 18.00 MRP
10gm tube (cream): 29.00 MRP
5gm tube (oimt): 18.00 MRP
10gm tube (oimt): 29.00 MRP

5. PREPARATIONS FOR ECZEMA & PSORIASIS

5.1 Corticosteroid prepns.
5.2 Non-steroidal prepns.
5.2.1 Topical Vitamin D & related drugs
5.2.2 Topical Retinoid & related prepns.
5.2.3 Oral preparations for psoriasis
5.2.4 Coal-tar prepns.
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5.2.6 Emollients & combined prepns.
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5.3 Drugs affecting the immuneresponse

Corticosteroid prepns.

Corticosteroid preparations used in the topical treatment of eczema & psoriasis are discussed above under the 'topical corticosteroid prepns'.

Topical Vitamin D & related prepns. for Eczema & Psoriasis

Vitamin D & related drugs useful in the topical treatment of psoriasis and eczema include: Calcipotriol, calcitriol & tacalcitriol.

CALCIPOTRIOL[21,73]

CALCIPOTRIOL: Ointment/Cream
Calcipotriol is a vitamin D derivative.
Ind: Mild to moderate psoriasis affecting upto 40% of skin area; (scalp solution for scalp areas).
C/I: Hypersensitivity to any of the constituents of daivonex. Disorders of calcium metabolism.
S/E: Local irritation; also dermatitis, pruritus, erythema, aggravation of psoriasis, photosensitivity; rarely facial or perioral dermatitis; hypercalcaemia.
Caution: Pregnancy; avoid use on face and inadvertent transfer to other body areas; wash hands thoroughly after application; risk of hypercalcaemia if more than 100gm weekly used (reported with less in generalised pustular or erythrodermic exfoliative psoriasis).
Use & Admin.: Cream or ointment, mild to moderate plaque psoriasis affecting up to 40% of skin area, apply twice daily; maximum 100gm weekly (less with scalp solution). Child, not recommended.
Scalp solution: See below under the product.

❖ **DAIVONEX Cream/Oint. Leo pharma/ Kapricorn**
Calcipotriol 50mcg/gm (0.005% w/w): cream & ointment
30gm cream pack: 1282.44 MRP
30gm oint. pack: 1282.44 MRP

❖ **DAIVONEX Scalp Soln. Leo pharma/ Kapricorn**
Calcipotriol 50mcg/ml (0.005% w/v): Scalp solution
Ind: Scalp psoriasis.
Dosage &admin: Daivonex scalp solution should be applied twice daily (morning and evening) to the affected areas. The weekly dose should not exceed 60ml. When used together with daivonex ointment or cream, the total dose of calcipotriol should not exceed 5mg per week corresponding to 100gm daivonex ointment or daivonex cream.
Note: 1ml daivonex scalp solution corresponds to lgm of daivonex ointment or cream.
30ml bot: 1282.44 MRP

Topical Retinoid & related prepns. for Psorisis

TAZAROTENE[21,26]

TAZAROTENE: Topical cream
Tazarotene is a retinoid substance. It is available as tazarotene INN 1mg/gm (i.e. 0.1% W/W) cream for topical use in psoriasis.
Mode of action: Topical tazarotene blocks ornithine decarboxylase (ODC) activtiy, which is associated with cell proliferation and hyperplasia. Tazarotene suppresses expression of MRP8, a marker of inflammation present in the epidermis of psoriasis patients at high levels. In human keratinocyte cultures, it inhibits cornified envelope formation, whose build-up is an element of the psoriatic scale. Tazarotene also induces the expression of a gene which may be a growth suppressor in human keratinocytes and which may inhibit epidermal hyperproliferation in treated plaques.
Ind: Tazarotene cream 0.1% is indicated for the topical treatment of patients with plaque psoriasis. It also works to treat acne.
C/I: Known hypersensitivity to any ingredients of tazarotene cream; during an inflammatory phase of psoriasis.
S/E: Generally tazarotene cream is well tolerated. The most frequent adverse events related to treatment with tazarotene are skin-related as for example pruritus, erythema, burning irritation, desquamation, stinging, contact dermatitis, dermatitis, eczema, worsening of psoriasis, skin pain, rash, hypertriglyceridemia, dry skin, skin inflammation, and peripheral edema.
Precautions: Tazarotene cream should be applied only to the affected areas. It is for external use only. Avoid contact with eyes, eyelids and mouth. If contact with eyes occur, rinse thoroughly with water.
As retinoid tazarotene creams cause severe irritation on the skin, it should not be used on eczematous skin & also not in more inflammatory forms of psoriasis. Because of heightened burning susceptibility, exposure to sunlight (including sunlamps) because of the increased possibility of augmented photosensitivity.
Pregnancy & lactation: Tazarotene is a teratogenic substance. But, there are no adequate and well-controlled studies in pregnant women. So, it is not known what level of exposure is required for teratogenicity in humans. It is also not known whether this drug is excreted in human milk. So, caution should be exercised when tazarotene is administered to a nursing woman.
Dosage & admin: ***Psoriasis:*** **Apply once daily in the evening usually for up to 12 weeks. In case children up to 12 years, the doctor must be determined the use and dose of the drug.**
Acne: **Cleanse the face gently. After the skin is dry, apply a thin layer of tazarotene cream once daily in the evening, to the skin areas where acne lesions appear. Use enough to cover the entire affected area.**
Overdosage: Excessive topical use of tazarotene cream (0.1%) may lead to marked redness, peeling, or discomfort.
Tazarotene creams 0.1% are not for oral use. Oral ingestion of the drug may lead to the same adverse effects as those associated with excessive oral intake of vitamin A (hypervitaminosis A) or other retinoids. If oral ingestion occurs, the patients should be monitored and appropriate supportive measures should be administered as necessary.
Drug inter: Concomitant dermatological medications and cosmetics that have a strong drying effect should be avoided. It is also advisable to 'rest' a patient's skin until the effects of such preparations subside before use of tazarotene cream is begun.

❖ **SORITENE Cream Beximco**
Tazarotene INN 1mg/gm (0.1% w/w): cream
25gm tube: 150.00 IP
❖ **TAZOSKIN Cream Incepta**
Tazarotene INN 1mg/gm (0.1% w/w): cream
20gm tube: 125.00 MRP
❖ **ZAROTEN Cream Popular**
Tazarotene INN 1mg/gm (0.1% w/w): cream
20gm tube: 130.00 IP

Oral Retinoid prepns. for Psorisis

ACITRETIN[21,50]

ACITRETIN: Capsule
Acitretin is an oral retinoid preparation, and a metabolite of etretinate. It is available as 10mg & 25mg capsule.
Ind: Severe disorders of keratinization, such as erythrodermic psoriasis; local or generalized pustular psoriasis; congenital ichthyosis; pityriasis rubra pilaris; Darier's disease. Other severe disorders of keratinization of the skin, specially resistant to other therapies.
C/I: Acitretin is highly teratogenic, and must not be used by the women who are pregnant & also women of childbearing potential unless strict contraception is practised four weeks before, during, and two years after treatment. It also must not be given to nursing mothers. Donation of blood is prohibited during and for one year after completion of treatment with acitretin.

Severely impaired liver or kidney function and chronic abnormally elevated blood lipid values. Combiened use of acitretin with tetracyclines or methotre-xate. Concomitant use of acitretin and vitamin A or other retinoids.
Hypersensitivity to the acitretin prepara-tion or excipients or to other retinoids.
S/E: Ocular disturbances (conjunctivitis) and intolerance of contact lenses. Thinning of the skin and scaling, particularly on the palms and soles. Occasionally, headache, impaired night vision, and muscle, joint and bone pain have been reported. Increased hair loss, nail fragility and paronychia are frequently observed. These side effects are reversible. In one patient, spinal hyperostoses and calcification of spinal ligaments, resulting in compression of the spinal cord, appeared after several years therapy with acitretin.
Precaution: Please see manufacturer's literature.
Dosage: Adults- initially 25mg or 30mg daily for about 2 to 4 weeks.
Maintenance dose, in general, 25-50mg daily for a further 6 to 8 weeks; may be increased up to a maximum of 75mg daily, if necessary in some cases. In disorders of keratinization, maintenance therapy is usually needed, and a lowest possible dosage should be given, that may be less than 20mg/day and should not exceed 50mg/day.
Children- the daily dosage is about 0.5mg/kg; higher doses of up to 1mg/kg/day (max. 35mg/day) may be necessary in some cases for limited periods. The maintenance dose should be kept as low as possible in view of possible long-term side effects.

❖ **NEOTIGASON Cap. Actavis/Tajarat**
Acitretin 10mg & 25mg/capsule.
10mg x 30's pack:
25mg x 30's pack:
❖ **NEOTIGASON Cap. Roche/Radiant**
Acitretin 10mg & 25mg/capsule.
10mg x 30's pack: 3037.50 MRP
25mg x 30's pack: 6525.00 MRP

Other oral prepns. for Psorisis

METHOXSALEN[84]

❖ **OXSORALEN Cap. ICN Pharma/Janata**
Methoxsalen 10mg/capsule.
It is a naturally occuring photoactive substance found in the seeds of the Ammi majus plant. It belongs to a group of compounds known as psoralens, or furocoumarins.

Therapy for psoriasis: Please see under the 'drugs for vitiligo'.

Coal-tar prepns. for Psoriasis & Eczema

COAL-TAR PREPNS.[21,81]

COAL TAR: Ointment/Liquid
Ind: Chronic eczema, psoriasis.
S/E: Skin irritation; acne like erruptions; photosensitivity; stains skin & hair.
Caution: Avoid broken or inflamed skin.
Use: Apply 1-3 times daily starting with low strength preparations.

CALAMINE & COAL TAR: Ointment
Calamine 12.5gm, strong coaltar solution 2.5gm, zinc oxide 12.5 gm, hydrous wool fat 25gm, white soft paraffin 47.5gm.

COAL TAR & SALICYLIC ACID: Oint.
Coal tar 2gm, salicylic acid 2gm, emulsifying wax 11.4gm, white soft paraffin 19gm, coconut oil 54gm, poly sorbate "80" 4gm, liquid paraffin 7.6gm.
Ind; S/E; Caution: See above under coal tar.
Use: Apply 1-3 times daily starting with low strength preparations.

❖ **FONGITAR Liquid Stiefel/UniMed**[81]
Fongitar is a preparation of Zinc pyrithione 1% w/w & Polytar 1% w/w: liquid preparation.
Ind: Treatment of scalp disorders, such as psoriasis, dandruff, seborrhoeic dermatitis, eczema and pruritus.
Mode of action: Zinc pyrithione has fungicidal and bacteriostatic activities. It is fungicidal against the pityrosporum species of yeasts, in particular pityrosporum ovale which has recently been implicated as the causative agent of dandruff and seborrhoeic dermatitis of the scalp. The tar element contributes antimitotic, keratoplastic, antipruritic and antiseptic activities.
C/I: Known hypersensitivity to any of its components.
A/E: Tar products may cause skin irritation, rashes and rarely photosensitivity.
Cautions: Avoid contact with eyes. In case of any adverse effect, consult your physician.
Pregnancy & lactation: There is no, or inadequate evidence of the safety of this preparation in human pregnancy and lactation. Nevertheless the active constituents have been in widespread use for many years without apparent problems. So, there is no restriction of its use in pregnancy or lactation.
Use & appli: Wet the hair and massage the liquid into the hair, scalp and surrounding skin. Leave for 2-3 minutes then rinse thoroughly. Use 2-3 times weekly for at least 3 weeks or until the condition clears. For prevention of itchy and scaling scalp conditions, use once weekly.
100ml bot: 210.00 MRP

❖ **POLYTAR Liquid Stiefel/UniMed81**
Concentrated antiseptic tar medicated scalp cleanser. Contains 1% Polytar (arachis (peanut) oil extract of crude coal tar 0.3%, cade oil 0.3%, coal tar solution 0.1% & tar 0.3%) and oleyl alcohol 1%.
Ind: Dandruff, psoriasis, seborrhoeic dermatitis & any itchy, scaly scalp. It also has keratolytic, antipruritic and antiseptic actions.
Adult & child: Use as shampoo once or twice daily, or locally 2 to 3 times daily.
100ml pack: 190.00 MRP

Dithranol & combined prepns.

DITHRANOL PREPNS.[21,81]

DITHRANOL: Cream/ Gel/ Ointment/ Paste
Dithranol is very effective in the treatment of psoriasis.
Ind: Subacute & chronic psoriasis.
C/I: Hypersensitivity; acute and pustular psoriasis.
S/E: Local burning sensation and irritation; stains skin, hair, and fabrics.
Caution: Avoid use near eyes and sensitive areas of skin.
Warnings: The usual concentrations of dithranol are 0.1-2%; if going above 0.1%, the sensitivity of the skin must first be tested using 0.5%, further increases must be gradual. So it is customary to start with low concentrations i.e 0.1% and gradually increase after every 5 days to the maximum concentration which produces a therapeutic effect without irriation.
Use & application: Apply on the skin up to 2 times daily. The preparation is applied carefully to the lesion, covered with a dressing, & left for one hour. Applications are preferably left on the skin overnight but short contact applications of 30 minutes to an hour are also effective and are more convenient.

❖ **GACOZEMA Oint. Gaco**
Dithranol + salicylic acid + boric acid preparation: ointment.
Ind: Subacute & chronic psoriasis.
C/I; S/E; Caution: See above.
Use: See above.
6gm tube: 12.00 MRP
❖ **MILLAT Malam Millat**
Dithranol 0.1% + salicylic acid 1% + boric acid 2% preparation: ointment.
Ind: Subacute & chronic psoriasis.
C/I; S/E; Caution: See above.
Use: See above.
6.5gm x 12's pack: 72.00 MRP

DITHRANOL + ZINC OXIDE[136]

DITHRANOL + ZINC OXIDE: Ointment
This combined preparation is an innovative new product, specially developed for the intensive care of extremely dry, flaky, chapped and predamaged skin.
Mode of action: This preparation supports the natural regeneration of epidermis and is, therefore, suitable for a therapy, accompanying application in cases of neurodermatitis and psoriasis.
Chemically dithranol is an aromatic ketone -1 hydroxy anthraquinone which forms a complex with the DNA in the mitochondria of the cell stopping mitosis or cell division.
Comp: Each 10gm of ointment contains dithranol BP 50mg and zinc oxide BP 2.3gm.
Ind: It is indicated for the treatment of neurodermatitis and psoriasis.
C/I: This combined preparation is contraindicated in patients with known hypersensitivity or allergy to any component of the formulation.
S/E: The followings are some of the side effects often associated with this medicine, such as: burning sensation, irritation in the area of application, brown staining of skin.
Precautions: Don't use this medicine on very

sore, angry looking psoriasis. If treated areas become inflammed, reduce the frequency of application or may be stopped if it seems necessary.
Pregnancy & lactation: There is no information available about the safety of this drug during pregnancy and lactation. So, caution should be taken in case of pregnancy and nursing mother.
Dosage & admin: A small amount of the ointment should be applied accurately to the psoriatic area once or twice a day before a shower or bath. Repeat treatment daily until the skin feels entirely clean that is nothing to feel with the fingers and the tex ture is normal. Usually it takes six to twelve weeks to achieve clearance.

❖ **DERMACURE Oint. Aexim**
Each 10gm of dermacure ointment contains dithranol BP 50mg and zinc oxide BP 2.3gm.
10gm tube: 25.00 MRP

Emollients & combined prepns.

EMOLLIENTS[21,81]

EMOLLIENTS: Solution
Ind: It is necessary to allay irritation and permit healing especially for dry, fissured, scaly lesion. Preparations containing zinc oxide and calamine are sometimes useful.
Use: apply 2 -3 times locally daily.

AQUEOUS Cream BP
Emulsifying oint. 30%, phenoxyethanol 1%, in freshly boiled and cooled purified water.

HYDROUS Oiut. BP
Dried magnesium sulphate 0.5%, phenoxy ethanol 1%, wool alcohols oint. 50% in fresh boiled and cooled purified water.

❖ **LACTICARE Lotion Stiefel/UniMed**
Lacticare contains lactic acid 5% and sodium pyrrolidone carboxylate (sodium PCA) 2.5% in an oil-in water viscous lotion (emollient) base.
Ind & uses: Lacticare is indicated for the symptomatic relief of hyperkeratotic and other chronic dry skin conditions and for dry skin conditions caused by low humidity or the use of detergents.
C/I; S/E; Precaution: Occasionally a transient mild stinging sensation may occur. If used on abraded or inflamed skin, there may develop prolonged irritation, in such a condition discontinue it's use. Keep away from the eyes and mucous membranes. If contact occurs, remove with water. Keep out of the reach of children.
Dosage & admin: For external use only. Use as required on affected areas or as directed by the physician. Shake well before use.
100gm tube: 421.10 MRP

❖ **OILATUM Bar Stiefel/UniMed**
Oilatum bar is an emollient, composed of 7.5% mineral oil in a salt of high molecular weight fatty acid.
Mode of action: Oilatum bar is a gentle cleansing and moisturizing soap specially formulated to cleanse skin gently without drying it. It leaves a protective film after washing, to help guard against further moisture loss.
Ind: For use in dry and sensitive skin conditions.
C/I: Oilatum bar is contra-indicated in those with a known hypersensitivity to any of the ingredients.
S/E: No significant side effects have been reported.
Use: Daily use in dry and sensitive skin.Excellent for babies.
100gm bar (soap): 256.96 MRP

❖ **OILATUM Cream Stiefel/UniMed**
Oilatum cream is an emollient cream. It is composed of arachis oil 21% w/w and polyvinyl pyrrolidone 1% w/w.
Ind: Treatment of dry sensitive skin conditions, lanolin sensitivity, alkalin intolerance, ichthyosis and related dry skin conditions.
C/I: Oilatum cream is contra-indicated in those with a known hypersensitivity to any of the ingredients.
S/E: No significant side effects have been reported.
Dosage & admin: Use as often as required; apply to affected area and rub in well; specially effective immediately after washing.
40gm tube: 306.00 MRP

❖ **OILATUM Emollient Stiefel/UniMed**
Oilatum emollient is a preparation of light liquid paraffin BP 63.4% w/w & acetylated wool alcohols 5.0%. It is a bath additive producing an emulsion of dispersed oil in the bath water and a homogeneous film on the surface.
Ind: Treatmet of contact dermatitis, atopic dermatitis, senile pruritus, ichthyosis and related dry skin conditions. Oilatum emollient replaces oil and water and hydrates the skin. It is particularly suitable for infant bathing. The preparation also overcomes the problem of cleansing the skin in conditions where the use of soaps, soap substitutes and colloid or oat-meal baths prove irritating.
C/I; Warnings: The patient should be advised to be careful to avoid slipping in the bath.
Cautions: Nil.
Use: Oilatum emollient should always be used with water, either added to the bath or applied to wet skin.
Direct application to skin- wet the skin of the affected area and rub in a small quantity of emollient, then rinse and pat dry.
Use in bath- add 1-3 capsful to an 8 inch bath of water, soak for 10-20 minutes. For infant bathing, add 1/2-2 capsful to a wash basin of water, apply gently over entire body with sponge and pat dry.
150ml bot: 534.30 MRP

Ichthammol Prepns.

ICHTHAMMOL PREPNS.[21]

ICHTHAMMOL: Ointment/Cream
Ind: Chronic eczema.
S/E: Skin irritation and sensitisation
Use: Apply 1-3 times daily.

ZINC & ICHTHAMMOL Cream BP
Ichthammol 5%, cetostearyl alcohol 3%, wool fat 10% in zinc cream.
Ind: Chronic eczema.
S/E: Skin irritation and sensitisation
Use: Apply 1-3 times daily.

Zinc & Combined prepns.

ZINC OXIDE PREPN.[26,48]

ZINK OXIDE: Ointment
Zinc oxide BP 400mg/gm (40% w/w): ointment
This preparation is specially useful in the treatment of diaper rash.
Ind: This preparation is indicated to treat or prevent skin irritations (eg. burns, bed sore, cuts, poison ivy, diaper rash). Protects chafed skin due to diaper rash & helps seal out wetness.
C/I: Known hypersesitivity to any component of the preparation.
S/E: Usually well tolerated. Extremely low frequency of hypersensitivity reaction.
Precautions: Avoid contact with the eyes. Stop use if condition worsens or does not improve within 7 days. If swallowed, get medical help or contact a poison control centre right away.
Pregnancy & lactation: This medication should be used with caution only if clearly needed during pregnancy or while breast feeding.
Doase & Admin: Apply a thin layer of ointment locally on the affected area every 8 hours. Before that, change wet & soiled diapers, promptly clean the diaper area, allow to dry & then apply ointment liberally as often as necessary, with each diaper change, specially or any time when exposure to wet diapers may be prolonged.

❖ **DE-RASH Oint. Square**
Zinc oxide BP 400mg/gm (40% w/w): ointment
This preparation is specially useful in the treatment of diaper rash.
25gm pack: 50.00 MRP
❖ **NAPGUARD Oint. Incepta**
Zinc oxide BP 400mg/gm (40% w/w): ointment
This preparation is specially useful in the treatment of diaper rash.
25gm pack: 50.00 MRP
❖ **Q-RASH Oint. Beximco**
Zinc oxide BP 400mg/gm (40% w/w): ointment
This preparation is specially useful in the treatment of diaper rash.
25gm pack: 50.00 MRP
❖ **RASHGUARD Oint. Popular**
Zinc oxide BP 400mg/gm (40% w/w): ointment

This preparation is specially useful in the treatment of diaper rash.
20gm pack: 40.00 MRP

❖ **SOFTI Oint. SK+F**
Zinc oxide BP 400mg/gm (40% w/w): ointment
This preparation is specially useful in the treatment of diaper rash.
15gm pack: 35.00 MRP
50gm pack: 90.00 MRP

ZINC OXIDE + CASTOR OIL PREPN.[65]

❖ **SOFTI Oint. SK+F**
Softi ointment is a barrier preparation of zinc and castor oil. It is composed of zinc oxide, virgin castor oil, cetostearyl alcohol, white beeswax and arachis (peanut) oil. This preparation is much easier to apply and useful alternative to only zinc oxide ointment.

Mode of action: This is an emollient to soothe and moisturize the skin. It is also protective with mild astringent properties.

Ind: Softi is used for protection against local mild dermatological conditions such as dermatosis, nappy rash, eczema, and dermatitis, dry and chapped skin. It is indicated for the treatment of vulvovaginitis in women of any age. It is also used in the treatment of perianal symptoms due to mildly prolapsed anal cushion (haemorrhoid) causing mucus leakage, excoriation and pruritus.

S/E: Softi (zinc and castor oil) ointment is remarkably well tolerated and there is an extremely low frequency of hypersensitivity reactions.

Precautions: As it contains white beeswax, which is produced from the bee honeycomb, some hypersensitivity reactions have been reported.

Dosage & application: Apply sparingly as required to the affected areas. For eczema and dermatitis, the areas should be washed with a soap alternative and patted dry. It should then be applied as soon as possible before the skin dries, and as required during the day. For nappy rash, a soap alternative should also be used, and the ointment applied similarly (together with anti-fungal agent where indicated). The ointment should then be reapplied following each nappy change. parents should be encouraged not to use nappies where possible until the rash settles. In vulvovaginitis and perianal symptoms, the ointment should be applied about three times daily after a wash, in a thin layer to protect the skin from moisture.
50gm pack: 125.00 MRP

Drugs affecting the immune response

In the treatment of eczema & psoriasis some specialised immunosuppressant drugs (other than steroids) are used, which include:
Cyclosporin, Methotrexate, Pimecrolimus & Tacrolimus.

CYCLOSPORIN[21,54,82]

❖ **CYCLOSPORIN: Capsule/Injection**
It is a fungal metabolite & potent immunosuppressant, which is virtually non-myelotoxic but markedly nephrotoxic.
Oral preparations are available as cyclosporin 25mg, 50mg & 100mg capsule.
Ind: This oral immunosuppressant can be used in the treatment of severe psoriasis, atopic dermatitis, severe active rheumatoid arthritis where conventional therapy is ineffective or inappropriate.
Other indications- given under cytotoxic drugs.

C/I: In abnormal renal function, hypertension not under control, infections not under control, and malignancy. Measure serum creatinine at least twice before treatment and monitor every 2 weeks for first 3 months, then every 4 weeks (or more frequently if dose increased or concomitant NSAIDs introduced or increased; reduce dose if serum creatinine increases more than 30% above baseline in more than 1 measurement; if above 50% reducing dose by 50% (even if within normal range) and discontinuing if reduction not successful within 1 month; monitor blood pressure (discontinue if hypertension develops that cannot be controlled by antihypertensive therapy); monitor hepatic function if concomitant NSAIDs given.
S/E: Commonly dose-dependent increase in serum creatinine and urea during first few weeks (see also under cautions), and less commonly renal structural changes on long-term administration; also hypertrichosis, tremor, hypertension (especially in heart transplant patients), hepatic dysfunction, fatigue, gingival hypertrophy, gastro-intestinal disturbances, and burning sensation in hands and feet (usually during first week); occasionally headache, rash (possibly allergic), mild anaemia, hyperkalaemia, hyperuricaemia, hypomagnesaemia, weight increase, oedema, pancreatitis, neuropathy, confusion, paraesthesia, convulsion, dysmenorrhoea or amenorrhoea; muscle weakness, cramps, myopathy, gynaecomastia, colitis also reported; thrombocytopenia (sometime with haemolytic uraemic syndrome) also reported; incidence of malignancies and lymphoproliferative disorders similar to that with conventional immunosuppressive therapy.

Cautions: Monitor kidney function-dose dependent increase in serum creatinine and urea during first few weeks may necessitate dose reduction in transplant patients (exclude rejection if kidney transplant) or discontinuation in non-transplant patients. Monitor liver function (dosage adjustment based on bilirubin and liver enzymes may be needed). Monitor blood pressure- discontinue if hypertension develops that cannot be controlled by antihypertensives. Caution in hyperuricaemia. Monitor serum potassium especially in marked renal dysfunction (and avoid high dietary potassium).
Measure blood lipids before and after 1 month- if increases, restrict dietary fat and (if appropriate) reduce dose.
Additional cautions in atopic dermatitis & psoriasis: Dermatological and physical examination, including blood pressure and renal function measurements required at least twice before starting. Avoid excessive expousre to sunlight and use of UVB or PUVA; in atopic dermatitis, also allow herpes simplex infections to clear before starting (if they occur during treatment withdraw if severe); Staphylococcus aureus skin infections not absolute contra-indication providing controlled (but avoid erythromycin unless no other alternative); monitor serum creatinine every 2 weeks; throughout; in psoriasis, also exclude malignancies (including those of skin and cervix) before starting (biopsy any lesions not typical of psoriasis) and treat patients with malignant or pre-malignant conditions of skin only after appropriate treatment (and if no other option); monitor serum creatinine every 2 weeks for first 3 months then every 2 months (monthly if dose more than 2.5 mg/kg daily), reducing dose by 25-50% if increases more than 30% above baseline even if within normal range) and discontinuing if reduction not successful within 1 month; also discontinue if lymphoproliferative disorder develops.
Pregnancy & lactation: Avoid in pregnancy & breast-feeding (or avoid breast-feeding during therapy).

Dosage & admin: Adult, over 16 years by mouth, administered in accordance with expert advice.
Short-term treatment (max. 8 weeks) of severe atopic dematitis where conventional therapy ineffective or inappropriate, initially 2.5 mg/kg daily in 2 divided doses, if good initial response not achieved within 2 weeks, increase rapidly to max. 5 mg/kg daily; initial dose of 5 mg/kg daily if very severe; Child, under 16 years not recommended.
In severe psoriasis where conventional therapy ineffective or inappropriate, initially 2.5 mg/kg daily in 2 divided does, increased gradually to max. 5 mg/kg daily if no improvement within 1 month (discontinue if response still insufficient after 6 weeks); initial dose of 5 mg/kg daily justified if condition requires rapid improve-ment; Child, under 16 years not recommended.
In severe active rheumatoid arthritis, where conventional therapy ineffective or inappropriate; Adult over 18 years by mouth, administered in accordance with expert advice initially, 2.5 mg/kg daily in 2 divided doses, if necessary increased gradually after 6 weeks to max. 4 mg/kg daily (discontinuing if response still insufficient after 3 months); dose adjusted according to response for maintenance and treatment reviewed after 6 months (continue only if benefits outweigh risks); Child and under 18 years, not recommended.

Drug inter: There may be interactions with the following drugs when used or administered concomitantly- such as aminoglycosides, amphotericin B, ciprofloxacin, melphalan, trimethprim; NSAIDs; lovastatin, colchicine; ketoconazole, erythromycin, josamycin, doxycycline, oral contraceptives, propafencone, calcium channel blockers; barbiturates, carbamazepine, phenytoi, metamizole, rifampicin, nafcilli, sulfadimidine and

trimethoprim i.v; prednisolone, methylprednisolone.
Note: For further information, please consult manufacturer's literature.

❖ **NEORAL Cap. Novartis**
Cyclosporin 25mg, 50mg & 100mg/capsule
25mg x 50's: 2900.00 MRP
50mg x 50's: 5650.00 MRP
100mg x 50's: 11300.00 MRP

METHOTREXATE

Methotrexate preparations are discussed under cytotoxic antimetabolites in the chapter-14 for carcino-chemotherapy.

PIMECROLIMUS[54]

D ELIDEL Cream Novartis
Pimecrolimus 10mg/gm (or 1%): topical cream.
Pimecrolimus is an immunosuppressant drug used for the treatment of mild to moderate atopic eczema
Ind: Pimecrolimus 1% cream is indicated for the short-term (acute) treatment and long-term management of the signs and symptoms of atopic dermatitis (eczema) in infants (3-23 months), children (2-11 years), adolescents (12-17 years) and adults.
C/I: Hypersensitivity to pimecrolimus or to any of the excipients.
S/E: The most common adverse events were application-site reactions reported by approximately 19% of the patients treated with pimecrolimus 1% cream and 16% of patients in the control group receiving either pimecrolimus vehicle and/or topical corticosteroids. These reactions generally occurred early in treatment, were mild/moderate in severity and were of short duration. Common side effects also include skin infections, such as folliculitis. Worsening of the condition and skin infections such as impetigo, herpes simplex, herpes simprex dermatitis, molluscum contagiosum, warts and furuncles were rarely reported.
Precautions & warnings: Pimecrolimus 1% cream should not be applied to areas affected by acute cutaneous viral infections. In the presence of a dermatological bacterial or fungal infection, the use of an appropriate antimicrobial agent should be instituted. If resolution of the infection does not occur, pimecrolimus 1% cream should be discontinued until the infection has been adequately controlled. Use of pimecrolimus 1% cream may cause mild and transient reactions at the site of application, such as a feeling of warmth and/or burning sensation. Patients should see a physician if an application-site reaction is severe.
Dosage & admin: Application of a thin layer of pimecrolimus 1% cream to the affected skin twice daily as long as sings and symptoms persist. The cream may be used on all skin areas, including the head and face, neck, and intertriginous areas. In the long-term management of atopic dermatitis (eczema), pimecrolimus 1% cream treatment should begin at first appearance of sings and symptoms of atopic dermatitis to prevent flares of the disease. If discontinued, treatment should be resumed upon first recurrence of signs and symptoms to prevent flares of the disease. Emollients can be applied immediately after using pimecrolimus 1% cream. However, after a bath or shower, emollients should be applied before using pimecrolimus 1% cream. Due to the low level of systemic absorption, there is no restriction either in the total daily dose applied, or in the extent of the body surface area treated, or in the duration of treatment.
Drug inter: Potential interactions between pimecrolimus cream and other drugs have not been systematically evaluated. Based on its minimal extent of absorption, interactions of pimecrolimus cream with systemically administered drugs are unlikely to occur. For the same reason and based on the pharmacodynamic properties of the cream, no effect on vaccination response is expected. Application of pimecrolimus cream to vaccination sites, as long as local reactions persist, was not studied and is therefore not recommended.
15gm tube: 1000.00 MRP

TACROLIMUS[42]

TACROLIMUS: Ointment
Tacrolimus, a macrolide immunosuppressant. It is for topical dermatologic use only. Preparation available as tacrolimus INN 0.3mg/gm of ointment.
Mode of action: The actual mechanism of action of tacrolimus in atopic dermatitis is not fully known. But, it has been demonstrated that tacrolimus inhibits T-lymphocyte activation by binding to an intracellular protein, FKBP-12.
Ind: Tacrolimus ointment is indicated for short-term and intermittent long-term therapy in the treatment of patients with moderate to severe atopic dermatitis (eczema).
C/I: Patients with a history of hypersensitivity to tacrolimus or any other components of the preparation.
S/E: No phototoxicity and no photo-allergenicity are detected in the patient using tacrolimus. However, skin burning, pruritus, allergic reaction may occur in the patient of tacrolimus. Other adverse events are anaphylactoid reaction, angioedema, anorexia, anxiety.
Precaution: The use of tacrolimus ointment in patients with Netherton's syndromes in not recommended due to the potential for increased systemic absorption of tacrolimus. The safety of tacrolimus ointment has not been established in patients with generalized erythroderma.
Pregnancy & lactation: The safety of topical use of tacrolimus ointment during pregnancy in not established. So, caution should be taken if its use is necessary during pregnancy.
It is known that tacrolimus is excreted in human milk. Because of the potential for serious adverse reactions in nursing infants from tacrolimus, a decision should be made whether to discontinue nursing or to discontinue the drug to the mother.
Dosage & admin: Adults & children: Apply a thin layer of tacrolimus ointment to the affected skin areas twice daily and rub in gently and completely. Treatment should be continued for one week after clearing of signs and symptoms of atopic dermatitis. Tacrolimus ointment should not be used with occlusive dressings, because the safety of tacrolimus use under occlusion, which may promote systemic exposure, has not been evaluated.
Drug inter: The concomitant administration of known CYP3A4 inhibitors in patients with widespread and/or erythrodermic disease should be done with caution. Such as erythromycin, itraconazole, ketoconazole, fluconazole, calcium channel blockers and cimetidine.

❖ **ATOLIMUS Oint. Beximco**
Tacrolimus INN 0.3mg/gm: topical ointment.
5gm tube: 80.00 MRP
❖ **LIMUS Oint. Alco Pharma**
Tacrolimus INN 0.3mg/gm (or 0.03% ww): topical ointment.
5gm tube: 70.00 MRP
❖ **REMUS Oint. Square**
Tacrolimus INN 0.3mg/gm: topical ointment.
5gm tube: 80.00 MRP
❖ **TACROL Oint. Acme**
Tacrolimus INN 0.3mg/gm: topical ointment.
5gm tube: 80.00 MRP
10gm tube: 150.00 MRP
❖ **TACROLIM Oint. Incepta**
Tacrolimus INN 0.3mg/gm: topical ointment.
5gm tube: 80.00 MRP

6. PREPARATIONS FOR WARTS & CALLUSES

SALICYLIC ACID PREPNS.[21]

SALICYLIC ACID PREPNS: Ointment/ Paste/Paint
Ind: Hyperkeratosis, removal of wart, and hard skin.
S/E: Sensitivity, excessive drying, irritation, systemic effect after prolonged use.
Cautions: Aviod broken or inflamed skin.

❖ **DUOFILM Soln. Stiefel/Lilac Pvt.**
Salicylic acid 16.7%, lactic acid 16.7%, in flexible collodion: paint solution.
Ind; S/E; Caution: See above under salicylic acid.
Use: Apply twice daily.
15ml bot: 289.42 MRP

SALICYLIC ACID Oint. BP
Salicylic acid 2%, in wool alcohol ointment.
Ind; S/E; Caution: see above under salicylic acid.
Use: Apply twice daily.

ZINC & SALICYLIC ACID Paste BP
Zinc oxide 24%, salicylic acid 2%, starch 24%, white soft paraffin 50%.
Ind; S/E; Caution: see above under salicylic acid.
Use: Apply twice daily.

7. DRUGS FOR ACNE & ROSACEA[21]

A. Topical preparations for Acne:

1. **Topical antibiotics: Such as,** ***erythromycin & clindamycin topical preparations.***
2. ***Benzoyl peroxide & azelaic acid preparations.***
3. **Topical retinoid & related preparations: Such as,** ***tretinoin, isotretinoin & adapalene.***
4. **Other topical preparations: Such as,** ***salicylic acid, nicotinamide preparations etc.***

B. Oral preparations for Acne:

1. **Oral antibiotics: Such as,** ***tetracycline, oxytetracycline, doxycycline & minocycline; erythromycine-*** **for detail, see in the antibiotic section.**
2. **Oral retinoid: such as,** ***isotretinoin.***
3. **Hormone preparation: such as,** ***cyproterone acetate with ethinylestradiol.***

C. Ppreparations for Rosacea:

1. **Oral antibiotics: Such as,** ***erythromycin, tetracycline or oxytetracycline or doxycycline.***
2. **Topical preparations: Such as,** ***topical metronidazole.***

Topical antibiotics for Acne

CLINDAMYCIN[36]

CLINDAMYCIN: Lotion
Clindamycin phosphate USP 1% w/v (i.e 10mg/ml): topical antibiotic lotion.
Mode of action: Clindamycin phosphate topical lotion has an antiacne and antibacterial activity. After application, clindamycin phosphate rapidly hydrolyzes to active climdamycin in vivo by tissue phosphatase. It binds to the 50S subunit of the bacterial ribosome and inhibits the early stage of protein synthesis. It is active against most aerobic gram-positive bacteria, as well as has good activity against anaerobic bacteria. Clindamycin acts as an antiacne agent due to is antibacterial activity. Topical clindamycin lotion is thought to reduce free fatty acid concentration on the skin and to suppress the growth of Propionibacterium acnes (Corynebacterium acnes), an anaerobe founds in sebaceous glands and follicles.
Ind: Acne vulgaris: Clindamycin lotion is indicated in the treatment of acne vulgaris which are characterized by inflammatory lesions such as papules and pustules. Skin infection & ulcers: Clindamycin lotion is used in the topical treatment of erythrasma caused by Corynebacterium minutissimum; rosacea, periorificial dermatitis, folliculitis, stasis, chronic lymphedema and familial pemphigus. It is also used in the treatment of dermal ulcers
S/E: Serious side effects are not likely to occur. Some rare side effects are dryness, erythema, burning, peeling, oily skin, itching, diarrhoea, colitis, g.i disturbances.
C/I: Patients who have hypersensitivity to clindamycin or lincomycin, history of regional enteritis or ulcerative colitis or antibiotic associated colitis.
Precaution: Avoid cantact with eyes, nose, mouth, and other mucous membranes. Wash hands immediately after use. Patients should report any signs of local adverse reactions or abdominal pain or diarrhoea to the physicians. Pregnancy & lactation: FDA pregnancy category B. It is not known whether the agent is excreted in human milk. So, caution should be exercised when administering to a nursing mother.
Dosage & admin: Clean the face or affected areas gently with warm water or soap as recommended by the physician. After the skin is dried, apply a thin film of clindamycin lotion to the affected areas twice daily, in the morning and in the evening. Do not wash within three hours after using lotion. The treatment period is usually 6 weeks or as advised by the physician.
Children: Safety and effectiveness in children under 12 years have not been established.
Drug inter: Clindamycin should be used with caution in patients receiving neuromascular agents and erythromycin.

❖ **CLINDACIN Lotion Incepta**
Clindamycin phosphate USP 1% w/v (i.e 10mg/ml): topical antibiotic lotion.
25ml bot: 125.00 MRP
❖ **CLINEX Lotion Aristopharma**
Clindamycin phosphate USP 1% w/v (i.e 10mg/ml): topical antibiotic lotion.
25ml bot: 125.00 MRP

ERYTHROMYCIN[35,42]

ERYTHROMYCIN: Topical Soln.
Erythromycin is a macrolide antibiotic, available as 2% & 3% lotion for topical use.
Mode of action: The mechanism by which erythromycin topical solution acts in reducing inflammatory lesions of acne vulgaris is unknown, but it is presumably due to its antibiotic action.
Ind: Topical treatment of acne vulgaris, pimples & bacterial skin infections susceptible to erythromycin.
C/I: Erythromycin topical solution is contraindicated in persons who have shown hypersensitivity to any of its ingredients.
S/E: Adverse reactions reported include dryness, tenderness, pruritis, desquamation, erythema, oilness and burning sensation. Irritation of the eyes has also been reported. A case of generalized urticarial reaction, possibly related to the drug, which required the use of systemic steroid therapy has been reported.
Precautions: Use of antibiotics (specially prolonged or repeated therapy) may result in bacterial or fungal overgrowth of non-susceptible organisms. Such overgrowth may lead to a secondary infection. If this occurs, administration of this drug should be discontinued & appropriate measures should be taken.
Pregnancy & lactation: It is not known whether erythromycin can cause fetal harm after topical application to a pregnant woman. However, erythromycin should be given to a pregnant woman only if clearly needed.
Erythromycin is excreted in breast milk, so, caution should be exercised when administered to a nursing woman.
Dosage & admin: The erythromycin topical solution should be applied lightly (rather than rubbing) over the affected area twice a day after the skin is thoroughly washed with warm water and soap and patted dry. Acne lesions on the face, neck, shoulders, chest and back may be treated in this manner. Additional containers may be used, if needed. Each container should be used once and discarded.
Use in children: Safety and effectiveness in children less than 12 years have not been established. Keep the erythromycin lotion away from eyes, nose, mouth and other mucous membrane.
Drug inter: Clindamycin interacts with erythromycin.

❖ **A-MYCIN Lotion Aristopharma**
Erythromycin BP 2% lotion: topical preparation
25ml tube: 100.00 MRP
❖ **EROMYCIN Lotion Square**
Erythromycin BP 3% lotion: topical preparation
25ml tube: 100.00 MRP
❖ **MACROCIN-T Soln. Sanofi-aventis**
Erythromycin BP 2% solution: topical preparation
30ml tube: 177.00 MRP

Benzoyl peroxide & Azelaic acid preparations.

AZELAIC ACID[46]

AZELEC Cream Acme
Azelaic acid INN 0.2gm/gm (20%): Cream
Azelaic acid has been shown to possess antimicrobial activity against propionibacterium acnes and staphylococcus epidermidis.
Mode of action: The antimicrobial action of azelaic acid may be attributable to inhibition of microbial cellular protein synthesis. A normalization of keratinization leading to an anticomedonal effect of azelaic acid may also contribute to its clinical activity.
Ind: Azelaic acid cream is indicated for the topical treatment of mild-to-moderate inflammatory acne vulgaris.
C/I: Known hypersensitivity to any of its components.
S/E: Local skin irritation (e.g erythema, scaling, itching or burning) occurs in occasional cases, usually at the start of treament. However, in the majority of cases the irritation is mild and regresses as treatment continues.
Precaution: For external use only. If azelaic acid comes in contact with the eyes they should immediately be thoroughly rinsed with copius amounts of water. The patients should consult a physician if eye irritation persists.
Pregnancy & lactation: This drug should be used during pregnancy only if clearly needed. Caution should be exercised when azelaic acid is

administered to a nursing mother.
Dosage & admin: After the skin is thoroughly washed and patted dry, a thin film of azelaic acid should be gently but thoroughly massaged into the affected areas twice daily, in the morning and evening. The hands should be washed following application.
Children: Safety and effectiveness in pediatric patients under 12 years of age have not been established.

❖ **AZELEC Cream Acme**
Azelaic acid INN 0.2gm/gm (20%): Cream
5gm tube: 40.00 MRP
10gm tube: 75.00 MRP

BENZOYL PEROXIDE[62,81]

BENZOYL PEROXIDE: 2.5%, 4% & 5% w/w Cream
Benzoyl peroxide is an anti-acne preparation for topical use. It is available in different strengths, viz: 2.5%, 4% & 5% w/w cream.
Mode of action: Benzoyl peroxide has sebostatic and keratolytic activity counteracting the hyperkeratinization and excessive sebum secretion associated with acne vulgaris. It has unresistable antibacterial activity against Propionibacterium acnes, the organism implicated in acne vulgaris.
Ind: Benzoyl peroxide may be used alone locally for mild to moderate acne and as an adjunct in acne treatment regimens, which might include retinoic acid products, systemic antibiotics, and/or sulfer salicylic acid containing preparations.
C/I: Known hypersensitivity to any of the ingredients. Patients with a personal or family history of cutaneous epithelioma (skin cancer).
S/E: In normal use a mild burning sensation will probably be felt on first application and a moderate reddening and peeling of the skin will occur within a few days. During the first few weeks of treatment a sudden increase in peeling will occur in some patients; this is not harmful and will normally subside in a day or two if treatment is temporarily discontinued.
If excessive skin irritation, erythema or peeling occurs, discontinue treatment as persistent inflammatory reactions can sometimes lead to hyperpigmentation.
Precautions: It is for only external use.
Application to sensitive areas, such as the neck should be made with caution; to avoid irritation there should be no contact with eye, mouth and other mucous membrane. If not careful, it may bleach hair, colured fabrics and clothing.
Pregnancy & lactation: Benzoyl peroxide should be given to pregnant woman only if clearly needed. It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when benzoyl peroxide administered to a nursing woman.
Use & appli: Apply to the affected area once or twice daily. Frequency of use should be adjusted to obtain the desired clinical response. Washing with soap and water prior to application greatly enhances the efficacy of the preparation.
Paediatric use: Safety and effectiveness in paediatric patients under the age of 12 have not been established.
Note: For further information, please consult manufacturer's literature.

❖ **BREVOXYL Cream Stiefel/UniMed**
Benzoyl peroxide 4% w/w, in an aqueous base: cream.
10gm tube: 246.55 MRP
40gm tube: 363.46 MRP
❖ **CARESS Cream Renata**
Benzoyl peroxide hydrous 2.5% & 5% w/w: cream
2.5% x 15gm tube: 43.50 MRP
5% x 15gm tube: 45.00 MRP

Topical retinoid & related prepns.

TRETINOIN / ISOTRETINOIN[21,33]

TRETINOIN/ISOTRETINOIN: Cream/ Gel/Lotion
Tretinoin is the acid form of vitamin-A & Isotretinoin is an isomer of tretinoin.
Ind: Acne vulgaris.
C/I: Pregnancy. eczema, broken or sunburned skin; personal or family history of cutaneous epithelioma: hypersensitivity.
S/E: Irritation, erythema, peeling, photosensitivity, changes in pigmentation.
Precautions & warnings: Aviod contact with eyes, nostrils. mouth & mucous membrane; do not use simultaneously with other peeling agents; do not use with ultra violet lamps & minimise exposure to sunlight.
Use & appli: Apply thinly 1 to 2 times daily to the area of skin where acne lesions occur; only apply sufficient to cover the affected area lightly, using a gauze swab, cotton, wool or the tips of clean fingers.

❖ **COSMOTRIN Cream Beximco**
Tretinoin 0.025% w/w: cream preparation.
10gm tube: 45.00 IP
❖ **ISOTREX Gel Stiefel/UniMed**
Isotretinoin 0.05%: gel preparation.
10gm tube: 289.42 MRP
30gm tube: 420.00 MRP
❖ **NILAC Gel Square**
Tretinoin 0.025% w/w; gel cream preparation.
10gm tube: 45.00 MRP
❖ **RETIN-A Cream Sanofi-aventis**
Tretinoin 0.05% w/w: cream preparation.
15gm tube: 55.00 MRP
30gm tube: 84.96 MRP
❖ **TRINON Cream Renata**
Tretinoin 0.025% & 0.05% w/w: cream preparation.
0.025% x 10gm tube: 46.52 MRP
0.05% x 10gm tube: 48.00 MRP

ADAPALENE[42]

ADAPALENE: Cream
Adapalene is a retinoid related preparation, may be used in the topical treatment of acne vulgaris. It is available as adapalene INN 1mg/gm (0.1%) cream.
Mode of action: Adapalene binds with specific nuclear retinoic acid receptors that normalizes the differentiation of follicular epithelial cells resulting in decreased microcomedone formation. In addition, adapalene inhibits the lipo-oxygenase enzyme which contributes to relieve some skin irritation of inflammatory lesions of acne vulgaris. Absoption of adapalene through human skin is low.
Ind: Adapalene 0.1% cream is indicated for the treatment of acne vulgaris.
C/I: Known hypersensitivity to adapalene or it's components.
S/E: Erythema, scaling, dryness, pruritus, burning, skin irritation, stinging sunburn, acne flares etc. are commonly seen during the first month of therapy but usually lessen with continued use of adapalene 0.1% cream.
Precaution: Adapalene should not be applied to cuts, abrasions, eczematous or sunburned skin.
Pregnancy & lactation: Use adapalene during pregnancy only if the potential benefit justifies the potential risk to the fetus. It is not known whether this drug is excreted in breast milk. Exercise caution when administering adapalene to a nursing mother.
Dosage & admin: Adapalene cream is usually used once daily at night-time. A thin film of cream is applied to the skin areas where lesions appear, using enough to cover the entire affected areas lightly. Before application of cream, the area should be cleansed with a mild or soapless cleanser or water.
Children: Safety and effectiveness in childen below 12 years of age have not been established.
Advises for the patients: *1. Minimize exposure to sunlight during and after the use of adapalene. Use of sunscreen products and protective clothing over treated areas is recommended when exposure cannot be avoided. 2. During the early weeks of therapy, an apparent exacerbation of acne may occur. This is due to action of adapalene on explored and previously unseen acne and should not be considered as a reason to discontinue therapy. Overall clinical benefit may be noticed after 2 weeks of therapy but at least 8 weeks are required to obtain consistent beneficial effects. 3. Depending on the severity of adverse events, patients are advised to reduce the frequency of application or discontinue use. It's better to consult with a physician. 4. Avoid contact with the eyes, lips and mucous membrane of the mouth.*
Drug inter: Concomitant use of other potentially irritating topical products (medicated or abrasive soaps, and cosmetics that have a strong drying effect, products with high concentrations of alcohol, astringents, spices or lime) should be approached with caution. Exercise particular caution in using preparations containing sulfur, resorcinol or salicylic acid in combination with adapalene. If these preparations have been used, it is advisable not to start therapy with adapalene until the effects of such preparations in the skin have subsided.

❖ **ACLENE Cream Drug Inter.**
Adapalene INN 1mg/gm (0.1%): cream

10gm tube x 1's pack: 60.00 MRP

❖ **ADOLIN Cream Peoples**
Adapalene INN 1mg/gm (0.1%): cream
10gm tube x 1's pack: 50.00 MRP

❖ **FONA Cream Square**
Adapalene INN 1mg/gm (0.1%): cream
10gm tube x 5's pack: 60.00 MRP

Topical antibiotic & retinoid prepns.

CLINDAMYCIN + TRETINOIN[36]

CLINDAMYCIN + TRETINOIN: Gel
This is a combined topical gel preparation of clindamycin and tretinoin. Clindamycin is an antibiotic & tretinoin is a retinoid preparation, both of which are effective in the treatment of acne. This combined preparation is available as clindamycin phosphate USP 1.2% & tretinoin USP 0.025%.
Mode of action: Clindamycin that inhibits bacterial protein synthesis. It has been found effective against *propionibacterium acnes.* Tretinoin is a retinoid that has been shown to reduce microcomedo formation. It also reduces the cohesiveness and increases the turnover of follicular epithelial cells, causing extrusion of the comedones.
Ind: This combined preparation is indicated for the topical treatment of acne.
C/I: Patients who have hypersensitivity to clindamycin and tretinoin, history of regional enteritis, ulcerative colitis or antibiotic-associated colitis.
S/E: Erythema, itching, burning, nasopharyngitis, dry skin and sinusitis.
Pregnancy & lactation: There are no well-controlled trials in pregnant & lactating women treated with clindamycin and tretinoin gel. So, it should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus, and in nursing women caution should be exercised.
Dosage & admin: Apply thin film to clean, dry face once daily at bedtime.
Direction of use: **Wash the face gently with a soap and warm water & dry the face. Apply the gel smoothly with finger tips. Use soap as recommended by the physician.**
Pediatric use: **Safety and effectiveness of clindamycin and tretinoin gel in pediatric patients under the age of 12 have not been established.**
Drug inter: Clindamycin & tretinoin should be used with caution in patients receiving neuromuscular agents, erythromycin, tetracyclines, quinolone and other topical products (eg. alcohol, drying agent).

❖ **CLINEX Plus Gel Aristopharma**
Each gram of clinex plus gel contains clindamycin phosphate USP equivalent to 12mg (i.e 1.2%) and tretinoin USP 0.25mg (i.e 0.025%): gel preparation.
15gm tube x 1's pack: 150.00 MRP

Oral antibiotics for Acne

The antibiotics that can be used in the oral treatment of acne, are given in the chapter of systemic antibiotics.

Oral retinoids for Acne

ISOTRETINOIN

❖ **ROACCUTANE Cap. Roche**
Isotretinoin 10mg & 20mg/capsule.
Isotretinoin is an isomer of tretinoin, & tretinoin is the acid form of vitamin-A.
Ind: Acne vulgaris, specially modulo-cystic & conglobate acne, & severe acne resistant to previous treatment with antibiotics; & also treatment of late onset acne in women in the third or fourth decades of life, because they are mostly resistant to amibiotic therapy.
C/I: Pregnancy & lactation. Hepatic & renal insufficiency. Hypervitaminosis A. Patients with excessively elevated blood lipid values. Hypersensitivity to the drug. Supplementary treatment with tetracyclines. Blood donation by the patients who are being treated or who have recently been treated (1 to 2 weeks before) with isotretinoin is contraindicated to the women of childbearing ages.
S/E: Muscle and joint pain. Bone changes in children & adults and hyperostosis in children (i.e premature epiphyseal closure) occur when treated with high doses of isotretinoin over long periods. Psychic or neurological disturbances. Hyperlipidaemia & hypertriglyceridaemia. Dermatitis facialis, pyogenic granuloma, paronychia, increased formation of granulation tissue. Reversible alopecia. Intolerance to contact lenses & decreased night vision.
Precautions: Liver functions & serum lipids (fasting value) should be checked before starting treatment. In diabetics, frequent determination of blood glucose levels is recommended.
Pregnancy & lactation: Isotretinoin is highly teratogenic, & must not be used by the women who are pregnant & also women of childbearing potential unless strict contraception is practised four weeks before, during, & one month after treatment. It also must not be given to nursing mother.
Dosage & admin: Treatment should be started with 0.5mg/kg daily. After about 4 weeks of treatment, maintenance dose should be adjusted within the range of 0.1-1mg/kg daily to meet individual needs. The maximum dose of 1mg/kg daily should be given for only a limited period of time. Maximum treatment duration- 5 months.
Drug inter: Concurrent therapy with isotretinoin & vitamin A must be avoided.
10mg x 30's pack: 2137.50 MRP
20mg x 30's pack: 3881.25 MRP

Oral Hormonal prepns. for Acne

CYPROTERONE + ETHINYLESTRADIOL[62]

❖ **GIANE 35 Tab. Renata**
Cyproterone acetate 2mg and ethinylestradiol 0.035mg/tablet.
Ind: For the treatment of women with severe acne, unresponsive to oral antibiotic and other available treatments, with associated symptoms of androgenization, including seborrhea and mild hirsutism.
(***Note:*** Giane 35 should not be prescribed solely for its contraceptive properties. However, when taken as recommended dosage, giane 35 will provide reliable contraception in patients treated for the above clinical conditions. If patient compliance is uncertain and contraception is necessary, then a supplementary nonhormonal contraceptive method should be considered.
C/I: Thrombophlebitis, thromboembolic disorders, or a history of these conditions, cerebrovascular disorders; myocardial infarction or coronary artery disease; active liver disease or hepatic adenomas or carcinomas; history of cholestatic jaundice; known or suspected carcinoma of the breast; konwn or suspected estrogen-dependent neoplasia; undiagnosed abnormal vaginal bleeding; any ocular lesion arising from ophthalmic vascular disease, such as partial or complete loss of vision or defect in visual fields; when pregnancy is suspected or diagnosed; previous or existing liver tumors; severe diabetes with vascular changes: a history of otosclerosis with deterioration during pregnancy.
S/E: General: An increased risk of the following serious adverse reactions has been associated with the use of estrogen/progestogen combinations: thrombophlebitis; arterial thromboembolism; pulmonary embolism; mesenteric thrombosis; neuro-ocular lesions, e.g. retinal thrombosis and optic neuritis; myocardial infarction; cerebral thrombosis; cerebral hemorrhage; hypertension; liver tumors; gallbladder disease and congenital anomalies.
Precautions & warnings: Please see manufacturer's literature.
Dosage: Giane 35 is supplied in blister pack units consisting of 21 tablets. Each cycle of treatment consists of 21 days on medication and a 7-day interval without medication (3 weeks on, 1 week off).
First treatment course: The patient is instructed to take 1 tablet daily for 21 consecutive days beginning on day 1 of her menstrual cycle. (For the first cycle only the first day of menstrual flow is considered day 1.) The tablets are then discontinued for 7 days (1 week). Withdrawal bleeding should usually occur during the period that the patient is off the tablets. The first cycle will be somewhat shorter than usual, whereas all following cycles will last 4 weeks.
Subsequent courses: The patient begins her next and all subsequent 21-day course of tablets (following the same 21 days on, 7 days off) on the same day of the week that she began her first course. She begins taking her tablets 7 days after discontinuation, regardless of whether or not withdrawal bleeding is still in progress. Treatment should be continued for several months, since improvement may not be observed with 4 or 5 cycles. It is recommended to continue treatment with

giane 35 for at least another 3 to 4 cycles after signs have subsided. Pregnancy should be ruled out before continuing treatment with giane 35 in patients who have missed a menstrual period. If pregnancy is suspected, medication should be discontinued.
Special notes on administration: It is recommended that giane 35 tablets be taken at the same time each day. Irregular tablet taking, vomiting or intestinal affections with diarrhea, very rare individual metabolic disturbances or prolonged simultaneous use of certain medical preparations can affect the contraceptive action. If spotting or breakthrough bleeding occurs during the 3 weeks in which giane 35 is being taken, the patient is instructed to continue taking the medication. This type of bleeding usually is transient and without significance. However, if the bleeding is persistent or prolonged, the patient is advised to consult her physician. In exceptional cases, menstruation may fail to occur during the 7-day tablet-free interval. The patient is advised not to resume tablet-taking and to consult her physician. Although the occurrence of pregnancy is highly unlikely if the tablets are taken according to directions, the possibility of pregnancy should be ruled out before continuing treatment with giane 35 in patients who have missed a period of withdrawal bleeding. The patient should consult her physician and, in the meantime, a supplementary nonhormonal method of contraception should be employed. If the patient forgets to take a tablet at the usual time, the tablet may be taken within the next 12 hours. If more than 12 hours have elapsed from the time of usual administration, the patient must discard the missed tablet and continue to take the remaining tablets in the pack at the usual time in order to avoid a premature withdrawal bleeding during this cycle.
1 x 21's pack: 150.15 MRP

8. DRUGS FOR ICHTHYOSIS & SCALY SKIN

TOPICAL UREA PREPN[42]

TOPICAL UREA PREPN: 10% Cream
Topical urea preparation (10%) is bacteriostatic, bactericidal, fungistatic, proteolytic and hygroscopic with mild local anesthetic action. These actions are dose dependent. Most of its therapeutic applications depend on its hygroscopic property.
Mode of action: The hygroscopic property of topical urea is due to its ability to cause configurational change in proteins in the stratum corneum. A 10% urea cream has been shown to increase the water holding capacity of ichthyotic scale by 100% after 3 weeks of treatment. There is no information available about percutaneous absorption of urea. Therapeutic effects depend on local concentrations, not on systemic absorption of the drug. If absorbed, urea would be excreted unchanged in the urine.
Ind: Urea cream is indicated for ichthyosis and dry skin conditions, management of eczemas, and management of psoriasis.
C/I & Precaution: In some instances, urea 10% cream may cause local irritation and edema, when applied to sensitive skin. If the condition is aggravated or there is no improvement the doctor should be consulted.
S/E: No serious toxicity has been reported with topical urea. Historically it is considered a safe drug. But on some occasions, topical urea has been shown to cause burning and irritation, if applied to inflammed, broken or exudative skin eruptions.
Pregnancy & lactation: Urea can be used during pregnancy and lactation.
Dosage & admin: Urea cream is applied topically. Wash affected areas well, rinse off all traces of soap, dry the skin and apply cream sparingly twice daily. Occlusive dressings may be used, but are usually unnecessary because of the self-occlusive nature of the cream.
Children: Can be used in all age groups.
Drug inter: No hazardous drug interaction has been reported.

❖ **EQURA Cream Square**
Each gram of cream contains 100mg urea BP (10%).
15gm tube: 30.00 MRP
❖ **EUKRIM Cream Beximco**
Each gram of cream contains 100mg urea BP (10%)
15gm tube: 30.00 IP

9. DRUGS FOR SKIN SCARS

CEPALIN

Cepalin, as gel or solution is useful in the treatment of skin scars. It makes new or existing scars smoother and less noticeable.
Preparations: Recently not avilable in our market.

10. DRUGS FOR HYPERPIGMENTATION

HYDROQUINONE[26,84]

HYDROQUINONE: Cream
Hydroquinone is a skin bleaching agent.
Mode of action: Topical application of hydroquinone produces a reversible depigmentation of the skin by inhibition of the enzymatic oxidation of tyrosine to 3,4 dihydroxyphenylalanine (dopa) and suppression of other melanocyte metabolic processes. Exposure to sunlight or ultraviolet light is harmful, as it will cause repigmentation of the bleached areas, which may be prevented by using sunblocking or sunscreen agents in the preparation or by protecting from sunlight or by using at night.

Ind: It is indicated for the gradual bleach-ing of hyperpigmented skin conditions such as chloasma, melasma, freckles, senile lentigines and other unwanted areas of melanin hyperpigmentation.

C/I: Prior history of sensitivity or allergic reaction to this product or any of its ingredients. The safety of topical hydroquinone use during pregnancy or in children (12 years and under) has not been established.

A/R: No systemic adverse reactions have been reported. Occasional hypersensitivity (localized contact dermatitis) may occur in which case the medication should be discontinued and the physician informed immediately.

Precautions & warnings:
1. Test for skin sensitivity before using hydroquinone by applying a small amount to an unbroken, healthy area of skin and check in 24 hours. Minor redness is not a contraindication, but where there is itching or vesicle formation or excessive inflammatory response, further treatment is not advised. Close patient supervision is recommended. Contact with the eyes should be avoided. If no bleaching or lightening effect is noted after 2 months of treatment, the medication should be discontinued.
2. Exposure to sunlight or ultraviolet light is harmful, because even minimal sunlight exposure sustains melanocytic activity and will cause repigmentation of the bleached areas. This may be prevented by using sunblocking or sunscreen agents in the preparation or by protective clothing or by using at night.
3. Keep hydroquinone preparation out of reach of children. In case of accidental ingestion, call a physician or a poison control centre immediately.

Pregnancy & lactation: The safety of topical hydroquinone use during pregnancy, lactation or in children below the age of 12 years has not been established. It is not known to what degree, if any, topical hydroquinone is absorbed systemically and excreted in human milk. So, topical hydroquinone should be used in pregnant or lactating women only when clearly indicated.

Dosage & admin: See below under the individual preparation.

Overdosage: There have been no systemic reactions from the use of topical hydroquinone. However, treatment should be limited to relatively small areas of the body at one time since some patients experience a transient skin reddening and mild burning sensation which does not preclude treatment.

❖ **ELDOPAQUE Forte 4% Cream ICN Pharma/Janata**
Hydroquinone USP 4% (40mg/1gm) in a tinted sunblocking cream base of water, stearic acid, talc, PEG-40 stearate, PEG-25 propylene glycol stearate, iron oxides, mineral oil, squalane disodium EDTA, sodium metabisulfite, and potassium sorbate: cream preparation.
Ind: It is indicated for the gradual bleaching of hyperpigmented skin conditions such as chloasma, melasma, freckles, senile lentigines and other unwanted areas of melanin hyperpigmentation.
C/I; A/R; Precautions & warnings: See above under the text of hydroquinone.
Pregnancy & lactation: See above under the text of hydroquinone.
Dosage & Admin: As Eldopaque forte cream has got sunblocking agent, it can be used during daytime. It should be applied to the affected area twice daily or as directed by the physician. Do not rub in. After clearing and during maintenance therapy, sun exposure should be avoided on bleached skin by application of a sunscreen, or protective clothing to prevent repigmentation. If no bleaching or lightening effect is noted after 2 months of treatment, the medication should be discontinued.
Eldopaque forte 4% cream pack: 402.05 MRP

❖ **ELDOQUIN Forte 4% Cream ICN Pharma/Janata**
Hydroquinone USP 4% (40mg/1gm cream) on a vanishing cream base of purified water, stearic acid, propylene glycol, polyoxyl 40 stearate, propylene glycol monostearate, glyceryl monostearate, mineral oil, squalane, propylparaben, and sodium metabisulfite: cream preparation.
Ind: It is indicated for the gradual bleaching of hyperpigmented skin conditions such as chloasma, melasma, freckles, senile lentigines and other unwanted areas of melanin hyperpigmentation.
C/I; A/R; Precautions & warnings: See above under the text of hydroquinone.
Pregnancy & lactation: See above under the text of hydroquinone.
Dosage & Admin: There is no sunblocking or sunscreening agents in Eldoquin forte, so it should be used only at night or on areas of the body covered by protective clothing. It should be applied to the affected area twice daily or as directed by the physician. Do not rub in. After clearing and during maintenance therapy, sun exposure should be avoided on bleached skin by application of a sunscreen, or protective clothing to prevent repigmentation. If no bleaching or lightening effect is noted after 2 months of treatment, the medication should be discontinued.
Eldoquin forte 4% cream pack: 402.05 MRP

❖ **SPOTCLEN Cream Incepta**
Hydroquinone BP 40mg/gm (or 4%): cream preparation.
Ind: It is indicated for the gradual bleaching of hyperpigmented skin conditions such as chloasma, melasma, freckles, senile lentigines and other unwanted areas of melanin hyperpigmentation; to reduce hyperpigmentation caused by photosensitization associated with inflammation of with the use of certain cosmetics.
C/I; A/R; Precautions & warnings: See above under the text of hydroquinone.
Pregnancy & lactation: See above under the text of hydroquinone.
Dosage & Admin: There is no sunblocking or sunscreening agents in Spotclen cream, so it should be used only at night or on areas of the body covered by protective clotbing. It should be applied to the affected area twice daily or as directed by the physician. Do not rub in. After clearing and during maintenance therapy, sun exposure should be avoided on bleached skin by application of a sunscreen, or protective clothing to prevent repigmentation. If no bleaching or lightening effect is noted after 2 months of treatment, the medication should be discontinued.
10mg pack: 50.00 MRP

❖ **SPOTCLEN Plus Cream Incepta**
Each gram cream contains Hydroquinone BP 40mg (or 4%) with sunscreen agents such as, octyldimethyl P-aminobenzoate USP 80mg, dioxybenzone USP 30mg and oxybenzone USP 20mg.
Ind: It is indicated for the gradual bleaching of hyperpigmented skin conditions such as chloasma, melasma, freckles, senile lentigines and other unwanted areas of melanin hyperpigmentation; to reduce hyperpigmentation caused by photosensitization associated with inflammation of with the use of certain cosmetics.
C/I; A/R; Precautions & warnings: See above under the text of hydroquinone.
Pregnancy & lactation: See above under the text of hydroquinone.
Dosage & Admin: As this cream preparation has got sunscreen agents, it can be used during daytime. It should be applied to the affected area twice daily or as directed by the physician. Do not rub in. After clearing and during maintenance therapy, sun exposure should be avoided on bleached skin by application of a sunscreen, or protective clothing to prevent repigmentation. If no bleaching or lightening effect is noted after 2 months of treatment, the medication should be discontinued.
10gm pack: 80.00 MRP

11. DRUGS FOR VITILIGO

METHOXSALEN[84]

❖ **OXSORALEN Lotion ICN Pharma/Janata Healthcare**
Methoxsalen USP 1% (10mg/ml) of lotion in an inert vehicle containing alcohol (71% v/v), propylene glycol, acetone and purified water.
Mode of action: Exact mechanism of action of methoxsalen with the epidermal melanocytes and keratinocytes is not known.
Methoxsalen acts as a photosensitizer. Topical application of this drug and subsequent exposure to ultraviolet-A (UVA), whether artificial or sunlight, can cause cell injury & an inflammatory reaction will result. The most obvious manifestation of this reaction is delayed erythema formation. The erythematous reaction is followed over several days or weeks by repair which is manifested by increased melanization of the epidermis and thickening of the stratum corneum. The exact mechanics are unknown but it has been suggested that melanocytes in the hair follicles are stimulated to move up the follicle and to repopulate the epidermis.
Ind: As a topical repigmenting agent in vitiligo in conjunction with controlled doses of ultraviolet A (320-400nm) or sunlight.
C/I: Idiosyncratic reactions or hypersensitivity reactions to methoxsalen compounds. Melanoma or history of melanoma. Invasive skin carcinoma. Photosensitivity diseases such as, porphyria, acute lupus or erythematosus, xeroderma pigmentosum etc. Children under 12 years since clinical studies to determine the efficacy and safety of treatment in this age group have not been done.

Precautions & Warnings:
A. *Skin burns*- serious skin burns from either UVA or sunlight can result if recommended exposure schedule is exceeded and/or protective covering or sunscreens are not used. The blistering of the skin sometimes encountered after UV exposure generally heals without complication or scarring. Suitable covering of the area of application or a topical sunblock should follow the therapeutic UVA exposure.
B. *Concomitant therapy*- special care should be exercised in treating patients who are receiving concomitant therapy (either topically or systemically) with known photosensitizing agents such as anthralin, coal tar or coal tar derivatives, griseofulvin, phenothiazine, nalidixic acid, halogenated salicylanilides (bacteriostatic soaps), sulfonamides, tetracyclines, thiazides and certain organic staining dyes such as, methylene blue, toluidine blue, rose bengal, and methyl orange.
C. *Pregnancy & nursing mothers*y-
although there is no definit study or finding of harmful affect, it should be used in pregnant & nursing women only when clearly indicated & with caution.
A/R: Systemic adverse reactions have not been reported.
Local short-term hazards- severe burns of the treated area from overexposure to UVA or sunlight; minor blistering of the skin is not a contraindication to further treatment and generally heals without incident. Long term hazards- cataract formation, accelerated ageing of the skin & the development of the skin cancer (non-fatal).

Dosage & admin: This product should be applied to a well-defined area of vitiligo by the physician and the area is then exposed to a suitable source of UVA or sunlight. Initial exposure time shoud be conservative and not exceed that which is predicted to be one-half the minimal erythema dose. Treatment intervals should be regulated by the erythema response; generallay once a week is recommended or less often depending on the results. The hand and fingers of the person

applying the medication should be protected by gloves or finger cots to avoid photosensitization and possible burns. Pigmentation may begin after a few weeks but significant repigmentation may require 6-9 months of treatment. Periodic re-treatment may be necessary to retain all of the new pigment. Idiopathic vitiligo is reversible but not equally reversible in every patient. Treatment must be individualized. Repigmentation will vary in completeness, time of onset, and duration. Repigmentation occurs more rapidly in fleshy areas such as face, abdomen, and buttocks and less rapidly over less fleshy areas such as the dorsum of the hands or feet.
30ml (1 oz) pack: 730.17 MRP

❖ **OXSORALEN Cap. ICN Pharma/Janata Healthcare**
Methoxsalen 10mg/capsule.
It is a naturally occuring photoactive substance found in the seeds of the Ammi majus plant. It belongs to a group of compounds known as psoralens, or furocoumarins.
Ind & Usage:
A. Photochemotherapy (methoxsalen with long wave ultraviolet radiation) is indicated for the repigmentation of idiopathic vitiligo.
B. Photochemotherapy (methoxsalen with long wave UVA radiation) is indicated for the symptomatic control of severe, recalcitant, disabling psoriasis not adequately responsive to other forms of therapy and when the diagnosis has been supported by biopsy. Photochemotherapy is intended to be administered only in conjunction with a schedule of controlled doses of long wave ultraviolet radiation.
C/I: 1. Patients exhibiting idiosyncratic reactions to psoralen compounds.
2. Patients possessing a specific history of light sensitive disease states should not initiate methoxsalen therapy. Diseases associa-ted with photosensitivity include lupus erythematosus, porphyria cutanea tarda, eryth-ropoietic protoporphyria, variegate porphyria, xeroderma pigmentosum, and albinism.
3. Patients exhibiting melanoma or possessing a history of melanoma.
4. Patients exhibiting invasive squamous cell carcinomas.
5. Patients with aphakia, because of the significantly increased risk of retinal damage due to the absence of lenses.
S/E; Cautions & warnings: Please see the manufacturer's literature.
Dosage & Admin:

A. Therapy for Vitiligo:

1. *Drug dosage*- 20mg (2 capsules) 20mg taken with milk or in food two to four hurs before ultraviolet light exposure.

2. *Light exposure*- The exposure time to sunlight should comply with the following guide

	Basic Skin Colour		
Exposure	Light	Medium	Dark
Initial Exposure	15 min	20 min	25 min
2nd Exposure	20 min	25 min	30 min
3rd Exposure	25 min	30min	35 min
4th exposure	30 min	35 min	40 min

Subsequent exposure: Gradually increase exposure based on erythema and tenderness of the amelanotic skin.
Therapy should be on alternate days and never two consecutive days.

B. *Therapy for Psoriasis:*

***Drug dosage:* Initial therapy- the methoxsalen capsules should be taken two hours before UVA exposure with some food or milk according to the following table:**

< 30kg body wt. - 10mg
30-50kg „ „ - 20mg
51-65kg „ „ - 30mg
66-80kg „ „ - 40mg
81-90kg „ „ - 50mg
91-115kg „ „ - 60mg
> 115kg „ „ - 70mg

Drug inter: Please see the manufacturer's literature.

Note: For further information, please consult manufacturer's literature.
100's pack: 2124.00 MRP

12. PROTECTION OF SKIN FROM SOLAR RADIATION

❖ **SPECTRABAN 19 Cream /SPECTRABAN ULTRA 28 Lotion Stiefel/UniMed**[81]
SpectraBAN 19 Cream: This preparation contains- microfine zinc oxide coated 15%: 50gm cream in tube
SpectraBAN ULTRA 28 Lotion: This preparation contains- titanium dioxide 2%, butyl methoxydibenzoyl methane 2%, padimate 0.8%, oxybenzone 3%: 60ml lotion in bottle.
Ind: Both offer skin protection against UVA, UVB & IR rays. These preparations are indicated as protective sun block in all patients who require a maximum protection sunscreen, including those with photodermatoses & reduced skin pigmentation.
Precautions: Don't use in patients with known hypersensitivity to any of the ingredients. Avoid application to broken skin, eyes and mucous membrane.
Use & application: Apply SpectraBAN 19 cream or SpectraBAN Ultra 28 lotion carefully and evenly to areas to be exposed or protected only by light clothing. Allow 30 minutes before going out or swimming. A single application may give daylong protection but the product should be re-applied during prolonged period of sunning, swimming or excessive sweating.
SpectraBAN 19 Cream 50gm tube: 629.39 MRP
SpectraBAN Ultra 28 Lotion 60ml bot: 499.21 MRP

13. SHAMPOOS & OTHER SCALP PREPNS. / ANTI-DANDRUFF PREPNS.

KETOCONAZOLE[26,106]

KETOCONAZOLE: Shampoo preparation
Ketoconazole 2% (20mg/gm): shampoo preparation.
Ind: Treatment and prophylaxis of infections in which the yeast Malassezia (previously called Pityrosporum) is involved, such as- Dandruff (Pityriasis capitis), Pityriasis versicolor (localized), Inflammatory skin condition with greasy, red & scaly areas (Seborrhoeic dermatitis)
C/I: Known hypersensitivity to ketoconazole or any of the excipients.
S/E: As with other shampoos, a local burning sensation, itching, or contact dermatitis (due to irritation or allergy), may occur on exposed areas.
Precautions: In patients who have been on prolonged treatment with topical corticosteroids, it is recommended that the steroid therapy be gradually withdrawn over a period of 2 to 3 weeks, while using Ketoconazole 2% shampoo to prevent any potential rebound effect.
Pregnancy & lactation: Since ketoconazole is not absorbed through the skin after topical application, it is not contraindicated in pregnancy and lactation.
Use & Admin: *Treatment:* Pityriasis versicolor- once daily for 5 days. Seborrhoeic dermatitis and pityriasis capitis- twice weekly for 2 to 4 weeks.
***Prophylaxis:* Pityriasis versicolor- once daily for 3 days during a single treatment course before the summer. Seborrhoeic dermatitis and pityriasis capitis- once every 1 or 2 weeks.**
Application: To use the Ketoconazole 2% shampoo, follow these steps:
Use a small amount of water to wet the area where Ketoconazole 2% shampoo is to be applied. Apply the shampoo to the affected scalp/skin and a large area around it. Use fingers to rub the shampoo until it forms lather. Leave the shampoo on scalp/skin for 5 minutes. Rinse the shampoo off scalp/skin with water
Prophylactic or maintenance use: When the dandruff is under control, it can be stabilised by using once weekly with ketoconazole shampoo.
Use normal shampoos on other occasions.

❖ **DANCEL Shampoo Incepta**
Ketoconazole 2% (20mg/gm): shampoo preparation.
60ml pack: 150.00 MRP
100ml pack: 230.00 MRP
❖ **NIZODER Shampoo UniMed/UniHealth**
Ketoconazole 2% (20mg/gm): shampoo preparation.
60ml pack: 150.00 MRP

14. ANTISEPTICS & SKIN DISINFECTANTS[21]

Antiseptics, skin disinfectants & cleansers in use are as following:

1. **Alcohols**
2. **Normal saline**
3. **Chlorhexidine & Chloroxylenol salts**
4. **Cationic surfactants and soaps**
5. **Chlorine, iodine & povidone-iodine**
6. **Phenolics**
7. **Astringents, oxidisers, and dyes**

Chlorhexidine & Chloroxylenol prepns.

CHLORHEXIDINE[21,33]

CHLORHEXIDINE Antiseptic Prepns: Cream/Lotion/Solution
Chlorhexidine is a widely used antiseptic and disifectant agent, available as cream, lotion, solution and hand rub in combination with cetrimide or isopropyl alcohol or alone.
Ind: General antisepsis and disinfectant and cleansing purposes.
Precautions: Only for external use; in case of solution dilute before use according to direction; solution should not come in contact with eyes, brain, meninges, or middle ear.
Accidental ingestion: Carry out a stomach lavage with milk, egg white, gelatin or mild soap water.
Use & application: Antiseptic solution: Rapid skin cleansing solution for hand disinfection prior to surgery & for routine use in the ward to reduce risk of cross-infection. For detail & other uses: See literature attached with the preparation.
Cream preparations:
Adult & children: apply two or three times daily.

❖ **CLENOL Cream Mystic**
Chlorhexidine hydrochloride 0.1% + cetrimide 0.5%: antiseptic cream preparation.
30gm tube: 19.00 MRP
❖ **G-ANTISEPTIC Soln. Gonoshas.**
Chlorhexidine gluconate BP solution
100ml bot: 15.17 MRP
❖ **GERMISOL Hand Rub Square**
Chlorhexidine gluconate 0.5% w/w in 70% isopropanol: solution for hand rub
50ml bot: 23.40 MRP
250ml bot: 79.25 MRP
❖ **HANDIRUB Hand Rub SK+F**
Chlorhexidine gluconate 0.5% w/v in isopropyl alcohol 20% w/v: solution for hand rub.
50ml bot: 30.00 MRP
200ml bot: 80.00 MRP
❖ **HEXISCRUB Soln. ACI**
Chlorhexidine gluconate 4% solution
250ml bot: 100.00 IP
❖ **HEXISOL Hand Rub ACI**
Chlorhexidine gluconate 0.5% w/w in 70% isopropanol: solution for hand rub
50ml bot: 31.00 IP
250ml bot: 105.00 IP
❖ **HYGINOL Solution Millat**
Chlorhexidine gluconate 0.3% w/v + cetrimide 3% w/v: solution.
50ml bot: 17.00 MRP
100ml bot: 26.00 MRP
❖ **HYGINOL Cream Millat**
Chlorhexidine hydrochloride 0.1% + cetrimide 0.5%: antiseptic cream preparation.
30gm tube: 22.00 MRP
60gm tube: 30.00 MRP
❖ **KEVILON Cream Opsonin**
Chlorhexidine hydrochloride 0.1% + cetrimide 0.5%: antiseptic cream preparation.
30gm tube: 18.00 MRP
❖ **KEVIRUB Hand Rub Opsonin**
Chlorhexidine gluconate 0.5% w/v in isopropyl alcohol 20% w/v: solution for hand rub.
50ml bot: 31.00 MRP
250ml bot: 105.00 MRP
❖ **SAFETISOL Soln. Silva**
Chlorhexidine gluconate 0.5% w/w in 70% isopropyl alcohol: solution for hand rub
50ml bot: 30.00 MRP
200ml bot: 80.00 MRP
❖ **SAFETISOL Regular Silva**
Chlorhexidine gluconate 0.5% w/w in 70% isopropyl alcohol: solution for hand rub (with dispenser).
300ml (with dispenser): 125.00 MRP
300ml (refill): 105.00 MRP
❖ **SAFWASH Soln. Medimet**
Chlorhexidine gluconate BP solution.
50ml bot: 31.00 MRP
❖ **SAVLON Liquid ACI**
Chlorhexidine gluconate 0.3% w/v + cetrimide 3% w/v: solution.
56ml bot: 15.00 IP
112ml bot: 23.00 IP
1 litre: 110.00 IP
Prices: Could not be revised.
❖ **SAVLON (Hosp. conc.) ACI**
Chlorhexidine gluconate soln. BP 1.5% w/w & certrimide BP 15% w/w, high concentration for hospital use.
5 lit. pack: 1415.00 MRP
Prices: Could not be revised.
❖ **SAVLON Cream ACI**
Chlorhexidine hydrochloride 0.1% + cetrimide 0.5%: antiseptic cream preparation.
15gm tube: 12.00 IP
30gm tube: 22.00 IP
Prices: Could not be revised.
❖ **SEFTOL Soln. Skylab**
Chlorhexidine gluconate BP & Cetrimide BP: solution
50ml bot: 15.00 MRP
100ml bot: 22.00 MRP
❖ **SEPNIL Liquid Square**
Chlorhexidine gluconate soln. BP 1.5% w/v & cetrimide BP 3% w/v.
50ml bot: 11.00 MRP
100ml bot: 16.63 MRP
Prices: Could not be revised.
❖ **SEPNIL (Hosp. conc.) Square**
Chlorhexidine gluconate soln. BP 1.5% w/w & certrimide BP 15% w/w, high concentration for hospital use.
5 lit. pack: 1418.00 MRP
Prices: Could not be revised.
❖ **SEVDOL Lotion Seema**
Chlorhexidine gluconate soln. BP & Cetrimide BP: lotion
50ml bot: 15.00 MRP
100ml bot: 28.00 MRP
❖ **XISOL Hand Rub Aristopharma**
Chlorhexidine gluconate 0.5% w/w in 70% isopropyl alcohol: solution for hand rub
50ml bot: 30.00 MRP
250ml bot: 105.00 MRP

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CHLORHEXIDINE Mouth Wash/Rinse: Solution
Chlorhexidine is available for antiseptic mouth wash or rinsing purpose as chlorhexidine gluconate in different concentrations, such as 1% (w/v) and 0.2% (w/v) solution.
Ind: Mouth wash as in gingivitis, cross infection during oral surgery, oral thrush, inhibition of plaque formation.
Use: 2 tsf 2 times daily; keep one minute in the mouth and gurgle each time; use one month for gingivitis.
❖ **ORALON Soln. ACI**
Chlorhexidine gluconate 0.2% w/v: solution for mouth wash or rinse.
100ml bot: 35.00 IP

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CHLORHEXIDINE Dental Prepn: Dental gel
Chlorhexidine is available for antiseptic dental use as chlorhexidine gluconate 1% (w/w) gel preparation.
Ind: Use in dental & gum infection.
Use: see manufacturer's literature attached with the preparation.

❖ **ORALON Dental Gel ACI**
Chlorhexidine gluconate 1% w/v: gel preparation
30gm tube: 40.00 IP

CHLOROXYLENOL[21,33]

❖ **DETTOL Lotion Reckitt Benckiser**
Chloroxylenol 1.3% solution.
Ind: disinfectant for skin and gloved hands; obstetrics, antiseptic lubricant for vaginal examinations and on forceps; for hand antisepsis.
Use: wash with one table spoonful of dettol to a tumbler of water (1 in 13) for urgent application, undiluted dettol may be used but not in a sensitive skin.
56ml bot: 18.00 MRP
100ml bot:
750ml bot:
Prices: Could not be revised.

Iodine compounds: Povidone-Iodine

POVIDONE-IODINE[21,85,141]

POVIDONE-IODINE PREPNS: Cream/Oint/ Lotion/Solution/Powder/Pessaries
Povidone-iodine (polyvinylpyrrolidone- iodine), is a complex of iodine and an organic polymer, povidone.
Action & Ind: The povidone-iodine polymerisation makes the 'complex' superior to ordinary elemental iodine. It prolongs the germicidal activity of iodine by liberating elemental iodine slowly, consequently it possesses a lower toxicity than elemental iodine. Different studies proved that povidone-iodine complex is effective against a wide spectrum of pathogenic organisms including both gram-postitive and gram-negative bacteria, fungi, protozoa, virus and yeasts. It is also found active against bacterial spores; even it is active in the presence of blood, serum,

purulent exudate and necrotic tissues.
C/I; Precautions: Hypersensitivity to iodine; history of abnormal thyroid function; in severely burnt patients serum iodine levels should be assessed due to possible hepatic and renal impairment.
Pregnancy & lactation: Use with caution in pregnancy and breast feeding mother
Use & Application: See under individual preparation (below).

POVIDONE-IODINE (Antiseptic Prepns.)[21,85]

POVIDONE-IODINE: Antiseptic lotion
Povidone-iodine antiseptic lotion is available as antiseptic alcoholic solution in two strengths, viz: 5% & 10% w/v.
Ind: Use as an antiseptic skin cleanser for major and minor surgical procedures pre- and post-operatively, (10% solution is used where a quick drying effect is desired); for the antiseptic treatment of superficial wounds, traumatic injuries etc.
Use & application: 5% & 10% solution: apply full strength as often as needed, as a paint or wet soak; for minor wounds and infections apply directly to the affected area; the site may be covered with gauze or adhesive bandage.

❖ **ARODIN 10% Lotion Aristopharma**
Povidone-iodine 10% w/v. antiseptic alcoholic solution: lotion.
100ml bot: 36.00 MRP
1 litre pack: 340.00 MRP
❖ **IOSOL 10% Soln. UniHealth**
Povidone-iodine 10% w/v; antiseptic aqueous solution.
100ml bot: 35.00 MRP
500ml bot: 150.00 MRP
❖ **PHARODIN 10% Lotion Pharmadesh**
Povidone-iodine 10% w/v, antiseptic alcoholic solution: lotion.
100ml bot: 35.00 MRP
❖ **POLYDIN 10% Soln. Chemist**
Povidone-iodine 10% w/v; antiseptic aqueous solution.
100ml bot: 36.00 MRP
❖ **POVISEP 5% Soln. Jayson**
Povidone-iodine 5% w/v: antiseptic aqueous solution.
20ml bot: 16.00 IP
100ml bot: 30.00 IP
❖ **POVISEP 10% Soln. Jayson**
Povidone-iodine 10% w/v: antiseptic aqueous solution.
30ml bot: 18.00 MRP
100ml bot: 36.00 MRP
1 lit. bot: 340.00 MRP
❖ **PROVIA 10% Soln. Asiatic**
Povidone-iodine 10% w/v; antiseptic aqueous solution.
100ml bot: 30.00 MRP
❖ **SAVEDIN 10% Soln. Gaco**
Povidone-iodine 10% w/v; antiseptic aqueous solution.
100ml bot: 30.00 MRP
❖ **VIODIN 10% Soln. Square**
Povidone-iodine 10% w/v: antiseptic aqueous solution.
15ml bot x 12's pack: 144.00 MRP
100ml bot x 1's pack: 36.00 MRP

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POVIDONE-IODINE: Cream/Ointment
Povidone-iodine antiseptic cream is available as 6% w/w & ointment as 5% w/w.
Ind: For the treatment and prevention of infections in cuts and abrasions, minor surgical procedures and burns; treatment of mycotic and bacterial skin infections, decubitus and stasis ulcers, pyodermas.
Use & Appli: The affected skin should be cleaned and dried, apply the cream or ointment liberally & then may be covered with a dressing or bandage; the ointment may be applied as often as is required.

❖ **APODIN Oint. Globe**
Povidone-iodine 5% w/w: ointment.
10gm tube: 15.00 MRP
❖ **ARODIN Oint. Aristopharma**
Povidone-iodine 5% w/w: ointment.
10gm tube: 15.00 MRP
25gm tube: 30.00 MRP
❖ **DONADIN 6% Cream Ibn Sina**
Povidone-iodine 6% w/w: cream
20gm tube: 25.00 MRP
❖ **POVIDINE 5% Oint. Alco Pharma**
Povidone-iodine 5% w/w: ointment.
15gm tube: 34.00 MRP
❖ **POVIN 5% Oint. Opsonin**
Povidone-iodine 5% w/w: ointment.
10gm tube: 15.00 MRP
❖ **POVISEP 6% Cream Jayson**
Povidone-iodine 6% w/w: cream
5gm tube: 10.60 IP
25gm tube: 33.00 IP
125gm tube: 117.00 IP
❖ **SAVEDIN 5% Cream Gaco**
Povidone-iodine 5% w/w: cream
25gm tube: 25.51 MRP
❖ **VIODIN 5% Oint. Square**
Povidone-iodine 5% w/w: ointment.
20gm tube: 25.00 MRP

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POVIDONE-IODINE: Antiseptic Powder
Povidone-iodine antiseptic powder is available as povidone-iodine USP 725mg/5gm of powder (or 14.5% w/w): Antiseptic powder for topical application.
Ind: Povidone-iodine antiseptic powder is used for the treatment of superficial wounds, minor cuts, minor skin infections, abrasions, laceration, burns etc.
Uses & appli: The affected skin should be cleaned and dried, apply the powder superficially to the site of infection, wounds, cuts or burns & then may be covered with a dressing or bandage; the powder may be applied as often as is required.

❖ **POVISEP Powder Jayson**
Povidone-iodine USP 725mg/5gm of powder (or 14.5% w/w): antiseptic powder for topical application.
10gm pack: 25.00 IP

POVIDONE-IODINE Surgical Scrub[21,33]

POVIDONE-IODINE: Surgical Scrub
Povidone-iodine 7.5% w/v with non-ionic surfactants: antiseptic aqueous solution.
Ind: Pre-operative scrubbing and washing by surgeon and operation theatre staff wherever a topical, microbicidal scrub is required; pre-operative antiseptic cleansing of patient's skin.
Use & Application:
1. For pre-operative washing by operating personnel- wet hands with water; pour about 5ml of solution onto the palm and spread over both the hands, without adding more water rub the scrub thoroughly over the entire area for about two minutes, use a brush if needd, clean thoroughly under fingernails, add a little water to develop copious suds, rinse thoroughly under running water.
2. For pre-operative use on patients- after the skin is shaved, wet it with water, apply the surgical scrub (1ml is sufficient to cover an area of 20-30 square inches) and rub thoroughly for minimum of two minutes. Then develop oa lather and rinse off with the aid of sterile gauze saturated with water. The area may then be painted with Povidone-iodine (10%) antiseptic solution and allowed to dry.

❖ **IOSOL Surgical Scrub UniHealth/UniMed**
Povidone-iodine 7.5% w/v with non-ionic surfactants: antiseptic aqueous solution.
100ml bot: 60.00 MRP
500ml container: 275.00 MRP
❖ **POVISEP Surgical Scrub Jayson**
Povidone-iodine 7.5% w/v with non-ionic surfactants: antiseptic aqueous solution.
250ml bot: 177.00 MRP

POVIDONE-IODINE Gargle & Mouthwash[21,33]

POVIDONE-IODINE
Gargle & Mouthwash: Solution
Povidone-iodine 1% w/v, a pleasant flavoured oral antiseptic solution for gargle and mouthwash.
Ind: For infected inflammatory conditions of the

mouth and pharynx caused by bacterial or monilial infections, and in dental surgery.
Use & Appli: adults & children- use undiluted or dilute with an equal volume of warm water, gargle or rinse for at least 30 seconds; repeat every 2 to 4 hours for as long as required.

❖ **ARODIN Gargle & Mouthwash Aristopharma**
Povidone-iodine 1% w/v: a pleasant flavoured oral antiseptic solution.
100ml bot: 25.00 MRP

❖ **HIDIN Gargle & Mouthwash Medicon**
Povidone-iodine 1% w/v: a pleasant flavoured oral antiseptic solution.
100ml bot: 25.00 MRP

❖ **POVIN Gargle & Mouthwash Opsonin**
Povidone-iodine 1% w/v: a pleasant flavoured oral antiseptic solution.
100ml bot: 25.00 MRP

❖ **POVISEP Gargle & Mouthwash Jayson**
Povidone-iodine 1% w/v: a pleasant flavoured oral antiseptic solution.
100ml bot: 25.00 MRP

❖ **SAVEDIN Gargle & Mouthwash Gaco**
Povidone-iodine 1% w/v: a pleasant flavoured oral antiseptic solution.
100ml bot: 19.00 MRP

❖ **VIODIN Gargle & Mouthwash Square**
Povidone-iodine 1% w/v: a pleasant flavoured oral antiseptic solution.
100ml bot: 25.00 MRP

CRYSTAL VIOLET/ GENTIAN VIOLET[21,33]

CRYSTAL VIOLET/ GENTIAN VIOLET: Aqueous Soln.
Crystal or gentian violet 0.5%, in purified water, freshly boiled & coold, to be used undiluted.
Ind: Topical application of solution on unbroken skin only (no longer recommended for application to mucous membrane or open wounds)- it is effective in superficial antifungal infection & also has some antibacterial role.
S/E: Mucosal ulcerations.
Cautions: Stains clothes & skin.
Use & application: Adult & child, apply once or twice daily on the lesions.

❖ **VIOLA Soln. Hudson**
Gentian violet (crystal violet) 2% lotion
60ml pack: 12.00 IP
100ml pack: 22.00 IP

❖ **VIOLA Lotion Kawsar Chemicals**
Gentian violet 1% & 2% lotion
I fl. oz. (1%):
I fl. oz. (2%):

❖ **VIOLA Lotion M.R Chemicals**
Gentian (crystal) violet 1% & 2% lotion
28ml (1%) soln:
28ml (2%) soln:

❖ **VIOLETE Lotion Kazi Chemical Co.**
Gentian (crystal) violet 1% lotion
28ml (1%) soln:

HYDROGEN PEROXIDE[21,33]

HYDROGEN PEROXIDE: Solution
Hydrogen peroxide 3% & 6% solutions.
Ind: Skin disinfection, particularly cleansing and deodorising wounds and ulcers.
Cautions: Large or deep wounrds; avoid normal skin; bleaches fabric.
Use & Appli: use during cleansing and deodorising wounds and ulcers as required.
Preparations: available in market.

POTASSIUM PERMANGANATE[21]

POTASSIUM PERMANGANATE: Solution
Potassium permanganate 0.1% solution in water; to be diluted 1 in 10 to provide a 0.01% solution.
Ind: Cleansing and deodorising, suppurating & eczematous reactions, infected skin conditions.
Cautions: Irritant to mucous membranes, stains skin and clothing.
Use: Wet dressings, bath, washing with approximate 0.01% solution.
Preparations: Available in market.

Misc. Preparations

❖ **PYRALVEX Drop Norgine/Lilac**[21,68]
Anthraquinone glycosides 5%, salicylic acid 1% solution; presented as drop for oral paint.
Ind: Relief of pain & inflammation in mild oral & peri-oral lesions.
Use: Apply 3-4 times daily on the surface lesions by using soft brush.
10ml pack (with brush): 240.00 MRP
(Price could not be revised)

15. DRESSING PRODUCTS FOR WOUNDS, BURN & ULCERS

❖ **MEDINAHL Wound Dressing Dermagenics Europe/UniMed**[144]
Medinahl is a honey-impregnated wound dressing material. The honey utilized has been specially selected for medical application. This means that the honey is free of pollutants and heavy metals. The wound dressing is inert and facilitates to the even delivery of honey to the wound bed. Medinahl does not interfere with the proper drainage of wound fluid.
Ind: *Acute wonds:* Burn, surgical wounds, traumatic wounds, Other acute wounds where fast epithelialisation is required
Chronic wounds: Leg ulcers, diabetic ulcers, decubitus ulcers (bed sore), in conjunction with corticosteroid use, radiation burn or radiation severe dermatitis.
Infected wounds: Medinahl may be applied in case of contaminated and infected chronic and acute wounds. Use appropriate systemic antibiotics whenever needed.
C/I: Medinahl is contra-indicated in patients with known allergy for honey.
S/E: Medinahl has been subjected to clinical tests, in the process of which no unfavourable side-effects have been detected.
Use & application: 1. Inspect the wound carefully. 2. If necessary, clean the wound. 3. Remove the cover foil. 4. Apply medinahl; ensure optimal contact with the wound bed by stroking down the surface of medinahl while applying light pressure. 5. Cover medinahl with a dressing. 6. In case of moist or oozing wounds, cover medinahl with an absorbent dressing. 7. Affix medinahl with the usual material, such as perforated adhesive tape or surgical paper tape.
***Removing Medinahl:* 1. Medinahl must be replaced every twenty-four hours. 2. Remove the covering dressing. 3. Remove medinahl. 4. Inspect the wound and rinse if necessary, preferably with normal saline.**
***Practical suggestions when replacing dressing:* Nedinahl has a yellowish aspect. Change the dressing when the honey is totally dissolved by the wound fluid. As the honey is being used up, medinahl gradually assumes the original whitish colour of the dressing material. Because of the sugars in medinahl, adhesion of the dressing to the wound bed is possible; moisturizing with lukewarm water will quickly dissolve these sugars, after which medinahl can be removed easily.**
In case of smaller wounds the dressing may be cut into pieces and remaining portion kept in refrigerator and used within 3 days.
At least 7 days therapy or use required to get full therapeutic benefit.
Storage: Medinahl is a gamma-sterilized product. It must be kept at room temperature in a dustproof designed for the storage of sterile medical supplies. It may also be kept in a refrigerator.
7 dressing in a box: 2100.00 MRP

16. COSMETIC TREATMENT OF FACIAL WRINKLES & FROWNING.

Mental and physical stress, squint into the harsh sun, mental concentration- all these expressions that we make repeatedly throughout the working time leave their mark on our faces, creating facial wrinkles and looking us older.
Although there is no cure for these wrinkles and frowning, a simple, nonsurgical procedure that can dramatically reduce these even within days. Recently a purified neurotoxin complex ***(Botulinum toxin type A)*** has been specially developed, which can be effectively used to improve this condition.

BOTULINUM TOXIN TYPE A[143]

❖ **BOTOX Inj. Allergan Pharma/City Overseas**
Botox is a natural, highly purified protien preparation of botulinum toxin type A, a neurotoxin complex, specially developed to treat the muscle rigidity that comes with cerebral palsy and for cosmetic treatment of facial wrinkles and frowning. It is available as botulinum toxin type A injection, 100units in vial.
Mode of action: Botox relaxes the tiny facial muscles that cause expression lines, leaving the overlying skin smooth and unwrinkled. Once the muscle is relaxed, one cannot contract it and

continue to make the undesirable facial expression. Thus, the lines gradually smooth out from disuse, and new creases are prevented from forming.
Botox works on the specific areas treated. Other muscles like those used to raise the eyebrows are not affected so a natural expression is maintained. It will not freeze one's facial expressions. It softens them and works where one wants it to.
Botox is equally effective on men and women.

Ind: 1. Cosmetic treatment of facial wrinkles and frowning. 2. Treatment of the muscle rigidity that comes with cerebral palsy (discussed before in the chapter of drugs used in neuromuscular disorders).
C/I: Known hypersensitivity to 'botulinum toxin type A'.

S/E: The most common side effects with this therapy are temporary and localised to the area of injection. These include- soreness or mild bruising, which can be easily covered with makeup, headache, and less commonly, an individual may develop a heavy eyelid lasting 1-4 weeks which the attending doctor may be able to treat. There have been no permanent side effects of Botox reported.
Precautions: Botox is not recommended for patients with a neuromuscular disease.
Pregnancy & lactation: Botox is not recommended during pregnancy or breast-feeding.
Dosage & admin: First, the doctor will determine exactly where to use Botox to achieve the best results. No anesthetic is required, although doctor may use ice before injecting. Treatment takes around 10 minutes. A tiny amount of Botox is placed in selected facial muscles via tiny injections using a very fine needle. Discomfort is minimal and brief, most patients describe it as an ant bite sting for a few seconds.
Most people resume normal activities immediately. After injection, it takes 2-3 days for Botox to begin taking effect and around 7 days to see the full effect.
Botox lasts for up to four months, depending on the individual. One can decide to repeat the procedure as he wishes. The result will wear off gradually and expression lines slowly return. To maintain the effect one requires repeating injections 2-3 times a year. Studies show that with repeated Botox treatment, the effect can last longer, so one may require less frequent treatment in the future to maintain the result as he likes.

Prospect & prognosis of botox therapy: Botox is used widely (in the western countries) for the elimination of frown lines between the eyebrows, horizontal forehead wrinkles, crows feet or smile lines around the eyes. It is also being used to lift the eyebrow and open up the eye for a more youthful appearance. Doctors have also reported good results in nasolabial folds between the nose and mouth, perioral lines (smokers lips), reducing neck lines and chin dimpling or creasing.
If an individual stops or discontinues treatment with botox, the lines will gradually revert to their pre-treatment oppearance. This may take 6 to 12 months. But there is no chance of worse looking.

Note: For more information please consult manufacturer's literature.
100 units vial x 1's pack: 26815.28 TP

Chapter-12
DRUGS USED IN ANAEMIAS & OTHER BLOOD DISORDERS

DRUGS USED IN ANAEMIAS & OTHER BLOOD DISORDERS

DRUGS DISCUSSED IN THIS CHAPTER INCLUDE:[21]

1. **Drugs used in Iron-deficiency anaemias**
   - **1.1 Oral iron prepns.**
   - **1.2 Parenteral iron prepns.**
   - **1.3 Misc. preparations: Desferrioxamine**
2. **Iron, Vitamin & Mineral combined prepns.**
   - **2.1 Iron & vitamin combined prepns.**
   - **2.2 Iron, vitamin & mineral combined prepns.**
3. **Drugs used in Megaloblastic anaemias**
4. **Drugs used in Haemolytic, hypoplastic & renal anaemias**
5. **Drugs used in Haemophilia**
6. **Drugs used in Autoimmune thrombocytopenic purpura**
7. **Drugs used in neutropenia**

1. *Iron Deficiency Anaemias*

1.1 Oral Iron preparations

Ferrous iron conc. in different iron salts:[21]

Iron Salt	Amount	Content of Ferrous iron
Ferrous fumarate	200 mg	65mg
Ferrous gluconate	300 mg	35mg
Ferrous succinate	100 mg	35mg
Ferrous sulphate	300 mg	60mg
Ferrous sulph. dried	200 mg	60mg

FERROUS FUMARATE[21,26,42,48,65]

FERROUS FUMARATE: Capsule/Suspension
Ferrous fumarate is an iron salt, in which 200mg ferrous salt contains 65mg elemental iron (or ferrous iron). It is available as capsule and suspension.
Ind: It is indicated for the prevention and treatment of iron deficiency anaemia. Prevention and treatment of iron deficiency anaemia before, during and after pregnancy and during lactation.
C/I: In conditions where there is a risk of iron overload e.g haemolytic anaemia, haemochromatosis, thalassemia or haemosiderosis. In case of hypersensitivity to iron or any other ingredients of the preparation.
S/E: This preparation is well tolerated. However, dark stools are usual during iron therapy, nausea and other symptoms of gastrointestinal irritation, such as anorexia, vomiting, discomfort, constipation and diarrhoea are sometimes encountered.
Precautions: Iron chelates with antacid and tetracycline and absorption of all these may be impaired if taken concurrently.

Pregnancy & lactation: Recommeded in pregnancy and lactation; but, during first trimester of pregnancy requires careful assessment of potential risk & benefit of the therapy and should not be administered unless clearly indicated.
Dosage & admin: Adult: Therapeutic- Ferrous iron, 120-180mg in single or divided doses; Prophylaxis- 60mg iron daily.
Child: Therapeutic- upto 1 year 36mg; 1-5 years 72mg; 6-12 years 120mg iron daily in divided doses.
Drug inter: Iron may decrease the absorption of tetracycline and quinolone antibiotics, levodopa, levothyroxine, methyldopa and penicillamine. On contrary, magnesium trisilicate, tetracycline and zinc salts reduce iron absorption from the gut.

❖ **FECAP Cap. Renata**
Ferrous fumerate BP: capsule
100's pack: 57.00 MRP
❖ **FERROSOBIN Cap. Seema**
Ferrous fumerate BP: capsule
100's pack: 57.00 MRP
❖ **FERROSOBIN Tab. Seema**
Ferrous fumerate BP 150mg/tablet
100's pack: 55.00 MRP

FERROUS GLUCONATE[21,48,52,56]

FERROUS GLUCONATE: Syrup
Ferrous gluconate is an iron salt, in which 300mg ferrous salt contains 35mg elemental iron (or ferrous iron). It is available as syrup.
Ind: It is indicated for the prevention and treatment of iron deficiency anaemia. Prevention and treatment of iron deficiency anaemia before, during and after pregnancy and during lactation.
C/I; S/E; Cautions: See above under 'ferrous fumerate' preparation.
Pregnancy & lactation: See above under 'ferrous fumerate' preparation.
Dosage & admin: Adult: Therapeutic- Ferrous iron, 120-180mg in single or divided doses; Prophylaxis- 60mg iron daily.

Child: Therapeutic- upto 1 year 36mg; 1-5 years 72mg; 6-12 years 120mg iron daily in divided doses.
Drug inter: See above under 'ferrous fumerate' preparation.

❖ **FERIDEX Syp. ACI**
Ferrous gluconate 300mg/5ml: syrup
200ml bot: 32.00 MRP
❖ **FERROSOBIN G Syp. Seema**
Ferrous gluconate 300mg/5ml: syrup
200ml bot: 32.00 MRP

FERROUS SULPHATE[21,48,65]

FERROUS SULPHATE: Tablet/ Capsule/ Syrup.
Ferrous sulphate is an iron salt, in which 300mg ferrous salt contains 60mg elemental iron (or ferrous iron). It is available as capsule and syrup.
Ind: It is indicated for the prevention and treatment of iron deficiency anaemia. Prevention and treatment of iron deficiency anaemia before, during and after pregnancy and during lactation.
C/I; S/E; Cautions: See above under 'ferrous fumerate' preparation.
Pregnancy & lactation: See above under 'ferrous fumerate' preparation.
Dosage & admin: Adult: Therapeutic- Ferrous iron, 120-180mg in single or divided doses; Prophylaxis- 60mg iron daily.
Child: Therapeutic- upto 1 year 36mg; 1-5 years 72mg; 6-12 years 120mg iron daily in divided doses.
Drug inter: See above under 'ferrous fumerate' preparation.

❖ **ARISTOFERON Syp. Beximco**
Ferrous sulphate 200mg/5ml: syrup
200ml bot: 26.19 MRP
❖ **BIORON Syp. Bio-pharma**
Ferrous sulphate 200mg/5ml: syrup
200ml bot: 26.00 MRP
❖ **DYAFERON Syp. Doctor's**
Ferrous sulphate BP 200mg/5ml: syrup
200ml bot: 25.00 MRP
❖ **FECON-H Syp. Alco Pharma**
Ferrous sulphate BP 200mg/5ml: syrup
200ml bot: 25.28 MRP
❖ **FEMETON Syp. Medicon**
Ferrous sulphate BP 200mg/5ml: syrup
200ml bot: 24.00 MRP
❖ **FEOTON Syp. Chemico**
Ferrous sulphate BP 200mg/5ml: syrup
200ml bot: 25.00 MRP
❖ **FERIGUN Syp. Medimet**
Ferrous sulphate 200mg/5ml: syrup
200ml bot: 23.50 MRP
❖ **FEROCIN Syp. Jayson**
Ferrous sulphate 200mg/5ml: syrup
200ml bot: 24.10 MRP
❖ **FEROLET Syp. Elixir**
Ferrous sulphate 200mg/5ml
200ml bot:
❖ **FEROMAT Syp. Pharmadesh**
Ferrous sulphate 200mg/5ml: syrup.
200ml bot: 25.90 MRP
❖ **FEROPLUS Syp. Pacific**
Ferrous sulphate 200mg/5ml: syrup
200ml bot: 26.00 MRP
❖ **FERROGLOBIN Syp. Acme**
Ferrous sulphate 200mg/5ml: syrup
200ml bot: 26.00 MRP
❖ **FERROSOBIN Syp. Seema**
Ferrous sulphate 200mg/5ml: syrup
200ml bot: 24.00 MRP
❖ **FERRUM Syp. Modern**
Ferrous sulphate 200mg/5ml: syrup
200ml bot: 24.89 MRP
❖ **FE-SOL Syp. Rasa Pharma**
Ferrous sulphate BP 200mg/5ml: syrup
200ml bot: 23.00 MRP
❖ **FETON Syp. Gaco**
Ferrous sulphate BP 200mg/5ml: syrup
100ml bot: 24.79 MRP
❖ **G-IRON Syp. Gonoshas**
Ferrous sulphate 200mg/5ml: syrup
200ml bot: 24.27 MRP
❖ **HEMATOL Syp. Nipa**
Ferrous sulphate 200mg/5ml: syrup
200ml bot: 26.10 MRP
❖ **HEMOBIN Syp. Zenith**
Ferrous sulphate 200mg/5ml: syrup
100ml bot: 18.00 MRP
200ml bot: 24.00 MRP
❖ **POLYTON Syp. Skylab**
Ferrous sulphate 200mg/5ml: syrup
100ml bot: 11.50 MRP
200ml bot: 19.75 MRP
200ml bot (sugar free): 35.00 MRP
❖ **SALFERON Syp. Salton**
Ferrous sulphate 200mg/5ml: syrup
200ml bot: 24.00 MRP
❖ **SINAFERON Syp. Ibn Sina**
Ferrous sulphate 200mg/5ml: syrup
200ml bot: 25.28 MRP

NON-IONIC IRON PREPNS: IRON (III) HYDROXIDE POLYMALTOSE COMPLEX[26,42]

IRON (III) HYDROXIDE POLYMALTOSE COMPLEX: Syrup
Iron (III) polymaltose complex is an iron preparation, which contains non-ionic ferric iron and polymaltose in a stable complex. It is available in two forms, viz: 1. Syrup- each 5ml contains iron (III) hydroxide polymaltose complex INN 200mg equivalent to 50mg of elemental iron.
2. Paediatric drop- each lml contains iron (III) hydroxide polymaltose complex INN 200mg equivalent to 50mg of elemental iron.
Mode of action: This complex preparation of non-ionic ferric iron and polymaltose facilitates a controlled absorption of the ferric iron when it comes in contact with the mucosal cell surface. Being non-ionic, it does not release any free radicals and thus takes care of all the toxic effects found due to the release of free radicals by the traditional ionized iron salt preparations. It does not interact with the food components and other medications and so, unlike ferrous salts, there is no decrease in bioavailability of 'iron polymaltose complex'. This makes sure that with the consumption of this complex, iron gets utilized at a faster rate in the haemoglobin and myoglobin synthesis.
Ind: Treatment of latent iron deficiency and iron deficiency anaemia including macrocytic anaemia, nutritional anaemia of infants, anaemia due to excessive haemorrhage and anaemia associated with infections and malignant disease. Prevention and treatment of iron deficiency anaemia before, during and after pregnancy and during lactation. For prophylactic therapy of iron deficiency to cover the recommended daily dietary allowances (RDA).
C/I: In conditions where there is a risk of iron overload e.g haemochromatosis, thalassemia or haemosiderosis. In case of hypersensitivity to iron or any other ingredients of the syrup.
S/E: This preparation is well tolerated. However, oral administration of iron preparations sometimes causes gastro-intestinal irritation with nausea, vomiting and diarrhoea. Continued administration may sometimes produce constipation. The faeces may be colored black.
Precaution: No significant precautionary measure is necessary except in case of overdose (see below).
Pregnancy & lactation: Recommeded in pregnancy and lactation; but, during first trimester of pregnancy requires careful assessment of potential risk & benefit of the therapy and should not be administered unless clearly indicated.
Dosage & admin:
Syrup: Adults- 5ml to 10ml 2 to 3 times daily. Children (6-12 years)- 5ml to 10ml once or twice daily; Children (2-6 years)- 5ml once or twice daily; Infants (5-10kg)- 2.5ml to 5ml once daily.
Paediatric drop: Infants (5-10kg)- 0.5ml to 1ml (or 8 to 15 drops) once daily. Premature infants (less than 1.5kg)- 3mg of elemental iron (or 0.06ml)/kg body weight daily in 2 to 3 divided doses.
All doses to be taken immediately after meal. Duration of therapy depends upon the extent of iron deficiency and should be taken as directed by the physician.
Overdosage: In case of overdosage, initially epigastric pain, diarrhoea and vomiting can occur and may include metabolic acidosis, convulsions and coma after apparent recovery. Should seek emergency medical attention in case of overdose. Initially an emetic should be given and then gastric lavage and general supportive measures should be employed.
Drug inter: Generally no interactions have been observed. Since, the iron is complex bound, ionic interactions with foodstuff components (phytates, oxalates, tannin, etc.) and concomitantly administered therapies (tetracycline, antacids) are unlikely to occur.

❖ **ANERON Syp. Orion**
Each 5ml of syrup contains iron (III) hydroxide polymaltose complex INN 200mg equivalent to 50mg of elemental iron: syrup
100ml bot: 30.00 MRP
200ml bot: 50.00 MRP
❖ **COMPIRON Syp. Incepta**
Each 5ml of syrup contains iron (III) hydroxide polymaltose complex INN 200mg equivalent to 50mg of elemental iron: syrup
50ml bot: 20.00 MRP
200ml bot: 50.00 MRP

❖ **COMPIRON Paed. Drop Incepta**
Each 1ml of drop contains iron (III) hydroxide polymaltose complex INN 200mg equivalent to 50mg of elemental iron: paediatric drop.
30ml drop: 30.00 MRP

❖ **IPEC Syp. Aristopharma**
Each 5ml of syrup contains iron (III) hydroxide polymaltose complex INN 200mg equivalent to 50mg of elemental iron: syrup
100ml bot: 30.00 MRP

❖ **POLIMINE Paed. Syp. Asiatic**
Each 5ml of syrup contains iron (III) hydroxide polymaltose complex INN 200mg equivalent to 50mg of elemental iron: syrup
50ml bot: 20.00 MRP

❖ **POLYFERON Syp. Chemist**
Each 5ml of syrup contains iron (III) hydroxide polymaltose complex INN 200mg equivalent to 50mg of elemental iron: syrup
50ml bot: 20.00 MRP
200ml bot: 50.00 MRP

❖ **POLYRON Syp. ACI**
Each 5ml of syrup contains iron (III) hydroxide polymaltose complex INN 200mg equivalent to 50mg of elemental iron: syrup
100ml bot: 25.00 MRP

❖ **POLYRON Syp. Square**
Each 5ml of syrup contains iron (III) hydroxide polymaltose complex INN 200mg equivalent to 50mg of elemental iron: syrup
100ml bot: 30.00 MRP

1.2 Parenteral Iron Prepns.

IRON DEXTRAN[21,112]

IRON DEXTRAN: Injection
Contains 5% (50mg/ml) of iron.
Ind: Severe iron deficiency amaemia (where oral therapy is failed; such failure may be due to lack of patient's cooperation with oral treatment, continuing severe blood lose or malabsorption, and the need for rapid cure of anaemia); intolerance to oral iron.
C/I: Non-iron deficiency anaemia (e.g haemolytic anaemia); Iron overload or disturbances in utilisation of iron (e.g haemochromatosis, haemosiderosis); Cardiac abnormalities (e.g angina, arrhythmia); History of asthma, eczema or other atopic allergy; Decompensated liver cirrhosis and hepatitis; Known drug hypersensitivity; Acute or chronic infections; Rheumatoid arthritis; Acute renal failure
A/R: Approximately 5% can be expected to experience adverse reactions. Immediate reactions are reported instantly such as, staining of skin if leakage along needle track, transient nausea, vomiting, flushing & occasionally severe dyspnoea. Acute, severe anaphylactoid reactions are very rare (<1/100).
Late side effects/reactions are less likely to be reported, because the relationship to the drug is often unclear.
Precautions: When given by slow i.v.infusion patient should be under observation the whole time and for an hour afterwards. Antihistamines should be available. Caution in patients with a history of allergic conditions.
Dosage & admin: Normal recommended dosage is 100-200mg two or three times a week depending on haemoglobin level. If rapid delivery of iron is required, a total dose infusion of up to 20mg/kg can be given.
***Administration:* By intravenous drip infusion or slow intravenous injection. May be given as dosage schedule mentioned above, or the total requirement may be given as a single dose infusion by slow i.v drip over 6-8 hours at a rate not exceeding 1ml/min (provided that there is no reaction within 30 minutes of administration of a 0.5ml i.v test dose).**
***Calculation of "Total Dose":* The total dose required for an individual patient can be calculated by his body weight and haemoglobin level.**
Thus, Iron required in mg= 0.3 x body wt. in lb x Hb deficit(%).
In pregnant patient an additional 500mg should be given with the above calculated dose.

❖ **COSMOFER Inj. PharmaCosmos a/s/Tajarat**
Iron dextran solution, containing iron 50mg/ml; 2ml ampoule: injection
2ml (100mg) ampoule x 5's pack:

IRON SUCROSE[133]

IRON SUCROSE: Injection
Iron sucrose injection USP equivalent to 100mg elemental iron in 5ml ampoule (i.e 20mg/ml). It may be given parenteraly by direct slow i.v injection or by i.v infusion.
Ind: Where there is a clinical need for a rapid iron supply, in patients who cannot tolerate oral iron therapy or who are non-compliant, in active inflammatory bowel disease where oral iron preparations are ineffective. Non-dialysis dependent-chronic kidney disease (NDD-CKD) patients receiving an erythropoietin, Non-dialysis dependent-chronic kidney disease (NDD-CKD) patients not receiving an erythropoietin, hemodialysis dependent-chronic kidney disease (HDD-CKD) patients receiving an erythropoietin, peritoneal dialysis dependent-chronic kidney disease (PDD-CKD) patients receiving an erythropoietin, patients undergoing surgical procedures, patients donating blood, postpartum.
C/I: The use of iron sucrose is contraindicated in patients with evidence of iron overload, in patients with known hypersensitivity to iron sucrose or any of its ingredients, and in patients with anemia not caused by iron deficiency. It is also contraindicated in patients with history of allergic disorders including asthma, eczema and anaphylaxis, liver disease and infections.
S/E: Hypotension, cramps/leg cramps, nausea, vomiting, and diarrhea, headache, fever, pain, asthenia, unwell, malaise, accidental injury, chest pain, hypertension, hypervolemia, abdominal pain, elevated liver enzymes. Mild or moderate hypersensitivity reactions presenting with wheezing, dyspnea, hypotension, rashes, or pruritus. Anaphylactoid reactions (anaphylactic shock, loss of consciousness or collapse, bronchospasm with dyspnea, or convulsion) associated with iron sucrose administration can occur.
Precautions: Do not mix iron sucrose with other medications or add to parenteral nutrition solutions for i.v infusion. Parenteral drug products should be inspected visually for particulate matter and discoloration prior to administration, whenever the solution and container permit.
Pregnancy & lactation: This drug should be used during pregnancy only if clearly needed. Caution should be exercised when iron sucrose is administered to a nursing woman.
Dosage & admin: ***Direct i.v administration:* Iron sugar injection can be administered undiluted by slow i.v injection at the (normal) recommended rate of 1ml iron sucrose (20mg iron)/minute (5ml iron sucrose i.e 100mg iron in 2 to 5 minutes). A maximum of 10ml iron sucrose (200mg iron) can be injected/episode.**
***By i.v infusion:* Iron sucrose should preferably be administered by drip infusion (in order to reduce the risk of hypotensive episodes and paravenous injection) in a dilution of 1ml iron sucrose (20mg iron) in maximum 20ml 0.9% w/v sodium chloride (5ml or 100mg iron) in maximum 100ml 0.9% w/v sodium chloride e.t.c up to 25ml (500mg iron) in maximum 500ml 0.9% w/v sodium chloride.**
***Dilution must take place immediately prior to infusion & the solution should be administered as follows:* 100mg iron in at least 15 minutes; 200mg iron in at least 30 minutes; 300mg iron in at least 1.5 hours; 400mg iron in at least 2.5 hours and 500mg iron in at least 3.5 hours. For the administration of the maximum tolerated single dose of 7mg iron/kg body weight, an infusion time of at least 3.5 hours has to be respected, independently of the total dose. Injection into dialyser: Iron sucrose may be administered directly into the venous limb of the dialyser under the same conditions as for i.v injection.**
***Normal dosage:* Adults & elderly: 5-10ml iron sucrose (100-200mg iron) once to three times a week depending on the hemoglobin level. Children: There is limited data on children under study conditions. If there is a clinical need, it is recommended not to exceed 0.15 ml iron sucrose (3mg iron)/kg body weight once to three times per week depending on the hemoglobin level.**
***Hemodialysis dependent-chronic kidney disease patients (HDD-CKD):* Iron sucrose may be administered undiluted as a 100mg slow i.v injection over 2 to 5 minutes or as an infusion of 100mg, diluted in a maximum of 100ml of 0.9% sodium chloride over a period of at least 15 minutes per consecutive hemodialysis session for a total cumulative dose of 1,000mg.**
***Non-dialysis dependent- Chronic kidney disease patients (NDD-CKD):* Iron sucrose is administered as a total cumulative dose of 1,000mg over a 14 day period as a 200mg slow i.v injection undiluted over 2 to 5 minutes on 5 different occasions within the 14 day period.**
***Peritoneal dialysis dependent- Chronic kidney disease patients (PDD-CKD):* Iron sucrose is administered as a total cumulative dose of 1,000mg in 3 divided doses, given by slow i.v infusion, within a 28 day period: 2 infusions of 300mg over 1.5 hours 14 days apart followed**

by one 400mg infusion over 2.5 hours 14 days later. The iron sucrose dose should be diluted in a maximum of 250ml of 0.9% sodium chloride.

Calculation of dosage: **The dosage has to be individually adapted according to the total iron deficit calculated with the following formula: Total iron deficit [mg] = body weight [kg] x (target Hb - actual Hb) [g/l] x 0.24* + depot iron [mg].**
Up to 35kg body weight: target Hb = 130g/l resp. depot iron = 15mg/kg body weight.
Above 35kg body weight: target Hb = 150g/l resp. depot iron = 500mg.
***Factor 0.24=0.0034x0.07x1000 (iron content of haemoglobin 0.34%/Blood volume 7% of body weight/factor 1000 = conversion from gm to mg).**

Total amount of iron sucrose to be admin (in ml)

$$= \frac{\text{Total iron deficit [mg]}}{\text{20mg/ml}}$$

(1 ampoule of iron sucrose corresponds to 5ml).

Overdosage: Overdosage can cause acute iron overloading wich may manifests itself as haemosiderosis. Symptoms associated with overdosage or infusing iron sucrose too rapidly included hypotension, headache, vomiting, nausea, dizziness, joint aches, paresthesia, abdominal and muscle pain, edema, and cardiovascular collapse. Overdosage should be treated with supportive measures and, if required, an iron chelating agent. Most symptoms have been successfully treated with i.v fluids, hydrocortisone, and/or antihistamines. Infusing the solution as recommended or at a slower rate may also alleviate symptoms.

Drug inter: Involving iron sucrose have not been studied. Iron sucrose injection should not be administered concomitantly with oral iron preparations since the absorption of oral iron is reduced. Even oral iron sucrose should not be given until 5 days after last injection.

❖ **HEMOFER Inj. Popular**
Iron sucrose injection USP equivalent to 100mg elemental iron in 5ml ampoule (i.e 20mg/ml). It may be given parenteraly by direct slow i.v injection or by i.v infusion.
5ml (100mg) ampoule x 2's pack: 600.00 MRP

❖ **VENOFER Inj. Vifor International/UniMed**
Iron sucrose injection USP equivalent to 100mg elemental iron in 5ml ampoule (i.e 20mg/ml). It may be given parenteraly by direct slow i.v injection or by i.v infusion.
5ml (100mg) ampoule x 5's pack: 1610.75 MRP

❖ **XENOFER Inj. Beacon**
Iron sucrose injection USP equivalent to 100mg elemental iron in 5ml ampoule (i.e 20mg/ml). It may be given parenteraly by direct slow i.v injection or by i.v infusion.
5ml (100mg) ampoule x 2's pack: 600.00 MRP

1.3 Misc. Preparations

DEFERASIROX[54]

❖ **ASUNRA Dis. Tab. Novartis**
Deferasirox 100mg & 400mg/tablet (dispersible).
Ind: For adults & paediatric patients aged 2 years & over with chronic iron overload due to blood transfusions (transfusional haemosiderosis).
C/I: Hypersensitivity to deferasirox or to any of the excipients.

A/R: *Most common adverse reactions*: Nausea, vomiting, diarrhoea, abdominal pain, rash, non-progressive increase in serum creatinine, increased transaminases, abdominal distension, constipation, dyspepsia, proteinuria, headache. *Less common adverse reactions but potentially serious:* Acute renal failure, hypersensitivity reactions (including anaphylaxis & angioedema), renal tubulopathy, severe skin rash, maculopathy, hepatitis, hepatic failure, leukocytoclastic vasculitis, urticaria, optic neuritis, gastrointestinal haemorrhage, gastric ulcer (including multiple ulcers), duodenal ulcer, gastritis, oesophagitis. As with other iron chelating therapy, high-frequency hearing loss and early cataracts have been uncommonly observed.

Precautions & warnings: *Monthly monitoring of serum creatinine and proteinuria:* Dose reduction may be needed in some cases of non-progressive increase in serum creatinine; Asunra should be interrupted if serum creatinine shows a progressive rise beyond the age appropriate upper limit of normal. More frequent creatinine monitoring recommended in patients with an increased risk of renal complications. *Monitoring of serum transaminases, bilirubin and alkaline phosphatase:* Before the initiation of treatment, every 2 weeks during the first month and monthly thereafter. Asunra should be interrupted if persistent and progressive unattributable increase in serum transaminases levels. Postmarketing cases of hepatic failure have been reported. Asunra has not been studied in patients with renal and hepatic impairment and should be used with caution in such patients. *Gastrointestinal irritation may occur:* Upper gastrointestinal ulceration and haemorrhage have been reported in patients, including children and adolescents. Multiple ulcers have been observed. *In some patients skin rashes:* Asunra should be interrupted if severe rash develops, discontinue if severe hypersensitivity reaction occurs. Annual ophthalmological/audiological testing. Must not be combined with other iron chelating therapies and product contains lactose.

Pregnancy & lactation: Deferasitox should not be used during pregnancy unless clearly necessary; not recommended when breast-feeding.

Dosage & admin: ***Starting daily dose:*** **Recommended initial daily dose is 20mg/kg body weight; consider 30mg/kg for patients receiving >14 ml/kg/month of packed red blood cells (>4 units/month), and for whom the objective is reduction of iron overload; consider 10mg/kg for patients receiving <7 ml/kg/month of packed red blood cells (<2 units/month), and for whom the objective is maintenance of the body iron level; for patients already well-managed on treatment with deferioxamine, consider a starting dose of Asunra that is numerically half that of the deferioxamine dose. Asunra must be taken once daily on an empty stomach at least 30 minutes before food. Asunra tablets to be dispersed in water or apple or orange juice. Monthly monitoring of serum ferritin for assessing patient's response to therapy is necessary. Maintenance daily dose to be adjusted if necessary every 3 to 6 months based on serum ferritin trends. Dose adjustments should be made in steps of 5 to 10mg/kg. In patients not adequately controlled with doses of 30mg/kg, doses of up to 40mg/kg may be considered. In patients whose serum ferritin level has reached the target (usually between 500 and 1000mcg/l), dose reductions in steps of 5 to 10mg/kg should be considered to maintain serum ferritin levels within the target range. Asunra should be interrupted if serum ferritin falls consistently below 500mcg/l. Maximum daily dose is 40mg/kg body weight.**

Drug inter: Should not be taken with aluminium-containing antacids. Caution when combined with drugs metabolised through CYP3A4 (e.g. cyclosporin, simvastatin, hormonal contraceptive agents). Increases in the dose of Asunra® should be considered when concomitantly used with potent UGT inducers (e.g. rifampicin, phenytoin, phenobarbital, ritonavir). Careful monitoring of glucose levels should be performed when repaglinide is used concomitantly with Asunra®. An interaction between Asunra® and other CYP2C8 substrates like paclitaxel cannot be excluded. Caution when combined with drugs with ulcerogenic potential (e.g. NSAIDS, corticosteroids, oral bisphosphonates) or with anticoagulants.

Note: For further information, consult full prescribing information.
100mg x 30's pack: 1239.00 MRP
400mg x 30's pack: 4963.00 MRP

DESFERRIOXAMINE[21,54]

DESFERRIOXAMINE MESYLATE: Injection
Desferrioxamine mesylate 500mg/vial: powder for injection in vial.

Ind: Acute iron poisoning. Haemochromatoses (as iron chelating agent used along with repeated blood transfusion therapy e.g in case of Thalassemia); Aluminium overload in dialysis patient.

S/E: Gastrointestinal disturbances, arrhythmias, hypotension (especially when given too rapidly by i.v.injection); anaphylaxis; dizziness, convulsion, disturbances of hearing and vision. Skin reaction & pain on intramuscular injection.

Precautions: Impaired renal function.

Dosage & admin: Subcutaneous infusions of desferrioxamine (20-40 mg/kg over 12 hours) are given on 5 to 7 nights each week. It may also be given through the infusion line at the time of blood transfusion (up to 2gm per unit of blood).

Preparation: Desferal injection of Novartis, now not available in Bangladesh.

❖ **DESFERAL Inj. Novartis**
Desferrioxamine mesylate 500mg/vial: powder for injection in vial.
500mg vial x 10's pack: 2189.00 MRP

2.1 Iron & Vitamin Combined prepns.

FERROUS FUMARATE + FOLIC ACID[48.65]

FERROUS FUMARATE + FOLIC ACID: Capsule/tablet/suspension.
This is a combination formulation of iron, ferrous fumarate and folic acid.
Ferrous fumarate is an iron salt, in which 200mg ferrous salt contains 65mg elemental iron (or ferrous iron). This combined preparation is available as capsule, tablet and suspension.
Ind: This combined iron and folic acid preparation is indicated for the prevention and treatment of iron deficiency anaemia. Prevention of iron and folic acid deficiency before, during and after pregnancy (i.e lactation), by providing the recommended daily dietary allowances (RDA).
C/I: It is contraindicated in patients with a known hypersensitivity to any of the ingredients. Iron therapy is contraindicated in the presence of haemolytic anaemia.
S/E: Allergic sensitization has been reported following oral administration of folic acid. Oral iron preparation may cause constipation, particularly in older patients, occasionally leading to faecal impaction.
Precautions: Iron chelates with antacid and tetracycline and absorption of all these may be impaired if taken concurrently.

Pregnancy & lactation: Use of any drug during the first trimester should be avoided if possible. Thus administration of iron during the first trimester requires definite evidence of iron deficiency. Prophylaxis of iron deficiency where inadequate diet calls for supplementary iron & folic acid is justified during the remainder of pregnancy.

Dosage & admin: Dosage and duration of therapy depend upon the extent of iron deficiency and should be taken as directed by the physician. The usual therapeutic dosage of elemental iron for adults is 50-100mg 2 to 3 times daily.
Iron therapy should continue for 3-6 months after restoration of normal hematologic values in order to replenish iron stores.

Drug inter: Iron preparation may decrease the absorption of tetracycline and quinolone antibiotics, levodopa, levothyroxine, methyldopa and penicillamine. Folic acid interacts with antiepileptics, so plasma concentrations of phenobarbital, phenytoin and primidone are possibly reduced.

❖ **ALIC Tab. Hudson**
Ferrous fumerate 200mg + folic acid 350mcg/tablet
100's pack: 25.00 MRP
❖ **ARISTOFOL-Fe Tab. Beximco**
Ferrous fumerate 200mg + folic acid 0.5mg/tablet
100's pack: 38.00 MRP
❖ **FECAP Cap. Renata**
Ferrous fumerate 200mg + folic acid 0.5mg/capsule.
100's pack: 57.00 MRP
❖ **FECON-H Cap. Alco Pharma**
Ferrous fumarate 200mg + folic acid 0.2mg/capsule
100's pack: 50.00 MRP
❖ **FEMICAP Cap. Jayson**
Ferrous fumarate 200mg + folic acid 200mcg/capsule.
100's pack: 51.00 MRP
❖ **FEMITAB Tab. Jayson**
Ferrous fumarate 200mg + folic acid 200mcg/tablet.
100's pack: 32.00 MRP
500's pack: 160.00 MRP
❖ **FEOLET Cap. Chemico**
Ferrous fumerate 200mg + folic acid 0.2mg/capsule
100's pack: 50.00 MRP
❖ **FePLUS Cap. Square**
Ferrous fumerate 200mg + folic acid 0.2mg/capsule
100's pack: 54.00 MRP
❖ **FERIFOL-SR Tab. Gaco**
Ferrous fumerate with folic acid BP: tablet (sustained release).
100's pack: 230.55 MRP
❖ **FERIGUN Cap. Medimet**
Ferrous fumerate 200mg + folic acid 0.5mg/capsule.
100's pack: 54.00 MRP
❖ **FEROCIT Tab. Acme**
Ferrous fumerate 200mg + folic acid 200mcg/tablet
100's pack: 18.00 MRP
❖ **FEROSON-TR Cap. Hudson**
Ferrous fumerate with folic acid BP: capsule (timed release).
100's pack: 210.00 MRP
❖ **FEROSON Susp. Hudson**
Ferrous fumerate with folic acid BP: suspension
200ml bot: 27.00 MRP
❖ **FERRUM Tab. Modern**
Ferrous fumerate 200mg + folic acid 200mcg/tablet
100's pack: 18.00 MRP
❖ **FIT-Plus Tab. Rephco**
Ferrous fumerate 200mg + folic acid 400mcg/tablet
100's pack: 25.00 MRP
250's pack: 62.50 MRP
500's pack: 125.00 MRP
❖ **G-IRON FOLIC ACID Tab. Gonoshas.**
Ferrous fumerate 200mg + folic acid 350mcg/tablet
100's pack: 18.00 MRP
1000's pack: 130.00 MRP
❖ **HEMOFOL TR Cap. Benham**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (timed release)
50's pack: 118.00 MRP
❖ **IROFOL Susp. General**
Ferrous fumerate with folic acid BP: suspension
200ml bot: 32.06 MRP
❖ **SINAFERON Cap. & Tab. Ibn Sina**
Ferrous fumarate with folic acid BP: capsule & tablet
100's pack (cap): 57.00 MRP
100's pack (tab): 19.00 MRP

FERROUS SULPHATE + FOLIC ACID[48.65]

FERROUS SULPHATE + FOLIC ACID: Capsule/syrup.
This is a combination formulation of iron, ferrous sulphate and folic acid.
Ferrous sulphate is an iron salt, in which 300mg ferrous salt contains 60mg elemental iron (or ferrous iron). This combined preparation is available as capsule and syrup.
Ind: This combined iron and folic acid preparation is indicated for the prevention and treatment of iron deficiency anaemia. Prevention of iron and folic acid deficiency before, during and after pregnancy (i.e lactation), by providing the recommended daily dietary allowances (RDA).
C/I; S/E; Precautions: See above under the text of 'ferrous fumerate + folic acid' preparation.
Pregnancy & lactation: See above under the text of 'ferrous fumerate + folic acid' preparation.
Dosage & admin: Dosage and duration of therapy depend upon the extent of iron deficiency and should be taken as directed by the physician. The usual therapeutic dosage of elemental iron for adults is 50-100mg 2 to 3 times daily.
Iron therapy should continue for 3-6 months after restoration of normal hematologic values in order to replenish iron stores.
Drug inter: See above under the text of 'ferrous fumerate + folic acid' preparation.

❖ **BIORON Plus Cap. Biopharma**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (timed release)
30's pack: 87.00 MRP
❖ **CPFERO TR Cap. Cosmo Pharma**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (timed release)
50's pack: 116.00 MRP
❖ **DIFOL-TR Cap. Desh**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (timed release)
60's pack: 144.00 MRP
❖ **FECON-TR Cap. Alco Pharma**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (timed release)
30's pack: 72.00 MRP
❖ **FEF-TR Cap. Navana**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (timed release)
60's pack: 138.00 MRP
❖ **FEOFOL-TR Cap. SK+F**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (timed release)
90's pack: 216.00 MRP
❖ **FEOL TR Cap. Medicon**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (timed release)
30's pack: 90.00 MRP
❖ **FERIDEX-TR Cap. ACI**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (timed release)
30's pack: 69.89 MRP
❖ **FERIFOL Tab. Gaco**
Ferrous sulphate 200mg + folic acid BP/tablet.
100's pack: 23.25 MRP
❖ **FEROCIT TR Cap. Acme**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (timed release)
50's pack: 119.50 MRP
❖ **FERAFOL-SR Cap. Chemist**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (sustained release)
30's pack: 72.00 MRP

❖ **FEROPLUS-TR Cap. Pacific**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (timed release)
32's pack: 75.84 MRP

❖ **FEROSON-TR Cap. Hudson**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (timed release)
100's pack: 210.00 MRP

❖ **FEROSPAN Cap. Drug Inter.**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (timed release)
100's pack: 240.00 MRP

❖ **FERO-TR Cap. Amico**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (timed release)
30's pack: 71.10 MRP

❖ **FERRITIN-TR Cap. Ambee**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (timed release)
30's pack: 66.90 MRP

❖ **FERROLIN Tab. Orion**
Ferrous sulphate 200mg + folic acid BP/ tablet.
100's pack: 15.00 MRP

❖ **FERRON-TR Cap. Kumudini**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (timed release)
100's pack: 240.00 MRP

❖ **F+F Cap. Zenith**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (timed release)
100's pack: 119.50 MRP

❖ **FOLEX TR Cap. General**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (timed release)
50's pack: 118.50 MRP

❖ **FOLIFEX TR Cap. Globe**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (timed release)
30's pack: 71.10 MRP

❖ **FOLIN-SR Cap. Somatec**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (sustained release).
30's pack: 71.10 MRP

❖ **HEMO Cap. Proteety**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (time release).
20's pack: 48.00 MRP

❖ **IFA-TR Cap. UniHealth/UniMed**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (time release).
30's pack: 72.00 MRP

❖ **IROPLUS Cap. Skylab**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (time release).
30's pack: 72.00 MRP

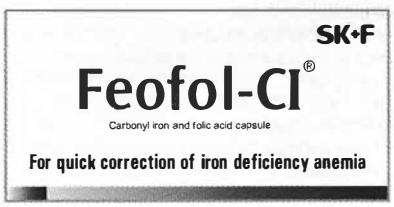
❖ **ITOP Cap. Pharmasia**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (time release).
30's pack: 60.00 MRP

❖ **METAPLUS TR Cap. Millat**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (time release).
50's pack: 118.00 MRP

❖ **SUPRAFOL TR Cap. Supreme**
Ferrous sulphate 150mg + folic acid 0.5mg/capsule (time release).
30's pack: 69.00 MRP

CARBONYL IRON + FOLIC ACID[48,65]

CARBONYL IRON + FOLIC ACID: Capsule
This is a combination formulation of iron and folic acid. Each capsule contains 51mg of carbonyl iron (50mg elemental iron) and folic acid USP 500mcg.
Carbonyl iron is a form of the mineral iron, that is produced by thermal decomposition of iron pentacarbonyl Fe(CO)5, which is previously highly purified by distillation. Carbonyl iron capsule contains pure iron micro particles with not less than 98% iron content. This advanced formula is specially designed to be gentle on the stomach, well absorbed by the body, high bioavailability and low toxicity. Thus, it offers an enhanced safety in case of an accidental overdose.
Ind: This combined preparation is indicated for the prevention and treatment of iron deficiency anaemia. Prevention of iron and folic acid deficiency before, during and after pregnancy (i.e lactation), by providing the recommended daily dietary allowances (RDA).
C/I; S/E; Precautions: See above under the text of 'iron + folic acid' preparation.
Pregnancy & lactation: See above under the text of 'iron + folic acid' preparation.
Dosage & admin: Adult: One capsule daily before food or as advised by the physician.
Drug inter: Carbonyl iron may decrease the absorption of tetracycline and quinolone antibiotics, levodopa, levothyroxine, methyldopa and penicillamine. Folic acid interacts with antiepileptics, so plasma concentrations of phenobarbital, phenytoin and primidone are possibly reduced.



❖ **FEOFOL-CI Cap. SK+F**
Carbonyl iron 51mg (elemental iron 50mg) and folic acid USP 500mcg/capsule.
30's pack: 75.00 MRP

❖ **PREGMIN Cap. Rangs Pharma**
Carbonyl iron 51mg (elemental iron 50mg) and folic acid USP 500mcg/capsule.
50's pack: 120.00 MRP

IRON POLYMALTOSE + FOLIC ACID[48,65]

IRON POLYMALTOSE + FOLIC ACID: Tablet
This is a combination formulation of iron (III) hydroxide polymaltose complex and folic acid. This is available as tablet.
(Note on iron polymaltose- see above under the text.)

Ind: This combined preparation is indicated for the prevention and treatment of iron deficiency anaemia. Prevention of iron and folic acid deficiency before, during and after pregnancy (i.e lactation), by providing the recommended daily dietary allowances (RDA).
C/I; S/E; Precautions: See above under the text of 'ferrous fumerate + folic acid' preparation.
Pregnancy & lactation: See above under the text of 'ferrous fumerate + folic acid' preparation.
Dosage & admin: Dosage and duration of therapy depend upon the extent of iron deficiency and should be taken as directed by the physician. The usual therapeutic dosage of elemental iron for adults is 50-100mg 2 to 3 times daily.
Iron therapy should continue for 3-6 months after restoration of normal hematologic values in order to replenish iron stores.
For specific preparation: Dosage given below under individual product.
Drug inter: See above under the text of 'ferrous fumerate + folic acid' preparation.

❖ **CHEWROL Chewable Tab. Renata**
Each chewable tablet contains iron (iii) hydroxide polymaltose complex INN equivalent to elemental iron 100mg and folic acid BP 350mcg.
Dosage & admin: Up to 3 tablets daily in divided doses depending on the severity of the anaemia being treated. The tablet should be chewed to get flavour and taste. Chewrol chewable tablets can be taken with meals as appropriate to the patient.
30's pack: 90.00 MRP

IRON + FOLIC ACID + VITAMIN B_{12}[52]

IRON POLYMALTOSE + FOLIC ACID + VITAMIN B_{12}: Capsule/Syrup
This is a combined preparation of iron, folic acid, & vitamin B_{12}, available in capsule & syrup form. In this preparation, iron is presented as iron polymaltose complex, which contains non-ionic ferric iron and polymaltose in a stable complex. This complex facilitates absorption of the iron in the mucosa. Iron-polymaltose complex is better tolerated than conventional iron preparation. Folic acid & vitamin B_{12} are essential for the development & maturation of haemoglobin. Therefore, this combined preparation is a unique presentation & may be considered as the ideal product for treatment of all types of anaemia.
Comp: Each capsule contains iron polymaltose complex INN 100mg, folic acid BP 1mg, and cyanocobalamin BP 25mcg.
Each 5ml syrup contains iron polymaltose complex INN 100mg, folic acid BP 1mg, and cyanocobalamin BP 25mcg.
Ind: This preparation is indicated for the prevention & treatment of iron, folic acid and vitamin B_{12} deficiency. Also indicated for the prevention of iron deficiency anaemia during pregnancy & lactation.
C/I; S/E; Cautions: See above under the text of 'iron & folic acid' preparations.
Pregnancy & lactation: Recommended for use in pregnancy & lactation.
Dosage & admin: Adult: 1-2 capsules (or 5-10ml) daily or as required.
Children: 1 capsule (or 5ml) daily or as required.
Drug inter: See above under the text of 'iron & folic acid' preparations.

❖ POLYRON Plus Cap. ACI
This is a combined preparation of iron, folic acid, & vitamin B12, available as capsule.
Each capsule contains iron as iron polymaltose complex INN 100mg, folic acid BP 1mg, and cyanocobalamin BP 25mcg.
Dose: See above under the text.
48's pack: 132.00 IP

❖ POLYRON Plus Syp. ACI
This is a combined preparation of iron, folic acid, & vitamin B12; available as syrup.
Each 5ml contains iron as iron polymaltose complex INN 100mg, folic acid BP 1mg, and cyanocobalamin BP 25mcg.
Dose: See above under the text.
100ml bot: 55.00 IP

IRON + FOLIC ACID + B-VITAMINS + VITAMIN C[26,65]

IRON + FOLIC ACID + B-VITAMINS + VITAMIN C: Capsule (Timed release)
This is a specialised combined preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
Comp: Each timed-release capsule contains dried ferrous sulfate USP 150mg, folic acid USP 0.5mg, thiamine mononitrate USP 2mg, pyridoxine USP 1mg, nicotinamide USP 10mg and ascorbic acid USP 50mg.
Ind: This iron and vitamin preparation is indicated for the treatment and prophylaxis of multiple nutritional deficiencies specially during pregnancy and lactation.
C/I: Known hypersensitivity to any of the ingredients. Iron therapy is contraindicated in the presence of hemochromatosis, or haemolytic anaemia.
S/E: Allergic sensitization has been reported following oral administration of folic acid. Oral iron preparation may cause constipation, particularly in older patients, occasionally leading to faecal impaction.
Precautions: Iron chelates with antacid and tetracycline and absorption of all these may be impaired if taken concurrently.
Dosage: 1 capsule daily, or in more severe cases 2 capsules daily may be given before food or as directed by the physician.
Overdosage: Accidental overdose of iron containing products is a leading cause of fatal poisoning in children fewer than 6. Avoid higher doses if there is liver disease or hemochromatosis; excess can cause bloody diarrhoea, vomiting, acidosis, darkened stools, abdominal pain. Symptoms may clear in a few hours.
Other components have no significant effects even with massive doses.

❖ ALFIL Cap. SAPL
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
Comp: See above under the text.
30's pack: 90.00 MRP

❖ ALNEED Cap. Incepta
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
Comp: See above under the text.
100's pack: 300.00 MRP

❖ BESTAL Cap. Modern
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
Comp: See above under the text + riboflavin 2mg/capsule
60's pack: 150.00 MRP

❖ BIC-F Cap. General
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
50's pack: 175.00 MRP

❖ COSVIT TR Cap. Cosmo Pharma
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
50's pack: 150.00 MRP

❖ ELIZINC Plus Cap. Elixir
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
50's pack: 150.00 MRP

❖ EPL Cap. Globe
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
30's pack: 90.00 MRP

❖ EXTRAVIT-Plus Cap. Salton
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
100's pack: 300.00 MRP

❖ FBC Cap. Pacific
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
30's pack: 90.00 MRP

❖ FECON-BC Cap. Alco Pharma
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
50's pack: 150.00 MRP

❖ FEONA Cap. Delta
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
30's pack: 90.01 MRP

❖ FEROVIT-TR Cap. Hudson
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
100's pack: 300.00 MRP

❖ FOLVIT TR Cap. SK+F
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
90's pack: 270.00 MRP

❖ HEPTAMIN Cap. Orion
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
50's pack: 150.00 MRP

❖ IROF-BC Cap. Apex
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
30's pack: 90.00 MRP

❖ IROVIT Cap. Pharmadesh
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
50's pack: 125.00 MRP

❖ ITOP-BC Cap. Pharmasia
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
30's pack: 90.00 MRP

❖ MOMCAP Cap. Sandoz/Novartis
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
100's pack: 350.00 MRP

❖ MORIAMIN-M Cap. Desh
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
60's pack: 180.00 MRP

❖ MULTIFOL Cap. Ultra Pharma
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
Comp: See above under the text + riboflavin 2mg/capsule.
50's pack: 150.00 MRP

❖ MYLOVIT Cap. ACI
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
100's pack: 300.00 MRP

❖ NATAVIT Cap. Jayson
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
30's pack: 90.00 IP

❖ PREGVIT Cap. Beximco
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
50's pack: 150.00 IP

❖ PRENAT Plus Cap. Healthcare
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
60's pack: 210.00 IP

❖ PROVIRON Cap. Marksman
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
50's pack: 150.00 MRP

❖ RECOVA Cap. Peoples
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
100's pack: 300.00 MRP

❖ SERVIN Cap. Square
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
100's pack: 300.00 MRP

❖ UNEED Cap. Medicon
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
28's pack: 84.00 MRP

❖ VIC Cap. Decent
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed

release form to avoid gastric irritation.
100's pack: 275.00 MRP

❖ **VITAFOL Cap. Chemico**
This is a preparation of iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
40's pack: 120.00 MRP

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CARBONYL IRON + FOLIC ACID + B-VITAMINS + VITAMIN C: Capsule
This is a specialised combined preparation of carbonyl iron, folic acid, B-vitamins & vitamin C. Iron is presented in carbonyl iron form to avoid gastric irritation.
Comp: Each capsule contains carbonyl iron 51mg (elemental iron 50mg), folic acid USP 0.5mg, thiamine mononitrate USP 2mg, riboflavin 2mg, pyridoxine USP 1mg, nicotinamide USP 10mg and ascorbic acid USP 50mg.
Ind: This iron and vitamin preparation is indicated for the treatment and prophylaxis of multiple nutritional deficiencies specially during pregnancy and lactation.
C/I; S/E; Precautions: See above under the text of 'iron, folic acid, B-vitamins & vitamin' preparations.
Pregnancy & lactation: See above under the text .
Dosage: 1 capsule daily, or in more severe cases 2 capsules daily may be given before food or as directed by the physician.
Overdosage: See above under the text of 'iron, folic acid, B-vitamins & vitamin' preparations.

❖ **FAMINA Cap. Silva**
This is a preparation of carbonyl iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
Comp: See above under the text.
60's pack: 195.00 MRP

❖ **FOLVIT-CI Cap. SK+F**
This is a preparation of carbonyl iron, folic acid, B-vitamins & vitamin C. Iron is presented in timed release form to avoid gastric irritation.
Comp: See above under the text.
60's pack: 195.00 MRP

2.2 Iron + Vitamin + Mineral Combined preparation

IRON + FOLIC ACID + ZINC[26,48,65]

IRON + FOLIC ACID + ZINC PREPN: ER/SR/TR Capsule.
Iron + folic acid + zinc preparation; available as extended release (ER), sustained release (SR) or timed release (TR) capsule.
This triple combination, specially designed for pregnancy & lactation.
Comp: Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP 61.8mg/capsule.
Ind: It is indicated for the treatment and prophylaxis of iron, folic acid and zinc deficiency specially during pregnancy & lactation.
C/I: Do not use in patients hypersensitive to the product or those with iron overload.
S/E: Dark stools are usual during iron therapy; nausea and other symptoms of gastrointestinal irritation, such as anorexia, vomiting, discomfort, constipation and diarrhoea are sometimes encountered. Zinc may also produce gastrointestinal upset. These sustained or timed release capsules are designed to reduce the possibility of gastrointestinal irritation. There have been rare reports of allergic reactions.
Precaution: Care should be taken in patients who may develop iron overlad, such as, those with haemochromatosis, haemolytic anaemia or red cell aplasia. Failure to respond to treatment may indicate other causes of anaemia and should be further investigated. Iron and zinc chelates with tetracyclines and absorption of all three agents may be impaired. The absorption of zinc may be reduced in the presence of iron. Absorption of iron may be impaired by penicillamine and by antacids. Such potential interactions can be reduced by separating administration of each product by several hours interval. In patients with renal failure, a risk of zinc accumulation could exist.
Pregnancy & lactation: Use of iron is recommeded in pregnancy and lactation; but, use of any drug during the first trimester of pregnancy should be avoided if possible. Therefore, during first trimester of pregnancy, it requires careful assessment of potential risk & benefit of the iron therapy and should not be administered unless clearly indicated.
Dosage & Admin: Treatment: Adult- 2 capsules a day or as advised by the physician. Prophylaxis: Adult & elderly- usually one capsule once daily. In severe cases, 2 capsules a day may be required.
Child: Age over one year- one capsule daily, (the capsule may be opened and the pellets may be mixed with soft, cool food but they must not be chewed).

❖ **APEFOL-TR Cap. A.P.C Pharma**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP 61.8mg/capsule (timed release).
50's pack: 145.00 MRP

❖ **ASTRO-Z Cap. Syntho**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP 61.8mg/capsule.
50's pack: 130.00 MRP

❖ **BTIRON TR Cap. Benham**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP 61.8mg/capsule (timed release).
30's pack: 87.00 MRP

❖ **COSFEZ TR Cap. Cosmo Pharma**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP 61.8mg/capsule (timed release).
50's pack: 145.00 MRP

❖ **EFOL-ER Cap. Beximco**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP 61.8mg/capsule (extended release).
50's pack: 125.00 MRP

❖ **FECEL TR Cap. Asiatic**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP 61.8mg/capsule (timed release).
45's pack: 135.00 MRP

❖ **FECON-Z Cap. Alco Pharma**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP 61.8mg/capsule.
30's pack: 87.90 MRP

❖ **FEELBE TR Cap. Hallmark**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP 61.8mg/capsule (timed release).
30's pack: 87.00 MRP

❖ **FEFA-TR Cap. Nipa**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP 61.8mg/capsule (timed release).
30's pack: 82.50 MRP

❖ **FEMIZIN TR Cap. ACI**
Ferrous sulphate BP 150mg + folic acid BP 0.5mg + zinc sulphate monohydrate USP 61.8mg/capsule.
30's pack: 87.00 MRP

❖ **FEOLET Plus TR Cap. Chemico**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP 61.8mg/capsule (timed release).
40's pack: 116.00 MRP

❖ **FEOSIL-Z Cap. Silva**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP 61.8mg/capsule.
30's pack: 87.00 MRP

❖ **FERAZ Cap. Amico**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP 61.8mg/capsule.
30's pack: 75.00 MRP

❖ **FERIZ-TR Cap. Medimet**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP 61.8mg/capsule (timed release).
50's pack: 145.00 MRP

❖ **FEROCIT-Z Cap. Acme**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP 61.8mg/capsule (timed release).
30's pack: 87.90 MRP

❖ **FEROFE-Z TR Cap. Aexim**
Ferrous sulphate BP 150mg + folic acid BP 0.5mg + zinc sulphate monohydrate USP 61.8mg/capsule (timed release).
30's pack: 87.00 MRP

❖ **FEROFOL-Z-TR Cap. CPL**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP 61.8mg/capsule (timed release).
100's pack: 250.00 MRP

❖ **FEROL TR Cap. Opsonin**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP 61.8mg/capsule (timed release).
30's pack: 81.00 MRP

❖ **FEROLET Cap. Elixir**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP 61.8mg/capsule (timed release).
50's pack: 142.00 MRP

❖ **FEROPLUS-Z SR Cap. Pacific**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg

+ zinc sulphate monohydrate USP
61.8mg/capsule (sustained release).
32's pack: 92.80 MRP

❖ **FERRO-Z Cap. Edruc**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP
61.8mg/capsule (timed release).
30's pack: 87.00 MRP

❖ **FEROZI Cap. Drug Inter.**
Ferrous sulphate BP 150mg + folic acid BP 0.5mg + zinc sulphate monohydrate USP
61.8mg/capsule.
100's pack: 293.00 MRP

❖ **FERROLIN-TR Cap. Orion**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP
61.8mg/capsule (timed release).
30's pack: 87.50 MRP

❖ **FE-SOL Plus TR Cap. Rasa**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP
61.8mg/capsule (timed release).
30's pack: 90.00 MRP

❖ **Fe-Z Cap. Modern**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP
61.8mg/capsule (timed release).
24's pack: 87.00 MRP

❖ **FEZIN-CR Cap. Rephco**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP
61.8mg/capsule (controlled release).
30's pack: 90.00 MRP

❖ **FIZZ-TR Cap. White Horse**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP
61.8mg/capsule (timed release).
50's pack: 150.00 MRP

❖ **FOLIN ZTR Cap. Somatec**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP
61.8mg/capsule (timed release).
30's pack: 87.00 MRP

❖ **FOLIRON-TR Cap. Mystic**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP
61.8mg/capsule (timed release).
30's pack: 90.00 MRP

❖ **FOLIZED Cap. General**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP
61.8mg/capsule (timed release).
50's pack: 155.00 MRP

❖ **FOZI TR Cap. Ziska**
Ferrous sulphate BP 150mg+folic acid BP 0.5mg + zinc sulphate monohydrate USP
61.8mg/capsule (timed release).
50's pack: 146.00 MRP

❖ **HAEMOZIN TR Cap. Doctor's**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP
61.8mg/capsule (timed release).
40's pack: 108.00 MRP

❖ **HEMO Plus TR Cap. Seema**
Ferrous sulphate BP 150mg+folic acid BP 0.5mg + zinc sulphate monohydrate USP
61.8mg/capsule (timed release).
100's pack: 294.00 MRP

❖ **HEMO-Z Cap. Proteety**
Ferrous sulphate BP 150mg+folic acid BP 0.5mg + zinc sulphate monohydrate USP
61.8mg/capsule (timed release).
30's pack: 87.00 MRP

❖ **IFEL-TR Cap. Pharmadesh**
Ferrous sulphate BP 150mg+folic acid BP 0.5mg + zinc sulphate monohydrate USP
61.8mg/capsule (timed release).
30's pack: 82.50 MRP

❖ **IFOZIN-SR Cap. Ibn Sina**
Ferrous sulphate BP 150mg+folic acid BP 0.5mg + zinc sulphate monohydrate USP
61.8mg/capsule (sustained release).
50's pack: 150.00 MRP

❖ **IRON-Z TR Cap. Hudson**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP
61.8mg/capsule (timed release).
100's pack: 250.00 MRP

❖ **ITOP-Z Cap. Pharmasia**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP
61.8mg/capsule (timed release).
30's pack: 90.00 MRP

❖ **RED Plus Cap. Ad-din**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP
61.8mg/capsule (timed release).
100's pack: 300.00 MRP

❖ **REFOL-Z TR Cap. Reman**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP
61.8mg/capsule (timed release).
30's pack: 87.00 MRP

❖ **SAKTI-TR Cap. SAPL**
Zinc sulphate monohydrate USP 61.8mg + ferrous sulphate BP 150mg+ folic acid BP 0.5mg/capsule (timed release).
30's pack: 87.00 MRP

❖ **SUPRAFOL TR+Z Cap. Supreme**
Zinc sulphate monohydrate USP 61.8mg + ferrous sulphate BP 150mg+ folic acid BP 0.5mg/capsule (timed release).
30's pack: 81.00 MRP

❖ **TRIFOL-TR Cap. Desh Pharma**
Zinc sulphate monohydrate USP 61.8mg + ferrous sulphate BP 150mg+ folic acid BP 0.5mg/capsule (timed release).
30's pack: 87.00 MRP

❖ **ULFE-TR Cap. Ultra Pharma**
Ferrous sulphate BP 150mg + folic acid BP 0.5mg + zinc sulphate monohydrate USP
61.8mg/capsule (timed release).
40's pack: 116.00 MRP

❖ **ZEEFOL TR Cap. SK+F**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP
61.8mg/capsule (timed release).
60's pack: 175.80 MRP

❖ **Z-FOL Cap. Bristol**
Zinc sulphate monohydrate USP 61.8mg + ferrous sulphate BP 150mg+ folic acid BP 0.5mg/capsule (timed release).
60's pack: 175.80 MRP

❖ **ZIF Cap. Square**
Zinc sulphate monohydrate USP 61.8mg + ferrous sulphate BP 150mg+ folic acid BP 0.5mg/capsule (timed release).
100's pack: 293.00 MRP

❖ **ZIFA-TR Cap. UniHealth**
Zinc sulphate monohydrate USP 61.8mg + ferrous sulphate BP 150mg+ folic acid BP 0.5mg/capsule (timed release).
30's pack: 87.90 MRP

❖ **ZIFEF-TR Cap. Navana**
Zinc sulphate monohydrate USP 61.8mg + ferrous sulphate BP 150mg+ folic acid BP 0.5mg/capsule (timed release).
30's pack: 84.00 MRP

❖ **ZIFEX SR Cap. Salton**
Ferrous sulphate BP 150mg+ folic acid BP 0.5mg + zinc sulphate monohydrate USP
61.8mg/capsule (sustained release).
50's pack: 150.00 MRP

❖ **ZIFRON-TR Cap. Marksman**
Zinc sulphate monohydrate USP 61.8mg + ferrous sulphate BP 150mg+ folic acid BP 0.5mg/capsule (timed release).
30's pack: 87.00 MRP

❖ **ZILIC-TR Cap. Decent Pharma**
Zinc sulphate monohydrate USP 61.8mg + ferrous sulphate BP 150mg+ folic acid BP 0.5mg/capsule (timed release).
50's pack: 146.50 MRP

❖ **ZIMOBIN Cap. Apollo**
Zinc sulphate monohydrate USP 61.8mg + ferrous sulphate BP 150mg+ folic acid BP 0.5mg/capsule (timed release).
30's pack: 90.00 MRP

❖ **ZIRON-F Cap. Cosmic**
Zinc sulphate monohydrate USP 61.8mg + ferrous sulphate BP 150mg+ folic acid BP 0.5mg/capsule (timed release).
30's pack: 90.00 MRP

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CARBONYL IRON + FOLIC ACID + ZINC
PREPN: Capsule
Carbonyl iron + folic acid + zinc preparation: capsule.
This triple combination, specially designed for pregnancy & lactation. Carbonyl iron is a form of the mineral iron, that is produced by thermal decomposition of iron pentacarbonyl $Fe(CO)_5$, which is previously highly purified by distillation. Carbonyl iron capsule contains pure iron micro particles with not less than 98% iron content. This advanced formula is specially designed to be gentle on the stomach, well absorbed by the body, high bioavailability and low toxicity. Thus, it offers an enhanced safety in case of an accidental overdose.

Ind: It is indicated for the treatment and prophylaxis of iron, folic acid and zinc deficiency specially during pregnancy & lactation.

C/I; S/E; Precaution: See above under the text of 'iron + folic acid + zinc' preparation.

Pregnancy & lactation: See above under the text of 'iron + folic acid + zinc' preparation.

Dosage & Admin: Treatment: Adult- 2 capsules a day or as advised by the physician. Prophylaxis: Adult & elderly- usually one capsule once daily. In severe cases, 2 capsules a day may be required.
Child: Age over one year- one capsule daily (the capsule may be opened and the pellets may be mixed with soft, cool food but they must not be chewed).

❖ **ANIMET Cap. Asiatic**
Carbonyl iron INN Ph. grade 51mg (equivalent to 50mg elemental iron), folic acid BP 0.50mg and zinc sulfate BP 61.80mg (equivalent to 22.5mg elemental zinc)/capsule (pellet).
30's pack: 90.00 IP

❖ **BIOFEZ Cap. Jayson**
Carbonyl iron INN Ph. grade 51mg (equivalent to 50mg elemental iron), folic acid BP 0.50mg and zinc sulfate BP 61.80mg (equivalent to 22.5mg elemental zinc)/capsule (pellet).
50's pack: 150.00 IP

❖ **CAROFOL Z Cap. Beximco**
Carbonyl iron INN Ph. grade 51mg (equivalent to 50mg elemental iron), folic acid BP 0.50mg and zinc sulfate BP 61.80mg (equivalent to 22.5mg elemental zinc)/capsule (pellet).
50's pack: 150.00 IP

❖ **FEOCRON Cap. Novo Healthcare**
Carbonyl iron INN Ph. grade 51mg (equivalent to 50mg elemental iron), folic acid BP 0.50mg and zinc sulfate BP 61.80mg (equivalent to 22.5mg elemental zinc)/capsule (pellet).
60's pack: 80.00 MRP

❖ **FEROPREG Cap. Amico**
Carbonyl iron INN Ph. grade 51mg (equivalent to 50mg elemental iron), folic acid BP 0.50mg and zinc sulfate BP 61.80mg (equivalent to 22.5mg elemental zinc)/capsule (pellet).
30's pack: 90.00 MRP

❖ **GLORY Cap. Orion**
Carbonyl iron INN Ph. grade 51mg (equivalent to 50mg elemental iron), folic acid BP 0.50mg and zinc sulfate BP 61.80mg (equivalent to 22.5mg elemental zinc)/capsule (pellet).
50's pack: 150.00 MRP

❖ **HEMO Plus Cap. Zenith**
Carbonyl iron INN Ph. grade 51mg (equivalent to 50mg elemental iron), folic acid BP 0.50mg and zinc sulfate BP 61.80mg (equivalent to 22.5mg elemental zinc)/capsule (pellet).
30's pack: 90.00 MRP

❖ **PREGMIN-Z Cap. Rangs Pharma**
Carbonyl iron INN Ph. grade 51mg (equivalent to 50mg elemental iron), folic acid BP 0.50mg and zinc sulfate BP 61.80mg (equivalent to 22.5mg elemental zinc)/capsule (pellet).
50's pack: 150.00 MRP

❖ **PRENATAL Cap. Silva**
Carbonyl iron INN Ph. grade 51mg (equivalent to 50mg elemental iron), folic acid BP 0.50mg and zinc sulfate BP 61.80mg (equivalent to 22.5mg elemental zinc)/capsule (pellet).
30's pack: 87.00 MRP

❖ **PRENAT-CI Cap. Healthcare**
Carbonyl iron INN Ph. grade 51mg (equivalent to 50mg elemental iron), folic acid BP 0.50mg and zinc sulfate BP 61.80mg (equivalent to 22.5mg elemental zinc)/capsule (pellet).
60's pack: 210.00 MRP

❖ **PRENEED Cap. Incepta**
Carbonyl iron INN Ph. grade 51mg (equivalent to 50mg elemental iron), folic acid BP 0.50mg and zinc sulfate BP 61.80mg (equivalent to 22.5mg elemental zinc)/capsule (pellet).
50's pack: 150.00 MRP

❖ **ZEEFOL-CI Cap. SK+F**
Carbonyl iron INN Ph. grade 51mg (equivalent to 50mg elemental iron), folic acid BP 0.50mg and zinc sulfate BP 61.80mg (equivalent to 22.5mg elemental zinc)/capsule (pellet).
60's pack: 180.00 MRP

❖ **ZIF-CI TR Cap. Square**
Carbonyl iron INN Ph. grade 51mg (equivalent to 50mg elemental iron), folic acid BP 0.50mg and zinc sulfate BP 61.80mg (equivalent to 22.5mg elemental zinc)/capsule (timed release).
30's pack: 90.00 MRP

IRON POLYMALTOSE COMPLEX + FOLIC ACID + ZINC[26,36,65]

IRON POLYMALTOSE + FOLIC ACID + ZINC: Tablet
This is a formulation of iron polymaltose complex, folic acid and zinc sulphate.
Comp: Each film-coated tablet contains iron (III) hydroxide polymaltose complex INN 188mg equivalent to 47mg elemental iron, folic acid BP 0.5mg and zinc sulphate monohydrate USP 61.8mg equivalent to 22.5mg elemental zinc.
Ind: Prevention and treatment of iron, folic acid and zinc deficiency.
C/I; S/E; Precaution: See above under the text of 'iron + folic acid + zinc' preparation.
Pregnancy & lactation: See above under the text of 'iron + folic acid + zinc' preparation.
Dosage & admin: One tablet daily. Two tablets may be required a day in severe cases or as advised by the physician.

❖ **IPEC-PLUS Tab. Aristopharma**
This is a formulation of iron polymaltose complex, folic acid and zinc sulphate.
Comp: See above under the text.
50's pack: 150.00 MRP

❖ **ZEPIRON Tab. Ibn Sina**
This is a formulation of iron polymaltose complex, folic acid and zinc sulphate.
Comp: See above under the text.
30's pack: 90.00 MRP

❖ **ZILIRON Tab. Square**
This is a formulation of iron polymaltose complex, folic acid and zinc sulphate.
Comp: See above under the text.
60's pack: 180.00 MRP

IRON POLYMALTOSE + VITAMIN-B COMPLEX + ZINC[26]

IRON + VITAMIN-B COMPLEX + ZINC: Syrup
This is a special combination preparation of non-ionic iron, vitamin B complex & zinc, available in syrup form.
Comp: Each 5ml of syrup contains iron (III) hydroxide polymaltose complex INN 200mg equivalent to elemental iron 50mg, thiamine hydrochloride BP 5mg, riboflavine 2mg, pyridoxine hydrochloride BP 2mg, nicotinamide BP 20mg & zinc sulfate USP 27.45mg equivalent to elemental zinc 10mg.
Iron polymaltose complex, a novel iron preparation, which contains non-ionic ferric iron and polymaltose in a stable complex. This facilitates a controlled absorption of the iron when it comes in contact with the mucosal cell surface. Being non-ionic, iron polymaltose complex is more tolerable than conventional iron form.
Ind: This combined preparation is indicated in the treatment and prevention of iron, B-vitamins and zinc deficiencies.
C/I; S/E; Precautions: See above under the text of 'iron, folic acid & zinc preparations.
Pregnancy & lactation: Recommended.
Dosage & admin: Adults: 5-10ml (1 to 2 tsf) 3 times daily or as recommended by the physician.
Children & infants: 5ml (1 tsf) 3 times daily or as recommended by the physician.
Drug inter: See above under the text of iron preparations.

❖ **ACTIVIT ZI Syp. Delta**
This is a special combination preparation of non-ionic iron (i.e iron polymaltose complex), vitamin B complex & zinc, available in syrup form.
100ml bot: 50.01 MRP

❖ **ARITONE ZI Syp. Incepta**
This is a special combination preparation of non-ionic iron (i.e iron polymaltose complex), vitamin B complex & zinc, available in syrup form.
50ml bot: 30.00 IP
100ml bot: 50.00 IP
200ml bot: 90.00 IP

❖ **ASIVIT-ZI Syp. Asiatic**
This is a special combination preparation of non-ionic iron (i.e iron polymaltose complex), vitamin B complex & zinc, available in syrup form.
100ml bot: 50.00 MRP
200ml bot: 90.00 MRP

❖ **BECONEX-ZI Syp. Renata**
This is a special combination preparation of non-ionic iron (i.e iron polymaltose complex), vitamin B complex & zinc, available in syrup form.
30ml bot: 30.00 MRP
50ml bot: 50.00 MRP

❖ **BICOZIN-I Syp. Square**
This is a special combination preparation of non-ionic iron (i.e iron III hydroxide polymaltose complex), vitamin B complex & zinc, available in syrup form.
100ml bot: 50.00 MRP
200ml bot: 90.00 MRP

❖ **BIOVIT Plus Syp. Bio-pharma**
This is a special combination preparation of non-ionic iron (i.e iron III hydroxide polymaltose complex), vitamin B complex & zinc, available in syrup form.
100ml bot: 50.00 MRP

❖ **BIOZINC-I Syp. Ibn Sina**
This is a special combination preparation of non-ionic iron (i.e iron III hydroxide polymaltose complex), vitamin B complex & zinc, available in syrup form.
100ml bot: 50.00 MRP

❖ **BIZI Syp. Globe**
This is a special combination preparation of non-ionic iron (i.e iron polymaltose complex), vitamin B complex & zinc, available in syrup form.
100ml bot: 50.00 MRP

❖ **EDIPLEX-ZI Syp. Edruc**
This is a special combination preparation of non-ionic iron (i.e iron polymaltose complex), vitamin B complex & zinc, available in syrup form.
100ml bot: 50.00 IP
200ml bot: 100.00 IP

❖ **FEVIZ Syp. Popular**
This is a special combination preparation of non-ionic iron (i.e iron polymaltose complex), vitamin B complex & zinc, available in syrup form.
100ml bot: 50.00 MRP

❖ **FEZIPLEX Syp. Acme**
This is a special combination preparation of non-ionic iron (i.e iron polymaltose complex), vitamin B complex & zinc, available in syrup form.
100ml bot: 50.00 MRP
200ml bot: 80.00 MRP

❖ **FEZOVIT Syp. Doctor's**
This is a special combination preparation of non-ionic iron (i.e iron polymaltose complex), vitamin B complex & zinc, available in syrup form.
100ml bot: 50.00 MRP

❖ **IROTREX Plus Syp. Amico**
This is a special combination preparation of non-ionic iron (i.e iron polymaltose complex), vitamin B complex & zinc, available in syrup form.
100ml bot: 50.00 MRP

❖ **IROVIT-Z Syp. Medicon**
This is a special combination preparation of non-ionic iron (i.e iron polymaltose complex), vitamin B complex & zinc, available in syrup form.
100ml bot: 45.00 MRP
200ml bot: 85.00 MRP

❖ **LIVITA Syp. ACI**
This is a special combination preparation of non-ionic iron (i.e iron polymaltose complex), vitamin B complex & zinc, available in syrup form.
100ml bot: 50.00 IP

❖ **MALTOVIT Syp. Somatec**
This is a special combination preparation of non-ionic iron (i.e iron polymaltose complex), vitamin B complex & zinc, available in syrup form.
100ml bot: 50.00 MRP

❖ **OPSOVIT ZI Syp. Opsonin**
This is a special combination preparation of non-ionic iron (i.e iron polymaltose complex), vitamin B complex & zinc, available in syrup form.
100ml bot: 50.00 MRP

❖ **ORAZINC-B Syp. Navana**
This is a special combination preparation of non-ionic iron (i.e iron polymaltose complex), vitamin B complex & zinc, available in syrup form.
50ml bot: 30.00 MRP
100ml bot: 50.00 MRP

❖ **POLYFER-Z Syp. Apex**
This is a special combination preparation of non-ionic iron (i.e iron polymaltose complex), vitamin B complex & zinc, available in syrup form.
50ml bot: 35.00 MRP
100ml bot: 45.00 MRP
200ml bot: 75.00 MRP

❖ **REOPLEX Plus Syp. Rephco**
This is a special combination preparation of non-ionic iron (i.e iron polymaltose complex), vitamin B complex & zinc, available in syrup form.
100ml bot: 45.00 MRP

❖ **SEEMAPLEX ZI Syp. Drug Inter.**
This is a special combination preparation of non-ionic iron (i.e iron polymaltose complex), vitamin B complex & zinc, available in syrup form.
100ml bot: 50.00 MRP

❖ **SUPRA-Z Syp. Drug Inter.**
This is a special combination preparation of non-ionic iron (i.e iron polymaltose complex), vitamin B complex & zinc, available in syrup form.
100ml bot: 50.00 MRP

❖ **VITAZIN I Syp. Aristopharma**
This is a special combination preparation of non-ionic iron (i.e iron polymaltose complex), vitamin B complex & zinc, available in syrup form.
100ml bot: 50.00 MRP

❖ **VITONIC Syp. Beximco**
This is a special combination preparation of non-ionic iron (i.e iron polymaltose complex), vitamin B complex & zinc, available in syrup form.
50ml bot: 30.00 IP
100ml bot: 50.00 IP
200ml bot: 80.00 IP

❖ **XINOPLEX I Syp. Silva**
This is a special combination preparation of non-ionic iron (i.e iron polymaltose complex), vitamin B complex & zinc, available in syrup form.
100ml bot: 50.00 MRP
200ml bot: 90.00 MRP

❖ **ZIMON Plus Syp. Zenith**
This is a special combination preparation of non-ionic iron (i.e iron polymaltose complex), vitamin B complex & zinc, available in syrup form.
60ml bot: 30.00 MRP

❖ **ZIMPLEX Syp. Orion**
This is a special combination preparation of non-ionic iron (i.e iron polymaltose complex), vitamin B complex & zinc, available in syrup form.
100ml bot: 50.00 MRP

❖ **ZIVIT-I Syp. Alco Pharma**
This is a special combination preparation of non-ionic iron (i.e iron polymaltose complex), vitamin B complex & zinc, available in syrup form.
100ml bot: 50.00 MRP
200ml bot: 90.00 MRP

IRON POLYMALTOSE + FOLIC ACID + VITAMIN B-COMPLEX + ZINC[26,36,65]

IRON POLYMALTOSE + FOLIC ACID + VITAMIN B-COMPLEX + ZINC: Capsule
This special formulation of iron polymaltose complex, folic acid, vitamin B-complex & zinc is available as capsule.
Comp: Each capsule contains iron polymaltose complex INN 188mg equivalent to 47mg of elemental iron, folic acid BP 0.5mg, thiamine hydrochloride (B1) USP 5mg, riboflavin (B2) BP 2mg, nicotinamide (B3) USP 20mg, pyridoxine hydrochloride (B6) BP 2mg and zinc sulfate monohydrate USP 61.8mg equivalent to 22.5mg elemental zinc.
Ind: Prevention and treatment of iron, folic acid, vitamin B-complex & zinc deficiency, particularly needed in pregnancy and lactation.
C/I; S/E; Precautions: See above under the text of 'iron, folic acid, B-vitamins & vitamin C' preparations.
Pregnancy & lactation: Recommended in pregnancy and lactation.
Dosage & admin: One capsule daily. Two capsules may be required a day in severe cases or as advised by the physician.
Durg inter: No interaction has been found between iron polymaltose complex and food or other drugs due to its non-ionic nature.

❖ **FEVIZ Plus Cap. Popular**
This special formulation of iron polymaltose complex, folic acid, vitamin B-complex & zinc is available as capsule.
Comp: See above under the text.
30's pack: 135.00 MRP

❖ **IPEC-SUPER Cap. Aristopharma**
This special formulation of iron polymaltose complex, folic acid, vitamin B-complex & zinc is available as capsule.
Comp: See above under the text.
30's pack: 135.00 MRP

IRON + FOLIC ACID + VITAMIN A + VITAMIN C + ZINC[62]

IRON + FOLIC ACID + VITAMIN A + VITAMIN C + ZINC: Powder in sachet
This is a combined preparation of vitamins & minerals specially prepared as food supplement for the children who are suffering from anemia & malnutrition. This is presented as 1gm powder in sachet which can easily be mixed with the children's daily meal.
Comp: Each 1gm powder contains- Vitamin A (as acetate) USP 0.3mg, vitamin C (ascorbic acid) USP 30mg, folic acid USP 0.16mg, iron (ferrous fumerate) BP 12.5mg, zinc (zinc gluconate) USP 5mg, plus non-medicinal ingredient maltodextrin.
Ind & Uses: This preparation is most suitable for all children from the age of 6 months to 24 months. This is also suitable for children under the age of five years. It is not advised for the babies under six months old, because mother's milk is only sufficient in this period.
C/I Or not suitable for: As per WHO guideline, any such preparation containing iron cannot be administered for the first 7 days to those children who are suffering from extreme malnutrition or are hospitalized due to malnutrition. After this period the children can be given this combined preparation safely & effectively.
S/E: This combined preparation is not known to have any harmful side effects.
Precaution: Do not use if the sachet is torn or damaged.
Dosage & admin: 1gm of this preparation to be mixed with the children's daily meal. It is ideal for mixing with soft rice, lentil and rice

mix and samolina. To avoid the risk of anemia, all children till the age of five can be fed with one sachet of this combined preparation everyday. Do not give more than one sachet per day. There is no need for other sources of iron when the child is already being treated with this iron preparation. This also does not alter the taste or smell of the food.
Storage: Store in a dry place at room temperature.

❖ **SPRINKLES Sachet Renata**
This is a combined preparation of vitamins & minerals specially prepared as food supplement for the children who are suffering from anemia & malnutrition. This is presented as Igm powder in sachet which can easily be mixed with the children's daily meal.
Comp: See above under the text.
30's pack: 60.00 MRP

IRON + FOLIC ACID + B-VITAMINS + VITAMIN C + ZINC[26,65]

IRON + FOLIC ACID + VITAMIN-B COMPLEX + VITAMIN C + ZINC: Capsule (Timed release)
This is a specialised combined preparation of iron, folic acid, vitamin-B complex, vitamin C & zinc. (Iron is presented in timed release form to avoid gastric irritation).
Comp: Each timed-release capsule contains dried ferrous sulfate BP 150mg, folic acid (B9) BP 0.5mg, thiamine mononitrate (B1) USP 2mg, riboflavin (B2) USP 2mg, nicotinamide (B3) USP 10mg, pyridoxine (B6) USP 1mg, vitamin C (ascorbic acid) USP 50mg and zinc sulphate monohydrate BP 61.8mg.
Ind: This iron, vitamins and mineral preparation is indicated for the treatment and prophylaxis of iron, folic acid, B-vitamins, vitamin-C and zinc deficiency specially during pregnancy & lactation.
C/I; S/E; Precautions: See above under the text of 'iron, folic acid, B-vitamins & vitamin C' preparations.
Pregnancy & lactation: Recommended.
Dosage & admin: One capsule daily. In more severe cases, 2 capsules a day may be given or as directed by the physician.
Overdosage: See above under the text of 'iron, folic acid, B-vitamins & vitamin C' preparations.
Drug inter: See above under the text of 'iron, folic acid, B-vitamins & vitamin C' preparations.

❖ **AD-ALL Cap. Ad-din**
This is a specialised combined preparation of iron, folic acid, vitamin-B complex, vitamin C & zinc. (Iron is presented in timed release form to avoid gastric irritation).
100's pack: 300.00 MRP

❖ **ALNEED Plus Cap. Incepta**
This is a specialised combined preparation of iron, folic acid, vitamin-B complex, vitamin C & zinc. (Iron is presented in timed release form to avoid gastric irritation).
100's pack: 350.00 MRP

❖ **FEONA Z Cap. Delta**
This is a specialised combined preparation of iron, folic acid, vitamin-B complex, vitamin C & zinc. (Iron is presented in timed release form to avoid gastric irritation).
30's pack: 104.94 MRP

❖ **FIVITA Cap. Bio-pharma**
This is a specialised combined preparation of iron, folic acid, vitamin-B complex, vitamin C & zinc. (Iron is presented in timed release form to avoid gastric irritation).
30's pack: 90.00 MRP
100's pack: 300.00 MRP

❖ **MYLOVIT-Z Cap. ACI**
This is a specialised combined preparation of iron, folic acid, vitamin-B complex, vitamin C & zinc. (Iron is presented in timed release form to avoid gastric irritation).
50's pack: 175.00 MRP

❖ **PREGNACARE Cap. Amico**
This is a specialised combined preparation of iron, folic acid, vitamin-B complex, vitamin C & zinc. (Iron is presented in timed release form to avoid gastric irritation).
50's pack: 150.00 MRP

❖ **PREGNID Cap. Navana**
This is a specialised combined preparation of iron, folic acid, vitamin-B complex, vitamin C & zinc. (Iron is presented in timed release form to avoid gastric irritation).
28's pack: 98.00 MRP

❖ **RECOVA-Plus Cap. Peoples**
This is a specialised combined preparation of iron, folic acid, vitamin-B complex, vitamin C & zinc. (Iron is presented in timed release form to avoid gastric irritation).
100's pack: 350.00 MRP

❖ **VITARON Plus Cap. Popular**
This is a specialised combined preparation of iron, folic acid, vitamin-B complex, vitamin C & zinc. (Iron is presented in timed release form to avoid gastric irritation).
30's pack: 105.00 IP

❖ **VIZICON Cap. Opsonin**
This is a specialised combined preparation of iron, folic acid, vitamin-B complex, vitamin C & zinc. (Iron is presented in timed release form to avoid gastric irritation).
60's pack: 210.00 MRP

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CARBONYL IRON + FOLIC ACID + VITAMIN-B COMPLEX + VITAMIN C + ZINC: Capsule
This is a specialised combined preparation of carbonyl iron, folic acid, vitamin-B complex, vitamin C & zinc. (Iron is presented in carbonyl iron form to avoid gastric irritation and toxicity).
Comp: Each capsule contains carbonyl iron 51mg (elemental iron 50mg), folic acid USP 0.5mg, thiamine mononitrate USP 2mg, riboflavin USP 2mg, pyridoxine USP 1mg, nicotinamide USP 10mg, ascorbic acid USP 50mg & zinc sulfate monohydrate USP 61.80mg (equivalent to 22.5mg elemental zinc)/capsule.
Ind: This iron, vitamins and mineral preparation is indicated for the treatment and prophylaxis of iron, folic acid, B-vitamins, vitamin-C and zinc deficiency specially during pregnancy & lactation.
C/I; S/E; Precautions: See above under the text of 'iron, folic acid, B-vitamins & vitamin C' preparations.
Pregnancy & lactation: Recommended.
Dosage & admin: One capsule daily. In more severe cases, 2 capsules a day may be given or as directed by the physician.
Overdosage: See above under the text of 'iron, folic acid, B-vitamins & vitamin C' preparations.
Drug inter: See above under the text of 'iron, folic acid, B-vitamins & vitamin C' preparations.

❖ **CARBOMET Cap. Somatec**
This is a specialised combined preparation of carbonyl iron, folic acid, vitamin-B complex, vitamin C & zinc. (Iron is presented in carbonyl iron form to avoid gastric irritation and toxicity).
60's pack: 180.00 MRP

❖ **CIVIC-ZF Cap. Kumudini**
This is a specialised combined preparation of carbonyl iron, folic acid, vitamin-B complex, vitamin C & zinc. (Iron is presented in carbonyl iron form to avoid gastric irritation and toxicity).
50's pack: 175.00 MRP

❖ **EPL Plus Cap. Globe**
This is a specialised combined preparation of carbonyl iron, folic acid, vitamin-B complex, vitamin C & zinc. (Iron is presented in carbonyl iron form to avoid gastric irritation and toxicity).
30's pack: 105.00 MRP

❖ **FAMINA Z Cap. Silva**
This is a specialised combined preparation of carbonyl iron, folic acid, vitamin-B complex, vitamin C & zinc. (Iron is presented in carbonyl iron form to avoid gastric irritation and toxicity).
60's pack: 210.00 MRP

❖ **FEOCRON Plus Cap. Novo Healthcare**
This is a specialised combined preparation of carbonyl iron, folic acid, vitamin-B complex, vitamin C & zinc. (Iron is presented in carbonyl iron form to avoid gastric irritation and toxicity).
30's pack: 105.00 MRP

❖ **FORMUM Cap. Radiant**
This is a specialised combined preparation of carbonyl iron, folic acid, vitamin-B complex, vitamin C & zinc. (Iron is presented in carbonyl iron form to avoid gastric irritation and toxicity).
50's pack: 175.00 MRP

❖ **OMNIVIT Cap. Beximco**
This is a specialised combined preparation of carbonyl iron, folic acid, vitamin-B complex, vitamin C & zinc. (Iron is presented in carbonyl iron form to avoid gastric irritation and toxicity).
50's pack: 175.00 IP

❖ **SYN-Z Cap. Syntho**
This is a specialised combined preparation of carbonyl iron, folic acid, vitamin-B complex, vitamin C & zinc. (Iron is presented in carbonyl iron form to avoid gastric irritation and toxicity).
50's pack: 175.00 MRP

❖ **XVIT Cap. Beacon**
This is a specialised combined preparation of carbonyl iron, folic acid, vitamin-B complex, vitamin C & zinc. (Iron is presented in carbonyl iron form to avoid gastric irritation and toxicity).
50's pack: 175.00 MRP

❖ **ZIF Forte Cap. Square**
This is a specialised combined preparation of carbonyl iron, folic acid, vitamin-B complex, vitamin C & zinc. (Iron is presented in carbonyl iron form to avoid gastric irritation and toxicity).
30's pack: 105.00 MRP

❖ **ZILVIT Cap. SK+F**
This is a specialised combined preparation of carbonyl iron, folic acid, vitamin-B complex, vitamin C & zinc. (Iron is presented in carbonyl iron form to avoid gastric irritation and toxicity).
60's pack: 210.00 MRP

3. *Drugs used in Megaloblastic Anaemias*

CYANOCOBALAMIN (B_{12})[21,33]

CYANOCOBALAMIN: Tablet/ Injection
Ind: Pernicious anaemia and other B12 responsive macrolytic anaemias; prophylaxis in total gastrectomy or total ileal resection, malabsorption syndrome, coeleac disease, tropical sprue etc.
C/I: Leber's disease, tobacco amblyopia (use hydroxocobalamin).
Dosage & admin: Adult: 250-1000mcg i.m on alternate days for 1-2 weeks (or for 10 times), then 250mcg weekly until blood count is normal. Maintenance, 1000mcg every monthly. Children: Initially as for adult, subsequent dosage according to haematological response (for detail see manuf. literature).

❖ **CYNODEX Inj. Gaco**
Cyanocobalamine 1mg/1ml ampoule:injection.
1 ampoule: 3.43 MRP

❖ **CYNOVIT Inj. Chemist**
Cyanocobalamine 1mg/1ml ampoule:injection.
25 amps pack: 101.00 MRP

❖ **CYNOMIN Inj. Jayson**
Cyanocobalamin 250mcg/1ml ampoule & 1000mcg/1ml ampoule & 10ml vial: injection
1ml (250mcg) amp x 10's pack: 35.00 IP
1ml (1000mcg) amp x 10's pack: 30.30 IP
10ml vial (1000mcg/ml) x 1's pack: 25.00 IP

❖ **VITAMIN B_{12} Inj. Rephco**
Cyanocobalamine 1mg/1ml ampoule: injection
25 amps pack: 80.00 MRP

HYDROXOCOBALAMIN[39]

HYDROXOCOBALAMIN: Injection
Hydroxocobalamin is a new form of vitamin B12 & it has completely replaced cyanocobalamin as the choice of therapy.
Mode of action: Hydroxocobalamin is readily converted into the coenzyme forms which, as methylcobalamin, is concerned with conversion of homocysteine to methionine, and as deoxyadenosyl-cobalamin, with the conversion of methylmalonyl-CoA to succinyl-CoA.
The active coenzymes, methylcobalamin and 5-deoxyadenosyl- coblalamin are essential for cell growth and replication.
Hydroxcobalamin has completely replaced cyanocobalamin as the form of vitamin B12 of choice for therapy; it is retained in the body longer than cyanocobalamin and thus at intervals of 3 months.
Ind: Addisonian pernicious anaemia; prophylaxis and treatment of other macrocytic anaemias due to vitamin B12 deficiency; tobacco amblyopia and Leber's optic atrophy; transcobalamin II deficiency; methylmalonylaciduria.
C/I: Sensitivity to hydroxocobalamin
S/E: Allergic or hypersensitivity reactions have occurred rarely following the administration of hydroxocobalamin.
Precautions: Treatment, if possible, should be started after confirming the diagnosis.
Administration of doses greater than 10mcg daily may produce a haematological response in patients with folate deficiency. Indiscriminate use may mask the precise diagnosis. Regular monitoring of the blood is advisable. Cardiac arrhythmias secondary to hypokalaemia have been reported during initial therapy and plasma potassium should therefore be monitored during this period.
Use in pregnancy: It should not be used to treat megaloblastic anaemia of pregnancy.

Dosage & Admin: ***Addisonian pernicious anaemia & other macrocytic anaemias without neurological involvement:*** **Initially, 250mcg to 1000mcg i.m injection on alternate days for 1 or 2 weeks then 250mcg weekly until blood count is normal; maintenance,1000mcg every 2 or 3 months.**
Addisonian pernicious anaemia and other macrocytic anaemias with neurological involvement: **Initially,1000mcg on alternate days as long as improvement continues; maintenance,1000mcg every 2 months.**
Prophylaxis of macrocytic anaemias associated with vitamin B12 deficiency resulting from gastrectomy, ileal resection, certain malabsorption states and vegetarianism: **1000mcg every 2 or 3 months.**
Tobacco amblyopia & Leber's optic atrophy: **intially, 1000mcg daily by i.m injection for 2 weeks then twice weekly as long as improvement is maintained; maintenance, 1000mcg every 3 months or as required.**
Drug inter: The serum concentration of hydroxocobalamin may be reduced by concurrent administration of oral contraceptives.
Chloramphenicol treated patients may respond poorly to hydroxocobalamin. Vitamin B12 assays by microbiological techniques are invalidated by antimetabolites and most antibiotics.
Note: For further information, please consult manufacturer's literature.

❖ **CYNOMIN-H Inj. Jayson**
Hydroxocobalamin USP 1000mcg/1ml ampoule: injection.
10 amps pack: 45.70 IP

MECOBALAMIN[107]

MECOBALAMIN: Tablet/Injection
Mecobalamin is a B_{12}-containing coenzyme with an active methyl base, developed synthetically through original technology. It participates in transmethy-lation reactions and is the most active of all B_{12} homologous in the body with respect to nucleic acid, protein and lipid metabolism.
Mecobalamin acts to repair damaged nerve tissue in nerve disorders
(peripheral neuropathies) such as axonal degeneration and demyelination; and it is involoved in erythroblast maturation, promotion of erythroblast division, and heme synthesis, thus acting to improve the status of the blood in megaloblastic anemia.
Ind: Peripheral neuropathies (e.g diabetic and alcoholic neuropathy, drug induced neuropathy, lumbago, entrapment neuropathy, intercostal neuralgia and diabetic retinopathy and otber neuropathies).
Megaloblastic anemia due to vitamin B_{12} deficiency (injection only).
S/E: *Tablet preparation:* loss of appetite, nausea, diarrhea or other symptoms of gastrointestinal upsets may infrequently appear.
Injection: hypersensitivity- use of the drug should be discontinued if symptoms of hypersensitivity, such as eruptions. *Other adverse reactions may include:* pain and induration at the site of injection and in rare cases, headache, sweating or fever may occur.
Precautions: Since this drug decomposes upon exposure to light, injection should be used immediately after the package is opened. In case of intramuscular route, repeated injection at the same site should be avoided. Particular care should be exercised when administering this drug to neonates, premature infants, infants and children. If the patient complains of pain or if blood reflux occurs when the syringe needle is inserted, withdraw it immediately and try at a different site.In case of oral preparation, the medicine should not be used for months, if there is no response at all after its use for a certain period of time.
Dosage & admin: ***By mouth:*** **Adults, usually 500mcg (one tablet) 3 times a day; the dosage should be adjusted according to the age of the patient and the severity of symptoms.**
By injection: **Peripheral neuropathies- the usual adult dose is 500mcg (one ampoule) administered i.m or i.v 3 times a week; the dosage should be adjusted according to the age of the patient and severity of symptoms. Megaloblastic anemia- the usual adult dose is 500mcg (one ampoule) administered i.m or i.v 3 times a week; after about 2 months of administration, dosage should be changed to 500mcg (one ampoule) every one to three months as maintenance therapy.**
Storage: This medicine (tablet & injection) is unstable in light, so it should be stored, protected from light; heat should be avoided.

❖ **MACLON Tab. White Horse**
Mecobalamin 500mcg/tablet.
50's pack: 150.00 MRP

❖ **MB-12 Tab. Acme**
Mecobalamin 500mcg/tablet.
30's pack: 120.00 MRP

❖ **MB-12 Inj. Acme**
Mecobalamin 500mcg/1ml ampoule: injection.

5 amps pack: 150.00 MRP

❖ **MECOBAL Tab. General**
Mecobalamin 500mcg/tablet.
30's pack: 120.00 MRP

❖ **MECOL Tab. Aristopharma**
Mecobalamin 500mcg/tablet.
50's pack: 200.00 MRP

❖ **MECOLAGIN Tab. Incepta**
Mecobalamin 500mcg/tablet.
60's pack: 240.00 MRP

❖ **MECOLAGIN Inj. Incepta**
Mecobalamin 500mcg/1ml ampoule: injection.
5 amps pack: 150.00 MRP

❖ **MECOLIN Tab. Drug Inter.**
Mecobalamin INN 500mcg/tablet.
50's pack: 200.00 MRP

❖ **MECOMIN Tab. Peoples**
Mecobalamin 500mcg/tablet.
50's pack: 200.00 MRP

❖ **MECOPEN Tab. SK+F**
Mecobalamin 500mcg/tablet.
50's pack: 200.00 MRP

❖ **METHICOL Tab. Square**
Mecobalamin 500mcg/tablet.
60's pack: 240.00 MRP

❖ **METHICOL Inj. Square**
Mecobalamin 500mcg/1ml ampoule: injection.
5 amps pack: 150.00 MRP

❖ **NERVEX Tab. Orion**
Mecobalamin 500mcg/tablet.
50's pack: 200.00 MRP

❖ **NEURAL Tab. Healthcare**
Mecobalamin 500mcg/tablet.
30's pack: 120.00 MRP

❖ **PEDIAL Tab. Globe**
Mecobalamin 500mcg/tablet.
50's pack: 200.00 MRP

❖ **PHYTON Tab. ACI**
Mecobalamin 500mcg/tablet.
50's pack: 200.00 IP

❖ **PHYTON Inj. ACI**
Mecobalamin 500mcg/1ml ampoule: injection.
5 amps pack: 150.00 IP

❖ **REMYLIN Tab. Ibn Sina**
Mecobalamin 500mcg/tablet.
30's pack: 120.00 MRP

FOLIC ACID[21,33]

FOLIC ACID: Tablet/Syrup
Ind: Megaloblastic anaemia due to folic acid deficiency; prophylaxis and treatment of anaemia in pregnancy.
C/I: Pernicious anaemia
S/E: Nausea, anorexia, abdominal distension and flatulence may develop.
Precautions: It should never be given alone in the treatment of Addisonian pernicious anaemia and other vita. B12 deficiency states because it may precipitate the onset of subacute combined degeneration of spinal cord. Do not use in malignant disease unless megaloblastic anaemia due to folate deficiency is an important complication.
Dosage & admin: Adult: Initially, 5mg daily for 4 months or until a haematopoietic response has been obtained; maintenance, 5mg every 1-7 days.
Child: Initially daily for 2 days, upto 1year 500 mcg/kg; 1-5 years 5mg; 6-12 years,10mg; maintenance half the initial dose.

❖ **FOLAC Tab. Ambee**
Folic acid 5mg/tablet
200's pack: 48.00 MRP

❖ **FOLIC ACID Tab. Elixir**
Folic acid 5mg/tablet
100's pack:

❖ **FOLISON Tab. Jayson**
Folic acid 5mg/tablet
100's pack: 27.00 MRP

❖ **FOLITAB Tab. Ziska**
Folic acid 5mg/tablet
100's pack: 30.00 MRP

❖ **TEROVIT Tab. Gaco**
Folic acid 5mg/tablet
100's pack: 27.00 MRP

4. Drugs used in Haemolytic, Hypoplastic & Renal Anaemias

EPOETIN ALFA & BETA[21,50,106]

EPOETIN ALFA & BETA: Injection
Epoetin alfa & beta are recombinant human erythropoietins (r-HuEPO), chemically glycoproteins, which stimulate erythropoiesis. So, epoetin is used for the treatment of anaemia associated with erythropoietin deficiency, as in chronic renal failure. Epoetin is produced from mammalian cells, into which the gene coding for human erythropoietin has been inserted. It is structurally & immunologically identical to erythropoietin produced by the normal functioning kidney. Epoetin alfa and beta are clinically indistinguishable & their efficacy is also similar, but epoetin beta is also indicated for the prevention of anaemia in premature low birth-weight infants.
Mode of action: Erythropoietin as a glycoprotein, it stimulates the formation of erythrocytes from precursors of the stem cell compartment. It acts as a mitosis-stimulating factor and differentiating hormone.

Ind: Epoetin (alpha & beta) is indicated in the following conditions: 1. Treatment of anemia associated with chronic renal failure (renal anemia), including patients on dialysis. 2. Treatment of anemia in patients with non-myeloid solid tumours where anemia is due to the effect of concomitantly administered platinum-based chemotherapy. 3. Anemic patients (hemoglobin >10 to <13gm/dl) scheduled to undergo elective, noncardiac, nonvascular surgery to reduce the need for allogeneic blood transfusions. 4. Anemia related to therapy with zidovudine in HIV-infected patients. 5. Epoetin beta is specially indicated for the prevention of anemia of prematurity in infants with a low birth-weight of 750gm to 1500gm and a gestation age of less than 34 weeks.
C/I: Uncontrolled hypertension; hypersensitivity to any component of this product.
A/E: Flu-like symptoms, such as headache, joint pain, feeling of weakness, dizziness and tiredness may occur, specially at the start of treatment. The most frequent adverse reaction during treatment with r-HuEPO is a dose-dependent increase in blood pressure or aggravation of existing hypertension. The following reactions may also occur in isolated patients with normal or low blood pressure- hypertensive crisis with encephalopathy-like symptoms and generalised tonoclonal seizures, requiring the immediate attention of a physician & intensive medical care.

Precautions: r-HuEPO should be used with caution in patients with ischaemic vascular disease or history of seizures. Patients should be closely monitored for changes in haemoglobin, blood pressure and serum electrolytes. In most cases, the ferritin values in the serum fall simultaneously with the rise in packed cell volume. Therefore, iron supplementation is recommended for all patients whose serum ferritin levels are below 100ng/ml or whose transferrin saturation index falls below 20%.

Dosage & admin: ***Treatment of anemia in chronic renal failure:*** **Epoetin is administered to maintain hemoglobin concentration between 11 to 12gm/dl & hematocrit of 33-36% in adults. Starting dose:** ***Adults:*** **50-100 IU/kg 3 times per week by i.v or s.c route.** ***Pediatric:*** **50 IU/kg 3 times per week by i.v or s.c route.**
Dose adjustment: Dose should be increased if hematocrit does not increase by 5 to 6 points after 8 weeks therapy, and hematocrit exists below suggested target range. Dose should be reduced when hematocrit approaches 36% or it increases >4 points in any 2-week period. When a dose adjustment is necessary, it should be done at 4 week intervals & each adjustment in dose should be equal to 25 IU/kg.
Maintenance dose: Maintenance dose must be individualized for each patients. In CRF patients not on dialysis, maintenance dose is 75 to 150 IU/kg/week. In patients undergoing dialysis, the median maintenance dose is 75 IU/kg 3 times per week. The maximum dosage should not exceed 200 IU/kg 3 times per week. If the hemoglobin exceeds 13gm/dl, the dose should be discontinued until the hemoglobin drops to 12gm/dl. The dose should be reduced by 25% when treatment is resumed and then titrated to maintain hemoglobin level.
When the treatment is stopped, the hemoglobin concentration falls by around 0.5gm/dl per week.
Treatment of anemia in cancer patients on chemotherapy: **Starting dose:** ***Adult:*** **150 IU/kg 3 times per week by s.c route.** ***Pediatric:*** **25 to 300 IU/kg 3 to 7 times per week by s.c or i.v route.**
Dose Adjustment: If the response is not satisfactory, the dose should be increased to 300 IU/kg 3 times per week. If the hematocrit exceeds 40%, the dose should be stopped until the hematocrit falls to 36%. The dose should be reduced to 25% when treatment is resumed & titrated to maintain the desired hematocrit.
Prevention of anemia of prematurity: **The injection is administered s.c at a dose of 250 IU/kg body-weight 3 times per week.**
Epoetin beta treatment should start as early as possible preferably by day 3 of life. Treatment should last for 6 weeks.
Instructions for injection: **S.C injection: A maximum volume of 1ml at one injection site,**

and should generally not be exceeded.

I.V injection: Over at least 1-2 minutes; in bemodialysed patients, the injection should be given after the dialysis session, into the fistula needle; do not administer by intravenous infusion, or mix with other drugs. Store at 2°-8°C; do not freeze or shake.

Note: Consult manufacturer's literature, if needed.

❖ **EPOETIN Inj. Incepta**
Epoetin 2000 IU, 3000 IU, 5000 IU & 10000 IU pre-filled syringes: for i.v or s.c injection.
2000 IU pre-filled syringe x 1's: 900.00 MRP
3000 IU pre-filled syringe x 1's: 1250.00 MRP
5000 IU pre-filled syringe x 1's: 1900.00 MRP
10000 IU pre-filled syringe x 1's: 3800.00 MRP

❖ **EPREX Inj. Janssen-Cilag/UniHealth**
Epoetin alfa 2000 IU, 4000 IU & 10000 IU pre-filled syringes: for i.v or s.c injection.
2000 IU pre-filled syringe x 1's: 1784.11 MRP
4000 IU pre-filled syringe x 1's: 3568.23 MRP
10000 IU pre-filled syringe x 1's: 5090.50 MRP

Chapter-13
DRUGS USED IN VITAMIN, MINERAL & NUTRITIONAL DEFICIENCY DISORDERS

DRUGS DISCUSSED IN THIS CHAPTER INCLUDE:

1. **Vitamin prepns.**
   - 1.1 **Specific vitamin prepns.**
   - 1.2 **Specific combined vitamin prepns.**
   - 1.3 **Anti-oxidant multivitamin prepns.**
   - 1.4 **Nonspecific multivitamin prepns.**
2. **Mineral & Mineral + Vitamin specific prepans.**
   - 2.1 **Specific mineral prepns.**
   - 2.2 **Specific mineral & vitamin combined prepns.**
3. **Multivitamin & multimineral combined prepns.**
   - 3.1 **Nonspecific multivitamin & multimineral combined prepns.**
   - 3.2 **Super anti-oxidant vitamins & multimineral prepns.**
   - 3.3 **Specialised multivitamin & multimineral combined prepns.**
4. **Nutritional & Energy supplement prepns.**
   - 4.1 **Oral nutritional prepns.**
   - 4.2 **Parenteral nutritional prepns.**

1.1 Specific Vitamin Prepns.

Vitamin-A Prepns.

VITAMIN-A[21,26,33]

VITAMIN-A: Tablet/Capsule/ Drop/ Injection
Ind: Vitamin A deficiency states, such as night blindness, impaired dark adaptation; lichen planus, acne, dry skin and other hyperkeratoses. Gastro-intestinal disorders associated with disturbances in lipid absorption.
Precautions: Hypervitaminosis-A can occur in infants and young childern given' excessive doses for long periods. Avoid use in early pregnancy.
S/E: Overdose can cause rough skin, dry hair, enlarged liver, and a raised ESR and raised serum calcium and serum alkaline phosphatase concentrations.
Dosage & admin: ***Adult:*** **Oral- Prophylaxis, 4000 i.u. daily; in deficiency state, 50,000 to 300,000 i.u daily.**
Injection: By deep i.m. injection, 150,000-300,000 i.u monthly, increased to weekly in acute deficiency states.
Children: **Oral- upto 50,000 i.u. daily.**
Injection- same as adult.

❖ **A-FORTE Soft Cap. Globe**
Vitamin A palmitate 50,000 i.u/capsule (soft gelatin).
100's pack: 190.00 MRP

❖ **A-VIT-1 Soft Cap. Globe**
Vitamin A palmitate 1,00,000 i.u/capsule (soft gelatin).
100's pack: 283.00 MRP

❖ **A-VIT-2 Soft Cap. Globe**
Vitamin A palmitate 2,00,000 i.u/capsule (soft gelatin).
100's pack: 404.00 MRP

❖ **OVIT-A Cap. Opsonin**
Vitamin A 50,000 i.u/capsule (soft gelatin).
100's pack: 190.00 MRP

❖ **RATINOL Forte Cap. Drug Inter.**
Vitamin A 50,000 i.u/capsule (soft gelatin).
120's pack: 230.40 MRP

❖ **VIS-A SG Cap. Pacific**
Vitamin A 50,000 i.u/capsule (soft gelatin).
100's pack: 190.00 MRP

❖ **VITAMIN A FORTE Cap. Drug Inter.**
Vitamin A palmitate 2,00,000 i.u/capsule (soft gelatin).
50's pack: 136.50 MRP

VITAMIN-D PREPNS.[21]

Vitamin-D preparations include:

1. **Ergocalciferol (calciferol or vitamin-D_2)**
2. **Cholecalciferol (vitamin-D_3)**
3. **Alfacalcidol (1 α - hydroxycholecalciferol)**
4. **Calcitriol (1, 25 dihydroxy cholecalciferol)**
5. **Dihydrotachysterol**

ERGOCALCIFEROL(D_2)/ CHOLECALCIFEROL(D_3)[21,33,88]

ERGOCALCIFEROL (D_2)/ CHOLECALCIFEROL (D_3): Tablet/Capsule/ Solution/Drop/Injectin
Ind: Prophylaxis of rickets in mature infants; therapy of rickets & osteomalacia induced by vitamin D deficiency; supportive treatment in osteoporosis; prophylaxis in recognisable risk of a vitamin-D deficiency disease; deficiency caused by intestinal malabsorption or chronic liver disease; abnormal calcium or phosphate metabolism; renal osteodystrophy; hypocalcaemia of hypoparathyroidism; as adjunct in treatment of lupus vulgaris and T.B adenopathies.
C/I: Renal dysfunction; hypercalcaemia, metastatic calcification.
S/E: Symptoms of overdosage include anorexia, lassitude, nausea and vomiting, diarrhoea, weight loss, polyuria, sweating, headache, thirst, vertigo, and raised concentrations of calcium and phosphate in plasma and urine.
Dosage & admin: ***By mouth:*** **Adult & Child:**
Simple Vitamin- D deficiency, **400 i.u (10mcg) daily;**
Deficiency caused by intestinal malabsorption or chronic liver disease, **upto 40,000 i.u. (lmg) daily.**
Renal osteodystrophy, **upto 200,000 i.u. (5mg) daily.**
Rickets & Osteomalacia, **1000-5000 i.u. daily.**

By Injection:

In Rickets- for prevention: **200,000 i.u or 1 ampoule every 4 months which may be increased to 400,000 i.u (2 ampoules). In pregnancy- 1 ampoule at the 6th month. Prevention should be started early and continue to the 5th year of life.**
In Rickets- curative: **1 ampoule every 2 weeks for one month and then**
1 ampoule every 4 months or 600,000 i.u (3 ampoules) renewed some months later, as per the severity of the case.
Hypocalcaemia caused tetany: **Same as for preventing Rickets.**
Osteoporosis & Osteomalacia: **200,000 i.u (1 ampoule) every 15 days for 3 months.**
Renal Osteodystrophy: **200,000 i.u (1 ampoule) or more daily or as advised by the physicians.**

❖ **CALCIFEROL Inj. Renata**
Calciferol injection 1ml ampoule contains-cholecalciferol (vitamin D_3) BP 200,000 i.u.
1ml amp (200,000 i.u/ml) x 1's pack: 90.00 MRP

❖ **CALCIROL Inj. Drug Inter.**
Calcirol injection 1ml ampoule contains-cholecalciferol (vitamin D_3) BP 200,000 i.u.
1ml amp (200,000 i.u/ml) x 1's pack: 120.00 MRP

❖ **DEBOLIN Inj. Chemist**
Debolin injection 1ml ampoule contains-cholecalciferol (vitamin D_3) BP 200,000 i.u.
1ml amp (200,000 i.u/ml) x 2's pack: 180.00 MRP

❖ **OSTEO-D Injectable & Oral Soln. Incepta**
Injectable solution- 1ml ampoule contains cholecalciferol (vitamin D_3) BP 200,000 i.u.
Oral solution- 1ml contains cholecalciferol (vitamin D_3) BP 200 i.u (or 5mcg); 15ml bottle.

1ml amp (200,000 i.u/ml) x 1's pack: 90.00 MRP
15ml bot (200 i.u/ml) x 1's pack: 75.00 MRP

❖ **VIGANTOL Oil Soln. Popular**
Vigantol oil, 1ml solution (30 drops) contains 0.5mg cholecalciferol, equivalent to 20,000 IU vitamin D_3.
10ml dropping vial: 360.46 MRP

❖ **VITAMINE D3 B.O.N Lab. Doms Adrian/ Maisha Health**
Oily solution of cholecalciferol 200,000 i.u/1ml ampoule: injectable i.m or drinkable.
1ml amp x 1's pack: 135.00 TP

ALFACALCIDOL[21,73,89] (1 α-hydroxycholecalciferol)

ALFACALCIDOL: Capsule/Solution/ Injection.
Alfacalcidol or 1 α- hydroxycholecalciferol is the active form of vitamin-D3, which is formed in the kidney tissues by hydroxylation of D3.
Ind: (i) Severe renal impairment requiring vitamin-D therapy (i.e renal osteodystrophy- because, in this condition kidney fails to convert D_3 into its active form i.e 1 α- hydroxycholecalciferol, so it is prescribed).
(ii) Hypoparathyroidism & other diseases associated with abnormal vitamin-D metabolism.
(iii) Postmenopausal & other osteoporosis.
C/I; S/E: See under ergocalciferol.
Cautions: All patients receiving pharmacological doses of vitamin-D should have the plasma calcium concentration checked at intervals (initially weekly) & whenever nausea or vomiting are present; take care to ensure correct dose in infants; renal impairment.
Dosage & admin : By mouth or by i.v injection (over 30 seconds): adult & child over 20kg- initially 1mcg daily (elderly 500 nanogram), adjusted to avoid hypercalcaemia; maintenance, usually 0.25-1mcg daily; Child under 20kg- initially 50 nanograms/kg daily; Neonate & premature Infant- initially 50-100nanograms/kg daily.

❖ **ONE ALPHA Cap. Leo Pharma/ Kapricorn**
Alfacalcidol (1 α-hydroxycholecalciferol)
0.25mcg/capsule.
Dosage & admin: Adult and Child over 20kg- initially 1mcg daily (elderly 500 ngm), adjusted to avoid hypercalcaemia; maintenance, usually 0.25-1mcg daily. Child under 20kg-, initially 50 ngm/kg daily. Neonate & premature infants- initially 50-100 ngm/kg daily.
100's pack: 1195.00 MRP

CALCITRIOL[21,50] (1,25-dihydroxycholecalciferol)

CALCITRIOL (1,25-Dihydroxycholecalciferol): Capsule/Injection
Calcitriol (or 1,25-dihydroxycholecalciferol) is available as 0.25mcg/capsule for oral ingestion and 1mcg/1ml ampoule for injection.
Ind: *Oral capsule:* Requiring vitamin-D therapy in patients with severe renal impairment i.e renal osteodystrophy (vitamin-D requires hydroxylation by the kidney to its active form i.e 1 -hydroxycholecalciferol, or 1,25-dihydroxycholecalciferol so, in severe renal impairment it is prescribed); postmenopausal osteoporosis.
Parenteral injection: Hypocalcaemia in dialysis patients with chronic renal failure.
C/I; S/E; Cautions: See above under ergocalciferol.
Dosage & admin:
By mouth: Renal osteodystrophy: Adult, initially 0.25mcg daily or on alternate days, increased if necessary in steps of 0.25mcg at intervals of 2-4 weeks;usual dose 0.5-1mcg daily; child, not established.
Established postmenopausal osteoporosis: 0.25mcg twice daily (monitor plasma calcium and creatinine level if possible).
By injection: Hypocalcaemia in dialysis patients with chronic renal failure- by i.v injection or through dialysis catheter after haemodialysis, initially 500 nanograms (approx. 10 nanograms/kg) 3 times a week, increased if necessary in steps of 250-500 nanograms at intervals of 2-4 weeks; usual dose 0.5-3mcgs 3 times a week.
Child: Not established.

❖ **CALOREN I.V Inj. ACI**
Calcitriol (1,25-dihydroxycholecalciferol)
1mcg/1ml ampoule: i.v injection
1ml amp x 1's pack: 155.00 IP

❖ **CALTROL Cap. Pacific**
Calcitriol (1,25-dihydroxycholecalciferol)
0.25mcg/capsule.
0.25mcg x 30's pack: 240.00 MRP

❖ **COLITROL Cap. Incepta**
Calcitriol (1,25-dihydroxycholecalciferol)
0.25mcg/capsule.
0.25mcg x 30's pack: 300.00 MRP

❖ **COLITROL Inj. Incepta**
Calcitriol (1,25-dihydroxycholecalciferol)
1mcg/1ml ampoule: i.v injection
1ml amp x 1's pack: 155.00 IP

❖ **DEBOLIN Inj. Chemist**
Calcitriol (1,25-dihydroxycholecalciferol)
1mcg/1ml ampoule: injection
1ml amp x 1's pack: 120.00 MRP

❖ **DICALTROL Cap. Drug Inter.**
Calcitriol (1,25-dihydroxycholecalciferol)
0.25mcg/capsule.
0.25mcg x 50's pack: 350.00 MRP

❖ **LIQUICAL Cap. Beacon**
Calcitriol (1,25-dihydroxycholecalciferol)
0.25mcg/capsule.
0.25mcg x 30's pack: 300.00 MRP

❖ **ROCALTROL Cap. Roche**
Calcitriol (1,25-dihydroxycholecalciferol)
0.25mcg & 0.50mcg/capsule.
0.25mcg x 30's pack: 390.30 MRP

VITAMIN A+D / VITAMIN A+D+E[21,33]

❖ **COD LIVER OIL Cap. Drug Inter.**
Vitamin A, D & E soft gelatin capsule.
120's pack: 121.00 MRP

❖ **CODVIT Cap. Opsonin**
Cod liver oil capsule, contains vitamin A 600 i.u & vitamin D_3 85 i.u: soft gelatin capsule
100's pack: 100.00 MRP

❖ **SEVENSEAS COD LIVER OIL British Cod Liver Oil Ltd.**
Vitamin A & D containing fish cod liver oil.
170ml & 450ml bottle.
Dose: 1 tsf 3 times daily.
170ml x 12's pack: 474.50 MRP
450ml pack: 86.94 MRP
Prices: Could not be revised.

❖ **SEVENSEAS (High Potency) Cap. B.C.L.O Ltd.**
High potency vitamin A & D containing fish liver oil: capsule.
100's x12 bot: 647.20 MRP
500's x12 bot: 2174.50 MRP
Prices: Could not be revised.

MULTIVITAMIN + COD LIVER OIL PREPNS.[26,34,139]

MULTIVITAMIN + COD LIVER OIL PREPN: Syrup
This is a special preparation of multivitamin, comprising vitamin A, D, B_1, B_2, B_6, C, E, nicotinamide & cod liver oil. These eight essential vitamins & cod liver oil, which adequately replenish the deficiency of vitamins & maintains the proper growth & resistance of body against diseases. These are also essential for normal metabolic functions including hematopoiesis.
Comp: Each 5ml contains- vitamin A (as vitamin A propionate) BP 2000 i.u, vitamin D (as cholecalciferol) BP 200 i.u, vitamin B_1 (as thiamine hydrochloride) BP 0.70mg, vitamin B2 (as riboflavine sodium phosphate) BP 0.85mg, vitamin B6 (as pyridoxine hydrochloride) BP 0.35mg, vitamin C (as ascorbic acid) BP 17.50mg, vitamin E (as alpha tocopherol acetate) BP 1.50 i.u, nicotinamide BP 9.00mg, & cod liver oil BP 100mg.
Ind: To supply the increased need of growing child; prevention of deficiency syndromes; improvement of child appetite, supplement of multivitamin for the malnourished patients during rehabilitating period.
C/I: This product is contraindicated in patients with a known hypersensitivity to any of the ingredients.
S/E: Generally well tolerated. However, a few allergic reactions may be seen.
Precautions: The multivitamin ingredients may accumulate in the body, which may cause danger. So, it should not use over dosage or not use continuously.
Pregnancy & lactation: Recommended.
Dosage & admin: Infant (1-12 months): 1/2 tsf daily; Child (1-4 yrs): 1 tsf daily; Child (4 yrs up): 11/2 tsf daily.
Drug inter: No such drug interactions have been reported.

❖ **AQUAVIT Syp. Somatec**
This is a special preparation of multivitamin comprising vitamin A, D, B_1, B_2, B_6, C, E, nicotinamide & cod liver oil: syrup
Comp: See above under the text.
Dose & admin: See above under the text.
100ml bottle: 80.00 MRP

❖ **BEXTRAM KIDZ Syp. Beximco**
This is a special preparation of multivitamin comprising vitamin A, D, B1, B2, B6, C, E, nicotinamide & cod liver oil: syrup
Comp: See above under the text.
Dose & admin: See above under the text.
100ml bottle: 80.00 MRP

❖ **CNV Syp. Delta**
This is a special preparation of multivitamin comprising vitamin A, D, B1, B2, B6, C, E, nicotinamide & cod liver oil: syrup
Comp: See above under the text.
Dose & admin: See above under the text.
60ml bottle: 45.00 MRP
100ml bottle: 80.00 MRP

❖ **CODLIVIT Syp. Silva**
This is a special preparation of multivitamin comprising vitamin A, D, B1, B2, B6, C, E, nicotinamide & cod liver oil: syrup
Comp: See above under the text.
Dose & admin: See above under the text.
100ml bottle: 80.00 MRP
200ml bottle: 150.00 MRP

❖ **COD PLUS Syp. Apex**
This is a special preparation of multivitamin comprising vitamin A, D, B1, B2, B6, C, E, nicotinamide & cod liver oil: syrup
Comp: See above under the text.
Dose & admin: See above under the text.
100ml bottle: 80.00 MRP
200ml bottle: 145.00 MRP

❖ **CODVITA Syp. Amico**
This is a special preparation of multivitamin comprising vitamin A, D, B1, B2, B6, C, E, nicotinamide & cod liver oil: syrup
Comp: See above under the text.
Dose & admin: See above under the text.
100ml bottle: 80.00 MRP

❖ **E-COD Syp. Novo Healthcare**
This is a special preparation of multivitamin comprising vitamin A, D, B1, B2, B6, C, E, nicotinamide & cod liver oil: syrup
100ml bottle: 80.00 MRP

❖ **FILWEL KIDS Syp. Square**
This is a special preparation of multivitamin comprising vitamin A, D, B1, B2, B6, C, E, nicotinamide & cod liver oil: syrup
100ml bottle: 80.00 MRP
200ml bottle: 145.00 MRP

❖ **GOLD KID Syp. Orion**
This is a special preparation of multivitamin comprising vitamin A, D, B1, B2, B6, C, E, nicotinamide & cod liver oil: syrup
100ml bottle: 80.00 MRP

❖ **HEPTASEAS Syp. ACI**
This is a special preparation of multivitamin comprising vitamin A, D, B_1, B_2, B_6, C, E, nicotinamide & cod liver oil: syrup
100ml bottle: 80.00 MRP

❖ **JUNIVIT Syp. Ibn Sina**
This is a special preparation of multivitamin comprising vitamin A, D, B_1, B_2, B_6, C, E, nicotinamide & cod liver oil: syrup
100ml bottle: 80.00 MRP

❖ **KIDDI Syp. Renata**
This is a special preparation of multivitamin comprising vitamin A, D, B_1, B_2, B_6, C, E, nicotinamide & cod liver oil: syrup
50ml bottle: 50.00 MRP
100ml bottle: 80.00 MRP
200ml bottle: 140.00 MRP

❖ **MIXAVIT Syp. SK+F**
This is a special preparation of multivitamin comprising vitamin A, D, B_1, B_2, B_6, C, E, nicotinamide & cod liver oil: syrup
100ml bottle: 80.00 MRP

❖ **MULTI SEAS Syp. General**
This is a special preparation of multivitamin comprising vitamin A, D, B1, B2, B6, C, E, nicotinamide & cod liver oil: syrup
100ml bottle: 80.00 MRP
200ml bottle: 145.00 MRP

❖ **NINE SEAS Syp. Aristopharma**
This is a special preparation of multivitamin comprising vitamin A, D, B_1, B_2, B_6, C, E, nicotinamide & cod liver oil: syrup
100ml bottle: 80.00 MRP
200ml bottle: 145.00 MRP

❖ **PEDIAVIT Syp. UniMed/UniHealth**
This is a special preparation of multivitamin comprising vitamin A, D, B_1, B_2, B_6, C, E, nicotinamide & cod liver oil: syrup
100ml bottle: 80.00 MRP

❖ **REVAM KIDS Syp. Navana**
This is a special preparation of multivitamin comprising vitamin A, D, B1, B2, B6, C, E, nicotinamide & cod liver oil: syrup
50ml bottle: 45.00 MRP
100ml bottle: 80.00 MRP

❖ **SEAS Plus Syp. Globe**
This is a special preparation of multivitamin comprising vitamin A, D, B1, B2, B6, C, E, nicotinamide & cod liver oil: syrup
100ml bottle: 80.00 MRP
200ml bottle: 145.00 MRP

❖ **SUPRACOD Syp. Drug Inter.**
This is a special preparation of multivitamin comprising vitamin A, D, B1, B2, B6, C, E, nicotinamide & cod liver oil: syrup
100ml bottle: 80.00 MRP

❖ **VITAGROW Syp. Incepta**
This is a special preparation of multivitamin comprising vitamin A, D, B1, B2, B6, C, E, nicotinamide & cod liver oil: syrup
100ml bottle: 80.00 MRP

❖ **VITA SEAS Syp. Medicon**
This is a special preparation of multivitamin comprising vitamin A, D, B1, B2, B6, C, E, nicotinamide & cod liver oil: syrup
100ml bottle: 80.00 MRP

❖ **VITCOD Syp. Alco Pharma**
This is a special preparation of multivitamin comprising vitamin A, D, B1, B2, B6, C, E, nicotinamide & cod liver oil: syrup
100ml bottle: 75.00 MRP

❖ **ZOVIA KIDS Syp. Opsonin**
This is a special preparation of multivitamin comprising vitamin A, D, B1, B2, B6, C, E, nicotinamide & cod liver oil: syrup
100ml bottle: 80.00 MRP

Vitamin B Group

THIAMINE (B_1)[21.33]

THIAMINE (B_1): Tablet/Injection.
Ind: Beri-beri; Neuritis (such as in diabetes, poisoning etc), Polyneuritis after infectious diseases; mental disorders associated with alcoholism, wernickes syndrome; anorexia nervosa.
Dosage & admin: Adult: Daily dietary requirement, 3 to 6mg; Neuritis, 25 to 100mg daily by inj. followed by 10-50 mg daily orally. In acute deficiency, 100-200 mg daily by i.m or i.v inj. followed by oral therapy. Neuralgias, 50-150mg by inj. every alternate day. Anorexia, Same as neuritis
Child: 5-20 mg daily orally and parenterally.

❖ **A-B_1 Tab. Acme**
Thiamine hydrochloride 100mg/tablet
100's pack: 74.00 MRP

❖ **AVITRON-V Tab. Beximco**
Thiamine hydrochloride 100mg/tablet
250's pack: 185.00 MRP

❖ **BEOVIT Tab. Square.**
Thiamine hydrochloride 100mg/tablet
250's pack: 185.00 MRP

❖ **BERIN Tab. GlaxoSmithKline**
Thiamine hydrochloride 100mg/tablet
250's pack: 187.50 MRP

❖ **B-ONE Tab. Alco Pharma**
Thiamine hydrochloride 100mg/tablet
100's pack: 74.00 MRP

❖ **G-VITAMIN-B1 Tab. Gonoshasthaya**
Thiamine hydrochloride 100mg/tablet
100's pack: 61.00 MRP

❖ **KVIT-TH Tab. Chemico**
Thiamine hydrochloride 100mg/tablet
100's pack: 74.00 MRP

❖ **NEOVIT Tab. Skylab**
Thiamine hydrochloride 100mg/tablet
100's pack: 72.00 MRP

❖ **NEUROVIT Tab. Medimet**
Thiamine hydrochloride 100mg/tablet
100's pack: 74.00 MRP

❖ **NEUROVIT Inj. Medimet**
Thiamine hydrochloride 25mg/1ml ampoule: injection
10 amps pack: 39.60 MRP

❖ **RENERV Tab. Gaco**
Thiamine hydrochloride 100mg/tablet
100's pack: 74.20 MRP

❖ **RENERV Inj. Gaco**
Thiamine hydrochloride 25mg/1ml ampoule: injection
1 ampoule: 3.03 MRP

❖ **THAI-1 Inj. Edruc**
Thiamine hydrochloride 25mg/1ml ampoule: injection
10 amps pack: 35.00 MRP

❖ **THIABIN Tab. Medicon**
Thiamine hydrochloride 100mg/tablet.
300's pack: 225.00 MRP

❖ **THIAMINE Tab. Seema**
Thiamine hydrochloride 100mg/tablet.
250's pack: 185.00 MRP

❖ **THIANOMIN Inj. Rephco**
Thiamine hydrochloride 25mg/1ml ampoule: injection
25 amps pack: 65.00 MRP

❖ **THIASON Tab. Jayson**
Thiamine hydrochloride 100mg/tablet.

100's pack: 74.00 MRP

❖ **THIASON Inj. Jayson**
Thiamine hydrochloride 100mg/l ml; 1ml ampoule & 10ml vial: injection
10 amps pack: 35.40 MRP
10ml vial: 16.17 MRP

❖ **THIATAB Tab. Mystic**
Thiamine hydrochloride 100mg/tablet.
100's pack: 73.00 MRP

❖ **THIOBION Tab. Aristopharma**
Thiamine hydrochloride 100mg/tablet
100's pack: 72.00 MRP

❖ **THIOLEX Tab. Globe**
Thiamine hydrochloride 100mg/tablet.
100's pack: 73.00 MRP

❖ **THIOSINA Tab. Ibn Sina**
Thiamine hydrochloride 100mg/tablet
200's pack: 148.00 MRP

❖ **THIOVIT Tab. Pharmadesh**
Thiamine hydrochloride 100mg/tablet
100's pack: 80.00 MRP

❖ **TONE Tab. Orion**
Thiamine hydrochloride 100mg/tablet
100's pack: 73.00 MRP

❖ **VITA-1 Tab. Pacific**
Thiamine hydrochloride 100mg/tablet
100's pack: 73.00 MRP

❖ **VITAMIN-B1 Inj. Chemist**
Thiamine hydrochloride 25mg/1ml ampoule: injection
25mg x 50 amps pack: 121.00 MRP

RIBOFLAVINE (B_2)[21,33]

RIBOFLAVINE (B_2): Tablet.
Ind: Angular stomatitis, cheilosis, glossitis; sore-throat; seborrhoeic dermatitis; photophobia, anaemia, neuropathy etc.
Dosage: Adult & Child: 5 to 10 mg 2-3 times daily

❖ **G- VITAMIN-B_2 Tab. Gonoshasthaya**
Riboflavine 5mg/tablet.
100's pack: 13.00 MRP

❖ **RIBOFLAVIN Tab. Medicon**
Riboflavine 5mg/tablet.
500's pack: 60.00 MRP

❖ **RIBOFLAVIN Tab. Rasa Pharma**
Riboflavine 5mg/tablet.
500's pack: 85.00 MRP

❖ **RIBOFLAVIN Tab. Skylab.**
Riboflavine 5mg/tablet.
500's pack: 45.00 MRP
1000's pot: 90.00 MRP

❖ **RIBOFLAVINE Tab. Amico**
Riboflavine 5mribotab g/tablet.
500's pack: 65.00 MRP

❖ **RIBOFLAVINE Tab. Pharmadesh**
Riboflavine 5mg/tablet.
500's pack: 105.00 MRP
1000's pack: 210.00 MRP

❖ **RIBOSEEM Tab. Ibn Sina**
Riboflavin 5mg/tablet
500's pack: 60.00 MRP

❖ **RIBOSINA Tab. Ibn Sina**
Riboflavin 5mg/tablet
500's pack: 115.00 MRP

❖ **RIBOSON Tab. Jayson**
Riboflavine 5mg/tablet.
500's pack: 115.00 MRP

❖ **RIBOTAB Tab. Ziska**
Riboflavine 5mg/tablet.
500's pack: 105.00 MRP

❖ **RIBOVIT Tab. Aexim**
Riboflavine 5mg/tablet.
500's pack: 60.00 MRP

❖ **RIBOVIT Tab. Gaco**
Riboflavine 5mg/tablet.
100's pack: 22.53 MRP

❖ **RIVIN Tab. Supreme**
Riboflavine 5mg/tablet.
500's pack: 50.00 MRP

NICOTINIC ACID (B_3)[21,39]

NICOTINIC ACID (B_3): Tablet
Ind: Prevention and treatment of pellagra, as vasodilator in peripheral vascular disease, vincent's infection, hypercholesterolaemia, hypertriglyceridaemia.
C/I: Pregnancy, breast feeding.
S/E: Flushing, dizziness, palpitations, pruritus, nausea, vomiting; rarely impaired liver function and rashes.
Caution: Diabetes mellitus, gout, liver diseases, peptic ulcer.
Dose: 2-3 tabs. daily or 100-200mg. daily.

❖ **NICOSON Tab. Jayson**
Nicotinic acid 50mg/tablet
50mg x 100's pack: 35.00 IP

PYRIDOXINE (B_6)[21,33]

PYRIDOXINE (B_6): Tablet
Ind: Peripheral neuritis, isoniazid-induced peripheral neuritis; premenstrual syndrome; pregnancy; radiation sickness; idiopathic sideroblastic anaemia, B_6 deficiency anaemia: other deficiency states and convulsion in infants.
C/I: In patients receiving levodopa
Cautions: Drug interaction with levodopa, but does not occur if dopa decarboxylase inhibitor also given.
Dosage & admin: Adult: Neuritis & dificiency states, 20-25mg upto 3 times daily
Isoniazid neuropathy, prophylaxis 10mg daily.
Idiopathic sideroblastic anaemia, 100-400 mg daily in divided doses.
Premenstrual syndrome, 50-100mg daily.
Child: Convulsions, 20-100mg daily.

❖ **G- VITAMIN-B_6 Tab. Gonoshasthaya**
Pyridoxine hydrochlor 25mg/tablet.
100's pack: 17.00 MRP

❖ **PYROL Tab. Jayson**
Pyridoxine hydrochlor 25mg/tablet.
100's pack: 19.22 IP

❖ **PYROVIT Tab. Pharmadesh**
Pyridoxine hydrochlor 20mg/tablet
250's pack: 70.00 MRP

❖ **PYROXIN Tab. Gaco**
Pyridoxine hydrochlor 20mg/tablet
100's pack: 19.21 MRP

CYANOCOBALAMINE (B_{12})

See above under 'megaloblastic anaemia'.

VITAMIN B_1 + B_2 + B_6[21,33,90]

VITAMIN B_1 + B_2 + B_6: Injection
This is a special combination product of vitamin B_1, B_2 and B_6. It is available as 2ml ampoule for injection.
Each 2ml ampoule contains- thiamine (B_1) BP 100mg, riboflavine (B_2) 50mg & pyridoxine (B_6) 100mg.
Ind: Neuritis accompanying alcoholism and pregnancy, optic neuritis, trigeminal neuralgia, lumbago sciatica, peripheral neuritis due to isoniazid therapy, facial paralysis, disorders of the peripheral circulation.
C/I: Anaphylactic reaction; patients receiving levodopa.
Caution: See under individual drug (B_1, B_2 & B_6).
Dose: In severe cases, one ampoule daily until all the symptoms disappear. For milder cases, one ampoule 2-3 times a week.

❖ **NERVIN Inj. Jayson**
Thiamine (B_1) 100mg + Riboflavine (B_2) 50mg + Pyridoxine (B_6) 100mg/2ml ampoule: injection
10's pack: 45.20 MRP

❖ **NUROBIX Inj. Chemist**
Thiamine (B_1) 100mg + Riboflavine (B_2) 50mg + Pyridoxine (B_6) 100mg/2ml ampoule: injection
3 amps pack: 21.75 MRP

❖ **RENERV Plus Inj. Gaco**
Thiamine (B_1) 100mg + Riboflavine (B_2) 50mg + Pyridoxine (B_6) 100mg/2ml ampoule: injection
4's pack: 54.00 MRP

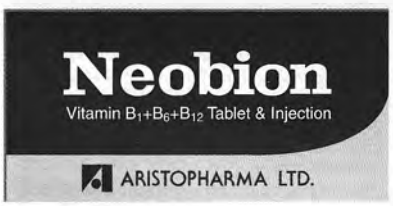
❖ **REOPLEX Forte Inj. Rephco**
Thiamine (B_1) 100mg + Riboflavine (B_2) 50mg + Pyridoxine (B_6) 100mg/2ml ampoule: injection
10 amps pack: 55.00 MRP

❖ **TI-EDIPLEX Inj. Edruc**
Thiamine (B_1) 100mg + Riboflavine (B_2) 50mg + Pyridoxine (B_6) 100mg/2ml ampoule: injection
6 amps pack: 43.20 MRP

VITAMIN B_1 + B_6 + B_{12}[26,129]

VITAMIN B_1 + B_6 + B_{12}: Tablet/Injection
This is a special combination product of vitamin B_1, B_6 and B_{12}. These vitamins are indispensable for a normal course of the nervous metabolism in the human body. The deficiency of these three vitamins leads to a syndrome of various chronic painful conditions.
The product is available in tablet & injection form.
Comp: Each tablet contains- thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 200mg & cyanocobalamin (B_{12}) BP 200mcg.
Each injection ampoule contains- thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 100mg and cyanocobalamin (B_{12}) BP 1mg.
Mode of action: These three vitamins- thiamine, pyridoxine and cyanocobalamin play an essential role as co-enzyme in cellular biochemical metabolism in the nervous system. Thus, the combination normalizes metabolic condition of nerve cells & improves their condition. This combination also supports the regeneration of nerve fibers & myelin sheath, & the natural

repair mechanism.
Ind: This combined product is indicated where a deficiency of the relevant vitamins exists, such as: diabetic neuropathy, back pain, lumbago, sciatica, spinal pain, peripheral neuralgia, trigeminal neuralgia, intercostal neuralgia, myalgia, cervical syndrome, & shoulder-arm syndrome.
C/I: Should not be used in the patients on levodopa therapy and hypersensitivity to any of the active ingredients.
S/E: Generally well tolerated. However, a few allergic reactions may be seen.
Precautions: Cyanocobalamin should not be given before a diagnosis has been fully established because of the possibility of masking symptoms of subacute degeneration of the spinal cord. Cyanocobalamin is not a suitable form of vitamin B12 for the treatment of optic neuropathies associated with raised plasma concentrations of cyanocobalamin.
Pregnancy & lactation: Oral tablet form is recommended but injectable preparation is not recommended due to presence of benzyl alcohol.
Dosage & admin: Oral preparation may be administered in a dose of 1-3 tablets daily or as directed by the physician.
Injections are preferably to be given by deep intramuscularly (as in intragluteal muscles). In severe cases 1 ampoule daily until the acute symptoms subside. For milder cases and follow up therapy 2 to 3 ampoules per week.
Drug inter: No such drug interactions have been reported.



❖ **BOST Tab. General**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 200mg and cyanocobalamin (B12) BP 200mcg/tablet.
30's pack: 120.00 MRP

❖ **DEBION Tab. Delta**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 200mg and cyanocobalamin (B12) BP 200mcg/tablet.
30's pack: 120.01 MRP

❖ **D-VITAL Tab. Doctor's**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 200mg and cyanocobalamin (B12) BP 200mcg/tablet.
40's pack: 160.00 MRP

❖ **EDRUPLEX Tab. Edruc**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 200mg and cyanocobalamin (B12) BP 200mcg/tablet.
30's pack: 120.00 MRP

❖ **EDRUPLEX Inj. Edruc**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 100mg and cyanocobalamin (B12) BP 1mg/3ml ampoule: i.m injection.
3ml amp x 3's pack: 75.00 MRP

❖ **KVIT-N Tab. Chemico**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 200mg and cyanocobalamin (B12) BP 200mcg/tablet.
30's pack: 120.00 MRP

❖ **KVIT-N Inj. Chemico**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 100mg and cyanocobalamin (B12) BP 1mg/3ml ampoule: i.m injection.
3ml amp x 1's pack: 25.00 MRP

❖ **MEDIBION Tab. Medicon**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 200mg and cyanocobalamin (B12) BP 200mcg/tablet.
30's pack: 120.00 MRP

❖ **MIOVIT Tab. Somatec**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 200mg and cyanocobalamin (B12) BP 200mcg/tablet.
30's pack: 120.00 MRP

❖ **MYELIN Tab. Opsonin**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 200mg and cyanocobalamin (B12) BP 200mcg/tablet.
50's pack: 200.00 MRP

❖ **MYELIN Inj. Opsonin**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 100mg and cyanocobalamin (B12) BP 1mg/3ml ampoule: i.m injection.
3ml amp x 5's pack: 125.00 MRP

❖ **MYOLIN Tab. Beximco**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 200mg and cyanocobalamin (B12) BP 200mcg/tablet.
30's pack: 120.00 IP

❖ **NEOBION Tab. Aristopharma**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 200mg and cyanocobalamin (B12) BP 200mcg/tablet.
30's pack: 200.00 MRP

❖ **NEOBION Inj. Aristopharma**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 100mg and cyanocobalamin (B12) BP 1mg/3ml ampoule: i.m injection.
3ml amp x 10's pack: 250.00 MRP

❖ **NERVA Tab. Pharmadesh**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 200mg and cyanocobalamin (B12) BP 200mcg/tablet.
30's pack: 105.00 MRP

❖ **NERVO-B Tab. Apex**
TThiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 200mg and cyanocobalamin (B12) BP 200mcg/tablet.
50's pack: 200.00 MRP

❖ **NEUBIN Tab. Ziska**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 200mg and cyanocobalamin (B12) BP 200mcg/tablet.
30's pack: 120.00 MRP

❖ **NEUBIN Inj. Ziska**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 100mg and cyanocobalamin (B12) BP 1mg/3ml ampoule: i.m injection.
3ml amp x 10's pack: 200.00 MRP

❖ **NEUREX-B Tab. Silva**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 200mg and cyanocobalamin (B12) BP 200mcg/tablet.
50's pack: 200.00 MRP

❖ **NEURALGIN Tab. Ibn Sina**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 200mg and cyanocobalamin (B12) BP 200mcg/tablet.
30's pack: 120.00 MRP

❖ **NEURALGIN Inj. Ibn Sina**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 100mg and cyanocobalamin (B12) BP 1mg/3ml ampoule: i.m injection.
3ml amp x 10's pack: 250.00 MRP

❖ **NEUREX-B Tab. Silva**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 200mg and cyanocobalamin (B12) BP 200mcg/tablet.
30's pack: 120.00 MRP

❖ **NEURO-B Tab. Square**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 200mg and cyanocobalamin (B12) BP 200mcg/tablet.
30's pack: 120.00 MRP

❖ **NEURO-B Inj. Square**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 100mg and cyanocobalamin (B12) BP 1mg/3ml ampoule: i.m injection.
3ml amp x 10's pack: 250.00 MRP

❖ **NEUROBEST Tab. Renata**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 200mg and cyanocobalamin (B12) BP 200mcg/tablet.
30's pack: 120.00 MRP

❖ **NEUROBEST Inj. Renata**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 100mg and cyanocobalamin (B12) BP 1mg/3ml ampoule: i.m injection.
3ml amp x 10's pack: 250.00 MRP

❖ **NEU VITAL Tab. UniMed/UniHealth**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 200mg and cyanocobalamin (B12) BP 200mcg/tablet.
30's pack: 120.00 MRP

❖ **NUGESIC Tab. Orion**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 200mg and cyanocobalamin (B12) BP 200mcg/tablet.
30's pack: 120.00 MRP

❖ **NUGESIC Inj. Orion**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 100mg and cyanocobalamin (B12) BP 1mg/3ml ampoule: i.m injection.
3ml amp x 10's pack: 250.00 MRP

❖ **NUROBIX Plus Inj. Chemist**
Thiamine mononitrate (B1) BP 100mg, pyridoxine hydrochloride (B6) BP 100mg and

cyanocobalamin (B_{12}) BP 1mg/3ml ampoule: i.m injection.
3ml amp x 5's pack: 125.00 MRP

❖ **N-VIT Tab. Syntho**
Thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 200mg and cyanocobalamin (B_{12}) BP 200mcg/tablet.
30's pack: 120.00 MRP

❖ **PACIBION Tab. Pacific**
Thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 200mg and cyanocobalamin (B_{12}) BP 200mcg/tablet.
30's pack: 150.00 MRP

❖ **POVITAL Tab. ACI**
Thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 200mg and cyanocobalamin (B_{12}) BP 200mcg/tablet.
50's pack: 200.00 MRP

❖ **POVITAL Inj. ACI**
Thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 100mg and cyanocobalamin (B_{12}) BP 1mg/3ml ampoule: i.m injection.
3ml amp x 10's pack: 250.00 MRP

❖ **REBION Tab. Rephco**
Thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 200mg and cyanocobalamin (B_{12}) BP 200mcg/tablet.
30's pack: 135.00 MRP

❖ **REBION Inj. Rephco**
Thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 100mg and cyanocobalamin (B_{12}) BP 1mg/3ml ampoule: i.m injection.
3ml amp x 10's pack: 250.00 MRP

❖ **REJUBION Tab. Beacon**
Thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 200mg and cyanocobalamin (B_{12}) BP 200mcg/tablet.
30's pack: 120.00 MRP

❖ **RENEP Tab. Alco Pharma**
Thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 200mg and cyanocobalamin (B_{12}) BP 200mcg/tablet.
30's pack: 90.00 MRP

❖ **RENOVIT Tab. Healthcare**
Thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 200mg and cyanocobalamin (B_{12}) BP 200mcg/tablet (f.c).
30's pack: 120.00 MRP

❖ **SOLBION Tab. SK+F**
Thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 200mg and cyanocobalamin (B_{12}) BP 200mcg/tablet.
50's pack: 200.00 MRP

❖ **SOLBION Inj. SK+F**
Thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 100mg and cyanocobalamin (B_{12}) BP 1mg/3ml ampoule: i.m injection.
3ml amp x 10's pack: 250.00 MRP

❖ **SUPRA-B Tab. Drug Inter.**
Thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 200mg and cyanocobalamin (B_{12}) BP 200mcg/tablet.
50's pack: 200.00 MRP

❖ **SUPRA-B Inj. Drug Inter.**
Thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 100mg and cyanocobalamin (B_{12}) BP 1mg/3ml ampoule: i.m injection.
3ml amp x 5's pack: 125.00 MRP

❖ **TPC Tab. Acme**
Thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 200mg and cyanocobalamin (B_{12}) BP 200mcg/tablet.
32's pack: 128.00 MRP

❖ **TPC Inj. Acme**
Thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 100mg and cyanocobalamin (B_{12}) BP 1mg/3ml ampoule: i.m injection.
3ml amp x 6's pack: 150.00 IP

❖ **TRI-B Tab. Wbite Horse**
Thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 200mg and cyanocobalamin (B_{12}) BP 200mcg/tablet.
75's pack: 300.00 MRP

❖ **TRIBION Tab. Globe**
Thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 200mg and cyanocobalamin (B_{12}) BP 200mcg/tablet.
30's pack: 120.00 MRP

❖ **TRIBION Inj. Globe**
Thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 100mg and cyanocobalamin (B_{12}) BP 1mg/3ml ampoule: i.m injection.
3ml amp x 10's pack: 250.00 MRP

❖ **UNIBION Tab. Desh Pharma**
Thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 200mg and cyanocobalamin (B_{12}) BP 200mcg/tablet.
30's pack: 120.00 MRP

❖ **VIGOR-3 Tab. Hallmark**
Thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 200mg and cyanocobalamin (B_{12}) BP 200mcg/tablet.
30's pack: 120.00 MRP

❖ **VITABION Tab. Incepta**
Thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 200mg and cyanocobalamin (B_{12}) BP 200mcg/tablet.
30's pack: 200.00 IP

❖ **VITABION Inj. Incepta**
Thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 100mg and cyanocobalamin (B_{12}) BP 1mg/3ml ampoule: i.m injection.
3ml amp x 5's pack: 125.00 IP

❖ **VT-3 Tab. Decent**
Thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 200mg and cyanocobalamin (B_{12}) BP 200mcg/tablet.
32's pack: 128.00 MRP

❖ **3BION Tab. RAK Pharma**
Thiamine mononitrate (B_1) BP 100mg, pyridoxine hydrochloride (B_6) BP 200mg and cyanocobalamin (B_{12}) BP 200mcg/tablet.
50's pack: 200.00 MRP

VITAMIN B_6 + B_9 + B_{12}[133]

PYRIDOXINE (B_6) + FOLIC ACID (B_9) + CYANOCOBALAMIN (B_{12}): Tablet
This is a special combination product of folic acid, pyridoxine & cyanocobalamin, available as tablet. Each tablet contains folic acid BP 2.5mg, pyridoxine hydrochloride BP 25mg & cyanocobalamin BP 1mg.
Mode of action: Folic acid, pyridoxine & cyanocobalamin work closely together to control blood levels of the amino acid homocysteine. Elevated levels of this substance appear to be linked to heart disease & increased risk of stroke. The breakdown of dietary protein (meat, dairy products) generates methionine, which is then converted into homocysteine. Homocysteine is then converted into cysteine where pyridoxine acts as a key co-factor. Homocysteine is converted back into methionine where folic acid & cyanocobalamin are the key co-factors.
Ind: This combined preparation is indicated for the distinct nutritional requirements of individuals under a physician's treatment for hyperhomocysteinemia, homocystinuria, or nutrient malabsorption: with particular emphasis for individuals with or at risk for: cardiovascular disease, cerebrovascular disease, peripheral vascular disease, atherosclerotic vascular disease, neurological disorders, renal disease & vitamin B_{12} deficiency.
C/I: Known hypersensitivity to any of the components in the product.
S/E: Allergic sensitization has been reported following both oral & parenteral administration of folic acid. Paresthesia & somnolence have been reported with pyridoxine. Mild transient diarrhea, polycythemia vera, itching, transitory exanthema, and the feeling of swelling of the entire body has been associated with cyanocobalamin.
Precaution: Folic acid when administered as a single agent in doses above 0.1mg daily may obscure pernicious anemia in that hematologic remission can occur while neurological manifestation remain progressive.
Dosage & admin: Usual adult dose is 1 or 2 tablets daily or as required.
Drug inter: Pyridoxine supplement should not be given to patients receiving levodopa, because the action of the latter drug is antagonized by pyridoxine. However, pyridoxine may be used concurrently in patients receiving a preparation containing both carbidopa & levodopa. Concurrent use of phenytoin & folic acid may result in decreased phenytoin effectiveness.

❖ **FOLBION Tab. Pacific**
Pyridoxine hydrochloride (B_6) BP 25mg, folic acid (B_9) BP 2.5mg & cyanocobalamin (B_{12}) BP 1mg/tablet.
30's pack: 237.00 MRP

❖ **PFC Tab. Aristopharma**
Pyridoxine hydrochloride (B_6) BP 25mg, folic

acid (B_9) BP 2.5mg & cyanocobalamin (B_{12}) BP 1mg/tablet.
30's pack: 180.00 MRP

❖ **VICARD Tab. Popular**
Pyridoxine hydrochloride (B_6) BP 25mg, folic acid (B_9) BP 2.5mg & cyanocobalamin (B_{12}) BP 1mg/tablet.
30's pack: 120.00 IP

❖ **VITA-HEART Tab. Novo Healthcare**
Pyridoxine hydrochloride (B_6) BP 25mg, folic acid (B_9) BP 2.5mg & cyanocobalamin (B_{12}) BP 1mg/tablet.
30's pack: 90.00 MRP

VITAMIN B COMPLEX PREPNS.[21.33]

VITAMIN B COMPLEX: Tablet/Capsule/ Syrup/Injection
Ind: Vitamin-B complex deficiency states, such as during pregnancy, lactation, prolonged antibiotic therapy, convalescence, prophylaxis.
Dose: Capsule & tablet prepns. 1-2 caps/tabs daily.
Other prepns: See under individual drugs.

❖ **ADUVIT Cap. Pacific**
Vitamin-B complex: capsule
200's pack: 104.00 MRP

❖ **ADUVIT Syp. Pacific**
Vitamin-B complex: syrup
100ml bot: 20.00 MRP
200ml bot: 37.00 MRP

❖ **ALBAPLEX Syp. Aexim**
Vitamin-B complex: syrup
100ml bot: 20.60 MRP
200ml bot: 37.60 MRP

❖ **ALBATAB Tab. Aexim**
Vitamin-B complex: tablet
100's pack: 44.00 MRP

❖ **ALLBEEVIT Caplet Medimet**
Vitamin-B complex: caplet
45's pack: 19.80 MRP

❖ **ALLBEEVIT Cap. Medimet**
Vitamin-B complex: capsule
100's pack: 57.00 MRP

❖ **ALLBEEVIT Tab. Medimet**
Vitamin-B complex: tablet
100's pack: 44.00 MRP
200's pack: 88.00 MRP

❖ **ALLBEEVIT Syp. Medimet**
Vitamin-B complex: syrup
100ml bot: 20.60 MRP
200ml bot: 37.00 MRP

❖ **ALLBEEVIT Inj. Medimet**
Vitamin-B complex: injection.
2ml amp x 10's pack: 39.20 MRP

❖ **APEVIT-B Tab. A.P.C Pharma**
Vitamin-B complex: tablet
100's pack: 40.00 MRP

❖ **APEVIT Syp. A.P.C Pharma**
Vitamin-B complex: syrup
100ml bot: 20.00 MRP
200ml bot: 37.60 MRP

❖ **APLEX Syp. Apollo**
Vitamin-B complex: syrup
100ml bot: 20.60 MRP
200ml bot: 37.60 MRP

❖ **ARISTOVIT-B Tab. Beximco**
Vitamin-B complex: tablet
45's pack: 20.25 MRP

❖ **ARISTOPLEX Syp. Beximco**
Vitamin-B complex: syrup
100ml bot: 20.83 MRP
200ml bot: 38.03 MRP

❖ **ASIVIT Tab. Asiatic**
Vitamin-B complex: tablet
60's pack: 36.00 MRP

❖ **BECONEX Cap. Renata**
Vitamin-B complex: capsule
30's pack: 17.10 MRP

❖ **BECONEX Syp. Renata**
Vitamin-B complex: syrup
100ml bot: 20.85 MRP
200ml bot: 38.03 MRP

❖ **BECONEX H/P Inj. Renata**
Vitamin-B complex high potency preparation, 10ml vial: injection
Dose & Admin: The Inj. is prepared in a twin pack as solun. no.1 (vial) and solun. no. 2 (ampoule). For administration, solution no. 2 (contained in the amp.) is added first in the vial (solun. no.1) by a syringe. The combined solution is then administered by i.m. inj. 1ml or 2ml daily.
10ml vial: 12.39 MRP

❖ **BECOSON Cap. Hudson**
Vitamin-B complex: capsule
200's pack: 112.00 MRP

❖ **BECOSON Syp. Hudson**
Vitamin-B complex: syrup
100ml bot: 20.60 MRP
200ml bot: 37.60 MRP

❖ **BECOSULES Cap. Renata**
Vitamin-B complex: capsule
100's pack: 200.00 MRP

❖ **B-50 Forte Cap. Square**
Vitamin-B complex: capsule
250's pack: 145.00 MRP

❖ **B-50 FORTE Tab. Square**
Vitamin-B complex: tablet
45's pack: 20.25 MRP

❖ **B-50 FORTE Inj. Square**
Vitamin-B complex: injection.
10 amps pack: 39.60 MRP

❖ **B-50 FORTE Syp. Square**
Vitamin-B complex: syrup
100ml bot: 20.84 MRP
200ml bot: 38.03 MRP

❖ **BEFORTE Cap. Doctor's**
Vitamin-B complex: capsule
200's pack: 114.00 MRP

❖ **BEFORTE Tab. Doctor's**
Vitamin-B complex: tablet
45's pack: 19.35 MRP

❖ **BEFORTE Syp. Doctor's**
Vitamin-B complex: syrup
100ml bot: 20.00 MRP
200ml bot: 37.00 MRP

❖ **BENVIT-B Tab. Benham**
Vitamin-B complex: tablet
45's pack: 18.90 MRP

❖ **BENVIT-B Susp. Benham**
Vitamin-B complex: syrup
100ml bot: 20.23 MRP
200ml bot: 37.42 MRP

❖ **BEVIT Tab. Hudson**
Vitamin-B complex: tablet
100's pack: 43.00 MRP

❖ **BIOVIT Cap. Bio-Pharma**
Vitamin-B complex: capsule
200's pack: 114.00 MRP

❖ **BIOVIT Syp. Bio-Pharma**
Vitamin-B complex: syrup
100ml bot: 20.80 MRP
200ml bot: 38.00 MRP

❖ **BIVAPLEX-T Tab. Sonear**
Vitamin-B complex: tablet
100's pack: 27.00 MRP

❖ **BIVAPLEX-T Cap. Sonear**
Vitamin-B complex: capsule
50's pack: 26.00 MRP

❖ **BPFORT Cap. Bristol**
Vitamin-B complex: capsule
250's pack: 125.00 MRP

❖ **B-PLEX Tab. Ad-din**
Vitamin-B complex: tablet
45's pack: 20.70 MRP

❖ **B-PLEX Syp. Ad-din**
Vitamin-B complex: syrup
100ml bot: 20.84 MRP

❖ **B-PLEX Drop Ad-din**
Vitamin-B complex: drop
15ml bot: 15.75 MRP

❖ **B-PLUS Syp. Somatec**
Vitamin-B complex: syrup
100ml bot: 20.50 MRP
200ml bot: 37.50 MRP

❖ **B-VIT 4 Tab. Cosmic**
Vitamin-B complex: tablet
45's pack: 19.80 MRP
200's pack: 88.00 MRP

❖ **B-VIT 4 Syp. Cosmic**
Vitamin-B complex: syrup
200ml bot: 37.60 MRP

❖ **COMBIVIT Inj. Orion**
Vitamin-B complex, 2ml ampoule: injection
5 amps pack: 40.00 MRP

❖ **COMPLAVIT Syp. GlaxoSmithKline**
Vitamin-B complex: syrup
100ml bot: 20.84 MRP
200ml bot: 38.03 MRP

❖ **COMVIT-B Syp. Mystic**
Vitamin-B complex: syrup
100ml bot: 20.70 MRP

200ml bot: 38.03 MRP

❖ **CPVIT-B Tab. Cosmo Pharma**
Vitamin-B complex: tablet
45's pack: 19.80 MRP

❖ **CYTAPLEX Cap. CPL**
Vitamin-B complex: capsule.
200's pack: 110.00 MRP

❖ **CYTAPLEX Syp. CPL**
Vitamin-B complex: syrup
100ml bot: 22.00 MRP
200ml bot: 37.00 MRP

❖ **DEPLEX Syp. Decent**
Vitamin-B complex: syrup
100ml bot: 20.84 MRP
200ml bot: 38.00 MRP

❖ **EDIPLEX Tab. Edruc**
Vitamin-B complex: tablet
45's pack: 19.80 MRP

❖ **EDIPLEX Syp. Edruc**
Vitamin-B complex: syrup
100ml bot: 20.84 IP
200ml bot: 37.43 MRP

❖ **ENERGY B Syp. Proteety**
Vitamin-B complex: syrup
200ml bot: 38.00 MRP

❖ **ENPLEX-B Tab. Novo Healthcare**
Vitamin-B complex: tablet
45's pack: 20.00 MRP

❖ **EV-PLEX-B Tab. Elixir**
Vitamin-B complex: tablet
45's pack: 19.00 MRP

❖ **EV-PLEX Syp. Elixir**
Vitamin-B complex: syrup
200ml bot:

❖ **EXTRAVIT-B Tab. Salton**
Vitamin-B complex: tablet
45's pack: 19.80 MRP

❖ **FLAVIT Tab. Amico**
Vitamin-B complex: tablet
45's pack: 19.80 MRP

❖ **FLAVIT Syp. Amico**
Vitamin-B complex: syrup
100ml bot: 20.65 MRP
200ml bot: 38.00 MRP

❖ **GACOVIT-B Complex Tab. Gaco**
Vitamin B-complex: tablet
1000's pack: 121.11 MRP

❖ **GENAPLEX Cap. General**
Vitamin-B complex: capsule
250's pack: 140.00 MRP

❖ **GENAPLEX Syp. General**
Vitamin-B complex: syrup
100ml bot: 20.00 MRP
200ml bot: 37.60 MRP

❖ **G-VITAMIN B Complex Tab. Gonoshastha**
Vitamin B-complex: tablet
100's pack: 44.00 MRP

❖ **G- VITAMIN B Complex Inj. Gonoshastha**
Vitamin B-complex: injection
2ml amp x 25's pack: 101.25 MRP

❖ **HEXAPLEX Syp. Jayson**
Vitamin-B complex: Syrup
100ml bot: 19.73 MRP
200ml bot: 38.03 MRP

❖ **HIPOSUL Tab. Gaco**
Vitamin-B complex: tablet
45's pack: 19.08 MRP

❖ **HIPOSUL Cap. Gaco**
High potency vitamin-B complex: capsule
100's pack: 50.35 MRP

❖ **HIPOSUL Syp. Gaco**
Vitamin-B complex: syrup
100ml bot: 20.86 MRP
200ml bot: 38.03 MRP

❖ **HIPOSUL Inj. Gaco**
Vitamin-B complex, 2ml ampoule: injection
1 ampoule: 3.34 MRP

❖ **KVIT-B Tab. Chemico**
Vitamin-B complex: tablet
45's pack: 18.90 MRP

❖ **KVIT-B Cap. Chemico**
High potency vitamin-B complex: capsule
100's pack: 55.00 MRP

❖ **KVIT-B Syp. Chemico**
Vitamin-B complex: syrup
200ml bot: 37.00 MRP

❖ **LYSOVITA Cap. Desh**
Vitamin-B complex: capsule
200's pack: 120.00 MRP

❖ **LYSOVITA-B Tab. Desh**
Vitamin-B complex: tablet
45's pack: 19.80 MRP
100's pack: 44.00 MRP

❖ **LYSOVITA Syp. Desh**
Vitamin-B complex: syrup
200ml bot: 37.60 MRP

❖ **MEDIVIT Tab. Medicon**
Vitamin-B complex: tablet
45's pack: 19.80 MRP
100's pack: 44.00 MRP

❖ **MICOPLEX-B Tab. Millat**
Vitamin-B complex: tablet
45's pack: 19.80 MRP

❖ **MICOPLEX-B Syp. Millat**
Vitamin-B complex: syrup
100ml bot: 20.60 MRP
200ml bot: 38.00 MRP

❖ **M-PLEX Tab. Modern**
Vitamin-B complex: tablet
45's pack: 20.25 MRP
100's pack: 42.00 MRP

❖ **M-PLEX Syp. Modern**
Vitamin-B complex: syrup
100ml bot: 20.84 MRP
200ml bot: 38.04 MRP

❖ **NIPAPLEX Cap. Nipa**
Vitamin-B complex: capsule
100's pack: 58.00 MRP

❖ **NIPAPLEX Syp. Nipa**
Vitamin-B complex: syrup
100ml bot: 20.00 MRP
200ml bot: 37.00 MRP

❖ **NUTRIVIT-B Tab. ACI**
Vitamin-B complex: tablet
45's pack: 20.25 MRP

❖ **NUTRIVIT-B Syp. ACI**
Vitamin-B complex: syrup
200ml bot: 38.00 MRP

❖ **NUTROVITA Syp. Asiatic**
Vitamin-B complex: syrup
100ml bot: 20.00 MRP
200ml bot: 36.60 MRP

❖ **OPSOVIT Tab. Opsonin**
Vitamin-B complex: tablet
45's pot: 19.80 MRP
200's pack: 88.00 MRP

❖ **OPSOVIT Syp. Opsonin**
Vitamin-B complex: Syrup
100ml bot: 23.00 MRP
200ml bot: 42.50 MRP

❖ **OPSOVIT Inj. Opsonin**
Vitamin-B complex, 2ml ampoule: injection
50 amps pack: 175.00 MRP

❖ **ORABEX Cap. Jayson**
Vitamin-B complex: capsule
200's pack: 114.00 MRP

❖ **ORABEX Tab. Jayson**
Vitamin-B complex: tablet (f.c)
100's pack: 43.00 MRP

❖ **ORABEX Inj. Jayson**
Vitamin-B complex: injection
10ml vial: 11.24 MRP

❖ **ORIOPLEX Tab. Orion**
Vitamin-B complex: tablet
45's pack: 19.80 MRP

❖ **ORIOPLEX Syp. Orion**
Vitamin-B complex: Syrup
100 ml bot : 20.46 MRP
200 ml bot : 38.03 MRP

❖ **PEOPLEX Cap. Peoples**
Vitamin-B complex: capsule
30's pack: 20.00 MRP

❖ **PEOPLEX Syp. Peoples**
Vitamin -B complex: Syrup
100ml bot: 23.45 MRP
200ml bot: 43.00 MRP

❖ **PLACENT-B Tab. Navana**
Vitamin-B complex: tablet
45's pack: 20.25 MRP

❖ **PLACENT-B Syp. Navana**
Vitamin -B complex: syrup
100ml bot: 20.60 MRP
200ml bot: 38.00 MRP

❖ **PLEXIVIT Cap. Syntho**
Vitamin-B complex: capsule
30's pack: 17.10 MRP

❖ **PLEXIVIT Syp. Syntho**
Vitamin -B complex: syrup
100ml bot: 20.80 MRP
200ml bot: 38.00 MRP

❖ **PROVIT-B Cap. Belsen**
Vitamin-B complex: caplet
45's pack: 18.90 MRP

❖ **PROVIT-B Tab. Belsen**
Vitamin-B complex: tablet
100's pack: 36.80 MRP

❖ **PROVIT-B Syp. Belsen**
Vitamin -B complex: syrup
100ml bot: 23.00 MRP
200ml bot: 41.00 MRP

❖ **RANVIT-B Tab. Rangs Pharma**
Vitamin-B complex: tablet
45's pack: 20.25 MRP

❖ **RANVIT-B Syp. Rangs Pharma**
Vitamin-B complex: syrup
100ml bot: 20.00 MRP
200ml bot: 38.00 MRP

❖ **REMAPLEX Cap. Reman**
Vitamin-B complex: capsule
100's pack: 45.00 MRP

❖ **REMAPLEX Syp. Reman**
Vitamin-B complex: Syrup
100ml bot: 20.60 MRP
200ml bot: 37.00 MRP

❖ **REOPLEX Forte Tab. Rephco**
Vitamin-B complex: tablet
40's pot: 18.00 MRP
250's pack: 75.00 MRP

❖ **REOPLEX Forte Syp. Rephco**
Vitamin-B complex: syrup

100ml bot: 20.00 MRP
200ml bot: 35.00 MRP

❖ **RESTOVIT- B Tab. Zenith**
Vitamin-B complex: tablet
45's pack: 19.80 MRP

❖ **RESTOVIT Syp. Zenith**
Vitamin-B complex: syrup
100ml bot: 20.85 MRP
200ml bot: 37.60 MRP

❖ **RIBAPLEX Cap. Apex**
Vitamin-B complex: capsule
100's pack: 53.00 MRP

❖ **RIBAPLEX Tab. Apex**
Vitamin-B complex: tablet
45's pack: 20.00 MRP

❖ **RIBAPLEX Syp. Apex**
Vitamin -B complex: syrup
200ml bot: 37.00 MRP

❖ **SEEMAPLEX-B Tab. Seema**
Vitamin-B complex: tablet
45's pack: 20.00 MRP

❖ **SEEMAPLEX Cap. Seema**
Vitamin-B complex: capsule
100's pack: 56.00 MRP

❖ **SEEMAPLEX Syp. Seema**
Vitamin-B complex: syrup
100ml bot: 23.00 MRP
200ml bot: 43.00 MRP

❖ **SG-PLUS Syp. Salton**
Vitamin-B complex: syrup
100ml bot: 20.60 MRP
200ml bot: 37.60 MRP

❖ **SIMVIT-B Tab. Pharmasia**
Vitamin-B complex: tablet
45's pack: 19.80 MRP

❖ **SIMVIT-B Syp. Pharmasia**
Vitamin-B complex: syrup
200ml bot: 38.00 MRP

❖ **SINAFORT-B Cap. Ibn Sina**
Vitamin-B complex: capsule
250's pack: 142.50 MRP

❖ **SINAFORT-B Tab. Ibn Sina**
Vitamin-B complex: tablet
45's pack: 19.80 MRP

❖ **SINAFORT-B Syp. Ibn Sina**
Vitamin-B complex: syrup
100ml bot: 20.84 MRP
200ml bot: 38.00 MRP

❖ **SKYVIT Cap. Skylab**
Vitamin-B complex: capsule
250's pack: 137.00 MRP

❖ **SOLVIT-B Tab. SK+F**
Vitamin-B complex: tablet.
45's pack: 20.25 MRP

❖ **SOLVITONE Syp. SK+F**
Vitamin-B complex: syrup
100ml bot: 20.84 MRP
200ml bot: 38.03 MRP

❖ **STANOPLEX Syp. Globe**
Vitamin-B complex: syrup
100ml bot: 20.60 MRP
200ml bot: 37.60 MRP

❖ **STANOVIT-B Tab. Globe**
Vitamin-B complex: tablet.
45's pack: 19.80 MRP

❖ **STANOVIT-B Inj. Globe**
Vitamin-B complex, 2ml ampoule: injection
10 amps pack: 39.00 MRP

❖ **SUPERVIT-B Tab. Rasa**
Vitamin-B complex: tablet.
45's pack: 19.80 MRP
100's pack: 44.00 MRP

❖ **SUPERVIT Syp. Rasa**
Vitamin-B complex: syrup
100ml bot: 21.00 MRP
200ml bot: 35.00 MRP

❖ **SUPRAPLEX Syp. Drug Inter.**
Vitamin-B complex: syrup
100ml bot: 20.80 MRP
200ml bot: 38.03 MRP

❖ **UNIPLEX Syp. Aristopharma**
Vitamin-B complex: syrup
100ml bot : 20.84 MRP
200ml bot : 38.00 MRP

❖ **ULTRAVIT-B Cap. Alco Pharma**
Vitamin-B complex: capsule
100's pack: 57.00 MRP

❖ **ULTRAVIT-B Tab. Alco Pharma**
Vitamin-B complex: tablet
45's pack: 19.80 MRP

❖ **ULTRAVIT-B Syp. Alco Pharma**
Vitamin-B complex: syrup
100ml bot: 20.60 MRP
200ml bot: 38.00 MRP

❖ **UNIVIT-B Tab. Aristopharma**
Vitamin-B complex: tablet
45's pack: 19.80 MRP

❖ **VICON Tab. Kumudini**
Vitamin-B complex: tablet
45's pack: 19.80 MRP

❖ **VICON Syp. Kumudini**
Vitamin-B complex: syrup
200ml bot: 37.60 MRP

❖ **VIGOR-B Tab. Hallmark**
Vitamin-B complex: tablet
45's pack: 19.80 MRP

❖ **VIGOR-B Syp. Hallmark**
Vitamin-B complex: syrup
100ml bot: 20.60 MRP
200ml bot: 37.60 MRP

❖ **VITACARE Syp. Marksman**
Vitamin-B complex: syrup
100ml bot: 20.00 MRP
200ml bot: 37.00 MRP

❖ **VITACON Syp. Medicon**
Vitamin-B complex: syrup
100ml bot: 23.00 MRP
200ml bot: 42.00 MRP

❖ **VITAL-B Tab. UniHealth**
Vitamin-B complex: tablet
100's pack: 40.00 MRP

❖ **VITAL-B Syp. UniHealth**
Vitamin-B complex: syrup
200ml bot: 38.03 MRP

❖ **VITALEX Syp. Supreme**
Vitamin-B complex: syrup
100ml bot: 20.00 MRP
200ml bot: 36.00 MRP

❖ **VITAPLEX Tab. Pharmadesh**
Vitamin-B complex: tablet
45's pack: 20.25 MRP

❖ **VITAPLEX Syp. Pharmadesh**
Vitamin-B complex: syrup
100ml bot: 19.50 MRP
200ml bot: 32.46 MRP

❖ **VITA-S Syp. Chemist**
Vitamin-B complex: syrup
100ml bot: 20.86 MRP
200ml bot: 38.03 MRP

❖ **VITA-S Inj. Chemist**
Vitamin-B complex, 2ml ampoule: injection
10 amps pack: 40.40 MRP

❖ **VITASIL B Tab. Silva**
Vitamin-B complex: tablet
45's pack: 20.00 MRP

❖ **VITASIL B Syp. Silva**
Vitamin-B complex: syrup
100ml bot: 20.00 MRP
200ml bot: 38.00 MRP

❖ **VITASULE Cap. Salton**
Vitamin-B complex: capsule
250's pack: 125.00 MRP

❖ **VITATAB Tab. Bristol**
High potency vitamin-B complex: tablet
200's pack: 80.00 MRP

❖ **VITAVIT-B Tab. Skylab**
High potency vitamin-B complex: tablet
30's pack: 14.00 MRP

❖ **VITAVIT Syp. Skylab**
Vitamin-B complex: syrup
100ml bot: 23.40 MRP
200ml bot: 43.00 MRP

❖ **VITEX Cap. Ambee**
Vitamin-B complex: capsule
200's pack: 106.00 MRP

❖ **VITEX Syp. Ambee**
Vitamin-B complex: syrup
100ml bot: 20.84 MRP
200ml bot: 38.04 MRP

❖ **VITEX Inj. Ambee**
Vitamin-B complex, 2ml ampoule: injection
10 amps pack: 43.70 MRP

❖ **VITSA Cap. SAPL**
Vitamin-B complex: capsule
100's pack: 53.00 MRP

❖ **V-PLEX Tab. Acme**
Vitamin-B complex: tablet
100's pack: 44.00 MRP

❖ **V-PLEX Cap. Acme**
Vitamin-B complex: capsule
250's pack: 145.00 MRP

❖ **V-PLEX Syp. Acme**
Vitamin-B complex: syrup
100ml bot: 20.83 MRP
200ml bot: 38.03 MRP

❖ **V-PLEX Inj. Acme**
Vitamin-B complex, 2ml ampoule: injection
10 amps pack: 39.60 MRP

❖ **ZISKAVIT Cap. Ziska**
Vitamin-B complex: capsule
200's pack: 114.00 MRP

❖ **ZISKAVIT Tab. Ziska**
Vitamin-B complex: tablet
100's pack: 45.00 MRP

❖ **ZISKAVIT Syp. Ziska**
Vitamin-B complex: syrup
200ml bot: 38.00 MRP

❖ **ZISKAVIT Inj. Ziska**
Vitamin-B complex, 2ml ampoule: injection
10 amps pack: 45.00 MRP

Vitamin-C Prepns.

ASCORBIC ACID[21,26,33]

ASCORBIC ACID: Tablet/Syrup/Drop/ Sachet/Injection.
Vitamin-C or ascorbic acid is available as tablet, syrup, drop & injection.

Mode of action: As human being cannot synthesize ascorbic acid, supplementation of exogenous vitamin-C (ascorbic acid) is required. It is absorbed from the gastrointestinal tract and widely distributed in the body tissues. Ascorbic acid is reversibly oxidized to dehydro-ascorbic acid in the body. These two forms of vitamin-C are important in oxidation-reduction reactions. Vitamin-C is involved in tyrosine metabolism, conversion of folic acid, carbohydrate metabolism, synthesis of lipids and proteins, iron absorption and metabolism, resistance to infections and cellular respiration. It is also essential for collagen formation and tissue repair.
Ind: 1. Supplementation of vitamin-C deficiency; 2. Prevention and treatment of scurvy; 3. Adjunct in the treatment of wounds, infections, trauma, fractures, burns, cold exposure, following surgery, fever, stress, leg ulcers, cancer; 4. In pregnancy and lactation; 5. Other conditions, such as dental caries, gingivitis, pyorrhoea, ulcerative colitis, acne, infertility, atherosclerosis, haemorrhagic diathesis, anaemia etc.
C/I: There are no contraindications to the administration of vitamin-C.
S/E: Generally ascorbic acid is well tolerated. However, few side-effects including stomach upset, diarrhoea, mouth sores, or frequent urination may be seen after administration of ascorbic acid.
Precautions: Diabetes, patients prone to recurrent renal calculi and those on sodium restricted diets or anticoagulant therapy should not take excessive doses of ascorbic acid over an extended period of time.
Pregnancy & lactation: During pregnancy and lactation recommended dosage of vitamin-C is safe.
Dosage & admin: Adult: Scurvy, 500mg-1gm; infections, 1gm. Both 2 or 3 times daily. Children: Under 4 years, 1/4, adult dose; 4-12 yrs. 1/2 adult dose; 12-14 yrs. 3/4 adult dose.
Drug inter: No significant drug interaction has been shown.

❖ **ASCOBEX Tab. Beximco**
Ascorbic acid 250mg/tablet
200's pack: 262.00 MRP
❖ **ASCORIN Tab. Bristol**
Ascorbic acid 250mg/tablet
200's pack: 164.00 MRP
❖ **ASCOSON Tab. Jayson**
Ascorbic acid 250mg/tablet
200's pack: 282.00 MRP
❖ **ASCOSON Syp. Jayson**
Ascorbic acid 100mg/5ml: syrup.
100ml bot: 33.22 MRP
❖ **ASCOSON Inj. Jayson**
Ascorbic acid 500mg in 5ml ampoule: injection
5ml amp x 10's: 49.50 MRP
❖ **ASCOVIT Tab. Pharmadesh**
Ascorbic acid 250mg/tablet
200's pack: 258.00 MRP
❖ **ASPEL SR Cap. Delta**
Ascorbic acid BP 500mg/capsule (sustained release)
Dosage & admin: One capsule per day orally.
48's pack: 167.90 MRP
❖ **CAPCEE SR Cap. Silva**
Ascorbic acid BP 500mg/capsule (sustained release)
Dosage & admin: One capsule per day orally.
48's pack: 168.00 MRP
❖ **C-BON Tab. Ambee**
Ascorbic acid 250mg/tablet
100's pack: 130.00 MRP
❖ **CECON Tab Acme**
Ascorbic acid 250mg/tablet
100's pack: 131.00 MRP
❖ **CEEGRAM 500 Effervescent Tab. Incepta**
Vitamin-C 500mg (as ascorbic acid BP & sodium ascorbate BP)/tablet (effervescent).
Dosage & admin: 1 tablet daily with a meal or as directed by the physician. Dissolve one effervescent tablet in half glass (100ml) of water and drink instantly.
10's pack: 75.00 MRP
❖ **CEEMET Tab. Medimet**
Ascorbic acid 250mg/tablet
250's pack: 327.50 MRP
❖ **CEETA Tab. Syntho**
Ascorbic acid 250mg/tablet
200's pack: 164.00 MRP
❖ **CEEVIT Tab. Square**
Ascorbic acid 250mg/tablet
200's pack: 262.00 MRP
❖ **CEEVIT Forte Tab. Square**
Ascorbic acid BP 1000mg/tablet (effervescent).
Dosage & admin: 1 tablet daily with a meal. Dissolve one effervescent tablet in half glass (100ml) of water and drink instantly.
10's pack: 100.00 MRP
❖ **CELIN Tab. GlaxoSmithKline**
Ascorbic acid 250mg/tablet
200's pack: 262.00 MRP
❖ **CEVALIN Tab. Bio-pharma**
Ascorbic acid 250mg/tablet
200's pack: 262.00 MRP
❖ **CEVION Tab. Healthcare**
Ascorbic acid BP 250mg/tablet
250mg x 10's pack: 76.40 MRP
❖ **C-GUM Chewing Gum Tab. Beximco**
Ascorbic acid 125mg/tablet (Chewing Gum)
30's pack: 113.40 MRP
❖ **CHEWCE Tab. Navana**
Ascorbic acid 250mg/tablet
200's pack: 262.00 MRP
❖ **CITAVIT Tab. Skylab**
Ascorbic acid 250mg/tablet
200's pack: 162.00 MRP
❖ **C-ON Sachet Rephco**
Ascorbic acid 250mg/sachet
10's pack (lemon): 50.00 MRP
10's pack (mango): 50.00 MRP
10's pack (orange): 50.00 MRP
❖ **C-VITERA Tab. Millat**
Ascorbic acid 250mg/tablet
100's pack: 130.00 MRP
❖ **GEVIT Tab. Globe**
Ascorbic acid 250mg/tablet
200's pack: 160.00 MRP
❖ **G-VITAMIN-C Gonoshas.**
Ascorbic acid 250mg/tablet.
100's pack: 71.00 MRP
❖ **KVIT-C Tab. Chemico**
Ascorbic acid 250mg/tablet
50's pack: 40.00 MRP
❖ **LEMON-C Tab. Gaco**
Ascorbic acid 250mg/tablet
100's pack: 79.50 MRP
❖ **LEMOVIT-C Tab. Ziska**
Ascorbic acid 250mg/tablet
200's pack: 262.00 MRP
❖ **MEGA-C Tab. Edruc**
Ascorbic acid 250mg/tablet
200's pack: 262.00 MRP
❖ **MEGA-C Inj. Edruc**
Ascorbic acid 500mg in 5ml ampoule: injection
5ml amp x 10's pack: 50.00 MRP
❖ **NUTRIVIT-C Tab. ACI**
Ascorbic acid 250mg/tablet.
200's pack: 262.01 MRP
❖ **NUTRIVIT-C Syp. ACI**
Ascorbic acid 100mg/5ml: syrup.
100ml bot: 33.22 MRP
❖ **ORANGE-C Tab. A.P.C Pharma**
Ascorbic acid (+ sodium ascorbate) 250mg/tablet.
200's pack: 164.00 MRP
❖ **RAPID-C Eff. Tab. Popular**
Ascorbic acid BP 1000mg/tablet (effervescent).
Dosage & admin: 1 tablet daily with a meal. Dissolve one effervescent tablet in half glass (100ml) of water and drink instantly.
1000mg x 9s pack: 90.00 MRP
❖ **RAPID-C Syp. Popular**
Ascorbic acid 100mg/5ml: syrup.
100ml bot: 33.22 MRP
❖ **SEEMA-C Tab. Seema**
Ascorbic acid 250mg/tablet.
200's pack: 262.00 MRP
❖ **SUVIC Tab. Amico**
Ascorbic acid 250mg/tablet.
200's pack: 150.00 MRP
❖ **VASCO Tab. Opsonin**
Ascorbic acid 250mg/tablet.
200's pack: 262.00 MRP
❖ **VC-250 Tab. Aristopharma**
Ascorbic acid 250mg/tablet
200's pack: 260.00 MRP
❖ **VEESINA Tab. Ibn Sina**
Ascorbic acid 250mg/tablet
100's pack: 131.00 MRP
❖ **VITA-C Tab. CPL**
Ascorbic acid 250mg/tablet.
200's pack: 160.00 MRP
❖ **VITA-CEE Tab. Zenith**
Ascorbic acid 250mg/tablet.
200's pack: 215.00 MRP

Vitamin E Preparations

VITAMIN E[21,33]

ALPHA TOCOPHERYLACETATE: Tablet/ Capsule
Ind: Vitamin E is indicated in the treatment & prevention of vitamin E deficiency in various conditions. Vitamin E deficiency in malabsorption syndromes, sprue; neuromuscular abnormalities due to very low Vita-E concentration as found in young children with congenital cholestasis. As an adjunct to specific hormone therapy in sterility, habitual or imminent abortion. Vitamin-E has also been tried as supplement in the treatment of various disorders including angina pectoris, hypercholesterolaemia, intermittent claudication, fibrocystic breast disease, cancer, nocturnal leg cramps, osteoarthritis etc. There is possible need for supplementation of vitamin-E in the diet of

pregnant & lactating women & for new born infants where anaemia can develop as a result of insufficiency of vitamin-E.
C/I: Known hypersensitivity to vitamin-E.
S/E: Vitamin-E is usually well tolerated. Large doses may cause diarrhoea, abdominal pain & other gastro-intestinal disturbances.
Pregnancy & lactation: Recommended as advised by the physician.
Dosage: Adults: 200mg or 400mg daily, or as directed by the physician.
Children: 1-10mg/kg daily, or as directed by the physician.

❖ **ALFA-E Tab. Aristopharma**
Alpha tocopheryl acetate 200mg/tablet
15's pack: 57.00 MRP
❖ **BIOVIT E Tab. Bio-pharma**
Alpha tocopheryl acetate 200mg/tablet
15's pack: 45.00 MRP
❖ **CPVIT-E Tab. Cosmo Pharma**
Alpha tocopheryl acetate 200mg/tablet
50's pack: 100.00 MRP
❖ **E-CAP Drug Inter.**
Alpha tocopheryl acetate 200 i.u & 400 i.u/soft capsule.
200 i.u x 100's pack: 400.00 MRP
400 i.u x 50's pack: 300.00 MRP
❖ **ECOVIT-S Cap. Globe**
Alpha tocopheryl acetate USP 200mg/capsule (soft gelatin)
200mg x 100's pack: 400.00 MRP
❖ **ECOVIT-400 Cap. Globe**
Alpha tocopheryl acetate USP 400mg/capsule (soft gelatin)
400mg x 50's pack: 300.00 MRP
❖ **EFYNAL Chew. Tab. Healthcare**
Alpha tocopheryl acetate 200mg/tablet (chewable)
25's pack: 162.50 IP
❖ **E-GOLD Cap. Rangs**
Alpha tocopheryl acetate USP 200 i.u/capsule
30's pack: 105.00 MRP
❖ **E-SOFT 200/400 SG Cap Pacific**
Alpha tocopheryl acetate 200 i.u & 400 i.u/ capsule.
200 i.u x 100's pack: 400.00 MRP
400 i.u x 50's pack: 300.00 MRP
❖ **E-TAB Tab. Acme**
Alpha tocopheryl acetate 200mg/tablet
100's pack: 325.00 MRP
❖ **EVINOL Tab. Skylab**
Alpha tocopheryl acetate 200mg/tablet
15's bot: 57.00 MRP
❖ **EVIT Chew. Tab. Square**
Alpha tocopheryl acetate 200mg/tablet (chewable)
15's pack: 50.00 MRP
❖ **EVIT Licap Square**
Alpha tocopheryl acetate 200mg & 400mg/capsule (liquid capsule)
200mg x 30's pack: 120.00 MRP
400mg x 30's pack: 158.26 MRP
❖ **FORMULA E Tab. Beximco**
Alpha tocopheryl acetate 200mg/tablet
15's pack: 57.00 IP
❖ **INOVIT E Cap. Incepta**
Alpha tocopheryl acetate 200mg & 400mg/ capsule
200mg x 30's pack: 120.00 MRP
400mg x 30's pack: 180.00 MRP
❖ **KVIT-E Tab. Chemico**
Alpha tocopheryl acetate 400mg/tablet
400mg x 20's pack: 70.00 MRP
❖ **LIQU-E Cap. Beacon**
Alpha tocopheryl acetate 200mg/capsule
30's pack: 120.00 MRP
50's pack: 200.00 MRP
❖ **NUTRIVIT-E Tab. ACI**
Alpha tocopheryl acetate 200mg/tablet
50's pack: 110.00 MRP
❖ **OVIT-E Cap. Opsonin**
Alpha tocopheryl acetate 200mg & 400mg/ capsule
200mg x 100's pack: 250.00 MRP
400mg x 50's pack: 250.00 MRP
❖ **PLACENT-E Tab. Navana**
Alpha tocopheryl acetate 200mg/tablet
15's pack: 51.00 IP
❖ **RENBO-E Tab. Sandoz/Novartis**
Alpha tocopheryl acetate 200mg/tablet
200mg x 100's pack: 380.00 MRP
❖ **TABLET E-V Pharmadesh**
Alpha tocopheryl acetate 200mg/tablet
20's pack: 60.62 MRP
❖ **VITA-E Tab. Edruc**
Alpha tocopheryl acetate 200mg/tablet
15's pack: 55.00 IP

Vitamin-K Preparations.

Preparations discussed in the cardiovascular chapter, under the Coagulant/Haemostatic group of drugs.

1.2 Specific combined vitamin prepns.

VITAMIN-B COMPLEX + VITAMIN-C PREPNS.

❖ **BECOSULES GOLD Cap. Renata**
This is a special combined preparation of vitamin B complex and vitamin C, available as capsules.
Comp: Each capsule contains thiamine hydrochloride BFP 50mg, riboflavin BP 25mg, nicotinic acid BP 100mg, pantothenic acid BP 25mg, pyridoxine hydrochloride BP 10mg, folic acid 0.5mg, cyanocobalamin 0.005mg and ascorbic acid (vitamin C) 175mg.
Ind: This combined preparation is indicated for the treatment and prevention of vitamin-B and vitamin C deficiencies.
C/I; S/E; Precautions: See above under the text of vitamin-B complex and vitamin-C separately.
Pregnancy & lactation: This combined preparation is recommended in pregnancy & lactation.
Dosage & admin: 1 or 2 capsules daily or as advised by the physician.
90's pack: 270.00 MRP

VITAMIN C + VITAMIN D_3 + FOLIC ACID[26]

VITAMIN C + VITAMIN D_3 + FOLIC ACID: Tablet
This combination preparation is available as tablet containing vitamin C (ascorbic acid BP) 400mg, vitamin D_3 (colecalciferol BP) 400 IU & folic acid BP 2mg.
Mode of action: Ascorbic acid (vitamin C) & folic acid (vitamin B_9) are water-soluble vitamins. Vitamin D is fat-soluble. Ascorbic acid helps integration & cohesiveness of cells by synthesizing collagen which is also known as biological glue. It is also a powerful anti-oxidant in the aqueous media. Vitamin D is an antirachitic and sun-shine vitamin which displays its roles like a hormone (pro-hormone). Vitamin D spares calcium in the body dy reducing excretion and enhancing calcium absorption. Folic acid is crucial for proper brain function and plays an important role in mental and emotional health. It aids in the production of DNA and RNA, the body's genetic material, and is specially important during periods of high growth, such as infancy, adolescence and pregnancy. It controls blood levels of the amino acid homocysteine. Elevated levels of this substance appear to be linked to certain chronic conditions such as heart disease.
Ind: Deficiency states of vitamin C, vitamin D and folic acid associated with cardiovascular diseases. Deficiency states and necessity of vitamin-C, such as- scurvy, generalized weakness, gum bleeding, after acute infections, alcoholism and postoperatively, wound healing, prevention of cold, flu and influenza. Deficiency states and necessity of folic acid, such as- megaloblastic anemia and anemia of nutritional origin. Deficiency states and necessity of vitamin-D, such as- intestinal malabsorption, chronic liver disease, osteomalacia, osteopenia, rickets, hypocalcemia, institutionalized patients, persons who use sunscreen, black people, person who covers most of the dody surface due to cultural and religious purpose; familial hypophosphatemia, hypoparathyroidism; as adjuvant with calcium supplement, prevention of osteoporosis and fracture alone or in combination with calcium supplement. Conditions where demand for vitamin C, vitamin D and folic acid increases, such as- prepnancy, lactation, smoking & old age, person living in polluted environment.
C/I: This combination is contraindicated in hypercalcemia, hyperparathyroidism, renal calculi, nephrolithiasis, Zollinger-Ellison syndrome, concomitant digoxin therapy (requires careful monitoring of serum calcium level).
S/E: Vitamin C & vitamin D are well tolerated and side-effects are very rare at the recommended dose. Allergic sensitization has been reported following oral administration of folic acid.
Precautions: Precautions should be exercised if hypersensitivity to any of its ingredients is manifested.
Pregnancy & lactation: There is no contraindication to the use of this preparation in pregnancy and lactation.
Dosage & admin: 1 tablet once daily or as directed by physician.
Drug inter: No interaction of this combination has been reported.

❖ **CARDIVIT Tab. Incepta**
This is a special preparation of three vitamins, available as tablet containing vitamin C (ascorbic acid BP) 400mg, vitamin D_3 (colecalciferol BP) 400 IU & folic acid BP 2mg.
30's pack: 90.00 MRP

1.3 Anti-oxidant Multivitamin prepns.

ß-CAROTENE + VITAMIN C + VITAMIN E[33,62]

ß-CAROTENE + VITAMIN C + VITAMIN E: Tablet/Capsule

Beta carotene, vitamin C & vitamin E are anti-oxidant vitamins- scientifically it is found that, their presence in foods help fight & protect the cell against harmful cell damage.

Mechanism of action: Various environ-mental factors, poor nutrition and the body's natural metabolic process can rob normal oxygen atoms of crucial electrons in the cell wall , thus produce the free radical- which then tries to replace the lost electron by raiding other molecules. When the free radical takes an electron from a molecule in a cell wall, a new free radical is created and a chain reaction begins. The chain of electron theft erodes the cell & opening the door to cancer and other ills. The anti-oxidant vitamins, for their molecular sturcture can give up electrons to free radicals without becoming harmful heading off the dangerous chain reaction in the cell.

Use & Ind: As anti-oxidant vitamins to combat degenerative process of aging; prevent old age diseases such as, cardiovascular diseases, inflammatory rheumatic diseases, malignancy & precancerous conditions, lung functional problems & immunological problems. Deficiency states of this 3 vitamins. Everyone beyond 40 years needs anti-oxidants daily either as food or supplement.

C/I; S/E; Cautions: See under respective vitamins individually, i.e vitamin A (as beta carotene converts to vitamin A in the body whenever required), vitamin C & E.

Dose: 1 tablet or capsule daily, or as prescribed by the physician.

❖ **A-CARE Tab. Asiatic**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **ACTIVE Plus Tab. White Horse**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
30's pack: 75.00 MRP

❖ **AGEDEFY Tab. Medimet**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **AGE-M Tab. Mystic**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **ANOXIV Tab. UniHealth**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
30's pack: 75.90 MRP

❖ **ANTOX Tab. Acme**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.60 MRP
100's pack: 253.00 MRP

❖ **BEC Tab. Opsonin**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 45.00 MRP

❖ **BETANIC Tab. Modern**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **CARE Tab. Edruc**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 IP

❖ **CAROCET Tab. Beximco**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.60 MRP

❖ **CARV Tab. Delta**
Vitamin C 200mg BP & vitamin E 200mg BP/ tablet
15's pack: 60.00 MRP

❖ **CEB Tab. Rephco**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **CETO Tab. General**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **CETOX Plus Tab. Chemist**
Vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 80.00 MRP

❖ **DONOR Tab. Millat**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **D'TOX Tab. Aexim**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **EBA Tab. Apex**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 45.00 MRP

❖ **ECA Tab. Gaco**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.62 MRP

❖ **E-CAP PLUS Cap. Drug Inter.**
Vitamin C 250mg BP & vitamin E 200mg BP/capsule (soft gelatin)
60's pack: 240.00 MRP

❖ **ECOTIN Tab. Globe**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **ECOTIN-S Cap. Globe**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/capsule (soft gelatin).
50's pack: 134.50 MRP

❖ **EC-Plus Tab. Orion**
Vitamin C 200mg BP & vitamin E 200mg BP/ tablet
30's pack: 120.00 MRP

❖ **EC-VIT Tab. Zenith**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP
30's pack: 75.00 MRP

❖ **ENERGIN Tab. Doctor's**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **E-TOX Tab. Elixir**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack:

❖ **EXTRAVIT-X Tab. Salton**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **HAX Tab. Hudson**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **HIPREX Tab. Kumudini**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **NORAD Tab. Pacific**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **NORAD SG Cap. Pacific**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/capsule (soft gelatin)
50's pack: 250.00 MRP

❖ **NOREX Tab. Skylab**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **NOX Tab. Alco Pharma**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.60 MRP

❖ **NOXID Tab. Navana**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 IP

❖ **NUTRIACE Tab. Marksman**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **OXFORTE Tab. Reman**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **OXID Tab. Medicon**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **OXITAB Tab. Syntho**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.60 MRP

❖ **OXIVIT Tab. Pharmadesh**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 47.00 MRP

❖ **PEREX Tab. CPL**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **PRENTOX Tab. Silva**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **PRIOVIT Tab. SK+F**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.60 MRP

❖ **PROXID Tab. Renata**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.60 MRP

❖ **RACE Tab. Ibn Sina**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet (film coated).
20's pack: 50.00 MRP

❖ **REX Tab. Square**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
30's pack: 75.90 MRP

❖ **ROTEX Tab. SAPL**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 51.00 MRP

❖ **SAFE Tab. Nipa**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet (film coated).
20's pack: 50.80 MRP

❖ **TANOX Soft Cap. Drug Inter.**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/soft capsule
100's pack: 273.00 MRP

❖ **TASTI Tab. ACI**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **TRIVIT Tab. Proteety**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 48.00 MRP

❖ **ULTOX Tab. Ultra Pharma**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **VECAROT Tab. Cosmic**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
50's pack: 150.00 MRP

❖ **VIGOR ACE Tab. Hallmark**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **VITACE Tab. Aristopharma**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
30's pack: 75.00 MRP

❖ **VITAFORCE Tab. Bio-pharma**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **VITAL E+C Tab. UniHealth**
Vitamin C 250mg BP & vitamin E 200mg/tablet
28's pack: 112.00 MRP

❖ **VITOXI-3 Tab. Desh**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **VROOT Tab. Chemico**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

❖ **ZEST Tab. Jayson**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
50's pack: 126.50 MRP

❖ **ZEX Tab. Ziska**
Beta carotene 6mg USP, vitamin C 200mg BP & vitamin E 50mg BP/tablet
20's pack: 50.00 MRP

1.4 Nonspecific multivitamin prepns.

MULTVITAMIN CAP & TAB PREPARATIONS[21,33]

❖ **APEVIT-M Tab. A.P.C Pharma**
Multivitamin preparation for adult: tablet
Dose: 1 tablet daily.
30's pack: 26.10 IP

❖ **KVIT-M Tab. Chemico**
Multivitamin preparation for adult: tablet
Dose: 1 tablet daily.
30's pack: 31.80 MRP

❖ **SUPRAVIT Soft Cap. Drug Inter.**
Multivitamin soft capsule preparation.
100's pack: 195.00 MRP

❖ **VITAPLUS Tab. Pharmadesh**
Multivitamin preparation for adult: tablet (chewable).
Dose: 1 tablet daily.
30's pack: 30.00 MRP

❖ **ZISKAVIT-M Tab. Ziska**
Multivitamin preparation for adult: tablet
Dose: 1 tablet daily.
30's pack: 40.00 MRP

MULTIVITAMIN SYRUP PREPNS[133]

MULTIVITAMIN PREPN: Syrup
Composition: Each 5ml syrup contains- Vitamin A 666.66 i.u, vitamin B1 0.3mg, B2 0.4mg, B6 0.35mg, vitamin C 25mg, vitamin D 140 i.u, vitamin E 2mg, nicotinamide 5mg, pantothenic acid 1.33mg.
Ind: Multivitamin syrup is indicated in infants and children- as daily nutritional supplement; increased demands of vitamains in grown children; prevention and treatment of multi-vitamin deficiencies in malabsorption syndrome, other gastrointestinal diseases, retard growth etc.
Dosage & admin: Infants 1 - 4 months : 2.5ml (1/2 tsf)daily; 4 months - 4yrs : 5ml (1 tsf) daily; adults & children over 4 yrs: 10ml (2 tsf) daily. The syrup can be mixed with milk or water.

❖ **KIDOVIT Syp. Amico**
Multivitamin preparation for children: syrup.
Comp: See above under the text.
100ml bot: 65.00 MRP

❖ **VITACHILD Syp. Popular**
Multivitamin preparation for children: syrup.
Comp: See above under the text.
100ml bot: 65.00 MRP
200ml bot: 125.00 MRP

MULTIVITAMIN DROP PREPNS[21,33]

MULTIVITAMIN PREPN: Drop
Composition: 0.6ml (10 drops) preparation contains- Vitamin A 6000 i.u., vitamin D 1200 i.u., vitamin B_1 1mg, B_2 1mg, B_6 1mg, vitamin C 60mg, nicotinamide 5mg, pantothenic acid 2mg.
Ind: Multivitamin deficiencies in infants and children as in malabsorption syndrome, other gastrointestinal diseases; retard growth; during antibiotic therapy.
Dose: Usual dosage, 10-15 drops (0.6-1ml) once or twice daily.

❖ **APEVIT-M Drop A.P.C Pharma**
Multivitamin prepn: drop.
15ml bot: 15.00 MRP

❖ **BABIVIT Drop Alco Pharma**
Multivitamin prepn: drop.
15ml bot: 15.00 MRP

❖ **BIOVIT Drop Bio-pharma**
Multivitamin prepn: drop.
15ml bot: 15.00 MRP

❖ **CYTAPLEX-M Drop CPL**
Multivitamin prepn: drop
15ml bot: 15.00 MRP

❖ **EDRUVIT Drop Edruc**
Multivitamin prepn: drop.
15ml bot: 15.70 MRP

❖ **JASOVIT Drop Jayson**
Multivitamin preparation: drop
15ml bot: 15.09 MRP

❖ **KVIT-M Drop Chemico**
Multivitamin preparation: drop
15ml bot: 15.00 MRP

❖ **MICOVIT Drop Amico**
Multivitamin preparation: drop
15ml bot: 15.00 MRP

❖ **MULTI-7 Drop Apollo**
Multivitamin preparation: drop
15ml bot: 14.37 MRP

❖ **MULTISINA Drop Ibn Sina**
Multivitamin prepn.: drop
15ml bot: 15.94 MRP

❖ **MULTIVIN Drop Orion**
Mulltivitamin preparation: drop
15ml bot: 15.00 MRP

❖ **M-VIT Drop Modern**
Mulltivitamin preparation: drop
15ml bot: 14.16 MRP

❖ **NIPAVIT Drop Nipa**
Multivitamin preparation: drop
15ml bot: 15.10 MRP

❖ **NUTRIVIT-MV Drop ACI**
Multivitamin preparation: drop
15ml bot: 15.95 MRP

❖ **PANVIT Drop Square**
Multivitamin preparation: drop
15ml bot: 15.17 MRP

❖ **PHARMAVIT Drop. Pharmadesh**
Multivitamin preparation: drop
15ml bot: 15.00 MRP

❖ **REMAVIT Drop Reman**
Multivitamin preparation: drop
15ml bot: 16.75 MRP

❖ **RESTOVIT-M Drop Zenith**
Multivitamin preparation: drop
15ml bot: 15.00 MRP

❖ **SEEMAVIT Drop Seema**
Multivitamin preparation: drop
15ml bot: 16.00 MRP

❖ **TYNISOL Drop Beximco**
Multivitamin prepn: drop
15ml drop: 15.98 MRP

❖ **VIMIN Drop Gaco**
Multivitamin preparation: drop
15ml bot: 15.07 MRP

❖ **VITA-M Drop Opsonin**
Multivitamin preparation: drop
15ml bot: 14.75 MRP

❖ **VITAVIT Drop Skylab**
Multivitamin prepn: drop.
15ml bot: 14.00 MRP
❖ **V-PLEX Drop Acme**
Multivitamin prepn: drop
15ml bot: 15.15 IP

2.1 Specific mineral prepns.
2.2 Specific mineral & vitamin combined prepns.

CALCIUM SALT (As Gluconate/Lactate/Pantothenate)[21,33]

CALCIUM Gluconate/ Lactate/ Pantothenate: Tablet/Injection
Ind: Deficient dietary intake as in childhood rickets, pregnancy , lactation; in old age due to imparied absorption, osteomalacia, osteoporosis; hypocalcaemic tetany, neonatal tetany; systolic cardiac arrest.
C/I: Conditions associated with hypercalcaemia and hypercalciuria (e.g some forms of malignant disease).
Precautions: Renal impairments; sarcoidosis; concurrent admin. of thiazide diuretics may increase the risk of hypercalcaemia.
S/E: Mild g.i disturbances; bradycardia, arrhythmias, and irritation after i.v injection.
Dosage & admin: By mouth- upto 20 mmol ca++ daily in divided doses as calcium gluconate or lactate or pantothenate.
By slow i. v. or deep i. m. injection- calcium gluconate 1-2 gm (2.25-4.5 mmol of ca++).
Child: half adult dose by slow i. v. route.
Note: Ca++ 1mmol = 300mg calcium lactate = 450mg calcium gluconate aporoximately.

❖ **CALAC Tab. Opsonin**
Calcium lactate 300mg/tablet.
100's pack: 30.00 MRP
❖ **CALATE Tab. Pharmadesh**
Calcium lactate 300mg/tablet.
100's pack: 40.00 MRP
❖ **CALCI Inj. Opsonin**
Calcium pantothenate 100mg/2ml (i.e 5%) ampoule:injection
50 amps pack: 175.00 MRP
❖ **CALCINATE Inj. Gaco**
Calcium pantothenate 100mg/2ml (i.e 5%) ampoule: injection
1 ampoule: 3.50 MRP
❖ **CALCI-R Tab. Rephco**
Calcium lactate 300mg/tablet
100's pack: 30.00 MRP
❖ **CALCITATE Tab. Ambee**
Calcium lactate 300mg/tablet.
120's pack: 34.80 MRP
❖ **CALCIUM AMBEE Inj. Ambee**
Calcium gluconate 10% w/v solution; 5ml ampoule: injection
5ml amp x 5's pack: 31.00 MRP
❖ **CALCIUM GLUCONATE Inj. Edruc**
Calcium gluconate 10% w/v solution; 5ml ampoule: injection
5ml amp x 10's: 52.00 MRP
❖ **CALCIUM-JAYSON Inj. Jayson**
Calcium gluconate 10% w/v solution; 5ml & 10ml ampoule: injection
5ml amp x 10's: 51.50 MRP
10ml amp x 10's: 63.70 MRP
❖ **CALCIZEN Tab. Zenith**
Calcium lactate 300mg/tablet.
50's pack: 20.00 MRP
❖ **CALSON Tab. Hudson**
Calcium lactate 300mg/tablet.
100's pack: 29.00 MRP
❖ **CALTATE Tab. Gaco**
Calcium lactate 300mg/tablet.
100's pack: 30.00 MRP
❖ **CALTON Tab. Salton**
Calcium lactate 300mg/tablet.
100's pack: 29.00 MRP
❖ **DECAL Tab. Desh Pharma**
Calcium lactate 300mg/tablet.
100's pack: 29.00 MRP
❖ **ELICAL Tab. Elixir**
Calcium lactate 300mg/tablet.
100's pack:
❖ **G-CALCIUM LACTATE Tab. Gonoshas.**
Calcium lactate 300mg/tablet.
100's strip: 29.00 MRP
100's pot: 20.00 MRP
1000's tin: 90.00 MRP
❖ **G-CALCIUM GLUCONATE Inj. Gonoshas.**
Calcium gluconate 10% w/v solution; 5ml & 10ml ampoule: injection
5ml amp x 10's pack: 60.70 MRP
10ml amp x 10's pack: 70.80 MRP
❖ **LACTAB Tab. Chemico**
Calcium lactate 300mg/tablet.
100's pack: 30.00 MRP

CALCIUM SALT (As carbonate)[21,33,54]

CALCIUM Carbonate: Tablet
Calcium carbonate salt preparation, available in two presentations: i. Adult formula- tablet containing calcium carbonate BP 1250mg equivalent to 500mg elemental calcium; ii. Pediatric formula- chewable and non-chewable tablet containing calcium carbonate BP 625mg equivalent to 250mg elemental calcium.
Ind: Raised calcium requirement for children and adolescents at times of rapid growth, inadequate intake of calcium in the diet due to malnutrition, prevention and treatment of childhood rickets and osteomalacia, disorders of osteogenesis and tooth formation (in addition to specific treatment), during pregnancy and lactation; neonatal tetany, latent tetany, hypocalcaemic tetany; in old age prevention and treatment of osteoporosis; systolic cardiac arrest.
C/I: Conditions associated with hypercalcaemia and hypercalciuria (e.g some forms of malignant disease).

Caution: Renal impairments; sarcoidosis; concurrent admin. of thiazide diuretics may increase the risk of hypercalcaemia.
S/E: Mild g.i disturbances; bradycardia, arrhythmias, and irritation after i.v injection.

Dosages & admin: ***Adult preparation (500mg):*** **1 tablet daily or as directed by the physician. Higher doses should not be taken unless recommended by the physician.**
Pediatric preparation (250mg): **Children, 1 tablet daily; Adolescent, 1-2 tablets daily; Adults, 2 tablets daily; or as directed by the physician. Higher doses should not be taken unless recommended by the physician.**

❖ **A-CAL 250 Tab. Acme**
Calcium carbonate 625mg tablet, containing elemental calcium equivalent to 250mg/tablet.
100's pack: 100.00 MRP
❖ **A-CAL 250 Chew. Tab. Acme**
Calcium carbonate 625mg chewable tablet containing elemental calcium equivalent to 250mg/tablet.
30's pack: 45.00 MRP
❖ **A-CAL 500 Tab. Acme**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
100's pack: 250.00 MRP
❖ **ACICAL Tab. ACI**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
100's pack: 200.00 MRP
❖ **AMBEECAL Tab. Ambee**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 100.00 MRP
❖ **APOCAL Tab. Apex**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 100.00 MRP
❖ **ARISTOCAL Tab. Beximco**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
100's pack: 400.00 IP
❖ **BONACAL 500 Tab. Marksman**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
30's pack: 60.00 MRP
❖ **BONEC Tab. Orion**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
100's pack: 350.00 MRP
❖ **BONI Tab. Delta**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
16's pack: 48.00 MRP
❖ **BPCAL 500 Tab. Bristol**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 100.00 MRP
❖ **CABONAT Tab. Millat**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
30's pack: 75.00 MRP
❖ **CAL 250 Chewable Tab. Pacific**
Calcium carbonate 625mg chewable tablet containing elemental calcium equivalent to 250mg/tablet.
100's pack: 200.00 MRP
❖ **CAL 500 Tab. Pacific**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
30's pack: 90.00 MRP
100's pack: 300.00 MRP
❖ **CALBO 500 Tab. Square**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
60's pack: 195.00 MRP
❖ **CALBO Jr. Tab. Square**
Calcium carbonate 625mg (equivalent to 250mg elemental calcium)/tablet (chewable).
60's pack: 120.00 MRP

❖ **CALBON Tab. Aristopharma**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
45's pack: 135.00 MRP

❖ **CALCARB Tab. Alco Pharma**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 100.00 MRP

❖ **CALCI-500 Tab. Rasa**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
100's pack: 130.00 MRP

❖ **CALCI-POT Tab. Rasa**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
30's pack: 60.00 MRP

❖ **CALCICAR 250 Chewable Tab. Incepta**
Calcium carbonate chewable tablet containing elemental calcium equivalent to 250mg/tablet.
100's pack: 150.00 MRP

❖ **CALCICAR 500 Tab. Incepta**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
100's pack: 250.00 MRP

❖ **CALCI-D Tab. Rephco**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 100.00 MRP

❖ **CALCIFIL Tab. Gaco**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
20's pack: 50.00 MRP

❖ **CALCIM Tab. Skylab**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
30's pack: 75.00 MRP

❖ **CALCIN Tab. Renata**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 126.50 MRP

❖ **CALCITON Tab. Chemist**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
30's pack: 60.00 MRP

❖ **CALCIUM-500 Tab. A.P.C Pharma**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
100's pack: 200.00 IP

❖ **CALCIUM-500 Tab. Navana**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 150.00 IP

❖ **CALCIUM-A Tab. Ad-din**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
100's pack: 250.00 MRP

❖ **CALCIUM-J Tab. Navana**
Calcium carbonate 625mg (equivalent to 250mg elemental calcium)/tablet (chewable).
50's pack: 75.00 MRP

❖ **CALCIUM Sandoz Tab. Sandoz/Novartis**
Calcium carbonate 625mg (equivalent to 250mg elemental calcium)/tablet (chewable).
50's pack: 175.00 MRP

❖ **CALCIZEN DS Tab. Zenith**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 100.00 MRP

❖ **CALDICAL 500 Tab. Ziska**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 125.00 MRP

❖ **CALDIL Tab. Drug Inter.**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
100's pack: 200.00 MRP

❖ **CALFEED Tab. Apollo**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
30's pack: 60.00 IP
50's pack: 100.00 IP

❖ **CALFOR Tab. Asiatic**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 125.00 MRP

❖ **CALIUM-500 Tab. Pharmadesh**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 87.50 MRP

❖ **CALJUVEN Tab. Aristopharma**
Calcium carbonate chewable tablet containing elemental calcium equivalent to 250mg/tablet.
50's pack: 100.00 MRP

❖ **CALKID Tab. Gaco**
Calcium carbonate chewable tablet containing elemental calcium equivalent to 250mg/tablet.
30's pack: 50.88 MRP

❖ **CALMAX Tab. Hudson**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
100's pack: 200.00 IP

❖ **CALMET 500 Tab. Somatec**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 100.00 IP

❖ **CALOS Tab. Modern**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 100.00 MRP

❖ **CALPO-500 Tab. Medicon**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 125.00 MRP

❖ **CALSIL 500 Tab. Silva**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
30's pack: 60.00 MRP
60's pack: 150.00 MRP

❖ **CALTONIC Tab. Globex Pharma**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 100.00 MRP

❖ **CANTA Chew. Tab. Delta**
Calcium carbonate 625mg (equivalent to 250mg elemental calcium)/tablet (chewable).
22's pack: 30.14 MRP

❖ **CARBEN Tab. Benham**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 125.00 MRP

❖ **CARBOCAL-500 Tab. Globe**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
100's pack: 220.00 MRP

❖ **CASALT-500 Tab. Chemico**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 125.00 MRP

❖ **CENET Tab. CPL**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 80.00 MRP

❖ **CINET Tab. Belsen**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
30's pack: 60.00 MRP
50's pack: 100.00 MRP

❖ **COSTIN 500 Tab. General**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
100's pack: 200.00 MRP

❖ **CPCAL 500 Tab. Cosmo Pharma**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
100's pack: 200.00 MRP

❖ **EDICAL Tab. Edruc**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 100.00 IP

❖ **IPICAL Tab. Ibn Sina**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 175.00 IP

❖ **ISOCAL-500 Tab. Doctor's**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
30's pack: 55.80 MRP

❖ **JASOCAL 250 Tab. Jayson**
Calcium carbonate 625mg chewable tablet containing elemental calcium equivalent to 250mg/tablet.
50's pack: 75.00 IP

❖ **JASOCAL 500 Tab. Jayson**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 100.00 IP

❖ **MED-CAL Tab. Medimet**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 100.00 MRP

❖ **MYOCAL Tab. Nipa**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
30's pack: 60.60 MRP

❖ **MYSTOCAL Tab. Mystic**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 125.00 MRP

❖ **NEOCAL Tab. White Horse**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 125.00 MRP

❖ **ORACAL Tab. Amico**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 100.00 MRP

❖ **ORTHOCAL Tab. Bio-pharma**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 100.00 MRP

❖ **OSCAL-500 Tab. UniHealth/UniMed**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
30's pack: 60.00 MRP

❖ **OSSI 500 Tab. Kumudini**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 100.00 MRP

❖ **OSTACID Tab. Rangs Pharma**
Calcium carbonate 1250mg (equivalent to 500mg

elemental calcium)/tablet.
50's pack: 100.00 IP

❖ **OSTIM Tab. Hallmark**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 100.00 MRP

❖ **OSTOCAL Tab. SK+F**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
100's pack: 300.00 MRP

❖ **OSTOCAL JR Tab. SK+F**
Calcium carbonate chewable tablet containing elemental calcium equivalent to 250mg/tablet.
50's pack: 86.00 MRP

❖ **OSTOCURB 500 Tab. Aexim**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 80.00 MRP

❖ **OSTOGEN Tab. Opsonin**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
100's pack: 200.00 MRP

❖ **OSTOGEN JR Tab. Opsonin**
Calcium carbonate chewable tablet containing elemental calcium equivalent to 250mg/tablet.
50's pack: 100.00 MRP

❖ **OSTOPLUS-500 Tab. Desh Pharma**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 125.00 MRP

❖ **PEOCAL Tab. Peoples**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
30's pack: 60.00 MRP

❖ **PROCALA Tab. SAPL**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 100.00 MRP

❖ **PROTEBON Tab. Beacon**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
30's pack: 60.00 MRP

❖ **REJUVEN Tab. Novo Healthcare**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 125.00 MRP

❖ **ROCAL Tab. Healthcare**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
40's pack: 120.00 MRP

❖ **SALTONATE Tab. Salton**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
50's pack: 125.00 MRP

❖ **SANDOCAL 500 Tab. Sandoz/Novartis**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
100's pack: 500.00 MRP

❖ **SEE-CAL Tab. Seema**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
100's pack: 250.00 MRP

❖ **SUCAL 500 Tab. Supreme**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
30's pack: 54.00 MRP

❖ **SUPLECAL 500 Tab. Cosmic**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet.
30's pack: 60.00 MRP

❖ **TUMY Chew. Tab. SK+F**
Calcium carbonate chewable tablet containing elemental calcium equivalent to 250mg/tablet.
20's pack: 30.00 MRP

❖ **TYCAL 500 Tab. Proteety**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet
30's pack: 51.00 MRP

❖ **XTRACAL Tab. Pharmasia**
Calcium carbonate 1250mg (equivalent to 500mg elemental calcium)/tablet
50's pack: 100.00 IP

CALCIUM + VITAMIN C[26,42,54]

CALCIUM + VITAMIN C: Tablet
This combined preparation of calcium & vitamin C is available as readily soluble and drinkable effervescent tablet.
Comp: Each effervescent tablet contains calcium lactate-gluconate 1000mg, calcium carbonate BP 327mg (260mg Ca++), & ascorbic acid (vitamin C) BP 500mg. It is a rapidly soluble & drinkable orange flavoured calcium and vitamin C preparation.
Ind: Increased demand for calcium and vitamin C, e.g pregnancy, lactation, periods of rapid growth (childhood, adolescence); infectious disease, convalescence; treatment for calcium & vitamin C deficiency, old age, osteoporosis; premenstrual syndrome; postmenopausal problems; adjuvant in colds and influenza.
C/I: Hypersensitivity to drug; hypercalcemia, severe hypercalciuria; severe renal failure; patients with hyperoxaluria; glucose-6-phosphate dehydrogenase deficiency; iron overload.
S/E: Mild gastrointestinal disturbances.
Precautions: Check urinary calcium in patients with mild hypercalciuria, impaired renal function or a history of urinary concrements; reduce dosage or discontinue therapy if necessary. Avoid high doses of vitamin D. Take into account sugar content for diabetic patients and sodium contents for hypertensive patients or patients requiring a low sodium diet.
Dosage & admin: Adults and children of school age- 1 tablet daily; children 3 to 7 years- 1/2 tablet daily; infants- as prescribed by the physician.
It is rapidly soluble and dissolve in half glass (100ml) of water before use; needs no shaking or stirring.
Drug inter: Calcium reduces the absorption of oral tetracyclines and fluoride; avoid concomitant use within 3 hours. Ascorbic acid may interfere with urinary glucose determination.

❖ **C-4 Tab. Alco Pharma**
A combined, readily soluble and drinkable effervescent tablet of calcium & vitamin C.
Comp: As above under the text.
10's pack: 80.00 MRP

❖ **CaC-1000 Tab. Sandoz/Novartis**
A combined, readily soluble and drinkable effervescent tablet of calcium & vitamin C.
Comp: As above under the text.
12's pack: 132.00 MRP

❖ **CALBO-C Tab. Square**
A combined, readily soluble and drinkable effervescent tablet of calcium & vitamin C.
Comp: As above under the text.
10's pack: 78.30 MRP

❖ **CALCEFER Tab. Renata**
A combined, readily soluble and drinkable effervescent tablet of calcium & vitamin C.
Comp: As above under the text.
10's pack: 60.00 MRP

❖ **CAVIC-C Tab. Incepta**
A combined, readily soluble and drinkable effervescent tablet of calcium & vitamin C.
Comp: As above under the text.
10's pack: 60.00 MRP

❖ **SANTE Tab. Healthcare**
A combined, readily soluble and drinkable effervescent tablet of calcium & vitamin C.
Comp: As above under the text.
10's pack: 105.00 MRP

❖ **ULTRACAL-C Tab. Popular**
A combined, readily soluble and drinkable effervescent tablet of calcium & vitamin C.
Comp: As above under the text.
9's pack: 94.50 MRP

CALCIUM + VITAMIN D[133]

CALCIUM + VITAMIN D: Tablet
This combination preparation is available as tablet containing calcium carbonate USP 1250mg (equivalent to 500mg elemental calcium) and vitamin D_3 (cholecalciferol) USP 200 IU.
Calcium and vitamin D combination is effective against some deficiency diseases like osteoporosis, osteomalacia and rickets. The quantity and proportion of calcium and vitamin D present in this formula are maintained rightly. So that, this combination not only meets the need of vitamin D in the body but also acts as a calcium regulatory by increasing calcium absorption.
Ind: i. For dietary calcium supplement when it is deficient (i.e pregnancy & lactation, children & adolescents at times of rapid growth), ii. As a phosphate binder in chronic renal failure, iii. As an adjunct therapy in the arrest or slowing down of bone demineralization in osteoporosis.
C/I: Hypersensitivity to any of the ingredients. Absolute contraindications are hypercalcaemia resulting (for example) from myeloma, bone metastases or other malignant bone diseases, sarcoidosis; primary hyperparathyroidism and vitamin D overdosage. Severe renal failure.
S/E: The use of calcium supplements has, rarely, given rise to mild gastro-intestinal disturbances, such as constipation, flatulence, nausea, gastric pain, diarrhoea. Following administration of vitamin D supplements occasional skin rash has been reported. Hypercalciuria, and in rare cases hypercalcaemia have been seen with long term treatment at high dosages. Side-effects from micronutrients are rare.
Precautions: Patients with mild to moderate renal failure or mild hypercalciuria should be supervised carefully. Periodic checks of plasma calcium levels and urinary calcium excretion should be made in patients with mild to moderate renal failure or mild hypercalciuria. In patients with a history of renal stones urinary calcium excretion should be measured to exclude hypercalciuria. With long-term treatment it is advisable to monitor serum and urinary calcium

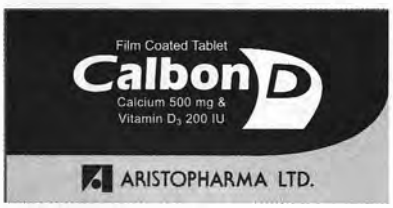
levels and kidney function, and reduce or stop treatment temporarily if urinary calcium exceeds 7.5mmol/24 hours. Allowances should be made for calcium and vitamin-D supplements from other sources.

Pregnancy & lactation: During pregnancy and lactation treatment should always be under the direction of a physician. During pregnancy and lactation requirements for calcium and vitamin D are increased but in deciding on the required supplementation allowances should be made for availability of these agents from other sources.

Dosage & admin: Adults & elderly: Dietary deficiency: 1 tablet daily or as directed by the physician. As phosphate binder: Dose required by the individual patient depending on serum calcium and phosphate levels. Adjunct to osteoporosis therapy: 2-3 tabs. daily. Children: Doses for children being half of those for adults.

Drug inter: The risk of hypercalcaemia should be considered in patients taking thiazide diuretics since these drugs can reduce urinary calcium excretion. Oral administration of calcium may enhance the cardiac effects of digoxin and other cardiac glycosides if systemic hypercalcaemia occurs, so, strict medical supervision is needed and, if necessary monitoring of ECG and serum calcium level should be done. Calcium salts may reduce the absorption of thyroxin, bisphosphonates, sodium fluoride, quinolone or tetracycline antibiotics or iron. It is advisable to allow a minimum period of four hours before taking the calcium.

Concomitant treatment with phenytoin or barbiturates can decrease the effect of vitamin D because of metabolic activation. Concomitant use of glucocorticoids can decrease the effect of vitamin D. Modification of vitamin D therapy may be required to avoid hypercalcaemia when calcium carbonate is used as a phosphate binder in chronic renal failure.



❖ **ACICAL-D Tab. ACI**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
30's pack: 99.00 IP

❖ **AMBEECAL-D Tab. Ambee**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
15's pack: 49.50 MRP

❖ **ARISTOCAL D Tab. Beximco**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
50's pack: 250.00 IP

❖ **BEUCAL D Tab. RAK Pharma**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
30's pack: 150.00 MRP

❖ **BONI D Tab. Delta**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
15's pack: 49.50 MRP
30's pack: 99.00 MRP

❖ **BPCAL-D Tab. Bristol**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
30's pack: 99.00 MRP

❖ **CADMIN Tab. General**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
20's pack: 66.00 MRP
30's pack: 99.00 MRP

❖ **CALBO-D Tab. Square**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
15's pack: 60.00 MRP
30's pack: 120.00 MRP

❖ **CALBON D Tab. Aristopharma**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
15's pack: 60.00 MRP
30's pack: 120.00 MRP

❖ **CALCI-D Plus Tab. Rephco**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
30's pack: 99.00 MRP

❖ **CALCIN D Tab. Renata**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
50's pack: 150.00 MRP

❖ **CALCIUM-A & D Tab. Ad-din**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
30's pack: 90.00 MRP

❖ **CALCIUM-D Tab. Navana**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
30's pack: 99.00 MRP

❖ **CAL D Tab. Pacific**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
30's pack: 111.00 MRP
100's pack: 370.00 MRP

❖ **CALDICAL-D Tab. Ziska**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
15's pack: 45.00 MRP
30's pack: 90.00 MRP

❖ **CALDIL-PLUS Tab. Drug Inter.**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
100's pack: 200.00 MRP

❖ **CALDIVIT Tab. GlaxoSmithKline**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
30's pack: 99.00 MRP

❖ **CALFOR-D Tab. Asiatic**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
15's pack: 49.50 MRP
30's pack: 99.00 MRP

❖ **CALIUM Plus Tab. Pharmadesh**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
30's pack: 90.00 MRP

❖ **CALMET-D Tab. Somatec**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
15's pack: 49.00 MRP
30's pack: 98.00 MRP

❖ **CALPO-D Tab. Medicon**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
15's pack: 55.00 MRP
30's pack: 106.00 MRP

❖ **CALSIL Plus Tab. Silva**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
15's pack: 45.00 MRP
30's pack: 90.00 MRP

❖ **CALVIMAX Tab. Incepta**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
15's pack: 49.50 MRP
30's pack: 99.00 MRP

❖ **CARBEN-D Tab. Benham**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
30's pack: 97.50 MRP

❖ **CARBOCAL D Tab. Globe**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
60's pack: 198.00 MRP

❖ **CASALT-D Tab. Chemico**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
30's pack: 99.00 MRP

❖ **EDICAL-D Tab. Edruc**
Calcium carbonate USP 1250mg equivalent to

500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
30's pack: 96.00 IP

❖ **IPICAL-D Tab. Ibn Sina**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
30's pack: 120.00 MRP

❖ **ISOCAL-D Tab. Doctor's**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
30's pack: 90.00 MRP

❖ **MAXICAL Tab. Orion**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
15's pack: 60.00 MRP
30's pack: 120.00 MRP

❖ **NEOCAL D Tab. White Horse**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
30's pack: 99.00 MRP

❖ **ORTHOCAL-D Tab. Bio-pharma**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
15's pack: 49.00 MRP
30's pack: 99.00 MRP

❖ **OSCAL-D Tab. UniHealth/UniMed**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
30's pack: 99.00 IP

❖ **OSMIN-D Tab. SAPL**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
15's pack: 37.50 MRP

❖ **OSSI D Tab. Kunudini**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
15's pack: 49.50 MRP

❖ **OSTACID-D Tab. Rangs Pharma**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
15's pack: 49.50 MRP
30's pack: 99.00 MRP

❖ **OSTIFEROL-D Tab. Ultra Pharma**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
50's pack: 150.00 MRP

❖ **OSTOCAL D Tab. SK+F**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
15's pack: 49.50 MRP
30's pack: 99.00 MRP

❖ **OSTOGEN D Tab. Opsonin**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
30's pack: 99.00 MRP

❖ **OSTOPLUS-D Tab. Desh Pharma**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
30's pack: 90.00 MRP
50's pack: 150.00 MRP

❖ **PEOCAL D Tab. Peoples**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
15's pack: 45.00 MRP
30's pack: 90.00 MRP

❖ **PROTEBON-D Tab. Beacon**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
30's pack: 100.00 MRP

❖ **REJUVEN-D Tab. Novo Healthcare**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
15's pack: 50.00 MRP
30's pack: 99.00 MRP
50's pack: 165.00 MRP

❖ **ROCAL-D Tab. Healthcare**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
40's pack: 160.00 MRP

❖ **SANDOCAL-D Tab. Sandoz/Novartis**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
50's pack: 300.00 MRP

❖ **SUPLICAL-D Tab. Cosmic**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
20's pack: 60.00 MRP

❖ **TYCAL-D Tab. Proteety**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
30's pack: 99.00 MRP

❖ **ULTRACAL-D Tab. Popular**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
15's pack: 60.00 MRP
30's pack: 120.00 MRP

❖ **XTRACAL-D Tab. Pharmasia**
Calcium carbonate USP 1250mg equivalent to 500mg elemental calcium and vitamin D3 (cholecalciferol) USP 200 i.u/tablet.
30's pack: 99.00 IP

CALCIUM + VITAMIN C + VITAMIN D[26]

CALCIUM + VITAMIN C + VITAMIN D: Effervescent tablet.
This is a combined preparation of calcium, vitamin C & vitamin D, available as effervescent tablet.
Each tablet contains calcium lactate-gluconate USP 1000mg, calcium carbonate USP 327mg, vitamin C (ascorbic acid) USP 500mg & vitamin D3 (colecalciferol) USP 400 IU.
Ind: i. Increased demand for calcium, vitamin-C and vitamin-D, such as pregnancy, lactation, period of rapid growth (in childhood, adolescence) and in old age; ii. As an adjunct to specific therapy for osteoporosis; iii. In osteomalacia; iv. The prevention and treatment of calcium deficiency/vitamin-D deficiency specially in the housebound and hospitalized elderly subjects; v. As adjuvant in cold and influenza; vi. Postmenopausal syndromes; vii. Premenstrual symptoms; viii. In high body temperatures; ix. As alkalizing agent in conditions with systemic acidosis.
C/I; S/E; Precautions: See above under the text of 'calcium+vitamin D' preparation.
Pregnancy & lactation: See above under the text of 'calcium+vitamin D' preparation.
Dosage & admin: Dosage of this combined product should be individualized based on the demands in age, sex and various physiological (pregnancy & lactation) & disease conditions. In general, the dosage is: Adults, elderly and school going children- 1 tablet daily; Children 3-7 years- 1/2 tablet daily; Infants- as advised by the physicians.
Drug inter: See above under the text of 'calcium+vitamin D' preparation.

❖ **CALBO Forte Tab. Square**
Each effervescent tablet contains calcium lactate-gluconate USP 1000mg, calcium carbonate USP 327mg, vitamin C (ascorbic acid) USP 500mg & vitamin D_3 (colecalciferol) USP 400 IU.
10's pack: 80.00 MRP

❖ **CAVIC-C Plus Tab. Incepta**
Each effervescent tablet contains calcium lactate-gluconate USP 1000mg, calcium carbonate USP 327mg, vitamin C (ascorbic acid) USP 500mg & vitamin D_3 (colecalciferol) USP 400 IU.
10's pack: 80.00 IP

CALCIUM + VITAMIN D + MINERALS[26.52]

CALCIUM + VITAMIN D + MINERALS: Tablet
This combined preparation of calcium, vitamin D & minerals is available as tablet.
Comp: Each tablet contains calcium (as calcium carbonate) 600mg, vitamin D3 (colecalciferol) 200 i.u, magnesium (as magensium oxide) 40mg, zinc (as zinc oxide) 7.5mg, copper (as cupric oxide) 1mg, manganese (as manganese sulphate) 1.8mg. boron (as boron citrate) 0.25mg.
Mode of action: Calcium, magnesium and vitamin D are the macro-nutrients for bone. Without vitamin D very little calcium is absorbed. Like calcium, magnesium increases bone strength and rigidity. Recent epidemiological studies show that some micro-nutrients like copper manganese, zinc and boron play important roles in bone health. Deficiency of the micro-nutrients is noticed in the patients with osteoporosis.
Ind: Prevention and treatment of osteoporosis; as nutritional supplement; pregnancy and lactation; deficiency states of calcium and vitamin D; as adjunct treatment to asthmatics to prevent steroid induced osteoporosis; as adjunct treatment to antiseizure medication.
C/I; S/E; Precautions: See above under the text of 'calcium+vitamin D' preparation.
Pregnancy & lactation: See above under the text of 'calcium+vitamin D' preparations.
Dosage & admin: 2 tablets per day, preferably 1 tablet in the morning & 1 in the evening.

Drug inter: See above under the text of 'calcium+vitamin D' preparation.

❖ **ACICAL-M Tab. ACI**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet.
30's pack: 120.00 IP

❖ **APOCAL-DM (Chew) Tab. Apex**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet (chewable).
10's pack: 30.00 MRP
30's pack: 90.00 MRP

❖ **ARISTOCAL M Tab. Beximco**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet.
20's pack: 80.00 IP

❖ **BONI M Tab. Delta**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet.
15's pack: 60.00 MRP
30's pack: 120.01 MRP

❖ **BONTONIC Tab. Globex Pharma**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet.
30's pack: 120.00 MRP

❖ **CADMIN Plus Tab. General**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet.
15's pack: 60.00 MRP
30's pack: 120.00 MRP

❖ **CALBON M Tab. Aristopharma**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet.
15's pack: 75.00 MRP
30's pack: 150.00 MRP

❖ **CALBOPLEX Tab. Square**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet.
30's pack: 120.00 MRP

❖ **CALCIN-M Tab. Renata**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet.
60's pack: 240.00 MRP

❖ **CAL D Plus Tab. Pacific**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet.
30's pack: 138.00 MRP

❖ **CALCIUM-M Tab. A.P.C Pharma**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet.
30's pack: 120.00 IP

❖ **CALCIUM-M Tab. Navana**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet.
15's pack: 60.00 MRP

❖ **CALMET-M Tab. Somatec**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet.
15's pack: 60.00 MRP
30's pack: 120.00 MRP

❖ **CALMI-D Tab. Alco Pharma**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet.
15's pack: 60.00 MRP
30's pack: 120.00 MRP

❖ **CALSIL M Tab. Silva**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet.
30's pack: 120.00 MRP

❖ **CALVIMAX Plus Tab. Incepta**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet.
30's pack: 120.00 IP

❖ **CZM Tab. Decent**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet.
30's pack: 120.00 MRP

❖ **IPICAL-M Tab. Ibn Sina**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet.
30's pack: 150.00 MRP

❖ **MULTICAL Tab. Zenith**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet.
30's pack: 120.00 MRP

❖ **NUTRUM BONE Tab. Acme**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet.
30's pack: 120.00 MRP

❖ **ORACAL-M Tab. Amico**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet.
15's pack: 60.00 MRP

❖ **OSCAL-M Tab. UniMed/UniHealth**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet.
30's pack: 120.00 MRP

❖ **OSTOCAL-M Tab. SK+F**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet.
15's pack: 60.00 MRP
30's pack: 120.00 MRP

❖ **OSTOGEN Plus Tab. Opsonin**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet.
30's pack: 120.00 MRP

❖ **PROTEBON M Tab. Beacon**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet.
30's pack: 120.00 MRP

❖ **ROCAL-M Tab. Healthcare**
This is a combined preparation of calcium, vitamin D & minerals, available as tablet.
32's pack: 128.00 MRP

CALCIUM + VITAMIN D + VITAMIN C + VITAMIN E + MULTIMINERAL[26,87]

CALCIUM + VITAMIN D + VITAMIN C + VITAMIN E + MULTIMINERAL: Tablet
This combined preparation of calcium, vitamin D, vitamin C, vitamin E & multimineral is available as tablet.

Comp: Each tablet contains calcium (as calcium carbonate) 600mg, vitamin D3 (cholecalciferol) 200 i.u, vitamin C BP 60mg, vitamin E BP 15 i.u, magnesium (as magensium oxide) BP 20mg, zinc (as zinc oxide) BP 7.5mg, copper (as cupric oxide) USP 1mg, manganese (as manganese sulphate) BP 1mg & boron (as boron citrate) USP 250mcg.

Mode of action: Calcium, magnesium and vitamin D are the macro-nutrients for bone. Calcium dercreases the rate of bone loss from the femoral neck, the spine and the total body. Since calcium is a nutrient, not a drug, the positive effects of supplemental calcium are most pronounced among women with low to moderate calcium intake. Vitamin D3 helps the body to absorb calcium which helps to reduce age-related bone loss and bone fractures related to osteoporosis. Magnesium helps the body to absorb both calcium and vitamin D_3. It also helps to synthesize proteins. Low magnesium status has been associated with postmenopausal osteoporosis. The trace minerals zinc, copper and manganese all play a role in bone development. Zinc is a part of an anti-oxidant enzyme that helps to prevent cellular destruction, which can cause problems with bone growth and maturation. Copper keeps bones free from thinning. Fifty percent of the total copper content in the body is in the bones and muscles. Manganese, in combination with other trace minerals, helps to prevent bone loss and osteoporosis. Boron works with magnesium and vitamin D3 to enhance calcium absorption and helps to maintain calcium levels in the body. Vitamin C works as an anti-oxidant. It is also essential for the formation of collagen and aids in iron absorption. Vitamin E serves as an anti-oxidant, protects biological membranes and stabilizes cellular functions.

Ind: This specific combined preparation is indicated for maintaining strong & healthy bones & teeth, prevention & treatment of osteoporosis, postmenopausal osteoporosis, management of glucocorticoid induced osteoporosis.

C/I: Patietns with known hypersensitivity to any of the tablet ingredients. Absolute contraindications are hyperparathyroidism, renal calculi, malignant bone diseases, sarcoidosis, severe renal failure.

S/E: Calcium salts may cause mild gastrointestinal side effects such as- constipation, flatulence, nausea, abdominal pain & bloating. Hypercalcaemia & in rare cases hypercalciuria have been seen with long term intake of calcium at high doses. Side effects from micronutrients are rare.

Precautions: If there is any pre-existing heart disease or kiney disease, precautions should be taken.

Pregnancy & lactation: Recommended in pregnancy and lactation.

Dosage & admin: One tablet twice daily with meals, preferably one tablet in the morning & one tablet in the evening or as recommended by the doctor.

Children: Data regarding use in children is insufficient.

Drug inter: The risk of hypercalcaemia is increased if calcium salts are given with thiazide diuretics as these drugs reduce urinary calcium excretion. The effects of digitalis glycosides on the heart are enhanced by calcium. Calcium salts may reduce the absorption of fluoride, some fluoroquinolones, tetracyclines and iron.

❖ **CALBON Plus Tab. Aristopharma**
This combined preparation of calcium, vitamin D, vitamin C, vitamin E & multimineral is available as tablet.
Comp: See above under the text.
15's pack: 75.00 MRP
30's pack: 150.00 MRP

❖ **MAXICAL Plus Tab. Orion**
This combined preparation of calcium, vitamin D, vitamin C, vitamin E & multimineral is

available as tablet.
Comp: See above under the text.
30's pack: 150.00 MRP

MAGNESIUM SALTS[21,48,113]

MAGNESIUM SALT: I.V Injection/Infusion
Magnesium is the second most plentiful cation of intracellular fluid and is involved in a wide range of activities. It is an essential constituent of many enzyme systems, particularly involved in energy generation and plays important role in neurochemical transmission and muscular excitability. Abnormally low concentration of magnesium in the ECF results in increased acetylcholine release and increased muscle excitability that can produce tetany. Magnesium sulphate heptahydrate has anticonvulsant properties when administered parenterally. An increased concentration of magnesium in the ECF causes depression of the central nervous system (CNS). Magnesium has a direct effect on skeletal muscle.
Magneium salts are not well absorbed from the gastro-intestinal tract which explains the use of magnesium sulphate as an osmotic laxative. Magnesium is mainly excreted by the kidneys (and over 90% of magnesium filtered by the kidney is reabsorbed) and is therefore retained in renal failure although significant hypermagnesaemia is rare.
Hypomagnesaemia may develop from diarrhoea, stoma or fistula, alcoholism or diuretic therapy, prolonged treatment with aminoglycosides, hypocalcaemia, hypokalaemia & hyponatraemia.
Ind:
1. To prevent convulsion in patients with pre-eclampsia, eclampsia, tetanus and acute uraemia.
2. In acute myocardial infarction, arrythmia.
3. To arrest premature labour.
4. As an adjuvant in neurosurgery to lower the CSF pressure.
5. For replacement therapy in hypomagnesaemia.
6. To control hypertension, encephalopathy and convulsion associated with acute nephritis in children.
7. In cerebral oedema as osmotic agent.

C/I: Heart block or myocardial damage.
S/E: Excessive administration of magesium results in hypermagnesaemia manifested by nausea, vomiting, flushing of the skin, thirst, hypotension (due to peripheral vasodilatation), drowsiness, confusion, loss of tendon reflexes, respiratory depression, cardiac arrest etc.
Precautions: Magnesium salts should be used with caution in patients with impaired renal and hepatic function or those receiving digitalis glycosides. Caution is required when the drug is administered to pregnant women & nursing mothers.

Dosage & Admin: See under individual prepn.
Overdose: Magnesium sulphate overdose can be treated with 10ml of 10% calcium gluconate or chloride intravenously. If the renal function is normal adequate fluid should be given. Dialysis may be performed in renal impairment.

Drug inter: Concomitant use of magnesium salts with barbiturates, narcotics, hypnotics or other CNS depressants need dose adjustment because of additive effect on CNS. Magnesium salts may enhance the effect of neuromuscular blocking agents or of central nervous system depressants.

❖ **ECLAMSIL Inj. Opsonin**
Magnesium sulphate heptahydrate BP 49.3% w/v; 5ml ampoule (2.46gm): i.m/i.v injection or infusion.
Ind; C/I; A/R; Cautions: See above under the text.
Dosage & Admin: Eclamsil injection, as supplied in ampoule with higher oncentration, can be given by deep intramuscular injection in doses up to 5gm (10ml) and by slow intravenous injection in doses of up to 4gm or by intravenous infusion by dilution as required in glucose or saline in doses of up to 4gm per hour. The daily total dose should not exceed 30gm in patients with normal renal function.
Dose schedule according to indication- please see below under G-Magsulph 4% or Nalepsin 4% infusion.
5ml amp x 5's pack: 125.00 MRP

❖ **G-MAGSULPH 4% Inf. Gonoshasthaya**
Magnesium sulphate heptahydrate BP 4% w/v: i.v infusion. Each 100ml i.v solution contains 4gm or 16.4 mmol of magnesium as magnesium sulphate heptahydrate BP.
Ind; C/I; A/R; Cautions: See above under the text.
Dosage & Admin: ***Seizure prophylaxis in pre-eclampsia and eclampsia:*** **a loading dose of 4gm or 16mmol (100ml) over upto 20 minutes followed by a maintenance dose of 2gm or 8mmol (50ml) per hour. Recurrence of seizure may require an additional i.v bolus of 2-4gm or 8-16mmol (50-100ml). For seizure prophylaxis, treatment should continue during labour and for atleast 24 hours after delivery.**
Myocardial infarction: **2gm or 8mmol (50ml) over 20 minutes, then 16gm or 64mmol (400ml) over 24 hours.**
Magnesium deficiency: **0.5-1 mmol/kg/day (200-400ml) on the first day followed by 25mmol (150ml) daily, upto 160mmol (1000ml) over upto 5 days.**
Tetanus: **an infusion of magnesium sulphate sufficient to maintain a blood magnesium concentration of 2.5 to 4mmol per litre has been recommended.**
Arrythmia: **8mmol (50ml) over 10-15 minutes (repeated once if needed).**
100ml vial: 55.00 MRP

❖ **G-MAGSULPH 49.3% Inj. Gonoshasthaya**
Magnesium sulphate heptahydrate BP 49.3% w/v; 5ml ampoule (2.46gm): i.m injection/i.v injection or infusion.
Ind; C/I; A/R; Cautions: See above under the text.
Dosage & Admin: G-Magsulph injection, as supplied in ampoule with higher oncentration, can be given by deep intramuscular injection in doses up to 5gm (10ml) and by slow intravenous injection in doses of up to 4gm or by intravenous infusion by dilution as required in glucose or saline in doses of up to 4gm per hour. The daily total dose should not exceed 30gm in patients with normal renal function.
Dose schedule according to indication- please see above under G-Magsulph (49.3%) infusion.
5ml amp x 5's pack: 101.15 MRP

❖ **MAGSUM 49.3% Inj. Renata**
Magnesium sulphate heptahydrate BP 49.3% w/v; 5ml ampoule (2.46gm): i.m injection/i.v injection or infusion.
Ind; C/I; A/R; Cautions: See above under the text.
Dosage & Admin: Magsum injection, as supplied in ampoule with higher oncentration, can be given by deep intramuscular injection in doses up to 5gm (10ml) and by slow intravenous injection in doses of up to 4gm or by intravenous infusion by dilution as required in glucose or saline in doses of up to 4gm per hour. The daily total dose should not exceed 30gm in patients with normal renal function.
Dose schedule according to indication- please see above under G-Magsulph 4% or Nalepsin 4% infusion below.
5ml amp x 1's pack: 20.00 MRP

❖ **NALEPSIN 4% Inf. Beximco**
Magnesium sulphate heptahydrate BP 4% w/v: i.v infusion. Each 100ml i.v solution contains 4gm or 16.4 mmol of magnesium as magnesium sulphate heptahydrate BP.
Ind; C/I; A/R; Cautions: See above under the text.
Dosage & Admin: ***Seizure prophylaxis in pre-eclampsia and eclampsia:*** **a loading dose of 4gm or 16mmol (100ml) over upto 20 minutes followed by a maintenance dose of 2gm or 8mmol (50ml) per hour. Recurrence of seizure may require an additional i.v bolus of 2-4gm or 8-16mmol (50-100ml). For seizure prophylaxis, treatment should continue during labour and for atleast 24 hours after delivery.**
Myocardial infarction: **2gm or 8mmol (50ml) over 20 minutes, then 16gm or 64mmol (400ml) over 24 hours.**
Magnesium deficiency: **0.5-1 mmol/kg/day (200-400ml) on the first day followed by 25mmol (150ml) daily, upto 160mmol (1000ml) over upto 5 days.**
Tetanus: **an infusion of magnesium sulphate sufficient to maintain a blood magnesium concentration of 2.5 to 4mmol per litre has been recommended.**
Arrythmia: **8mmol (50ml) over 10-15 minutes (repeated once if needed).**
100ml bot: 70.79 IP

ZINC SULPHATE[46,65,87]

ZINC SULPHATE MONOHYDRATE: Syrup
Zinc sulphate is a source of zinc which is an essential trace element required for human nutrition and involved in a number of body enzyme system. Severe zinc deficiency causes skin lesion, alopecia, diarrhoea, increased susceptibility of infections, cognitive impairment, and failure to thrive in children. Symptoms of less severe deficiency include distorted or absent perceptions of taste and smell and poor wonud healing.
Ind: Treatment of zinc deficiency. Recurrent

respiratory tract infections, diarrhoea, loss of appetite, severe growth retardation, deformed bone formation, impaired immunological status, acrodermatitis enteropathica, parakeratatic skin lesions, defective and delayed wound healing, anaemia, night blindness, mental disturbances and many other afflictions.

C/I: Known case of hypersensitivity to zinc or zinc products.

S/E: Mild side-effects have been observed with zinc therapy, such as abdominal pain and dyspepsia, gastric ulcer, pancreatitis, lethargy, anaemia, fever, nausea, vomiting, respiratory distress, pulmonary fibrosis.

Cautions: Concurrent administration of zinc salt with penicillamine might diminish the effect of penicillamine. Zinc may inhibit the absorption of concurrently administered tetracyclines, so when both are being given an interval of at least 3 hours should be allowed. Accumulation of zinc may occur in case of renal failure. The absorption of zinc, although poor, may be decreased by various compounds including some foods.

Use in pregnancy & lactation: The safety of this product in human pregnancy has not been established. Zinc crosses the placenta and is present in breast milk.

Dosage & Admin: ***Children range under 10kg:*** **22.5mg zinc daily after food.**
Children within 10-30kg: **22.5mg zinc 1-3 times daily after food.**
Adults & children over 30kg: **45mg zinc 1-3 times daily after food.**
Dosage of syrup (4.05mg/5ml): **Adjust as the dosage regimen given above, such as- children under 10kg, 5-6 tsf daily in divided doses; children within 10-30kg, 5-6 tsf 1-3 times daily; adults and children over 30kg 10 tsf 1-3 times daily after food or as directed by the physician.**
Dosage of syrup (10mg/5ml): **Adjust as the dosage regimen given above, such as- children under 10kg, 2 tsf daily in divided doses; children within 10-30kg, 2 tsf 1-3 times daily; adults and children over 30kg 4 tsf 1-3 times daily after food or as directed by the physician.**
Dosage of syrup (20mg/5ml): **Adjust as the dosage regimen given above, such as- children under 10kg, 1 tsf daily; children within 10-30kg, 1 tsf 1-3 times daily; adults and children over 30kg 2 tsf 1-3 times daily after food or as directed by the physician.**
Dosage of tablet (20mg/tablet): **Child under 10kg, 20mg zinc daily after food; Child within 10-30kg, 20mg zinc 1 to 3 times daily; Adult & child over 30kg 40mg zinc 1 to 3 times daily after food or as directed by the physician.**
Preparation of dispersible tablet: **Place the tablet on a spoon. Add adequate amount of water. Let the tablet dissolve complelety. Then give the entire spoonful solution as a single dose.**

Over dose: No cases of this kind appear to have been reported; nevertheless, zinc sulphate is corrosive in over dose. Symptoms are corrosion and inflammation of the mucus membrane of the mouth and stomach; ulceration of the stomach followed by perforation may occur. Gastric lavage and emesis should be avoided. Demulcents such as milk should be given. Chelating agents such as sodium edetate may be useful.

Drug inter: Zinc may inhibit the absorption of concurrently administered tetracyclines; when both are being given, an interval of at least 3 hours should be allowed.

❖ **BABY ZINC Tab. Acme**
Zinc sulphate monohydrate USP equivalent to 20mg elemental zinc/tablet (dispersible tablet).
100's pack: 175.00 MRP

❖ **BIMUTY DS Syp. Pacific**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 29.80 MRP

❖ **BIMUTY Disp. Tab. Pacific**
Zinc sulphate monohydrate USP equivalent to 20mg elemental zinc/tablet (dispersible tablet).
30's pack: 60.00 MRP

❖ **BP ZINC Tab. Bristol**
Zinc sulphate monohydrate USP equivalent to 20mg elemental zinc/tablet (dispersible tablet).
100's pack: 175.00 MRP

❖ **B-ZN Syp. Benham**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 25.00 MRP

❖ **C-ZINC Syp. CPL**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 MRP

❖ **DISPAZINC 20 Disp. Tab. ACI**
Zinc sulphate monohydrate USP equivalent to 20mg elemental zinc/tablet (dispersible).
50's pack: 87.50 MRP

❖ **E-ZINC Syp. Elixir**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 27.00 MRP

❖ **EZY XINC 20 Disp. Tab. SK+F**
Zinc sulphate monohydrate USP equivalent to 20mg elemental zinc/tablet (dispersible).
60's pack: 105.00 MRP

❖ **GROW Syp. Edruc**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 26.00 IP

❖ **G-ZINC Tab. Gonoshasthaya**
Zinc sulphate monohydrate USP equivalent to 20mg elemental zinc/tablet (coated).
60's pack: 60.00 MRP

❖ **G-ZINC Syp. Gonoshasthaya**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 20.00 MRP

❖ **INATE Syp. Ibn Sina**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup
100ml bot: 30.00 MRP

❖ **J-ZINC Syp. Ad-din**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup
100ml bot: 30.00 MRP

❖ **KIDS-B Syp. Gaco**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup
100ml bot: 30.00 MRP

❖ **MAZIC 20 Tab. Renata**
Zinc sulphate monohydrate USP equivalent to 20mg elemental zinc/tablet (coated).
30's pack: 45.00 MRP

❖ **MAZIC Junior Syp. Renata**
Zinc sulphate monohydrate equivalent to 4.05mg elemental zinc USP/5ml: syrup.
100ml bot: 27.00 MRP

❖ **MAZIC Syp. Renata**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 MRP

❖ **MAZIC DS Syp. Renata**
Zinc sulphate monohydrate equivalent to 20mg elemental zinc USP/5ml (double strength): syrup.
100ml bot: 50.00 MRP

❖ **NID 20 Tab. Opsonin**
Zinc sulphate monohydrate USP equivalent to 20mg elemental zinc/tablet (coated).
30's pack: 45.00 MRP

❖ **NID Syp. Opsonin**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 MRP

❖ **NOVO ZINC Tab. Novo Healthcare**
Zinc sulphate monohydrate USP equivalent to 20mg elemental zinc/tablet (dispersible).
50's pack: 100.00 MRP

❖ **ORAL-Z Syp. ACI**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 26.00 MRP

❖ **ORAL-Z 20 Tab. ACI**
Zinc sulphate monohydrate USP equivalent to 20mg elemental zinc/tablet (coated).
50's pack: 75.00 IP

❖ **ORALZIN Tab. Aristopharma**
Zinc sulphate monohydrate USP equivalent to 20mg elemental zinc/tablet (coated).
50's pack: 75.00 MRP

❖ **ORALZIN Syp. Aristopharma**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 26.00 MRP

❖ **ORAZINC-20 Tab. Navana**
Zinc sulphate monohydrate USP equivalent to 20mg elemental zinc/tablet (coated).
30's pack: 45.00 MRP

❖ **ORAZINC Syp. Navana**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 IP

❖ **PEDI-Z Syp. Supreme**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup
100ml bot: 25.00 MRP

❖ **PEM Syp. Proteety**
Zinc sulphate monohydrate equivalent to 4.05mg elemental zinc USP/5ml: syrup.
100ml bot: 29.00 MRP

❖ **PEM DS Syp. Proteety**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 MRP

❖ **PEP Syp. Orion**
Zinc sulphate monohydrate equivalent to 4.05mg elemental zinc USP/5ml: syrup.
100ml bot: 27.00 MRP

❖ **PEP-2 Syp. Orion**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 MRP

❖ **PEP-20 Tab. Orion**
Zinc sulphate monohydrate USP equivalent to

20mg elemental zinc/tablet (coated).
30's pack: 45.00 MRP

❖ **PEP-20 Syp. Orion**
Zinc sulphate monohydrate equivalent to 20mg elemental zinc USP/5ml: syrup.
100ml bot: 50.00 MRP

❖ **PEPTIN Syp. Nipa**
Zinc sulphate monohydrate equivalent to 4.05mg elemental zinc USP/5ml: syrup.
100ml bot: 25.28 MRP

❖ **PEPTIN DS Syp. Nipa**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 26.00 MRP

❖ **ROZINC Syp. Rasa**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 31.00 MRP

❖ **SOLUZINC Syp. Popular**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 IP

❖ **SYRUP ZINC Syp. Asiatic**
Zinc sulphate monohydrate equivalent to 4.05mg elemental zinc USP/5ml: syrup.
100ml bot: 28.00 MRP

❖ **SYRUP ZINC 200 Syp. Asiatic**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 MRP

❖ **SYRUP-ZP Syp. Pharmadesh**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 25.00 MRP

❖ **TINY-Z Syp. Pharmasia**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 IP

❖ **XINC 20 Tab. SK+F**
Zinc sulphate monohydrate USP equivalent to 20mg elemental zinc/tablet (coated).
60's pack: 90.00 MRP

❖ **XINC Syp. SK+F**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 MRP
200ml bot: 55.00 MRP

❖ **XINC DS Syp. SK+F**
Zinc sulphate monohydrate equivalent to 20mg elemental zinc USP/5ml: syrup (double strength).
100ml bot: 55.00 MRP

❖ **Z-DT 10 Tab. Square**
Zinc sulphate monohydrate USP equivalent to 10mg elemental zinc/tablet (dispersible).
100's pack: 150.00 MRP

❖ **Z-DT 20 Tab. Square**
Zinc sulphate monohydrate USP equivalent to 20mg elemental zinc/tablet (dispersible).
100's pack: 200.00 MRP

❖ **ZEAL Syp. Jayson**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 25.00 IP

❖ **ZEDEX 20 Tab. Beximco**
Zinc sulphate monohydrate USP equivalent to 20mg elemental zinc/tablet (coated).
30's pack: 45.00 IP

❖ **ZEDEX DS Syp. Beximco**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc/5ml: syrup.
100ml bot: 30.00 IP

❖ **ZEDEX Max Syp. Beximco**
Zinc sulphate monohydrate equivalent to 20mg elemental zinc USP/5ml: syrup.
100ml bot: 55.00 MRP

❖ **ZEE-1 Syp. Hudson**
Zinc sulphate monohydrate equivalent to 4.05mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 MRP

❖ **ZEE-2 Syp. Hudson**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 50.00 MRP

❖ **ZEENEE Syp. Chemist**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc/5ml: syrup.
100ml bot: 30.00 MRP

❖ **ZEENK Syp. Cosmic**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 25.00 MRP

❖ **ZEP Syp. Alco Pharma**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 IP

❖ **ZEP Junior Syp. Alco Pharma**
Zinc sulphate monohydrate equivalent to 4.05mg elemental zinc USP/5ml: syrup.
100ml bot: 27.00 MRP

❖ **ZESUP Syp. Square**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 MRP

❖ **ZESUP FORTE Syp. Square**
Zinc sulphate monohydrate equivalent to 20mg elemental zinc USP/5ml: syrup.
100ml bot: 50.00 MRP

❖ **ZICO Syp. General**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 25.00 MRP

❖ **ZIDO Syp. Novo Healthcare**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 MRP

❖ **ZIFLU 20 Tab. Incepta**
Zinc sulphate monohydrate USP equivalent to 20mg elemental zinc/tablet (coated).
100's pack:150.00 MRP

❖ **ZIFLU Syp. Incepta**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 MRP

❖ **ZIKID Syp. Globe**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 25.00 MRP

❖ **ZIMON Syp. Zenith**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 MRP

❖ **ZINCA Syp. Apollo**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 IP

❖ **ZINCEP Syp. Desh**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 MRP

❖ **ZINCOL Syp. Somatec**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 25.00 IP

❖ **ZINCORAL Syp. Ziska**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 MRP

❖ **ZINC-S Syp. Ambee**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 25.00 MRP

❖ **ZINCSY Syp. Biklpa**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 26.00 MRP

❖ **ZINGA 20 Tab. Bio-pharma**
Zinc sulphate monohydrate USP equivalent to 20mg elemental zinc/tablet (coated).
50's pack: 75.00 MRP

❖ **ZINGA Syp. Bio-pharma**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc/5ml: syrup.
100ml bot: 26.00 MRP

❖ **ZINOFA Syp. Modern**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 25.00 MRP

❖ **ZINON 20 Tab. Medicon**
Zinc sulphate monohydrate USP equivalent to 20mg elemental zinc/tablet (coated).
30's pack: 45.00 MRP

❖ **ZINON Syp. Medicon**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 MRP

❖ **ZINPRO Syp. Kumudini**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 25.00 MRP

❖ **ZINSUL Syp. Doctor's**
Zinc sulphate monohydrate equivalent to 4.05mg elemental zinc USP/5ml: syrup.
100ml bot: 28.00 MRP

❖ **ZINUP Syp. Rephco**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 25.00 MRP

❖ **ZIPOL Syp. Apex**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 MRP

❖ **ZIPOL-20 (Dispersible) Tab. Apex**
Zinc sulphate monohydrate USP equivalent to 20mg elemental zinc/tablet (dispersible tablet).
50's pack: 75.00 MRP

❖ **ZIS DS Syp. Acme**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc/5ml: syrup.
100ml bot: 30.00 MRP

❖ **ZISMO Syp. Chemico**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 MRP

❖ **ZISUL Syp. Marksman**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 25.00 MRP

❖ **ZISULMET Syp. Medimet**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 MRP

❖ **ZITON Syp. Drug Inter.**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 MRP

❖ **ZIXOL Syp. UniHealth**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 MRP

❖ **ZN Syp. Amico**
Zinc sulphate monohydrate equivalent to 4.05mg elemental zinc USP/5ml: syrup.
100ml bot: 25.00 MRP

❖ **ZNKID (Disp.) Tab. Delta**
Zinc sulphate monohydrate USP equivalent to 20mg elemental zinc/tablet (dispersible tablet).
30's pack: 59.98 MRP

❖ **ZNKID Syp. Delta**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 MRP

❖ **ZS Syp. Decent**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 30.00 MRP

❖ **Z-SIL DT Tab. Silva**
Zinc sulphate monohydrate USP equivalent to 10mg elemental zinc/tablet (dispersible tablet).
100's pack: 190.00 MRP

❖ **Z-SIL Syp. Silva**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 25.00 MRP
200ml bot: 48.00 MRP

❖ **ZYM Syp. Hallmark**
Zinc sulphate monohydrate equivalent to 4.05mg elemental zinc USP/5ml: syrup.
100ml bot: 25.00 MRP

❖ **ZYM DS Syp. Hallmark**
Zinc sulphate monohydrate equivalent to 10mg elemental zinc USP/5ml: syrup.
100ml bot: 27.00 MRP

FOLIC ACID + ZINC[87]

FOLIC ACID + ZINC: Tablet/Capsule
Ind: Prophylaxis of folic acid and zinc deficiency, specially during the first trimester of pregnancy.
Zinc is essential for normal embryonic development. Deficiency results in malformations of brain, eyes, bones, heart and other organs. The survival of the embryo is placed at risk when zinc intake is reduced even for a period of days, particularly in the first trimester. There is a decline of plasma zinc during the first trimester, which continues throughout pregnancy.
The incidence of neural tube defects in the newborn may be reduced by folate supplements to the mother at conception. There is an incidence of prematurity and low birth weight infants in folate deficient women, which is preventable by folate supplement.
C/I: Patients hypersensitive to any of the components of the preparation.
S/E: Side effects of zinc sulphate are mild abdominal pain and dyspepsia. In case of folic acid, allergy occurs very rarely.
Dosage: 1 tablet or capsule daily throughout the first trimester of pregnancy or as required.
Drug inter: Large amounts of calcium decrease the adsorption of zinc. In case of folic acid, no drug interactions have been reported.

❖ **ESP Cap. Orion**
Zinc sulphate monohydrate USP 61.8mg (equivalent to 22.5mg of elemental zinc) and folic acid BP 0.5mg/capsule.
30's pack: 67.50 MRP

❖ **FOLZIN Tab. Pacific**
Zinc sulphate monohydrate USP 54.90mg (equivalent to 20mg of elemental zinc) and folic acid BP 5mg/tablet.
100's pack: 190.00 MRP

❖ **ZIFOLET Tab. Square**
Zinc sulphate monohydrate USP 54.90mg (equivalent to 20mg of elemental zinc) and folic acid BP 5mg/tablet.
100's pack: 150.00 MRP

❖ **ZINCFOL Cap. Somatec**
Zinc sulphate monohydrate USP 61.8mg (equivalent to 22.5mg of elemental zinc) and folic acid BP 0.5mg/capsule.
30's pack: 67.50 IP

❖ **ZINFO Cap. SAPL**
Zinc sulphate monohydrate USP 61.8mg (equivalent to 22.5mg of elemental zinc) and folic acid BP 0.5mg/capsule.
30's pack: 90.00 MRP

❖ **ZNF Tab. Aristopharma**
Zinc sulphate monohydrate USP 61.8mg (equivalent to 22.5mg of elemental zinc) and folic acid BP 0.5mg/tablet.
50's pack: 75.00 MRP
100's pack: 150.00 MRP

VITAMIN-B COMPLEX + ZINC[26.65]

VITAMIN-B COMPLEX + ZINC: Syrup/ Tablet
This is a special combined preparation of zinc and B-vitamins, available as syrup.
Comp: Each 5ml of syrup contains thiamine hydrochloride BP 5mg, riboflavin BP 2mg, pyridoxine hydrochloride BP 2mg, nicotinamide BP 20mg and zinc sulfate USP 27.45mg equivalent to elemental zinc 10mg.
Each tablet contains vitamin-B complex and 10mg elemental zinc.
Ind: This combined preparation is indicated for the treatment and prevention of zinc and vitamin-B deficiencies, particularly in children.
C/I: Patients hypersensitive to any of its ingredients.
S/E: This combined preparation is generally well tolerated. However, a few side effects like nausea, vomiting, diarrhea, stomach upset may occur. Side effects have been reported with specific vitamins but generally at levels substantially higher than those available in this preparation.
Precautions: In acute renal failure zinc accumulation may occur; so dosage adjustment is needed. It is not inteneded for treatment of severe specific deficiencies.
Pregnancy & lactation: This combined preparation can be used in pregnancy & lactation.
Dosage & admin: Children under 10kg- 1 tsf (5ml) daily after meal or as recommended by the physician. Children within 10-30kg- 1 tsf (5ml) or 1 tablet 2 or 3 times daily after meal or as recommended by the physician. Adults and children over 30kg- 1 or 2 tsf (5 or 10ml) or 1 or 2 tablets 3 times daily after meal or as recommended by the physician.
Drug inter: Concomitant intake of a tetracycline and zinc may decrease the absorption of both the tetracycline and zinc. Similarly concomitant administration of zinc and quinolone may also decrease the absorption of both. Concomitant intake of penicillamine and zinc may depress absorption of zinc. As little as 5mg pyridoxine daily can decrease the efficiency of levodopa in the treatment of parkinsonism.

❖ **ACTIVIT Z Syp. Delta**
Each 5ml of syrup contains vitamin-B complex and 10mg elemental zinc.
100ml bot: 45.00 MRP
200ml bot: 85.00 MRP

❖ **ARITONE Z Syp. Incepta**
Each 5ml of syrup contains vitamin-B complex and 10mg elemental zinc.
100ml bot: 45.00 MRP
200ml bot: 85.00 MRP

❖ **BABIZ Syp. Rangs**
Each 5ml of syrup contains vitamin-B complex and 10mg elemental zinc.
100ml bot: 45.00 MRP
200ml bot: 85.00 MRP

❖ **BEFORTE-Z Syp. Doctor's**
Each 5ml of syrup contains vitamin-B complex and 10mg elemental zinc.
100ml bot: 45.00 MRP
200ml bot: 85.00 MRP

❖ **BICOZIN Tab. Square**
Each tablet contains vitamin-B complex and 10mg elemental zinc.
30's pack: 60.00 MRP

❖ **BICOZIN Syp. Square**
Each 5ml of syrup contains vitamin-B complex and 10mg elemental zinc.
100ml bot: 45.00 MRP
200ml bot: 85.00 MRP

❖ **BIOZINC-B Syp. Ibn Sina**
Each 5ml of syrup contains vitamin-B complex and 10mg elemental zinc.
100ml bot: 45.00 MRP

❖ **MONOVIT Syp. Zenith**
Each 5ml of syrup contains vitamin-B complex and 10mg elemental zinc.
100ml bot: 45.00 MRP
200ml bot: 80.00 MRP

❖ **ORAL-ZB Syp. ACI**
Each 5ml of syrup contains vitamin-B complex

and 10mg elemental zinc.
100ml bot: 45.00 IP

❖ **PEP-Plus Syp. Orion**
Each 5ml of syrup contains vitamin-B complex and 10mg elemental zinc.
100ml bot: 45.00 MRP

❖ **PEP-Plus Tab. Orion**
Each tablet contains vitamin-B complex and 10mg elemental zinc.
30's pack: 60.00 MRP

❖ **VITAZIN Syp. Aristopharma**
Each 5ml of syrup contains vitamin-B complex and 10mg elemental zinc.
100ml bot: 45.00 MRP

❖ **VIZINC Tab. Popular**
Each tablet contains vitamin-B complex and 10mg elemental zinc.
30's pack: 60.00 MRP

❖ **VIZINC Syp. Popular**
Each 5ml of syrup contains vitamin-B complex and 10mg elemental zinc.
100ml bot: 45.00 MRP

❖ **XINC B Tab. SK+F**
Each tablet contains vitamin-B complex and 10mg elemental zinc.
30's pack: 60.00 MRP

❖ **XINC B Syp. SK+F**
Each 5ml of syrup contains vitamin-B complex and 10mg elemental zinc.
100ml bot: 45.00 MRP

❖ **XINOPLEX Syp. Silva**
Each 5ml of syrup contains vitamin-B complex and 10mg elemental zinc.
100ml bot: 45.00 MRP
200ml bot: 85.00 MRP

❖ **ZBVIT Syp. Peoples**
Each 5ml of syrup contains vitamin-B complex and 10mg elemental zinc.
100ml bot: 45.00 MRP

❖ **ZICO Plus Syp. General**
Each 5ml of syrup contains vitamin-B complex and 10mg elemental zinc.
100ml bot: 45.00 MRP

❖ **ZIDO B Syp. Novo Healthcare**
Each 5ml of syrup contains vitamin-B complex and 10mg elemental zinc.
100ml bot: 45.00 MRP

❖ **ZINCAPLEX Syp. Apollo**
Each 5ml of syrup contains vitamin-B complex and 10mg elemental zinc.
100ml bot: 50.00 IP
200ml bot: 85.00 IP

❖ **ZIPOL Plus Syp. Apex**
Each 5ml of syrup contains vitamin-B complex and 10mg elemental zinc.
100ml bot: 45.00 MRP

❖ **ZISMO-B Syp. Chemico**
Each 5ml of syrup contains vitamin-B complex and 10mg elemental zinc.
100ml bot: 45.00 MRP

❖ **ZIVIT Syp. Alco Pharma**
Each 5ml of syrup contains vitamin-B complex and 10mg elemental zinc.
100ml bot: 45.00 MRP
200ml bot: 85.00 MRP

3.1 Nonspecific Multivitamin & Multimineral combined prepns.

MULTVITAMIN + MULTIMINERAL[21,33]

MULTVITAMIN + MULTIMINERAL: Tablet/ Capsule
Multivitamins & minerals like iron, zinc, calcium, magnesium and other trace elements in specific proportions: tablet or capsule preparations for adult or young adult.
Ind: Vitamin & mineral deficiency & as adjunct in synthetic diets as for malnutrited or debiliated persons in convalescent states.
Dose: 1 tablet or capsule daily.
Note: Children- preparation for junior children, yet not available in Bangladesh market.

❖ **ALLBEEVIT-M Tab. Medimet**
Multivitamin + multimineral preparation: tablet
24's pack: 24.00 MRP

❖ **ALLBEEVIT-M Cap. Medimet**
Multivitamin + multimineral preparation: capsule
100's pack: 97.00 MRP

❖ **ARISTOVIT-M Tab. Beximco**
Multivitamin + multimineral preparation: tablet
30's pack: 45.00 MRP

❖ **BECONEX-M Tab. Renata**
Multivitamin + multimineral preparation: tablet
30's pack: 32.70 MRP
100's pack: 109.00 MRP

❖ **BECOSON-M Tab. Hudson**
Multivitamin + multimineral preparation: tablet
30's pack: 30.00 IP

❖ **BEFORTE-M Tab. Doctor's**
Multivitamin + multimineral preparation: tablet
30's pack: 33.00 MRP

❖ **BIOVIT-M Tab. Bio-pharma**
Multivitamin + multimineral preparation: tablet
30's pack: 30.00 MRP

❖ **BPFORT-M Tab. Bristol**
Multivitamin + multimineral preparation: tablet
30's pack: 30.00 MRP

❖ **CYTAPLEX-M Tab. CPL**
Multivitamin + multimineral preparation: tablet
30's pack: 30.00 MRP

❖ **EDRUVIT-M Tab. Edruc**
Multivitamin + multimineral preparation: tablet
30's pack: 30.00 IP

❖ **ENVIT-M Tab. Ibn Sina**
Multivitamin + multimineral preparation: tablet
30's pack: 32.10 MRP

❖ **EQUATE Tab. Asiatic**
Multivitamin + multimineral preparation: tablet
30's pack: 30.00 MRP

❖ **EV-PLEX-M Tab. Elixir**
Multivitamin + multimineral preparation: tablet
30's pack:

❖ **EXTRAVIT-M Tab. Salton**
Multivitamin + multimineral preparation: tablet
30's pack: 30.00 MRP

❖ **FLAVIT-M Tab. Amico**
Multivitamin + multimineral preparation: tablet
30's pack: 30.00 MRP

❖ **JASOVIT-M Tab. Jayson**
Multivitamin + multimineral preparation: tablet
30's pack: 30.00 MRP

❖ **KVIT-M Tab. Chemico**
Multivitamin + multimineral preparation: tablet
30's pack: 30.00 MRP

❖ **MEDIVIT-M Tab. Medicon**
Multivitamin + multimineral preparation: tablet
30's pack: 33.00 MRP

❖ **MICOPLEX-M Tab. Millat**
Multivitamin + multimineral preparation: tablet
30's pack: 33.00 MRP

❖ **MULTI-M Tab. Apollo**
Multivitamin + multimineral preparation: tablet
30's pack: 30.00 IP

❖ **MULTIVITA Forte Tab. Aexim**
Multivitamin + multimineral preparation: tablet
30's pack: 30.00 MRP

❖ **MULTIVIT Plus Tab. Square**
Multivitamin + multimineral preparation: tablet
30's pack: 33.00 MRP

❖ **NIPAVIT-M Tab. Nipa**
Multivitamin + multimineral preparation: tablet
30's pack: 30.00 MRP

❖ **OPSOVIT MM Tab. Opsonin**
Multivitamin + multimineral preparation: tablet
30's pack: 30.00 MRP

❖ **ORIOPLEX-M Tab. Orion**
Multivitamin + multimineral preparation: tablet
30's pack: 27.90 MRP

❖ **PLACENT-M Tab. Navana**
Multivitamin + multimineral preparation: tablet
30's pack: 33.00 IP

❖ **PLEXIVIT-M Tab. Syntho**
Multivitamin + multimineral preparation: tablet
30's pack: 30.00 MRP

❖ **REMAVIT-M Tab. Reman**
Multivitamin + multimineral preparation: tablet
30's pack: 24.30 MRP

❖ **REOPLEX-M Tab. Rephco**
Multivitamin + multimineral preparation: tablet
30's pack: 35.10 MRP

❖ **RESTOVIT-M Tab. Zenith**
Multivitamin + multimineral preparation: tablet
30's pack: 27.90 MRP

❖ **SEEMAVIT-M Tab. Seema**
Multivitamin + multimineral preparations: tablet
30's pack: 29.00 MRP

❖ **SIMVIT M Tab. Pharmasia**
Multivitamin + multimineral preparations: tablet
30's pack: 30.00 MRP

❖ **SKYVIT Plus Tab. Skylab**
Multivitamin + multimineral preparations: tablet
30's pack: 24.00 MRP

❖ **SOLVIT-M Tab. SK+F**
Multivitamin + multimineral preparations: tablet
30's pack: 33.00 MRP

❖ **STANO-M Cap. Globe**
Multivitamin + multimineral preparation: tablet
50's pack: 150.00 MRP

❖ **STANOVIT-M Tab. Globe**

Multivitamin + multimineral preparation: tablet
30's pack: 24.30 MRP

❖ **SUPLEVIT-M Tab. Cosmic**
Multivitamin + multimineral preparations: tablet
30's pack: 30.00 MRP

❖ **SUPRAVIT-M Cap. Drug Inter.**
Multivitamin + multimineral preparation: soft capsule
120's pack: 360.00 MRP

❖ **ULTRAVIT-M Tab. Alco Pharma**
Multivitamin + multimineral preparations: tablet
30's pack: 27.90 MRP

❖ **UNIVIT Plus Tab. Aristopharma**
Multivitamin + multimineral preparations: tablet
30's pack: 45.00 MRP

❖ **VICON-M Tab. Kumudini**
Multivitamin + multimineral preparations: tablet
30's pack: 30.00 MRP

❖ **VIGOR-M Tab. Hallmark**
Multivitamin + multimineral preparations: tablet
30's pack: 33.00 MRP

❖ **VIMIN Plus Tab. Gaco**
Multivitamin + multimineral preparation: tablet
30's pack: 32.60 MRP

❖ **VITALEX-M Tab. Supreme**
Multivitamin + multimineral preparation: tablet
30's pack: 30.00 MRP

❖ **VITAL-M Tab. UniHealth**
Multivitamin + multimineral preparation: tablet
30's pack: 35.00 MRP

❖ **VITAPLUS Tab. Pharmadesh**
Multivitamin + multimineral preparation: tablet
30's pack: 30.00 MRP

❖ **VITASIL M Tab. Silva**
Multivitamin + multimineral preparation: tablet
30's pack: 27.00 MRP

❖ **VITEX-M Tab. Ambee**
Multivitamin + multimineral preparation: tablet
30's pack: 30.30 MRP

❖ **V-PLEX Plus Tab. Acme**
Multivitamin + multimineral preparation: tablet
30's pack: 32.10 MRP

3.2 Super Anti-oxidant vitamins & Multimineral prepns.

SUPER ANTI-OXIDANT VITAMIN + MULTIMINERAL[26]

SUPER ANTI-OXIDANT VITAMIN + MULTIMINERAL: Tablet

This is a special super anti-oxidant multivitamin and multimineral combined preparation that supplies the nutrients needed for protecting body cells and the immune system from damage caused by free radicals. The preparation is available as tablet.

Comp: Each tablet contains: Vitamins- vitamin A 2000 IU, vitamin C 200mg, vitamin E 50 IU and vitamin K 75mcg; Minerals- zinc 15mg, selenium 70mcg, copper 1mg and manganese 3mg.

Mode of action: Vitamin A is essential for human health. It is highly important for vision, cell development and immunity. It's role on immunity contributes to its anti-cancer properties. Vitamin C is one of the most widely taken supplements and plays a primary role in the formation of collagen, which is important for the growth and repair of cells, gums, blood vessels, bones and teeth. Thus vitamin C helps in faster recovery after surgery or any other trauma. Vitamin C quenches free radicals in the water based cellular components and thus acts as an anti-oxidant.

Vitamin E is a fat-soluble vitamin, which is stored in the liver, adipose tissues, heart, muscles etc. It is an active anti-oxidant, which prevents oxidation of fat compounds. It works in synergy with selenium.

Vitamin K is a key anti-aging vitamin and it prevents heart disease and osteoporosis.

Zinc is an important mineral that can actually rejuvenate the shrinking thymus gland that involves the working of the immune system. Zinc is a co-factor in over 100 enzymes of the body.

Apart from being a co-factor in anti-oxidant enzymes, selenium by itself has potent anti-oxidant capabilities. So, it prevents aging and hardening of tissues through oxidation. Vitamin E and selenium are synergistic and seem to potentiate each other's anti-oxidant activities.

Copper is an important co-factor of a number of enzymes present in our body. This enzymes act as endogenous anti-oxidant systems.

Manganese, an anti-oxidant, is one of the minerals required to form SOD (super oxide dismutase). SOD is an enzyme that protect against cell damaging free radicals.

Ind: This combined formula is indicated in the following cases: i. to prevent the well known deficiency diseases such as scurvy, beriberi, pellagra and others ii. to develop immune system, iii. to prevent certain types of cancer by blocking the formation of cancer causing substances in the body, iv. it is also capable of combating cardiovascular and immunological disorders, v. to prevent aging processes.

C/I: Known hypersensitivity to any of the ingredients.

S/E: Generally, this preparation is well-tolerated. Diarrhea may occasionally occur during treatment with beta-carotene & the skin may assume a slightly yellow discoloration. The side-effects of vitamin A are reversible. Vitamin C and vitamin E may cause diarrhea and other gastrointestinal disturbances.

Pregnancy & lactation: Recommended by the consultation with physician.

Dosage & admin: One tablet daily or as directed by the physician.

Drug inter: No drug interactions have been reported.

❖ **ACES Plus Tab. Ambee**
Super anti-oxidant multivitamin and multimineral combined preparation.
30's pack: 120.00 MRP

❖ **AGE-Plus Tab. Mystic**
Super anti-oxidant multivitamin and multimineral combined preparation.
20's pack: 75.00 MRP

❖ **ALVITAL Tab. Silva**
Super anti-oxidant multivitamin and multimineral combined preparation.
30's pack: 120.00 MRP

❖ **ANTI-VIT Tab. Seema**
Super anti-oxidant multivitamin and multimineral combined preparation.
30's pack: 120.00 MRP

❖ **ARISTOVIT-X Tab. Beximco**
Super anti-oxidant multivitamin and multimineral combined preparation.
30's pack: 120.00 MRP

❖ **AVISTA Tab. Chemico**
Super anti-oxidant multivitamin and multimineral combined preparation.
30's pack: 120.00 MRP

❖ **BEC Plus Tab. Opsonin**
Super anti-oxidant multivitamin and multimineral combined preparation.
30's pack: 120.00 MRP

❖ **EVAGREN Tab. Incepta**
Super anti-oxidant multivitamin and multimineral combined preparation.
30's pack: 120.00 MRP

❖ **NORAD Plus SG Cap. Pacific**
Anti-oxidant multivitamin and multimineral combined preparation: capsule (soft gelatin).
50's pack: 250.00 MRP

❖ **NUTRUM Super Tab. Acme**
Super anti-oxidant multivitamin and multimineral combined preparation.
30's pack: 120.00 MRP

❖ **SANTOX Tab. Healthcare**
Super anti-oxidant multivitamin and multimineral combined preparation.
30's pack: 120.00 IP

❖ **SYNERGY Tab. Amico**
Super anti-oxidant multivitamin and multimineral combined preparation.
20's pack: 80.00 MRP

❖ **TANOX-Plus Cap. Drug Inter.**
Anti-oxidant multivitamin and multimineral combined preparation.
50's pack: 200.00 MRP

❖ **VITACE M Tab. Aristopharma**
Super anti-oxidant multivitamin and multimineral combined preparation.
20's pack: 80.00 MRP

❖ **VITAFORCE-S Tab. Bio-pharma**
Super anti-oxidant multivitamin and multimineral combined preparation.
15's pack: 60.00 MRP
30's pack: 120.00 MRP

3.3 Specialised Multivitamin & Multimineral prepns.

MULTIVITAMIN-MULTIMINERAL A-Z FORMULA FOR PRENATAL SUPPLEMENT[48]

MULTIVITAMIN-MULTIMINERAL HIGH POTENCY A-Z FORMULA: Tablet

This is a special formulation comprising of necessary 20 high potency vitamins and minerals including iron & zinc with complete anti-oxidant effects.

This formulation is preferable to be used before, during & after pregnancy.

Comp: Each film-coated tablet contains 11 vitamins and 9 minerals, viz: Vitamins- vitamin A 2700 IU, vitamin C 120mg, vitamin E 30 IU, vitamin K 65mcg, thiamine (B1) 3.4mg, riboflavin (B_2) 3.4mg, niacin (B3) 40mg, pantothenic acid (B5 - as calcium pantothenate) 20mg, pyridoxine (B6) 10mg, folic acid 0.8mg,

inositol 50mg; Minerals- iron 30mg, copper 2mg, manganese 1.2mcg, iodine 175mcg, selenium 12.5mcg, molybdenum 25mcg, chromium 25mcg, quercetin 54mcg, and zinc 25mg.
Ind: This preparation is indicated for use to improve the nutritional status of women throughout the pregnancy and in the postnatal period for both lactating and non-lactating mothers. This preparation can also be beneficial in improving the nutritional status of women prior to conception. This multivita-min & multimineral preparation also maintains a daily nutritional supplement for all.
C/I: Known hypersensitivity to any of the ingredients.
S/E: Generally well tolerated.
Precautions: Long-term intake of high levels of vitamin A (excluding that sourced from beta-carotene) may increaase the risk of osteoporosis in postmenopausal women.
Pregnancy & lactation: Recommended in pregnancy & lactation.
Dosage & admin: One tablet once daily or as advised by the physician.
Drug inter: No such drug interactions have been reported.

❖ **AZTRUM PN Tab. Apex**
This is a special formulation comprising of necessary 20 high potency vitamins and minerals including iron & zinc with complete anti-oxidant effects.
This formulation is preferable to be used before, during & after pregnancy.
Comp: See above under the text.
Dosage & admin: One tablet once daily or as advised by the physician.
30's pack: 150.00 MRP

❖ **BEXTRAM Tab. Beximco**
This is a special formulation comprising of necessary 20 high potency vitamins and minerals including iron & zinc with complete anti-oxidant effects.
This formulation is preferable to be used before, during & after pregnancy.
Comp: See above under the text.
Dosage & admin: One tablet once daily or as advised by the physician.
30's pack: 150.00 IP

❖ **BIOVIT PN Tab. Bio-pharma**
This is a special formulation comprising of necessary 20 high potency vitamins and minerals including iron & zinc with complete anti-oxidant effects.
This formulation is preferable to be used before, during & after pregnancy.
Comp: See above under the text.
Dosage & admin: One tablet once daily or as advised by the physician.
15's pack: 75.00 MRP
30's pack: 150.00 MRP

❖ **NEWAGE Tab. Orion**
This is a special formulation comprising of necessary 20 high potency vitamins and minerals including iron & zinc with complete anti-oxidant effects.
This formulation is preferable to be used before, during & after pregnancy.
Comp: See above under the text.
Dosage & admin: One tablet once daily or as advised by the physician.
15's pack: 75.00 MRP
30's pack: 150.00 MRP

❖ **NUTRUM PN Tab. Acme**
This is a special formulation comprising of necessary 20 high potency vitamins and minerals including iron & zinc with complete anti-oxidant effects.
This formulation is preferable to be used before, during & after pregnancy.
Comp: See above under the text.
Dosage & admin: One tablet once daily or as advised by the physician.
30's pack: 150.00 MRP

❖ **PRECARE Tab. Incepta**
This is a special formulation comprising of necessary 20 high potency vitamins and minerals including iron & zinc with complete anti-oxidant effects.
This formulation is preferable to be used before, during & after pregnancy.
Comp: See above under the text.
Dosage & admin: One tablet once daily or as advised by the physician.
30's pack: 150.00 IP

❖ **REVIGOR Tab. ACI**
This is a special formulation comprising of necessary 20 high potency vitamins and minerals including iron & zinc with complete anti-oxidant effects.
This formulation is preferable to be used before, during & after pregnancy.
Comp: See above under the text.

Dosage & admin: One tablet once daily or as advised by the physician.
30's pack: 150.00 MRP

❖ **SUPRAVIT-PN Soft Cap. Drug Inter.**
This is a special formulation comprising of necessary 20 high potency vitamins and minerals including iron & zinc with complete anti-oxidant effects.
This formulation is preferable to be used before, during & after pregnancy.
Comp: See above under the text.
Dosage & admin: One tablet once daily or as advised by the physician.
50's pack: 250.00 MRP

❖ **VERVE Tab. Asiatic**
This is a special formulation comprising of necessary 20 high potency vitamins and minerals including iron & zinc with complete anti-oxidant effects.
This formulation is preferable to be used before, during & after pregnancy.
Comp: See above under the text.
Dosage & admin: One tablet once daily or as advised by the physician.
30's pack: 150.00 MRP

MULTIVITAMIN-MULTIMINERAL A-Z FORMULA FOR CHILDREN TO ALL AGED PEOPLE[36,139]

MULTIVITAMIN-MULTIMINERAL A-Z FORMULA FOR CHILDREN TO ALL AGED PEOPLE: Syrup

This is a special formulation comprising of 21 necessary vitamins, minerals & trace elements from vitamin A to zinc with complete anti-oxidant group, but excluding iron.
This formulation is available in liquid form for infants & school going children to all aged people. The spectrum of essential nutrients supports healthy development, strong immune function, and emotional and mental vitality.
Comp: Each 5ml syrup contains- vitamin A (beta carotene) BP 425 IU, vitamin A (retinol palmitate) BP 425 IU, vitamin B1 (thiamine HCl) BP 1mg, riboflavin sodium 5- phosphate BP1mg, pantothenic acid (D-pantothenol) BP 3.5mg, vitamin B12mg, (cyanocobalamin) BP 0.003mg, vitamin C (ascorbic acid) BP 67.5mg, vitamin D_3 (cholecalciferol) BP 137.5 IU, vitamin E (D-alpha-tocopherol acetate) BP 10 IU, biotin BP 0.0325mg, calcium (as lactate) BP 27.5mg, iodine (potassium iodide) BP 0.025mg, magnesium (as lactate) Ph.G 7.5mg, zinc (as gluconate) USP 2.5mg, selenium (as selenomithionine) USP 0.0175mg, manganese (as gluconate) USP 0.75mg, chromium (as polynicotinate) Ph.G 0.0035mg, potassium (as citrate) USP 7mg, PABA (para amino benzoic acid) Ph.G 0.5mg, inositol Ph.G 10mg, choline bitartrate Ph. G 10mg.

Ind: Syrup is indicated for the treatment and prevention of vitamin and minerals deficinencies in infants, children & all aged people.
C/I: Syrup is contraindicated in patients hypersensitive to any of its components.
S/E: Syrup generally well tolerated. However, a few allergic reactions may be seen.
Precautions: Supplement should not use in over dosage or use continuously except recommended by physicians.
Pregnancy & lactation: Specific information is not available. Should be taken on physician's advice.
Dosage & admin: Infants upto 1 year: 1 tsf daily; Children 1-4 years: 1-2 tsf daily; Children 4-12 years: 2-3 tsf daily; Adults 3-4 tsf daily.
Drug inter: No such interactions have been reported.

❖ **ARISTO KID Syp. Aristopharma**
This is a special formulation comprising of 21 necessary vitamins, minerals & trace elements from vitamin A to zinc with complete anti-oxidant group, but excluding iron. This is available in syrup form.
Comp: See above under the text.
Dosage & admin: See above under the text.
100ml bot: 85.00 MRP
200ml bot: 150.00 MRP

❖ **MULTITONIC Syp. Silva**
This is a special formulation comprising of 21 necessary vitamins, minerals & trace elements from vitamin A to zinc with complete anti-oxidant group, but excluding iron. This is available in syrup form.
Comp: See above under the text.
Dosage & admin: See above under the text.
100ml bot: 85.00 MRP
200ml bot: 150.00 MRP

❖ **NUTRUM JUNIOR Syp. Acme**
This is a special formulation comprising of 21 necessary vitamins, minerals & trace elements from vitamin A to zinc with complete anti-oxidant group, but excluding iron. This is available in syrup form.
Comp: See above under the text.
Dosage & admin: See above under the text.
100ml bot: 85.00 IP

❖ **ZOVIA GOLD Syp. Opsonin**
This is a special formulation comprising of 21 necessary vitamins, minerals & trace elements from vitamin A to zinc with complete anti-oxidant group, but excluding iron. This is available in syrup form.
Comp: See above under the text.
Dosage & admin: See above under the text.
100ml bot: 85.00 MRP
200ml bot: 150.00 MRP

MULTIVITAMIN & MULTIMINERAL A-Z GOLD PREPARATION[42,48]

MULTIVITAMIN & MULTIMINERALA-Z GOLD PREPN: Tablet

This is a specialized high potency multivitamin & multimineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
This formulation is designated as A to Z gold formulation.
Comp: Each film-coated tablet contains 14 vitamins and 18 minerals, viz: Vitamins- vitamin A 5000 IU, vitamin C 60mg, vitamin D 400 IU, vitamin E 30 IU, vitamin K 25mcg, thiamine 1.5mg, riboflavin 1.7mg, niacin 20mg, pyridoxine (B_6) 2mg, folic acid 400mcg, vitamin B_{12} 6mcg, biotin 30mcg, pantothenic acid 10mg, lutein 250mcg; Minerals- calcium 162mg, iron 18mg, phosphorous 109mg, iodine 150mcg, magnesium 100mg, selenium 20mcg, copper 2mg, manganese 2mg, chromium 120mcg, molybdenum 75mcg, chloride 72mg, potassium 80mg, boron 150mcg, nickel 5mcg, silicon 2mg, tin 10mcg, vanadium 10mcg and zinc 15mg. (Difference from silver formulation: one vitamin-lycopene is less and two minerals- iron and tin are more.)
Ind: This preparation is indicated for the prevention and treatment of vitamin and mineral deficiencies for all. As a complete daily nutritional supplement, this is helpful in maintaining a healthy body and active lifestyle. This preparation is indicated for use to improve the nutritional status of women throughout pregnancy and in the postnatal period for both lactating and non-lactating mothers. This preparation can also be beneficial in improving the nutritional status of women prior to conception.
C/I: Known hypersensitivity to any of the ingredients.
S/E: Generally, this preparation is well tolerated. Diarrhoea may occasionally occur during treatment with beta-carotene and the skin may assume a slightly yellow discoloration. The side effects of vitamin A are reversible. Vitamin C and vitamin E may cause diarrhea and other gastro-intestinal disturbances.
Precaution: Long-term intake of high levels of vitamin A (excluding that sourced from beta-carotene) may increase the risk of osteoporosis in postmenopausal women.
Pregnancy & lactation: Recommended in pregnancy & lactation as advised by the physician.
Dosage & admin: 1 tablet daily with food or as directed by the physician. Not formulated for use in children.
Drug inter: No drug interaction has been reported.

❖ **ACTIVIT GOLD Tab. Delta**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
Comp: See above under the text.
15's pack: 89.99 MRP
30's pack: 180.00 MRP

❖ **ALLION Tab. Beacon**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
30's pack: 180.00 MRP

❖ **ALTRUM GOLD 30 Tab. Ziska**
High potency multivitamin & multineral formulation comprising of 30 components from vitamin A to Zinc including the complete anti-oxidant group.

15's pack: 90.00 MRP
30's pack: 180.00 MRP

❖ **ARISTO GOLD Tab. Aristopharma**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 90.00 MRP
30's pack: 180.00 MRP

❖ **ASITRUM GOLD Tab. Asiatic**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 90.00 MRP
30's pack: 180.00 MRP

❖ **AZOVIT GOLD Tab. Novo Healthcare**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 90.00 MRP
30's pack: 180.00 MRP

❖ **AZTRUM GOLD Tab. Apex**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 75.00 MRP
30's pack: 150.00 MRP

❖ **BEXTRAM GOLD Tab. Beximco**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 90.00 IP
30's pack: 180.00 IP

❖ **BIOVIT GOLD Tab. Bio-pharma**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 90.00 MRP
30's pack: 180.00 MRP

❖ **DIVERSA GOLD Tab. Rangs Pharma**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 90.00 MRP
30's pack: 180.00 MRP

❖ **FILWEL GOLD Tab. Square**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 90.00 MRP
30's pack: 180.00 MRP

❖ **GOLDAGE Tab. Orion**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 90.00 MRP
30's pack: 180.00 MRP

❖ **GOLDPAC Tab. Pacific**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 90.00 MRP
30's pack: 180.00 MRP

❖ **KVIT GOLD Tab. Chemico**
High potency multivitamin & multimineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 90.00 MRP
30's pack: 180.00 MRP

❖ **LIFE GOLD Tab. Alco Pharma**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 87.00 MRP
30's pack: 174.00 MRP

❖ **LOLLY GOLD Tab. Pharmasia**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
30's pack: 180.00 MRP

❖ **MULTI GOLD Tab. Silva**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
30's pack: 180.00 MRP

❖ **MYSTRUM GOLD Tab. Mystic**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
30's pack: 144.90 MRP

❖ **NUTRUM GOLD Tab. Acme**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 90.00 IP
30's pack: 180.00 IP

❖ **POWER GOLD Tab. White Horse**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 90.00 MRP
30's pack: 180.00 MRP

❖ **PROVITEN A-Z Tab. Incepta**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 90.00 MRP
30's pack: 180.00 MRP

❖ **REVAM Gold Tab. Navana**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 85.00 MRP
30's pack: 170.00 MRP

❖ **REVITAL 32 Tab. ACI**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 90.00 IP
30's pack: 180.00 IP

❖ **SANTOGEN A-Z Tab. Healthcare**
High potency multivitamin & multineral formulation comprising of components from vitamin A to Zinc including the complete anti-oxidant group.
30's pack: 195.00 MRP

❖ **SINAGOLD Tab. Ibn Sina**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
30's pack: 180.00 MRP

❖ **SUPER GOLD Tab. General**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 90.00 MRP
30's pack: 180.00 MRP

❖ **SUPRAVIT-G Soft Cap. Drug Inter.**
High potency multivitamin & multineral formulation comprising of components from vitamin A to Zinc including the complete anti-oxidant group.
50's pack: 300.00 MRP

❖ **VIDALIN GOLD Tab. Popular**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 90.00 IP
30's pack: 180.00 IP

❖ **VITAMINZ Tab. Jayson**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
30's pack: 180.00 IP
100's pack: 600.00 IP

❖ **VITAN GOLD Tab. Amico**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
30's pack: 150.00 MRP

❖ **VITALEX GOLD Tab. Supreme**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 90.00 MRP
30's pack: 180.00 MRP

❖ **VITEX GOLD Tab. Ambee**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 82.50 MRP
30's pack: 165.00 MRP

❖ **VITRUM GOLD Tab. SK+F**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 90.00 MRP
30's pack: 180.00 MRP

❖ **XTRUM GOLD Tab. Globe**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-

oxidant group.
15's pack: 90.00 MRP
30's pack: 175.00 MRP

❖ **ZOVIA GOLD Tab. Opsonin**
High potency multivitamin & multineral formulation comprising of 32 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 90.00 MRP
30's pack: 180.00 MRP

MULTIVITAMIN & MULTIMINERAL A-Z SILVER PREPARATION[42,48]

MULTIVITAMIN & MULTIMINERAL A-Z SILVER PREPN: Tablet
This is a specially formulated multivitamin & multimineral preparation comprising of 31 components from vitamin A to Zinc including the complete anti-oxidant group.
This balanced nutritional supplement is designed and formulated to meet the changing needs of the people over 45 years of age (Acme's literature mentioned 50 years).
This formulation is designated as A to Z silver formulation.
Comp: Each tablet contains 15 vitamins and 16 minerals, viz: Vitamins: Vitamin A 5000 IU, vitamin C 60mg, vitamin D 400 IU, vitamin E 45 IU, vitamin K 10mcg, thiamine 1.5mg, riboflavin 1.7mg, niacin 20mg, pyridoxine (B6) 3mg, folic acid (B9) 400mcg, vitamin B12 25mcg, biotin 30mcg, pantothenic acid 10mg, lutein 250mcg & lycopene 300mcg; Minerals: Calcium 200mg, phosphorous 48mg, iodine 150mcg, magnesium 100mg, selenium 20mcg, copper 2mg, manganese 2mg, chromium 150mcg, molybdenum 75mcg, chloride 72mg, potassium 80mg, boron 150mcg, nickel 5mcg, silicon 2mg, vanadium 10mcg and zinc 15mg.
(Difference from gold formulation one vitamin-lycopene is added and two minerals- iron and tin are deducted.)
Ind: This multivitamin and multimineral A to Z silver preparation is specially formulated for the prevention and treatment of vitamin and mineral deficiencies for adults over 45 years of age. This is also indicated to meet the increase demands of vitamin & mineral for adults over 45 years of age.
C/I: Hypersensitivity to any of the ingredients.
S/E: Generally, this preparation is well tolerated. Diarrhea may occasionally occur during treatment with beta-carotene and the skin may assume a slightly yellow discoloration. The side effects of vitamin A are reversible. Vitamin C and vitamin E may cause diarrhea and other gastrointestinal disturbances.
Precaution: Long-term intake of high levels of vitamin A (excluding that sourced from beta-carotene) may increase the risk of osteoporosis in postmenopausal women.
Pregnancy & lactation: Recommended as advised by the physician.
Dosage & admin: One tablet daily with food or as directed by the physician. Not formulated for use in children.
Drug inter: No durg interaction has been reported.

❖ **ACTIVIT SILVER Tab. Delta**
This is a specially formulated multivitamin & multimineral preparation comprising of 31 components from vitamin A to Zinc including the complete anti-oxidant group.
Comp: See above under the text.
15's pack: 89.99 MRP

❖ **ASITRUM SILVER Tab. Asiatic**
This is a specially formulated multivitamin & multimineral preparation comprising of 31 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 90.00 MRP
30's pack: 180.00 MRP

❖ **AZTRUM SILVER Tab. Apex**
This is a specially formulated multivitamin & multimineral preparation comprising of 31 components from vitamin A to Zinc including the complete anti-oxidant group.
10's pack: 55.00 MRP
30's pack: 165.00 MRP

❖ **BIOVIT SILVER Tab. Bio-pharma**
This is a specially formulated multivitamin & multimineral preparation comprising of 31 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 90.00 MRP
30's pack: 180.00 MRP

❖ **FILWEL SILVER Tab. Square**
This is a specially formulated multivitamin & multimineral preparation comprising of 31 components from vitamin A to Zinc including the complete anti-oxidant group.
30's pack: 180.00 MRP

❖ **LIFE SILVER Tab. Alco Pharma**
This is a specially formulated multivitamin & multimineral preparation comprising of 31 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 70.50 MRP
30's pack: 141.00 MRP

❖ **MULTI SILVER Tab. Silva**
This is a specially formulated multivitamin & multimineral preparation comprising of 30 components from vitamin A to Zinc including the complete anti-oxidant group.
30's pack: 180.00 MRP

❖ **NUTRUM 50+ Tab. Acme**
This is a specially formulated multivitamin & multimineral preparation comprising of 31 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 90.00 IP
30's pack: 180.00 IP

❖ **PROVITEN SILVER Tab. Incepta**
This is a specially formulated multivitamin & multimineral preparation comprising of 31 components from vitamin A to Zinc including the complete anti-oxidant group.
30's pack: 180.00 MRP

❖ **REVITAL 30 Tab. ACI**
This is a specially formulated multivitamin & multimineral preparation comprising of 30 components from vitamin A to Zinc including the complete anti-oxidant group.
Comp: See above under the text, (1 vitamin component is less than others, viz: lycopene).
30's pack: 150.00 IP

❖ **SILVAGE Tab. Orion**
This is a specially formulated multivitamin & multimineral preparation comprising of 31 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 90.00 MRP
30's pack: 180.00 MRP

❖ **SINA SILVER Tab. Ibn Sina**
This is a specially formulated multivitamin & multimineral preparation comprising of 31 components from vitamin A to Zinc including the complete anti-oxidant group.
30's pack: 180.00 MRP

❖ **VIDALIN SILVER Tab. Popular**
This is a specially formulated multivitamin & multimineral preparation comprising of 31 components from vitamin A to Zinc including the complete anti-oxidant group.
30's pack: 180.00 IP

❖ **VITAN Tab. Amico**
This is a specially formulated multivitamin & multimineral preparation comprising of 31 components from vitamin A to Zinc including the complete anti-oxidant group.
30's pack: 135.00 MRP

❖ **VITRUM SILVER Tab. SK+F**
This is a specially formulated multivitamin & multimineral preparation comprising of 31 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 90.00 MRP
30's pack: 180.00 MRP

❖ **ZOVIA SILVER Tab. Opsonin**
This is a specially formulated multivitamin & multimineral preparation comprising of 31 components from vitamin A to Zinc including the complete anti-oxidant group.
15's pack: 90.00 MRP
30's pack: 180.00 MRP

MULTIVITAMIN & MULTIMINERAL PREPNS. FOR NURSING MOTHER[48]

MULTIVITAMIN + MULTIMINERAL PREPN: Tablet.
This multivitamin and multimineral formulation is specially prepared for nursing mothers, and available as flim-coated tablet.
Comp: Each tablet contains- vitamin A 26,667 IU (8mg), vitamin C 60 mg, vitamin D 400 IU, calcium 40mg, and potassium iodide 130mcg.
Ind: This preparation is indicated throughout the lactation period to improve and maintain nutritional status of the nursing mothers so that the child can get the essential vitamin and minerals for proper growth and development.
C/I: Hypersensitivity to any of the ingredients.
S/E: No clinically significant side effects or toxicity are reported with such kind of preparation.
Precautions: Excess vitamin A intake may be toxic and may increase the risk of birth defects. Pregnant women and women who may become pregnant are advised not to take this preparation.
Dosage & admin: One tablet daily or as advised by the physician.

❖ **MOMVIT Tab. Beximco**
This is a multivitamin and multimineral formulation prepared as flim-coated tablet specially for nursing mothers.
Each tablet contains- vitamin A 26,667 IU (8mg), vitamin C 60 mg, vitamin D 400 IU, calcium 40mg, and potassium iodide 130mcg.
Dosage & admin: One tablet daily or as

advised by the physician.
30's pack: 60.00 IP

4. Nutritional & Energy supplement prepns.

4.1 Oral nutritional prepns.
4.2 Parenteral nutritional prepns.

ORAL NUTRITIONAL PREPNS.

Sweetening agents for diabetic patients

ASPARTAME / SACCHARIN[47,118]

❖ **DIASWEET Tab. White Horse**
Aspartame USP 18mg/tablet.
One tablet is equivalent in sweetness to one teaspoon of sugar.
Ind: Sweetening substance, usually used by diabetic patient.
Dosage & use: As advised by the physician.
100's pack: 90.00 MRP

❖ **PEP-SWEET Tab. Sonear**
Aspartame USP 25mg/tablet.
One tablet is equivalent in sweetness to one teaspoon of sugar.
Ind: Sweetening substance, usually used by diabetic patient.
Dosage & use: As advised by the physician.
50's pack: 35.00 MRP

❖ **SAC-SWEET Pellet Sonear**
Saccharin sodium BP 12.5mg/tablet.
Dosage & use: As advised by the physician.
200's pack: 22.00 MRP
500's pack: 35.00 MRP

❖ **SUCROL Tab. Acme**
Aspartame USP 18mg/tablet.
One tablet is equivalent in sweetness to one teaspoon of sugar.
Ind: Sweetening substance, usually used by diabetic patient.
Dosage & use: As advised by the physician.
100's pack: 69.00 MRP

SUCRALOSE[46]

SUCRALOSE: Tablet
Sucralose is the no calorie sweetening agent. It is about 600 times sweeter than sugar. Sucrablose is produced through multistep process that starts with sugar and selectively replaces 3 hydroxyl groups on the sugar molecule with 3 chlorine atoms. Because it is made from sugar, sucralose tastes like sugar. Tightly bound chlorine atoms are exceptionally stable and prevent sucralose from being metabolized for energy, making sucralose calorie free. The chlorine atoms also provide heat stability, enabling sucralose to withstand cooking and baking without losing sweetness. Sucralose is not broken down for energy in the body. So it has no calorie. The sucralose molecule passes through the body unchanged (i.e not metabolized) and is eliminated after consumption. Sucralose does not cause tooth decay, has no effect on carbohydrate metabolism, no effect on fetal or neonatal development because sucralose is not actively trasported across the blood-brain barrier, the placental barrier, or the mammary gland.
Each tablet contains sucralose USPNF 8mg eguivalent to 1 teaspoonful of sugar in sweetness.
Ind: Sucralose can be a unique choice for the diabetic patients who have excess amount of glucose in blood. Sucralose can be used as sweetner in different foods like pudding, milk products, jelly, fruits juice, tea, coffee, desserts, hot & cold beverage etc. Due to zero calorie sweetner, it is a nice preparation for the health conscious people. Sucralose is suitable for use by everyone, including children, pregnant women & any person who wants to reduce calorie intake.
C/I: No known contraindications are found.
S/E: No known side effects are found.
Dosage & admin: The acceptable daily intake of sucralose is 5-15mg/kg body weight. Normally one tablet (8mg) in a cup of tea or coffee is enough to sweeten the drink.

❖ **ZERO Tab. Acme**
Each tablet contains sucralose USPNF 8mg eguivalent to 1 tsf. (5gm) of sugar in sweetness.
100's pack: 100.00 IP

Special milk formulations[33]

❖ **ENFALAC Powder Mead Johnson**
Premature formula. A whey protein formulation for rapidly growing low birth weight infants.
Ind: premature infant; low birth weight infant; infant with dietary needs.
Use: See literature with formula.
400gm pack:

❖ **ENFAMIL Powder Mead Johnson**
It is an infant formula powder having all vegetable fat blend, balanced caloric distribution nearly identical to mother's milk, containing calcium and phosphorus to meet baby's needs and fortified with bioavailable iron to 12mg per litre of formula. The infant formula is suitable for babies first 12 months in cases where mother's milk is not available.
It encourages growth and developement through excellent digestion and absorption of nutrients.

❖ **LACTOGEN FP Nestle**
Lactogen full protein formula guards infants under active care against nutritional gaps during the crucial weaning period and sures adequate nutrition of growing children from 6 months onwards.

❖ **LACTOGEN I.F. Nestle**
This infant formula assures an optimum intake of linoleic acid which is essential for important physiological functions. Exclusive 80:20 blend of milk fat & corn oil assures optimum utilisation of fat in the body plus a liberal intake of linoleic acid.

❖ **NAN Nestle**
Nan is a starter formula for healthy infants made from demineralised whey fullcream milk, milk fat, corn oil, lactose, calcium citrate, potassium chloride, magnesium chloride, vitamins, taurine, ferrous sulphate, zinc sulphate and copper sulphate. This milk specially fortified with iron is indicated for the routine feeding of healthy infants from birth onwards, as a supplement to breast feeding or when breast feeding is not adopted or discontinued.

❖ **O'LAC Mead Johnson**
It is a lactose-free, sucrose-free milk formula that retains all the milk protein required for baby's growth, having taste and texture of regular infant formulas.
Uses: Specially used in cases of carbohydrate/ lactose intolerance clinically manifested through colicky behavioured, spitting-up, loose stools/diarrhoea, nappy rash and restlessness. It is beneficial for babies suffering from Rota virus induced hypolactasia.

❖ **PREGESTIMIL Milk Powder Mead Johnson**
Composition:
Protein: Pregestimil contains high quality predigested protein in the form of enzymatically hydrolyzed casein hydrolysate, specially treated to reduce allergenicity and with three amino acids to provide a balance of amino acids more appropriate for the infant.
Carbohydrate- provides easily- digestible glucose polymers which help to maintain a desirable osmolality. Contains no lactose or sucrose.
Fat: A mixture of 40% medium chain triglycerides and 60% corn oil provides readily absorbable fat calories and essential fatty acids.
Osmolality: A low osmolality (338 mOsm/kg H_2O) helps achieve rapid tolerance.
Each 100gm of milk powder supplies 455 KCal, 12.8gm protein, 18.2gm fat & 61.3gm carbohydrate.
Indications:
An appropriate feeding for infants at nutritional risk in a variety of situations causing malabsorption problems, include-
* Severe or intractable diarrhoea
* Severe food allergies
* Sensitivity to intact protein
* Transition from parenteral feeding to normal diet
* Disaccharidase deficiency
* Intestinal resection
* Malabsorption due to dysfunction
* Steatorrhoea (fat malabsorption)
* Cystic fibrosis
* Severe protein-calorie malnutrition.

16 oz tin:

❖ **PROSOBEE Bristol-Myers**
Glucose syrup solids, saya protein isolate, corn oil, Coconut oil, L-methionine, Vitamines, and Minerals, providing prortein 15.6%, carbohydrate 51.4%, fat 27.9%.
Ind: for milk intolerance; galactosaemia; galactokinase deficiency, and lactose intolerance.
400gm tin.

❖ **S-26 MILK Powder Wyeth**
An infant milk formula for the growing infant supplying the physiologic levels of protein & minerals necessary to provide high growth rates & low-solute loads. The formula approximated with Vitamin A, C & D.
Ind: infant formula is intended to replace or supplement breast milk when breast feeding not possible or is insufficient or when mothers elect not to breast-feed.
450 gm powder in tin.

Special nutritional formula

❖ **ENSURE Powder Abbott/UniMed**
A complete & balanced nutritional formula for oral or tube feeding for adults & older persons in states of health & disease.
Comp: Protein 14%, fat 31.5%, carbohydrate 54.5%, vitamins & minerals.
Energy: 1kcal/ml.
Ind: Total diet replacement or supplement in anorexia, illness, convalescence, pregnancy, lactation, old age, weight loss, fatigue, pre- & post-surgical conditions, oral pathology, cancer, transition from TPN & tube feeding for adults & older persons.
Prepn & Use: To prepare a 250ml feeding, put 200ml of cold water in a glass. Gradually add 6 level scoops (enclosed) of powder while stirring and mix until dissolved. When mixed as directed powder provides approx. 1 kcal per ml.
400gm powder in tin (vanilla flavoured): 560.00 MRP

❖ **GLUCERNA SR Powder Abbott/UniMed**
A specialized complete & balanced nutritional formula for the diabetic patients with low carbohydrate contents.
Comp: Protein 16.7%, fat 50%, carbohydrate 33.3%, vitamins & minerals including m-inositol.
Ind: Specialized nutrition with fiber for diabetic patients.
Use: Prepare as advised in the manufacturer's literature.
400gm tin: 680.00 MRP

❖ **PEDIASURE Powder Abbott/UniMed**
A complete & balanced nutritional formula for oral & tube feeding for children of 1-10 years old in states of health & disease.
Comp: Protein 12%, fat 44.2%, carbohydrate 43.8%, vitamins & minerals. Energy- lkcal/ml.
Ind: Total diet replacement or supplement in anorexia, illness, inadequate growth, f ailure to thrive, improper eating habit, protein energy malnutrition, pre- & post-surgical conditions, convalescence, trauma, fatigue, oral pathology, cancer, transition from TPN & tube feeding for children of 1-10 years old.
Prepn & Use: To prepare a 225ml feeding, put 190ml of cold water in a glass. Gradually add 5 level scoops (enclosed) or 45.4gm of powder wbile stirring and mix until dissolved. Wben mixed as directed powder provides approx. 1 kcal per ml. A 400gm Can powder yields approx. nine 225ml servings.
400gm powder in tin (vanilla flavoured): 510.00 MRP

❖ **WYSOY Food Formula Wyetb**
A complete food formula containing protein (soya protein isolate, L-methionine) 16%, carbohydrate (corn syrup solids sucrose) 52%, fat (oleic, soya, oleo & coconut oils) 27%, & vitamins. Milkprotein, lactose and gluten free powder.
Ind: Milk or lactose intolerence, galactosaemia, galactokinase deficiency.
Use: See literature witb formula
100gm pack:

4.2 Parenteral Nutritional prepns.

DEXTROSE PREPNS.[101]

❖ **APN Inj. Opso Saline**
An appropriate preparation of parenteral nutrition. Each 100ml of solution contains dextrose anhydrous USP 10gm (i.e 10%) & sodium chloride BP 0.225gm (i.e 0.225%): i.v injection for infusion.
Mode of action: Dextrose solution helps in restoring blood glucose levels & provides caloreis. It may aid in minimizing liver glycogen depletion & exerts a protein sparing action. Sodium chloride in water dissociates into sodium (Na^+) and chloride (Cl^-) ions. Sodium is the principal cation of the extracellular fluid & plays important role in fluid therapy & electrolyte disturbances. Chloride has an integral role in buffering action when oxygen & carbon dioxide exchange occurs in the red blood cells. The distribution & excretion of sodium & chloride are largely under the control of the kidney which maintains a balance between intake & output.
Ind: APN injection is indicated for parenteral replenishment of fluid, minimal carbohydrate calories & sodium chloride as required by the clinical condition of the patient, specially children.
C/I: None known.
S/E: Thrombosis of the chosen vein is always a possibility with i.v infusion, if infusion is protracted, then another vein should be selected after 12 to 24 hours.
Precaution: Caution should be exercised in diabetic patient.
Pregnancy & lactation: It is not known whether dextrose or sodium chloride can cause fetal harm when administered to a pregnant or lactating woman. Dextrose or sodium chloride should be given to a pregnant woman only if clearly needed.
Dosage & admin: APN injection can be administered i.v at the rate of 30 to 60 drops per minute or as directed by tbe physician.
500ml bot: 65.00 MRP
1000ml bot: 86.00 MRP

PROTEIN (AMINO ACID) PREPNS.[21,33,91]

PROTEIN (AMINO ACID) PREPN: I.V Infusion
Protein is given by parenteral route (i.v infusion) whenever required, as amino acid preparation. The amino acid preparations are usually mixtures of essential and non-essential synthetic L-amino acids. Ideally all essential amino acids should be included with a wide variety of non essential ones to provide sufficient nitrogen together with electrolytes. Available solutions vary in their Comp of amino acids; they often contain an energy source (usually glucose) and electroytes.
Indications:
1. Massive protein loss as in wounds, burns, fractures, purulence & opns.
2. Gastro-intestinal disorders causing reduced protein absorption.
3. Malnutrition, including starvation.
4. Nephrosis where urinary protein loss requires supplement.
5. Chronic or acute infectious diseases where parenteral nutrition is needed.
Contraindications: Cardiac insufficiency; irreversible liver disease.
Precautions: i. Since amino acids infusion media are high in the titration acidity, metabolic acidosis may rarely be caused. So electrolyte balance is recommended to be corrected. ii. Too rapid infusion may give rise to nausea, vomiting. iii. Infusion instruments & others should be sterilised carefully to avoid microbes culture. iv. In combined admin. with other i.v. fluids unite or adjust with "Y" shaped tube directly to avoid chance of infection.
Dose & Admin: See under individual prepn.

❖ **AMISOL IV 5% Inf. Popular**
A composite 5% amino acid preparation, containing essential and semi-essential amino acids with D-sorbitol: i.v infusion.
Ind; C/I; Precautions: See notes above.
Dosage & Admin: Usually 500ml as one dose, is gradually (30-60 drops/min) infused i.v one to several times daily. Dosages are adjusted properly depending on disease conditions, age & body-wt.
Note: For further information please consult manufacturer's literature.
250ml bot: 200.00 MRP
500ml bot: 350.00 MRP

❖ **AMISOL GOLD IV 10% Inf. Popular**
'Amisol Gold' is a solution of amino acids, glucose and electrolytes for intravenous nutrition. 500ml of 'Amisol Gold' contains essential & non-essential amino acids, with 50gm glucose (10%) & electrolytes: i.v infusion.
Ind; C/I; Cautions: See notes above.
Dosage & Admin: Adults, 200-800ml daily by i.v infusion, initially 15-20 drops/min then can be increased to 30-40 drops/min.
Infants & children: i.v infusion should be given calculated as 0.2-0.25gm of nitrogen/kg body weight in 24 hours, or 15-20 drops/min.
Note: For further information please consult manufacturer's literature.
250ml bot: 260.00 MRP
500ml bot: 400.00 MRP

❖ **NUTRISOL-S (5%) Inf. Green Cross/ Shuvro Ltd.**
An amino acid 5% preparation, containing all essential and semi-essential amino acids with glycine and sorbitol: i.v infustion. Each litre of this preparation satisfies the daily basal protein requirement of an adult and affords about 400 calories of energy.
Ind; C/I; Precautions: See notes above.
Dosage & Admin: Usually 500ml as one dose, is gradually (30-60 drops/min) infused i.v one to several times daily. Dosages are adjusted properly depend-ing on disease conditions, age & body-wt.
Note: For further information please consult manufacturer's literature.
500ml bot (without set): 395.00 MRP

❖ **PROLIV 5% Inf. Orion**
A composite 5% amino acid preparation, containing essential and semi-essential amino acids with D-sorbitol: i.v infusion.

Ind; C/I; Precautions: See notes above.
Dosage & Admin: Usually 500ml as one dose, is gradually (30-60 drops/min) infused i.v one to several times daily. Dosages are adjusted properly depending on disease conditions, age & body-wt.
Note: For further information please consult manufacturer's literature.
100ml bot: 130.00 MRP
500ml bot: 350.00 MRP

❖ **PROSOL IV 5% Inf. Incepta**
A composite 5% amino acid preparation, containing essential and semi-essential amino acids with D-sorbitol: i.v infusion.
Ind; C/I; Precautions: See notes above.

Dosage & Admin: Usually 500ml as one dose, is gradually (30-60 drops/min) infused i.v one to several times daily. Dosages are adjusted properly depending on disease conditions, age & body-wt.
Note: For further information please consult manufacturer's literature.
500ml bot: 350.00 MRP

❖ **VAMIN GLUCOSE Inf. Fresenius Kabi/ Janata**
Vamin glucose is a solution of amino acids, glucose and electrolytes for intravenous nutrition. 500ml of Vamin glucose contains essential & non-essential amino acids, protein equivalent to 70.2gm/litre and nitrogen 9.4gm/litre, carbohydrates 100gm glucose/litre & total energy 650kcal/litre: i.v infusion.
Ind; C/I; Cautions: See notes above.

Dosage & Admin: Adults, 200-800ml daily by i.v infusion, initially 15-20 drops/min then can be increased to 30-40 drops/min.
Infants & children: i.v infusion should be given calculated as 0.2-0.25gm of nitrogen/kg body weight in 24 hours. 15-20 drops/min.

Note: For further information please consult manufacturer's literature.
500ml bot: 439.09 MRP

FAT (FATTY ACIDS) PREPNS.[49,91]

FAT (FATTY ACIDS) PREPNS 10%: I.V Fat Emulsion
Intravenous fat emulsion, 10% preparation.
Indications:
1 ***Absolute indications-***
   a. When adequate oral or enteral alimentation is unfeasible.
      * Intestinal obstruction (mechanical ileus including cancer of the digestive organ)
      * Paralytic ileus due to peritonitis etc.
      * Short bowel syndrome
      * Disturbance of conciousness (when dysphagia is involved)
      * Gastrointestinal haemorrhage
   b. In cases where oral or enteral feeding is likely to interfere with the cure of the underlying disease.
      * Digestive tract fistula, pancreatic fistula
      * Crohn's disease, granuloblastoma colitis, ulcerative colitis
      * Acute pancreatitis
2. ***Indications as adjunct therapy-***
      * Patients with preoperative malnutrition
      * Senility or delayed postoperative recovery
      * Severe burns
      * Adjuvant therapy to chemotherapy and radiation therapy for malignant tumors
      * Hepatic failure
      * Renal failure
      * Malabsorption syndrome
      * Protein-exsorptive gastroenteropathy
      * Heart failure(?)
      * Anorexia nervosa
3. ***Indications in children-***
      * Hernial funiculi umbilicalis, abdominal fissure
      * Premature and low birth weight infants
      * Short bowel syndrome
      * Intractable diarrhoea
      * Intestinal obstruction
      * Oesophageal atresia

C/I: Thrombosis; hyperlipaemia; severe liver damage & coagulation disorder; diabetes mellitus associated with ketosis.
S/E: Phlebitis, vasalgia & bleeding tendency & rarely venous embolism; hypersensitivity (discontinue); may cause liver dysfunction; tachycardia, tachypnoea & rarely dyspnoea & cyanosis; occasionally nausea & vomiting, diarrhoea & dry mouth; occasionally fever, chill, flushed face, facial oedema, sensation of peculiar odor may occur.
Precautions: Liver dysfunctions, coagulation disorder; preterm & low birth wt. infants, severe bacterial septicaemia. Intralipos should be postponed till 96 hours after any admin. of plasma expanders. Monitor liver function & blood lipid level periodically during longterm i.v. nutrition. Intralipos should not be used if once frozen.
Dosage & Admin: See under the individual preparation.

❖ **INTRALIPID 10% Inj. Fresenius Kabi/Janata**
Intravenous fat emulsion 10% preparation: i.v injection
Ind; C/I; S/E; Cautions: See above under the text.
Dosage & Admin: Usually, 500ml of 10% fat emulsion is administered by i.v drip infusion over a time of atleast 3 hours. The dosage is adjusted according to body wt. & condition up to 2 gm of fat per kg body wt/day.
500ml bag (with set): 1253.05 MRP

❖ **INTRALIPOS 10% Inj. Green Cross/Shuvro Ltd.**
Intravenous fat emulsion 10% preparation.
COMP: Purified soybean oil 10%, purified yolk phospholipids 1.2%, conc. glycerin (glycerol) 2.21%].
Intralipos contains 550 kcal per 500ml of 10% prepn.
Ind; C/I; S/E; Cautions: See above under the text.
Dosage & Admin: Usually, 500ml of 10% fat emulsion is administered by i.v drip infusion over a time of atleast 3 hours. The dosage is adjusted according to body wt. & condition up to 2gm of fat per kg body wt. daily.
500ml bag (without set): 915.00 MRP

Chapter-14
WATER & ELECTROLYTES REPLACEMENT & PLASMA SUBSTITUTES

DRUGS DISCUSSED IN THIS CHAPTER INCLUDE:

1. **Oral electrolytes prepns.**
   - **i. Oral Saline prepns.**
   - **ii. Potassium Salts prepns.**
2. **Intravenous fluid prepns.**
3. **Plasma substitutes or plasma expanders**

1. Oral Electrolytes Prepns.

ORAL REHYDRATION SALT[33]

ORAL REHYDRATION SALT (ORS): Powder
Oral rehydration salt powder, available as: i. Higher osmolarity oral saline; ii. Reduced osmolarity oral saline.
Composition:
Higher osmolarity oral saline:
$^1/_2$ litre formula (13.95gm): Sodium chloride 1.75gm, potassium chloride 0.75gm, tri-sodium citrate dihydrate 1.45gm & glucose anhydrous 10gm/sachet; prepare half litre of solution.
1 litre formula (27.50gm): Sodium chloride 3.5gm, sodium bi-carbonate 2.5gm, potassium chloride 1.5gm & glucose anhydrous 20gm/sachet; prepare 1 litre of solution.
Reduced osmolarity oral saline:
$^1/_2$ litre formula (10.25gm): Sodium chloride 1.30gm, potassium chloride 0.75gm, tri-sodium citrate dihydrate 1.45gm & glucose anhydrous 6.75gm/sachet; prepare half litre of solution.
Ind: Water and electrolyte imbalance as in cholera, gastroenteritis, diarrhoeas, vomiting and other g.i. diseases causing fluid and electrolyte loss; fever; hyperventilation.

❖ **ASALINE Apex**
Oral rehydration salt powder (13.95gm)- ½ litre formula.
20 sachets pack: 60.00 MRP

❖ **G-O.R.S Gonoshasthaya**
Oral rehydration salt powder (13.95gm)- ½ litre formula.
20 sachets pack: 60.60 MRP

❖ **KHABAR SALINE Ibn Sina**
Oral rehydration salt powder (13.95gm)- ½ litre formula.
20 sachets pack: 60.60 MRP

❖ **MILLAT ORAL SALINE Millat**
Oral rehydration salt powder: ½ litre formula.
20 sachets pack: 60.00 MRP

❖ **NEOSALINE SK+F**
Oral rehydration salt powder (13.95gm)- ½ litre formula.
20 sachets pack: 61.00 MRP
50 sachets pack: 152.40 MRP

❖ **NOVO ORS SALINE Novo Healthcare**
Oral rehydration salt powder: ½ litre formula.
20 sachets pack: 60.00 MRP

❖ **ORALSALINE Medicon**
Oral rehydration salt powder (13.95gm)- ½ litre formula.
20 sachets pack: 60.00 MRP

❖ **ORAL SALINE Rasa**
Oral rehydration salt powder (13.95gm)- ½ litre formula.
20 sachets pack: 48.00 MRP

❖ **ORASOL SALINE Sonear**
Oral rehydration salt powder (13.95gm)- ½ litre formula.
10 sachets pack: 30.00 MRP

❖ **O.R.S A.P.C Pharma**
Oral rehydration salt powder (13.95gm)- ½ litre formula.
20 sachets pack: 60.00 MRP

❖ **O.R.S Medimet**
Oral rehydration salt powder (13.95gm)- ½ litre formula.
12 sachets pack: 37.92 MRP

❖ **ORS-A Ad-din**
Oral rehydration salt powder (13.95gm)- ½ litre formula.
20 sachets pack: 57.20 MRP

❖ **ORSALINE-N SMC**
Oral rehydration salt powder (10.25gm)- ½ litre formula.
1 sachet pack: 3.06 MRP

❖ **ORS-BRAC Saline BRAC/Renata**
Oral rehydration salt powder (13.95gm)- ½ litre formula.
1 sachet pack: 3.20 MRP

❖ **ORS-N (WHO)/Renata**
Oral rehydration salt powder (10.25gm)- ½ litre formula.
1 sachet pack: 3.06 MRP

❖ **ORS Saline-Plus Renata**
Oral rehydration salt powder (10.25gm) - ½ litre formula (lemon flavour).
20 sachets pack: 86.00 MRP

❖ **ORS Saline-R Renata**
Oral rehydration salt powder (10.25gm i.e. reduced osmolarity)- ½ litre formula.
20 sachets pack: 61.20 MRP

❖ **ORS-RENA SALINE Renata**
Oral rehydration salt powder (13.95gm)- ½ litre formula.
1 sachet pack: 3.20 MRP

❖ **O SALINE Zenith**
Oral rehydration salt powder (13.95gm)- ½ litre formula.
20 sachets pack: 64.00 MRP

❖ **PHARMA SALINE Pharmadesh**
Oral rehydration salt powder (13.95gm)- ½ litre formula.
20 sachets pack: 72.00 MRP

❖ **RENASALINE-N Renata**
Oral rehydration salt powder (10.50gm)- ½ litre formula.
1 sachet pack: 4.30 MRP

❖ **R-SALINE Rephco**
Oral rehydration salt powder (13.95gm)- ½ litre formula.
20 sachets pack: 64.00 MRP

❖ **SOS SALINE Supreme**
Oral rehydration salt powder (13.95gm)- ½ litre formula.
20 sachets pack: 61.00 MRP

❖ **UNISALINE Ibn Sina**
Oral rehydration salt powder (10.25gm)- ½ litre formula.
20 sachets pack: 61.20 MRP

❖ **ZISKA ORAL SALINE Ziska**
Oral rehydration salt powder (13.95gm)- ½ litre formula.
20 sachets pack: 55.00 MRP

❖ ❖ ❖

FLAVOURED/TASTY ORAL REHYDRATION SALT (ORS): Powder
Tasty oral rehydration salt as powder.
Comp: See under individual product.
Ind: Water and electrolyte imbalance as in cholera, gastroenteritis, diarrhoeas, vomiting and other g.i. diseases causing fluid and electrolyte loss; fever; hyperventilation.

❖ **ASALINE Fruity Apex**
Flavoured (fruity) oral rehydration salt powder- 250ml formula.
Comp: See manufacturers literature.
20 sachets pack: 100.00 MRP

❖ **HUDSON'S ORS Hudson**
Tasty oral rehydration salt as powder (13.47gm)- 250ml formula.
Comp: See manufacturer's literature.
1 sachet pack: 5.00 MRP

❖ **ORS-ORS Renata**
Flavoured (mango & orange) oral rehydration salt powder (13.80gm)- 250ml formula.
Comp: See manufacturer's literature.
1 sachet (mango) pack: 5.00 MRP
1 sachet (orange) pack: 5.00 MRP

❖ **ORSALINE Fruity SMC**
Flavoured (mango & orange) oral rehydration salt powder (13.47gm)- 250ml formula.
Comp: See manufacturer's literature.
1 sachet (mango) pack: 5.00 MRP
1 sachet (orange) pack: 5.00 MRP

❖ **R-SALINE Fruity Rephco**
Flavoured (mango & orange) oral rehydration salt powder- 250ml formula.
Comp: See manufacture'rs literature.
20 sachets (mango) pack: 100.00 MRP
20 sachets (orange) pack: 100.00 MRP

❖ **SALINE Plus Renata**
Flavoured (lemon) oral rehydration salt powder (10.25gm)- 250ml formula.
Comp: See manufacturer's literature.
20 sachets (lemon) pack: 86.00 MRP

❖ **SALINE R Renata**
Flavoured (lemon) oral rehydration salt powder (10.25gm)- 250ml formula.
Comp: See manufacturer's literature.
20 sachets (lemon) pack: 61.20 MRP

❖ **TASTY SALINE Universal Food Ltd.**
Tasty oral rehydration salt as powder.
Comp: ½ litre formula: Sodium chloride BP 0.88gm, potassium chloride BP 0.76gm, sodium citrate BP 1.50gm, citric acid BP 0.88gm, glucose anhydrous BP 8.18gm, dried sucrose BP 6.14gm & flavor BP q.s/sachet; prepare half litre of solution.
20 sachets pack: 100.00 MRP

❖ **ZISKA Fruity Saline Ziska**
Flavoured (fruity) oral rehydration salt powder- 250ml formula.
Comp: See manufacturers literature.
20 sachets pack: 70.00 MRP

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RICE-BASED SALINE34: Powder in sachet
Rice-based oral rehydration salt as powder.
Comp: 1/2 litre formula (3.50gm +25gm): Each sachet contains- Sodium chloride BP 1.30gm, Potassium chloride 0.75gm, Tri-sodium citrate dihydrate BP 1.45gm & processed rice powder 25gm, flavour q.s.
Preparation: To prepare instant rice saline mix one sachet in half litre of boiled hot water (approx. 2 glasses) & stir with a clean spoon.
Ind: Prevention of dehydration & management of diarrhea, as in cholera, gastroenteritis, viral diarrhoea, vomiting and other g.i. diseases causing fluid and electrolyte loss.
C/I: Rice-based ORS should not be given to the children under 6 months of age.
S/E: No significant side-effects are observed.
Cautions: Reconstituted rice saline should be used within 5 hours. After making the rice saline further heating or boiling is not necessary. The solution should be given to infants & young children using a clean spoon or cup. The breast-fed infants should be allowed breast-feeding, as the infant desires.
Dosage & admin: 6 months - 2 yrs: 50ml to 100ml after each loose motion. 2 yrs - 9 yrs: 100ml to 200ml after each loose motion. 10 yrs or more: as much as required.

❖ **NUTRISALINE Sachet Skylab**
Rice-based oral rehydration salt as powder in sachet: ½ litre formula.
Comp: See manufacturers literature.
20's pack: 100.00 MRP
❖ **NEORICE Saline SK+F**
Rice-based oral rehydration salt as powder in sachet (3.50gm +25gm): ½ litre formula.
$^1/_2$ litre x 10's pack: 120.00 MRP
❖ **RICE SALINE Sachet General**
Rice-based oral rehydration salt as powder in sachet (3.50gm +25gm): ½ litre formula.
Rice-based oral rehydration salt as powder in sachet (1.75gm +12.5gm): $^1/_4$ litre formula.
$^1/_4$ litre x 20's pack: 120.00 MRP
½ litre x 12's pack: 144.00 MRP

POTASSIUM SALTS[21,33]

POTASSIUM SALTS: Syrup/Tablet/ Injection
Ind: Potassium depletion (associated with chloride depletions and with metabolic alkalosis as in vomiting in pyloric stenosis); use of high potency (K-loosing) diuretics; excessive losses of potassium in the faeces, as in chronic diarrhoea, associated with intestinal malabsorption or laxative abuse; patients taking cardiac glycosides; cirrhosis of liver, nephrotic syndrome and severe heart failure.
C/I: Renal failure; plasma potassium concentrations above 5mmol/litre; dehydration.
S/E: Nausea and vomiting (severe symptoms may indicate obstruction), oesophageal or small bowel ulceration.
Cautions: Intestinal stricture, hiatus hernia (for sustained-release prepn. e.g. tablet), potassium sparing diuretics, captopril.
Dosage & Admin: Adult: 10-50 mmol K+ (1 mmol equivalent to 75 mg of KCl) daily or on alternate days in divided doses after meal.
Child: See manufacturer's note.
Note: 75mg of KCl equivalent to 1mmol of K+.

❖ **ELECTRO-K Tab. Acme**
Potassium chloride BP 600mg/tablet
100's pack: 60.00 MRP
❖ **ELECTRO-K Syp. Acme**
Potassium chloride 500mg/5ml: syrup.
100ml bot: 20.00 MRP
❖ **KT Liquid Jayson**
Potassium chloride 540mg/5ml: syrup
100 ml bot: 18.92 IP
❖ **KT Inj. Jayson**
Potassium chloride 150mg/ml; 10ml amp: injection
10 amps pack: 90.00 IP
❖ **POTASSIUM Syp. Elixir**
Potassium chloride 500mg/5ml: syrup.
100ml bot:
❖ **SEEMA-K Syp. Seema**
Potassium chloride 500mg/5ml: syrup.
100ml bot: 16.00 MRP

2. Intravenous fluid prepns.

DEXTROSE (GLUCOSE) PREPNS.[21,33]

DEXTROSE (GLUCOSE) PREPN: I.V Infusion
Ind: Fluid replacement (5% solns); Provision of energy (10%, 12.5%, 25% & 50% solns).
S/E: Glucose injections specially if hypertonic may have a low pH and irritate the venous intima, so, causing thrombophlebitis.
Dosage & admin: ***Water replacement:*** **A healthy adult requires 1.5-2.5 litre daily, so replacement should be to recover loses and maintenance therapy.**
Energy source: **1-3 litres daily of 20-25% solution.**
Child: According to water & energy requirement.

❖ **DEXAQUA Inj. Beximco**
Dextrose in aqua, 5% w/v: i.v infusion
500ml bag: 48.55 MRP
1000ml bag: 61.70 MRP
❖ **DEXAQUA DS Inj. Beximco**
Dextrose in aqua, 10% w/v: i.v infusion
500ml bag: 50.57 MRP
1000ml bag: 70.80 MRP
❖ **DEXTROPAC Inj. Orion**
Dextrose in aqua, 5% w/v: i.v infusion
500ml bag: 48.55 MRP
1000ml bag: 61.68 MRP
❖ **DEXTROPAC-10 Inj. Orion**
Dextrose in aqua, 10% w/v: i.v infusion
500ml bag: 60.26 MRP
100ml bag: 74.67 MRP
❖ **DEXTROPAC-25 Inj. Orion**
Dextrose in aqua, 25% w/v: i.v infusion
100ml ampoule: 38.00 MRP
250ml ampoule: 60.00 MRP
❖ **DEXTROSE 5% Inj. Opso Saline**
Dextrose in aqua, 5% w/v: i.v infusion
500ml bag: 45.00 MRP
1000ml bag: 60.00 MRP
❖ **DEXTROSE 10% Inj. Opso Saline**
Dextrose in aqua, 10% w/v: i.v infusion
500ml bag: 47.00 MRP
1000ml bag: 65.00 MRP
❖ **DEXTROSE 25% Inj. Opso Saline**
Dextrose in aqua, 25% w/v: i.v infusion
25ml ampoule: 9.14 MRP
100ml ampoule: 28.75 MRP
250ml ampoule: 60.00 MRP
❖ **GLUCOLIN Inj. Popular**
Dextrose in aqua, 5% w/v: i.v infusion
500ml bag: 48.55 MRP
1000ml bag: 61.70 MRP
❖ **GLUCOLIN DS Inj. Popular**
Dextrose in aqua, 10% w/v: i.v infusion
500ml bag: 60.26 MRP
1000ml bag: 77.16 MRP
❖ **LIBOTT Inj. Libra**
Dextrose in aqua, 5% w/v: i.v infusion
500ml bag: 48.55 MRP
1000ml bag: 61.70 MRP
❖ **LIBOTT-10 Inj. Libra**
Dextrose in aqua, 10% w/v: i.v infusion
500ml bag: 56.32 MRP
1000ml bag: 77.16 MRP
❖ **LIBOTT-25 Inj. Libra**
Dextrose in aqua, 25% w/v: i.v infusion
100ml bot: 35.41 MRP
250ml bot: 58.67 MRP
❖ **NUTRIDEX-25 Inj. Beximco**
Dextrose in aqua, 25% w/v: i.v infusion
100ml bot:
250ml bot:

FRUCTOSE PREPNS.[48]

❖ **FRUCTIN-10 Inj. Beximco**
Fructose in aqua, 10% w/v: i.v infusion
500ml pack: 80.90 MRP
❖ **FRUCTOSE-10 Inj. Orion**
Fructose in aqua, 10% w/v: i.v infusion
500ml pack: 80.00 MRP
1000ml pack: 145.00 MRP

SALINE & DEXTROSE SALINE PREPNS.[21,33]

BABY SALINE PREPNS: I.V Infusion
Saline preparations available for infants and babies are in two forms, viz: i. Sodium chloride 0.225% in dextrose 5% w/v solution; ii. Sodium chloride 0.45% in dextrose 5% w/v solution: i.v infusion
Ind: Water and electrolyte imbalance in infants and children.
Dose & admin: According to the requirements or as advised by the physician & see manufacturers note.

❖ **BABY SALINE Libra**
Sodium chloride 0.225% in dextrose 5% w/v solution: i.v infusion
250ml bag: 34.50 MRP
500ml bag: 50.42 MRP
❖ **BABY SALINE IPH**
5% Dextrose & 0.225% Sodium chloride solution; 500 ml bag for i.v. injecti[illegible].
500ml bag: not for sale
❖ **BABYSOL Inj. Opso Saline**
Sodium chloride 0.225% in dextrose 5% w/v solution: i.v infusion
500ml bag: 45.00 MRP
❖ **BABYSOL Junior Inj. Opso Saline**
Sodium chloride 0.45% in dextrose 5% w/v solution: i.v infusion
500ml bag: 45.00 MRP
❖ **DEXTROSAL-BABY Inj. Orion**
Sodium chloride 0.225% in dextrose 5% w/v solution: i.v infusion
500ml bag: 49.78 MRP
❖ **DEXTROSAL-MINI Inj. Orion**
Sodium chloride 0.45% in dextrose 5% w/v solution: i.v infusion
500ml bag: 55.02 MRP
❖ **ELECTRODEX-10 Inj. Orion Infusion**
Sodium chloride 0.225% in dextrose 10% w/v solution: i.v infusion
500ml bag: 65.62 MRP
1000ml bag: 86.93 MRP
❖ **LIBOTT-S Junior Inj. Libra**
Sodium chloride 0.45% in dextrose 5% w/v solution: i.v infusion
500ml bag: 56.47 MRP
❖ **NEOSOL Inj. Beximco**
Sodium chloride 0.225% in dextrose 5% w/v solution: i.v infusion
250ml bag:
❖ **NEOSOL-DS Inj. Beximco**
Sodium chloride 0.45% in dextrose 5% w/v solution: i.v infusion
250ml bag:
500ml bag:

❖ **PEDISOL Inj. Popular**
Sodium chloride 0.225% in dextrose 5% w/v solution: i.v infusion
500ml bag: 50.42 MRP
❖ **PEDISOL DS Inj. Popular**
Sodium chloride 0.225% in dextrose 10% w/v solution: i.v infusion
500ml bag: 65.62 MRP

❖ ❖ ❖

NORMAL SALINE PREPNS: I.V Infusion
Indications: Water and salt (sodium chloride) imbalance in adults and older children.
Dose & admin: According to the requirements or as advised by the physician & see manufacturers note.

❖ **NORMALIN Inj. Popular**
Sodium chloride 0.9% solution (normal saline): i.v infusion.
100ml bag: 40.00 MRP
250ml bag: 44.00 MRP
500ml bag: 46.39 MRP
1000ml bag: 57.48 MRP
2000ml bag: 85.00 MRP
❖ **NORMAL SALINE IPH**
0.9% Soium chloride solution: i.v. infusion.
500ml bag: not for sale
1000ml bag: not for sale
❖ **NORMAL SALINE Inj. Opso Saline**
Sodium chloride 0.9% solution (normal saline): i.v infusion.
500ml bag: 45.00 MRP
1000ml bag: 55.00 MRP
❖ **NORMASOL Inj. Libra**
Sodium chloride 0.9% solution (normal saline): i.v infusion.
500ml bag: 46.39 MRP
1000ml bag: 57.48 MRP
❖ **SALORIDE Inj. Beximco**
Sodium chloride 0.9% solution (normal saline): i.v infusion.
500ml bag:
1000ml bag:
❖ **SALPAC Inj. Orion**
Sodium chloride 0.9% solution (normal saline): i.v infusion.
500ml bag: 43.23 MRP
1000ml bag: 56.33 MRP

❖ ❖ ❖

DEXTROSE SALINE PREPNS: I.V Infusion
Indications: Water and salt (sodium chloride) replacement; provision of glucose and energy in adults and older children.
Dose & admin: According to the requirements or as advised by the physician & see manufacturers note.

❖ **DEXORIDE Inj. Beximco**
Sodium chloride 0.9% in dextrose 5% w/v solution: i.v infusion
500ml bag: 48.55 MRP
1000ml bag: 62.71 MRP
❖ **DEXTROSE 5% IN NORMAL SALINE Opso Saline**
Sodium chloride 0.9% in dextrose 5% w/v solution: i.v infusion
500ml bag: 45.00 MRP
1000ml bag: 60.00 MRP
❖ **DEXTROSAL Inj. Orion**
Sodium chloride 0.9% in dextrose 5% w/v solution: i.v infusion
500ml bag: 48.55 MRP
1000ml bag: 62.71 MRP
❖ **GLUCOSAL Inj. Popular**
Sodium chloride 0.9% in dextrose 5% w/v solution: i.v infusion
500ml bag: 48.55 MRP
1000ml bag: 62.71 MRP
❖ **GLUCOSE SALINE IPH**
5% dextrose, 0.9% sodium chloride solution: i.v. infusion.
500ml bag: not for sale
1000ml bag: not for sale
❖ **LIBOTT-S Inj. Libra**
Sodium chloride 0.9% in dextrose 5% w/v solution: i.v infusion
500ml bag: 48.55 MRP
1000ml bag: 62.71 MRP

❖ ❖ ❖

ISOTONIC DEXTROSE SALINE: I.V Infusion
Sodium chloride 0.18% in dextrose 4.3% w/v solution: i.v infusion
It is an isotonic dextrose saline prepared mainly for maintenance fluid therapy throughout the pre- and post-operative fluid regime.
Ind: i. Dehydration accompanied by very small salt loss; ii. as nutrient, electrolyte & water replenisher in neonates, infants & children; iii. in pre- & post-operative fluid regime.
Dose & admin: 60-120 drops per minute or according to the require ments or directed by the physician.

❖ **DEXTROSAL-ISO Inj. Orion**
Sodium chloride 0.18% in dextrose 4.3% w/v solution: i.v infusion
500ml bag: 47.00 MRP
1000ml bag: 61.00 MRP
❖ **GLUCOSAL M I.V Inf. Popular**
Sodium chloride 0.18% in dextrose 4.3% w/v solution: i.v infusion
500ml bag: 47.54 MRP
1000ml bag: 61.70 MRP
❖ **IDS Inj. Opso Saline**
Sodium chloride 0.18% in dextrose 4.3% w/v solution: i.v infusion
1000ml bag: 60.00 MRP
❖ **ISORIDE Inj. Beximco**
Sodium chloride 0.18% in dextrose 4.3% w/v solution: i.v infusion
500ml bag: 45.00 MRP
1000ml bag: 60.00 MRP
❖ **LIBOTT-M Inj. Libra**
Sodium chloride 0.18% in dextrose 4.3% w/v solution: i.v infusion
500ml bag: 47.54 MRP
1000ml bag: 61.70 MRP

CHOLERA SALINE / DIARRHOEAL FLUID[33]

CHOLERA SALINE / DIARRHOEAL FLUID: I.V Infusion
Ind: Acute fluid loss resulting in water & electrolyte imbalance as in cholera or any diarrhoeal disease.

❖ **CHOLERA SALINE Inj. Opso Saline**
Diarrhoeal or cholera fluid prepn: i.v infusion
Comp: Sodium chloride 2.5gm, Sodium bicarbonate 2gm, Potassium chloride 0.5gm in 500ml: i.v infusion
500 ml bag: 45.00 MRP
1000ml bag: 55.00 MRP
❖ **CHOLERA FLUID (Dhaka soln.) IPH**
Na+ 3gm/L (or 133 meq/L), K+0.5 gm/L (or 13 meq/L), CI- 3.5 gm/L (or 88 meq/L), Acetate 2.8 gm/L (or 48 meq/L): i.v. injection.
500 ml bag: not for sale
1000ml bag: not for sale
❖ **DIANAK Inj. Orion**
Diarrhoeal or cholera fluid prepn: i.v infusion
Comp: Na+ 3gm/lit. (or 133 meq/lit), K+0.5 gm/lit. (or 13 meq/lit), Cl-3.5 gm/lit. (or 88 meq/lit), Acetate 2.8 gm/lit. (or 48 meq/lit): i.v. infusion.
500ml bag: 49.78 MRP
1000ml bag: 65.50 MRP
❖ **DIASOL I.V. Fluid Libra**
Diarrhoeal or cholera fluid prepn: i.v infusion
Comp: Na+ 3gm/lit. (or 133 meq/lit), K+0.5 gm/lit. (or 13 meq/lit), Cl-3.5 gm/lit. (or 88 meq/lit), Acetate 2.8 gm/lit. (or 48 meq/lit): i.v infusion.
500ml bag: 52.60 MRP
1000ml bag: 65.74 MRP
❖ **KOLORIDE Inj. Beximco**
Diarrhoeal or cholera fluid prepn: i.v infusion
Comp: Na+ 3gm/lit. (or 133 meq/lit), K+0.5 gm/lit. (or 13 meq/lit), Cl-3.5 gm/lit. (or 88 meq/lit), Acetate 2.8 gm/lit. (or 48 meq/lit): i.v infusion.
500ml bag: 45.52 MRP
1000ml bag: 55.63 MRP
❖ **KOLOSAL Inj. Popular**
Diarrhoeal or cholera fluid prepn: i.v infusion
Comp: Sodium chloride 0.5%, Potassium chloride 0.1% & Sodium-acetate trihydrate 0.65%: i.v infusion
500 ml bag: 52.60 MRP
1000ml bag: 65.74 MRP

HARTMANN'S SOLN.[21,33]

HARTMANN'S SOLN: I.V Infusion
Ind: Diabetic coma, diminished alkali. Orally for infantile gastroenteritis.

❖ **ELECTROSAL I.V Inf. Popular**
Hartmann's solution. Composition: Na+ 131mEq, K+ 5mEq, Ca++ 4mEq, CI- 111 mEq, HCO3- or lactate 29mEq/litre of the solution: i.v infusion
500ml bag: 52.44 MRP
1000ml bag: 60.51 MRP
❖ **HARTMAN Inj. Orion**
Hartmann's solution. Composition: Na+ 131mEq, K+ 5mEq, Ca++ 4mEq, CI- 111 mEq, HCO3- or lactate 29mEq/litre of the solution: i.v infusion
500ml bag: 52.02 MRP
1000ml bag: 60.02 MRP
❖ **HARTMANN'S SOLN. Opso Saline**
Hartmann's solution. Composition: Na+ 131mEq, K+ 5mEq, Ca++ 4mEq, CI- 111 mEq, HCO3- or lactate 29mEq/litre of the solution: i.v infusion

500ml bag: 45.00 MRP
1000ml bag: 58.00 MRP

❖ **HARTMAN'S Soln. Orion**
Hartmann's solution. Composition: Na+ 131mEq, K+ 5mEq, Ca++ 4mEq, CI- 111 mEq, HCO3- or lactate 29mEq/litre of the solution: i.v infusion
500ml bag: 52.02 MRP
1000ml bag: 60.02 MRP

❖ **HARTSOL Soln. Libra**
Hartmann's solution. Composition: Na+ 131mEq, K+ 5mEq, Ca++ 4mEq, CI- 111 mEq, HCO3- or lactate 29mEq/litre of the solution: i.v infusion
500ml bag: 52.44 MRP
1000ml bag: 60.51 MRP

❖ **LACTORIDE Inj. Beximco**
Hartmann's solution. Composition: Na+ 131mEq, K+ 5mEq, Ca++ 4mEq, CI- 111 mEq, HCO3- or lactate 29mEq/litre of the solution: i.v infusion
500ml bag: 46.52 MRP
1000ml bag: 58.67 MRP

DEXTROSE & HARTMANN'S SOLN[21,33]

❖ **GLUCOHART I.V Inf. Popular Infusion**
Dextrose 5% & Hartmann's solution: i.v infusion. (For further information please consult manufacturer's literature).
500ml bag: 62.54 MRP
1000ml bag: 80.74 MRP

DEXTROSE & LACTATED RINGER'S SOLN[21,33]

❖ **DEXTROLAC I.V Inf. Orion Infusion**
Lactated ringer's solution in 5% dextrose: i.v infusion.
Ind: Hypovolaemic shock, during & after surgery, burns, nutritional deficiency.
Caution: i.v. infusion is obsolete in metabolic acidosis, and carries the risk of producing lactic acidosis, particularly in seriously ill patients with poor tissue perfusion on impaired hepatic function.
Dosage & admin: As required and advised by the physician.
500ml bag: 62.54 MRP
1000ml bag: 80.74 MRP

RINGER'S & LACTATED RINGER'S SOLN[21,33]

RINGER'S & LACTATED RINGER'S SOLN: I.V Infusion
Ind: Diabetic coma, diminished alkali reserve
Caution: i.v. infusion is obsolete in metabolic acidosis, and carries the risk of producing lactic acidosis, particularly in seriously ill patients with poor tissue perfusion on impaired hepatic function.
Dosage & admin: As required and advised by the physician.

❖ **RINGER'S Soln. Opso Saline.**
Na+ 127mEq, K+ 4mEq, Ca++ 4mEq and CI- 155mEq/litre of solution: i.v. infuson
500ml bag: 45.00 MRP

SODIUM BICARBONATE PREPNS.[21,33]

SODIUM BICARBONATE PREPN: I.V Infusion
Sodium bi-carbonate preparations are available as 7.5% injection in the market for i.v infusion.
Ind: Metabolic acidosis (as in renal acidosis, diabetic ketosis, cardiac arrest, after by-pass surgery).
Dose & Admin: In renal acidosis or in severe acidosis of any origin (e.g. blood PH less than 7.1). Isotonic Sodi- bi- Carbonate (1.4%) should be infused with isotonic sodium chloride (0.9%); a total volume of 6 litres (NaCl 4 litres + NaHC03 2 litres) may be necessary in the adult by continuous i.v. infusion.
Acidosis in severe shock (e.g. in cardiac arrest), where acidosis develops without sodium depletion, sodium bi-carbonate is best given in a small volume of hypertonic solution, such as 200 to 300 ml of strong soln. (up to 8.4%) by slow intravenous injection.

❖ **SODI-BI-CARB Inj. Jayson**
7.5% sodium-bi-carbonate in 25ml ampoule: injection
25ml amp x10's pack:: 148.50 MRP

❖ **SODI-BI-CARB. Inj. Opso Saline**
7.5% sodium-bi-carbonate injection in 25ml ampoule: i.v infusion.
25ml amp x 1's pack: 7.00 MRP

3. Plasma substitutes or Plasma expanders

DEXTRAN PREPNS.[21,33]

Dextrans are macromolecular substances formed by the coalescence of simple glucose sugar which are slowly metabolised and may be used to expand and maintained blood volume in shock arising from conditions such as burns or septicaemia.
Ind: Burns, septicaemia, haemorrhage (if blood is not available and as a short-term measure).
Dextran i.v. infusion improves peripharal blood flow in ischaemic disease of the limbs and peripheral thrombo-embolism.
C/I: Should not be used when shock is due to sodium depletion
Predcautions: Dextrans interfere with blood group cross-matching or biochemical measurements and these should be carried out before infusion is begun.

❖ **DEXTRAN-40 10%, IN DEXTROSE 5% Otsuka**
Dextran 40 (i.e. with a low molelcular wt. of 40,000) 10%, in glucose intravenous infusion 5%.
500ml bag: 192.95 MRP
Preparation: May not be available; price could not be corrected.

❖ **DEXTRAN 40 10%, IN NORMAL SALINE Otsuka**
Dextran 40 (i.e.with a low molecular wt. of 40,000) 10%, in sodium chloride intravenous infusion 0.9%.
500ml bag:192.95 MRP
Preparation: May not be available; price could not be corrected.

❖ **DEXTRAN 70 6%, IN NORMAL SALINE Otsuka**
Dextran 70 as 6% w/v in sodium chloride 0.9% solution.
500ml bag (with set): 148.60 MRP
Preparation: May not be available; price could not be corrected.

HUMAN ALBUMIN PREPNS.[21,92]

HUMAN ALBUMIN: Injection.
Human albumin preparations are available in different concentrations, viz: 5%, 20% & 25% solutions.
Ind: Isotonic (5%) solutions for acute or subacute loss of plasma volume e.g in burns, trauma, pancreatitis & complications of surgery; plasma exchange.
Concentrate (20% & 25%) solutions for severe hypoalbuminaemia associated with low plasma volume & generalised oedema; adjunct in the treatment of hyperbilirubinaemia by exchange transfusion in the new born.
C/I: Cardiac failure, severe anaemia.
S/E: Allergic reactions with nausea, fever & chills reported.
Precautions: History of cardiac or circulatory disease (administer slowly to avoid rapid rise in blood pressure and cardiac failure, and monitor cardiovascular and respiratory function); correct dehydration when administering concentrated solution.

Dosage & Admin: Human albumin is administered intravenously. The total dosage will vary with the individual.

Human Albumin (5%)
In adults, an intital infusion of 500ml is suggested. Additional amounts may be administered as clinically indicated.
The dosage in children will vary with the clinical state and body weight. A dose one-quarter to one-half the adult dose may be administered or dosage may be calculated on the basis of 3-5 ml per kg. of body weight.
In the treatment of the patient in sbock with greatly reduced blood volume; albumin injection may be administered as rapidly as necessary in order to improve the clinical condition and restore normal blood volume. This may be repeated in 15-30 minutes if the initial dose fails to prove adequate. In the patient with a slightly low or normal blood volume the rate of administration should be 1-2 ml per minute. The usual rate of administration in children should be one-qurter the adult rate.

Human Albumin (20% & 25%)
In adults an initial infusion of 100 ml is suggested. Additional amounts may be administered as clinically indicated.
The dosage in children will vary with the clinical state and body weight. A dose one-quarter to one-half the adult dose may be administered or dosage may be calculated on the basis of 1 ml per pound of body weight.
For jaundiced infants suffering from haemolytic disease of the newborn the appropriate dose for binding of free serum bilirubin is 1 gm. per kg. of body weight which may be administered during the procedure.
In the treatment of the patient in shock with

greatly reduced blood volume. Albumin injection may be administered as rapidly as necessary in order to improve the clinical condition and restore normal blood volume. This may be repeated in 15-30 minutes if the initial dose fails to prove adequate. In the patient with a slightly low or normal blood volume the rate of administration should be 1ml per minute. The usual rate of administration in children should be one-quarter the adult rate.

❖ **ALBUTEIN 20% Inj. Alpha Therapeutic Corp/Shuvro Ltd.**
Human albumin 20% solution: i.v injection
20% x 50ml bot: 2659.00 MRP
20% x 100ml bot: 5275.00 MRP
❖ **ALBUTEIN 25% Inj. Alpha Therapeutic Corp/Shuvro Ltd.**
Human albumin 25% solutions: i.v injection
25% x 50ml bot: 3325.00 MRP
25% x 100ml bot: 6600.00 MRP
❖ **HUMAN ALBUMIN 20% Inj. Human Co./City Overseas**
Human albumin 20% solutions: i.v injection
20% x 50ml bot: 2900.00 TP
20% x 100ml bot: 5800.00 TP
❖ **HUMAN ALBUMIN 20% Inj. Octapharma/ Hyeimpex**
Human albumin 20% solutions: i.v injection
20% x 50ml bot: 3609.78 MRP

HES: HYDROXYETHYL STARCH[118]

HYDROXYETHYL STARCH (HES): Solution for i.v Infusion
Hydroxyethyl starch (or HES) is avilable as 6% (i.e 60gm/litre) & 10% (i.e 100gm/ litre) in isotonic sodium chloride solution: solution for i.v infusion
Comp: 1 litre contains: Medicinal active ingredients- Poly (hydroxyethyl) starch 60gm (6%) & 100gm (10%), degree of substitution 0.40-0.55, average molecular weight (Mw) 200,000. Active ingredients- Sodium chloride 9gm (Na+ 154mmol/l, CI- 154mmol/1). Other non-active minor ingredients are also present. Titration acidity <1 mmolNaOH/1; theoretical osmolarity 308mosm/1, pH value 3.5-6.0.

Ind: 1. Therapy and prophylaxis of volume deficiency (hypovolaemia) and shock (volume replacement therapy) in connection with surgery (haemorrhagic shock), injuries (traumatic shock), infections (septic shock), burns (burn shock). 2. Saving of donor blood during surgery e.g acute normovolaemic haemodilution (HAES-steril 6%). 3. Therapeutic dilution of blood (haemodilution).

C/I: Severe congestive heart failure, renal failure (serum creatinine >2mg/dl and >177 mol/l), severe coagulation disturbances (except in life-threatening emergncies), excess fluid overload (hyperhydration) and severe lack of fluid (dehydration), intra-cranial bleeding (cerebral haemorrhage), starch allergy.

S/E: The product may lead to anaphylactoid reactions in isolated cases. In the event of intolerance reactions infusion is to be discontinued immediately and the standard emergency measures to be initiated, as below-
1. If skin reactions- give antihistamines.
2. If tachycardia, drop in blood pressure, vertigo, nausea, vomiting- positioning of the patient & medical measure (Antihistamines + Corticosteroids e.g Prednisolone 120mg i.v).
3. If shock & bronchospasm- positioning of the patient & resuscitation + medical measure (i. Adrenaline 0.05-0.1mg i.v + ii. Corticosteroids e.g prednisolone 1-2gm i.v + iii. infusion e.g Albumin 5%.
4. If respiratory and cardiac arrest- measure same as for shock & bronchospasm.
Long-term daily administration of HAES-steril 6% or 10% in medium and high doses frequently causes an almost untreatable itching. This can still occur weeks after ending the therapy, persist over months and could be strained for the patient. Only in a rare number of cases were pains in the kidney area reported. In such cases, infusion is to be discontinued immediately, sufficient fluid to be infused and the serum creatinine values to be monitored closely. In higher doses, a rolongation of bleeding time can occur due to the dilution effect but clinically-relevant haemorrhage is not triggered. The fall in haematocrit and the dilution of the plasma proteins should be monitored.
Precautions: Serum creatinine levels should be monitored at the beginning of therapy. Daily monitoring of the fluid balance and renal retention values is essential with limit-value creatinine values (1.2-2.0mg/dl and 106-177 mol/l, compensatory renal insufficiency). Despite normal serum creatinine values, pathological urine findings can indicate existing compensatory renal damage. In such cases daily serum creatinine values should be monitored daily. Where serum creatinine values and urine test results are normal, monitoring of renal retention values 1-2 times daily is essential in a therapy of several days duration. Sufficient supply of fluid (2-3 litres of fluid per day) must be ensured. Particular care must be taken with pulmonary oedema or chronic liver diseases.
Pregnancy & lactation: There are no data available as yet with regard to use during pregnancy and breast-feeding, nor in children. To be administered only where indication is vital during early pregnancy.
Dosage & admin: Please read package insert leaflet.
Drug inter: No interactions with other drugs are known to date.
N.B: For further information please contact the manufacturer's literature.

❖ **HAES-STERIL 6% & 10% Infusion Soln. Fresenius Kabi/Hyeimpex**
HAES-Steril 6% i.e 6% hydroxyethyl starch & HAES-steril 10% i.e 10% hydroxyethyl starch in isotonic sodium chloride solution: solution for i.v infusion
Composition: See above under the text.
6% x 500ml bot: 607.77 MRP
10% x 500ml bot: 744.00 MRP
❖ **INFUKOLL HES 6% & 10% Infusion Soln. Serumwerk BernbergAG/Tajarat**
Infukoll HES 6% i.e 6% hydroxyethyl starch & Infukoll HES 10% i.e 10% hydroxyethyl starch in isotonic sodium chloride solution: solution for i.v infusion
Composition: See above under the text.
6% x 500ml bot:
10% x 500ml bot:

Chapter-15
DRUGS USED IN BONE FORMATION & BONE DISORDERS

DRUGS USED IN BONE FORMATION & BONE DISORDERS[21,114]

Drugs used in bone formation & bone disorders can be classified under the following groups:

I. Durgs used in bone & cartilage formation: These are further divided in to three grops:
1. **Stimulation of bone formation:**
   a. **Hormone: Such as-** ***Anabolic steroids.***
   b. **Vitamin preparations: Such as-** ***Vitamin-D (cholecalciferol) prepns, Fluoride.***
   c. **Other preparations: Such as-** ***Ipriflavone*** (also inhibits boneresorption)
2. **Inhibition of bone resorption:**
   a. **Hormone: Such as-** ***Calcitonin (Salcatonin*** a synthetic or recombinant salmon calcitonin) & ***Teriparatide*** (a recombinant fragment of parathyroid hormone); ***Oestrogens & HRT prepns.***
   b. **Minerals: such as-** ***Calcium salts; Phosphorus.***
   c. **Bisphosphonates: such as-** ***Alendronate sodium, Disodium etidronate, Disodium pamidronate, Ibandronic acid, Risedronate sodium, Sodium clodronate, Tiludronic acid, Zoledronic acid.***
   d. **Other preparations: such as-** ***Ipriflavone, Reloxifene, Strontium ranelate.***
3. **Stimulation of cartilage formation: such as-** ***Glucosamine & Chondroitin.***

II. Drugs used in inflammatory diseases of bones & joints:
1. **Antirheumatic & anti-inflammatory drugs-** discussed in the respective chapter.
2. **Drugs for Osteoarthritis (degenerative joint disease or osteoarthrosis):**
   i. **For pain relief:** ***Paracetamol &***

NSAIDs- discussed in the respective chapter.

ii. **Supplement of natural hyaluronic acid in the synovial fluid of the knee joint, such as- *Sodium hyaluronate.***

III. **Drugs used in bone infections (Osteomyelitis)**- discussed under antimicrobial drugs.

DRUGS USED IN BONE & CARTILAGE FORMATION

1. Stimulation of bone formation

Hormone in bone formation by stimulation

ANABOLIC STEROIDS

Hormone in bone formation by stimulation, such as anabolic steroids- discussed in the chapter of endocrine hormones, under anabolic steroids.

Vitamin in bone formation

VITAMIN-D

Vitamin in bone formation, such as vitamin D- discussed in the chapter of 'vitamin, minerals & nutrition' under vitamins.

2. Inhibition of bone resorption

Hormone in bone formation by Inhibition of bone resorption

CALCITONIN[21,114]

Calcitonin is a polypeptide hormone secreted by the parafollicular cells of the thyroid gland in mammals. It is involved with parathyroid hormone in the regulation of bone turnover and hence in the maintenance of calcium balance and homoeostasis. It is normaly present in blood, and its concentration increases when the calcium concentration is excessive as after eating or when calcium salts are administered. It inhibits bone resorption leading to hypocalcemia- an effect more apparent in children and patients with Paget's disease than in normal adults.
Synthetic calcitonin is used clinically to treat Paget's disease and hypercalcemia, and it has also been tried in postmenopausal osteoporosis treatment.

SALMON CALCITONIN[114]

SALMON CALCITONIN: Injection/Nasal spray
Salmon calcitonin, a synthetic calcitonin hormone; available in injection & nasal spray form.

Mode of action: Calcitonin has a hypocalcemic action by direct inhibition of bone resorption by osteoclastic cells. Among the available types of calcitonin, including synthetic human, synthetic salmon calcitonin is the most potent. Salmon calcitonin is used in the treatment of selected patients with diseases characterized by increased bone resorption, such as osteoporosis, Paget's disease of bone (osteitis deformans) and Sudeck's disease of bone.
Ind: 1. Osteoporosis of different types- i. Post-menopausal osteoporosis, ii. Senile osteoporosis, iii. Secondary osteoporosis.
2. Paget's disease of bone. 3. Sudecks's disease of bone. 4. Hypercalcemia, due to osteolysis in course of breast, lung and renal cancers and other malignancies.
5. Hyperparathyroidism & vitamin D intoxication and 6. also in the treatment of bone pain due to metastatic cancers.
C/I: Salmon calcitonin must not be administered in cases of suspected pregnancy or during lactation. Clinical hypersensitivity to salmon calcitonin.
A/R: *By injection:* In some cases nausea, vomiting, diarrhea, face redness and heat sensation have been reported. These reactions usually disappear spontaneously as treatment progresses. There can be occasionally inflammatory reactions at the injection site. Troublesome side effects may be reduced by bed-time administration. Anti-emetics may be used if necessary during treatment.
By nasal spray: The incidence of systemic side-effects is much lower than by injection. Local side effects, such as rhinorrhea, mucosal dryness, nasal obstructions, sneezing & hyposmia may appear, but these effects usually do not require withdrawal of the treatment as they generally regress spontaneously.
Precautions & warnings: In very rare cases, salmon calcitonin, being a polypeptide, can give rise to hypersensitive reactions either local or general; in the cases of such reactions, the treatment must be stopped and, if necessary, substitute by a suitable treatment. Salmon calcitonin must not be administered in cases of suspected pregnancy or during lactation.
Dosage & Admin:
***Osteoporosis: Injection-* 50-100 IU/day, s.c or i.m together with calcium and vitamin D supplementation. In some cases, the injection can be administered on alternate days. If necessary, the dosage can be increased to 200 IU/day. *Intranasal spray:* 100-200 IU/day depending on severity of the disease, together with calcium & vitamin D supplementation. In case of giving 100 IU/day, one spray a day, alter nating nostrils daily. In case of giving 200 IU/day, two sprays a day, one in the morning and one in the evening, alternating nostrils.**
***Paget's disease: Injection:* 50-100 IU/day, s.c or i.m. In some cases, the injection can be administered on alternate days. If necessary, the dosage can be increased to 200 IU/day. *Intranasal spray:* 200 IU/day; two sprays a day, one in the morning and one in the evening, alternating nostrils.**
Treatment should be at least 3 months irrespective of the route of administration. Dosage may be adjusted to the individual requirements.
***Hypercalcemia (following cancers and hyperparathyroidism):* Hypercalcemic crisis: Injection- 5-10 IU/kg/day over a period of at least 6 hours in i.v drip (most preferred & effective method) or by slow i.v injection in 2-4 divided doses.**
***Chronic hypercalcemia: Injection:* 5-10 IU/kg/day, s.c or i.m in one or two divided doses. The treatment should be adapted to clinical and biochemical reaction of the patient. *Intranasal spray:* 200-400 IU/day depending on severity of the condition, alternating nostrils.**
***Sudecks's disease: Injection:* 50-100 IU/day, s.c or i.m. In some cases, the injection can be administered on alternate days. If necessary, the dosage can be increased to 200 IU/day. *Intranasal spray:* 100-200 IU/day depending on severity of the disease. In case of giving 100 IU/day, one spray a day, alternating nostrils daily. In case of giving 200 IU/day, two sprays a day, one in the morning and one in the evening, alternating nostrils.**
***Bone pain due to metastatic cancers:* Injection- 50-100 IU/day, s.c or i.m. *Intranasal spray:* 100-200 IU/day depending on severity of the disease.**
In case of giving 100 IU/day, one spray a day, alternating nostrils daily. In case of giving 200 IU/day, two sprays a day, one in the morning and one in the evening, alternating nostrils. Irrespective of the route of administration, dosage should be adjusted to individual requirements.
Overdose: High doses of salmon calcitonin can provoke a notable hypocalcemia, which should be corrected by administrating calcium. However, no serious consequences due to overdose have yet been reported. An overdose of 1000 IU by s.c injection, may produce nausea and vomiting as the only adverse effect.

❖ **MIACALCIC Inj. Novartis**
Salmon calcitonin 100 IU/1ml ampoule: injection.
1ml amp x 5's pack: 2015.00 MRP

❖ **MIACALCIC Nasal Spray Novartis**
Salmon calcitonin 200 IU per actuation or delivery; 2200 IU/ml; 2ml solution for a minimum of 22 deliveries of 200 IU.
22 inhalations (2ml) unit: 1990.00 MRP

❖ **TONOCALCIN Inj. Alfa Wassermann Italy/Hyeimpex**
Salmon calcitonin 100 IU/1ml ampoule: injection.
1ml amp x 5's pack: 1080.00 MRP

Minerals in bone formation

CALCIUM SALTS

Minerals in bone formation by inhibition of bone resorption, such as calcium salts-discussed in the chapter of 'vitamin, minerals & nutrition' under minerals.

Bisphosphonate preparations

ALENDRONATE[42]

ALENDRONATE: Tablet
Alendronate sodium is a non-hormonal compound belonging to the bisphosphonate group, used in bone formation specially in osteoporosis in old ages.
Mode of action: At the cellular level alendronate shows preferential localization to sites of bone resorption, specially under osteoclasts. It does not interfere with osteoclast recruitment or attachment, but it inhibits osteoclast activity. It reduces bone turnover i.e the number of sites at which bone is remolded. In addition, bone formation exceeds bone resorption at these molding sites, leading to progressive gains in bone mass.
Ind: 1. Treatment and prevention of osteoporosis in post-menopausal women. 2. For the prevention of osteoporosis. 3. Treatment of Paget's disease of bone.
C/I: Abnormalities of the oesophagus which can delay oesophageal emptying, such as stricture or achalasia. Inability to stand or sit upright for at least 30 minutes. Hypersensitivity to any component of this product. Hypocalcaemia.
S/E: Usually mild and not require discontinuation of therapy. Side-effects include- oesophageal reactions, abdominal pain & distension, diarrhoea or constipation, flatulence, musculoskeletal pain, headache, rash, erythema and transient decrease in serum calcium & phosphate.
Precautions: Hypocalcaemia and other disturbances of mineral metabolism should be corrected before initiation of therapy.
Alendronate can cause local irritation of the upper gastrointestinal mucosa, and there is a potential for worsening of the underlying disease. Caution should be adoptet when alendronate is given to the patients with active upper gastrointestinal problems, such as dysphagia, oesophageal disease, gastritis, duodenitis or ulcers. Patients should stop taking medicine and consult their physician if they develop oesophageal diseases, such as difficulty or pain upon swallowing, retrosternal pain, new or worsening heart burn.
No dosage adjustment is necessary for the elderly or for patients with mild-to-moderate renal insufficiency (creatinine clearance 35 to 60 ml/min). Alendronate is not recommended for patients with more severe renal insufficiency (creatinine clearance < 35ml).
Pregnancy & Lactation: Alendronate has not been studied in pregnant and breast feeding women, and hence should not be given to them.

Dosage and Admin:
Post-menopausal osteoporosis: **10mg once daily.**
Paget's disease of bone: **40mg once daily for 6 months.**
To permit adequate absorption, alendronate tablet must be taken in an empty stomach with a full glass of water, at least 30 minutes before the breakfast or first food or drink or medication of the day. Patients should stand or sit upright for at least 30 minutes after taking the alendronate tablet & do not lie down until after eating breakfast. Patients should not chew or suck on the tablet & don't take the tablet at bed time.
Children- not recommended.
Drug inter: Calcium supplement, antacids and some oral medications will interfere with absorption of alendronate if taken at the same time. Intravenous ranitidine makes the bioavailability of oral alendronate double. Incidence of upper gastrointestinal adverse effects associated with NSAID and aspirin appears to be greater with concomitant administration of alendronate.

❖ **ALENDON-70 Tab. Beximco**
Alendronate sodium, equivalent to alendronic acid 70mg/tablet.
30's pack: 750.00 MRP
❖ **OSTEL 10 Tab. Square**
Alendronate sodium 13.05mg, equivalent to alendronic acid 10mg/tablet.
30's pack: 150.00 MRP
❖ **OSTEL 70 Tab. Square**
Alendronate sodium, equivalent to alendronic acid 70mg/tablet.
12's pack: 300.00 MRP
❖ **OSTOMAX 10 Tab. SK+F**
Alendronate sodium 13.05mg, equivalent to alendronic acid 10mg/tablet.
40's pack: 200.00 MRP
❖ **OSTOMAX 70 Tab. SK+F**
Alendronate sodium, equivalent to alendronic acid 70mg/tablet.
8's pack: 200.00 MRP

IBANDRONIC ACID[50]

❖ **BONVIVA Tab. Roche**
One 150mg film-coated tablet contains 168.75mg of ibandronic acid monosodium salt, monohydrate equivalent to 150mg ibandronic acid.
Mode of action: Ibandronic acid is a highly potent bisphosphonate belonging to the nitrogen-containing group of bisphosphonates, which acts on the bone tissue & specifically inhibits osteoclast activity without directly affecting bone formation. It does not interfere with osteoclast recruitment. The selective action of ibandronic acid on bone tissue is based on the high affinity of this compound for hydroxyapatite, which represents the mineral matrix of the bone. Ibandronic acid reduces bone resorption, with no direct effect on bone formation.
In postmenopausal women, it reduces the elevated rate of bone turnover towards premenopausal lavels leading to a progressive net gain in bone mass.
Ind: Ibandronic acid is indicated for the treatment of postmenopausal osteoporosis, to reduce the risk of fractures.
C/I: Bonviva is contraindicated in patients with known hypersensitivity to ibandronic acid or to any of the excipients.
A/R: In a one-year study in postmenopausal women with osteoporosis treated with bonviva (ibandronic acid) 150mg once monthly, the majority of adverse drug reactions observed, were mild to moderate in intensity, and most cases did not lead to cessation of therapy. The common adverse reactions (>1/10) were- dyspepsia, nausea, abdominal pain & diarrhoea; headache; myalgia; skin rash & influenza like illness.
Precautions & warnings: Hypocalcemia & other disturbances of bone & mineral metabolism should be effectively treated before starting bonviva therapy. Adequate intake of calcium & vitamin D is important in all paitents.
Bisphosphonates have been associated with dysphagia, esophagitis, & esophageal or gastric ulcer. Therefore, patients should pay particular attention & be able to comply with the dosing instructions.
Physicians should be alert to sings or symptoms signalling a possible esophageal reaction during therapy, and patients should be instructed to discontinue therapy & seek medical attention if they develop symptoms of esophageal irritation, such as new or worsening dysphagia, pain on swallowing, retrosternal pain, or heart burn.
Since NSAIDs & bisphosphonates are both associated with gastrointestinal irritation, caution should be taken during concomitant medication with bonviva.
Pregnancy & lactation: Bonviva should not be used during pregnancy & lactation.
Dosage & admin: The recommended dose of ibandronic acid for treatment is 150mg (one film-coated tablet) once a month. The tablet should preferably be taken on the same date each month.
Method of administration: **Ibandronic acid should be taken 60 minutes before the first food or drink (other than water) of the day or any other oral medicine or supplementation (including calcium). Tablet should be swallowed whole with a full glass of plain water (180-240ml) while the patient is sitting or standing in an upright position. Patients must not lie down for 60 munites after taking bonviva (ibandronic acid). Plain water is the only drink that should be taken with bonviva. (Some mineral waters may have a higher concentration of calcium & therefore should not be used). Patients should not chew or suck the tablet because of a potential for oropharyngeal ulceration. Pateints should receive supplemental calcium or vitamin D if dietary intake is inadequate.**
Missed dose: **In case a once- monthly dose is missed, patients should be instructed to take bonviva (ibandronic acid) 150mg tablet in the next morning of remembering the dose, unless the time to the next scheduled dose is within 7 days. Patients should then return to taking their dose once a month on their originally scheduled date.**
If the next scheduled dose is within 7 days, pateints should wait until their next dose & then continue taking one tablet once a month as originally scheduled. Patients should not take two tablets within the same week.
Special dosage instructions: **Patients with hepatic impairment- no dose adjustment is necessary. Patients with renal impairment- no dose adjustment is necessary with mild or moderate renal impairment where creatinine clearance is equal to or greater than 30ml/min; below 30ml/min creatinine clearance, the**

decision to administer bonviva should be based on an individual risk-benefit assessment.
Elderly- no dose adjustment is necessary.
Children: Safety & efficacy have not been established in patients less than 18 years old.
Drug inter: It is likely that calcium supplements, antacids & some oral medications containing multivalent cations (such as aluminium, magnesium ion) are likely to interfere with absorption of ibandronic acid. Therefore, patients must wait 60 minutes after taking bonviva (ibandronic acid before taking other oral medications.
Note: For further information, please consult manufacturer's literature.
150mg tab. x 1's pack: 3712.50 MRP

RISEDRONATE[35]

RISEDRONATE: Tablet
Risedronate sodium is a non-hormonal compound belonging to the bisphosphonate group, used in bone formation specially in osteoporosis in postmenopausal women and in old ages.
Mode of action: Risedronate has an affinity for hydroxyapetite crystats in bone and acts as an antiresorptive agent. At the cellular level, risedronate inhibits osteoclasts. The osteoclasts adhere normally to the bone surface, but show evidence of reduced active resorption (e.g lack of ruffled border). Histomorphometry in rats, dogs and mini pigs showed that risedronate treatment reduces bone turnover (activation frequency, i.e the rate at which bone remodeling sites are activated) and bone resorption at remodeling sites.
Ind: Risedronate is intended for the use in the following conditions. 1. Treatment of established postmenopausal osteoporosis; prevention of osteoporosis in postmenopausal women with increased risk of osteoporosis. 2. Prevention and treatment of osteoporosis associated with glucocorticoid therapy (daily dosage equivalent to 7.5mg or greater of prednisone) for chronic inflammatory disease.
C/I: Known hypersensitivity to risedronate sodium or to any of its ingredients.
Hypocalcaemia (a low blood calcium level).
Pregnancy and lactation. Severe renal impairment (creatinine clearance<30ml/min).
S/E: Risedronate may induce some undesirable effects in some patients, which were found mild to moderate. Among these, most common side effects are pain in bones, muscles, joints and stomach ache. In a small number of patients, the following uncommon side effects have been reported- inflammation of small intestine (duodenitis), tongue (glossitis) and inflammation of the coloured part of the eye (iritis). Early transient asymptomatic and mild decreases in serum calcium and phosphate levels have been reported in some patients.
Precautions & warnings: In patients who have a history of oesophageal disorders which delay oesophageal transit or emptying (e.g stricture or achalasia) or who are unable to stay in the upright position for at least after taking the tablet. Hypocalcaemia should be treated before starting risedronate therapy, other disturbances of bone and mineral metabolism (e.g parathyroid dysfunction, hypo-vitaminosis D) should be treated at the time of risedronate therapy. In patients who have a lack of vitamin D or problem with the parathyroid glands, risedronate should be used with special caution.
Pregnancy & lactation: Risedronate must not be used during pregnancy or breastfeeding.
Dosage & admin: The recommended daily dose is 5mg (1 tablet) orally.
The absorption of risedronate is affected by foods and drinks, so, this should not be taken with food or drinks other than water. Take the dose (1 tablet) once daily, either at least 30 minutes before the first food or drink (other than water of the day). Or at least 2 hours from any food or drink at any other time of the day, and at least
30 minutes before going to bed. Supplemental calcium and vitamin D should be considered if the dietary intake is inadequate.
In all cases including duration of treatment physician's prescription and advice must be strictly followed.
Children: Safety and efficacy of risedronate have not been established in children and adolescents.
Overdosage: In case of overdosage or accidental intoxication one should drink a full glass of milk and immediately contact physician or hospital. Decreases in serum calcium following substantial overdose may be expected. Signs and symptoms of hypocalcaemia may also occur in some of those patients. Milk or antacids containing magnesium, calcium or aluminium should be given to bind risedronate sodium and reduce absorption of the drug. Incase of substantial overdose, gastric lavage may be considered to remove unabsorbed drug.
Drug inter: If considered appropriate, risedronate may be used concomitantly with oestrogen supplementation. Concomitant ingestion of products containing calcium, magnesium, iron and aluminium may interfere with the absorption of risedronate. These products should be taken at different times of the day apart from risedronate dose. Risedronate is not systemically metabolized, does not induce P450 enzymes and has low protein binding.

❖ **ACTONEL Tab. Sanofi aventis**
Risedronate sodium 5mg equivalent to 4.64mg risedronic acid/tablet.
5mg x 28's pack: 1618.68 MRP
❖ **SEDRON Tab. General**
Risedronate sodium 5mg & 35mg/tablet.
5mg x 20's pack: 160.00 MRP
35mg x 10's pack: 350.00 MRP

ZOLEDRONIC ACID[54]

❖ **ACLASTA Inj. Novartis**
100ml solution (in bottle) contains 5mg zoledronic acid (anhydrous), corresponding to 5.330mg zoledronic acid monohydrate: injection for i.v infusion.
Ind: Treatment of postmenopausal osteoporosis, Glucocorticoid induced secondary osteoporosis, Paget's disease & prevention of Hip fractures.
C/I: Hypersensitivity to zoledronic acid, to any of the excipients or to any bisphosphonate; hypocalcemia;
A/R: Adverse reactions are usually mild and transient and similar to those reported for other intravenously administered bisphosphonates. Common are- influenza, hypocalcemia, headache, lethargy, dyspnoea, diarrhoea, nausea, dyspepsia, bone pain, arthralgia, myalgia, flu-like symptoms, pyrexia, rigors, fatigue, pain, asthenia. The following side effects have been reported with bisphosphonates: renal dysfunction, iritis, uveitis, episcleritis, conjunctivitis and osteonecrosis of the jaw.
Precautions: Zoledronic acid is not recommended in patients with severe renal impairment (creatinine clearance < 30ml/min) or in children and adolescents. Patients must be appropriately hydrated prior to administration of zoledronic acid. Pre-existing hypocalcemia and other disturbances of mineral metabolism must be treated by adequate intake of calcium and vitamin D before initiating therapy with zoledronic acid. It is strongly advised that patients with Paget's disease receive supplemental calcium and vitamin D. This should be ensured during the initial 10 days following zoledronic acid administration.
Pregnancy & lactation: Zoledronic acid is contraindicated in pregnancy & lactation.
Dosage & admin: One i.v infusion of 5mg zoledronic acid (anhydrous) in 100ml aqueous solution. The infusion time should be at least 15 minutes. No dose adjustment in patients with creatinine clearance 40ml/minute or hepatic impairment.
Drug inter: Caution is recommended when zoledronic acid is used concomitantly with drugs that can significantly impact renal function, such as aminoglycosides and diuretics that can cause dehydration.
Note: For further information consult full prescribing information.
5mg in 100ml bot x 1's pack: 27592.50 MRP

❖ **ZOMETA Inj. Novartis**
Zoledronic acid 4mg/vial with ampoule of 5ml water for reconstitution: injection.
Ind: Prevention of skeletal-related events (pathological fractures, spinal compression, radiation or surgery to bone, or tumour-induced hypercalcaemia) in patients with advanced malignancies involving bone. Treatment of hypercalcaemia of malignancy (HCM).
C/I: Pregnancy, breast-feeding women, patients with clinically significant hypersensitivity to zoledronic acid or other bisphosphonates or any of the excipients in the formulation.
A/R: Adverse reactions are usually mild and transient. These include- rise in body temperature; a flu-like syndrome consisting of fever, fatigue, chills, and bone, joint, and/or muscle pain; anaemia; headache; frequently, the reduction in renal calcium excretion is accompanied by a fall in serum phosphate levels; serum calcium may fall to asymptomatic hypocalcaemic levels; occasionally gastrointestinal reactions, such as nausea and vomiting; loss of appetite; local reactions at the infusion site, such as redness or swelling; elevations of serum creatinine; some cases of

rash and pruritus; isolated cases of conjunctivitis; some reports of impaired renal function.
Precautions & warnings: Monitoring of standard hypercalcaemia-related metabolic parameters such as serum levels of calcium, phosphate and magnesium as well as serum creatinine. In view of the potential impact of bisphosphonates on renal function, and the lack of extensive clinical safety data in patients with severe renal impairment with zoledronic acid, its use in this population is not recommended. In any patient requiring repeated administration of zoledronic acid, serum creatinine should be evaluated prior to each dose. If renal function has deteriorated, the dose should be withheld. Limited clinical data in patients with severe hepatic insufficiency; no specific recommendations can be given for this patient population. Overhydration should be avoided in patients at risk of cardiac failure. No experience in children.
Dosage & admin: For prevention of skeletal-related events in patients with advanced malignancies involving bone, the recommended dose is 4mg given as a 15-minute i.v infusion every 3 to 4 weeks.
For treatment of HCM, the recommended dose is 4mg given as a single 15-minute i.v infusion. Patients who show complete response and relapse, or who are refractory to initial treatment may be retreated with zoledronic acid 8mg given as a single 15-minute i.v infusion. However, at least 1 week must elapse before retreatment to allow for a full response to the initial dose.
No dose adjustment is necessary in patients with mild to moderate renal impairment.
Drug inter: Zoledronic acid shows no appreciable binding to plasma proteins and does not inhibit human P450 enzymes in vitro, but no formal clinical interaction studies have been performed. Caution is advised when bisphosphonates are administered with aminoglycosides since both agents may have an additive effect, resulting in a lower serum calcium level for longer periods than required. Caution is required when used with other potentially nephrotoxic drugs. Attention should also be paid to the possibility of hypomagnesaemia developing during treatment. In multiple myeloma patients, the risk of renal dysfunction may be increased when i.v bisphosphonates are used in combination with thalidomide.
4mg (5ml) vial x 1's pack: 21938.00 MRP

Combined preparations: Inhibiting bone resorption

ALENDRONIC ACID + COLECALCIFEROL[26]

ALENDRONIC ACID + COLECALCIFEROL: Tablet
Alendronic acid & colecalciferol combined preparation is available as alendronate monosodium trihydrate USP equivalent to 70mg of alendronic acid, and colecalciferol BP 70mcg equivalent to 2800 IU vitamin D3.
Mode of action: Alendronate sodium is a bisphosphonate that acts as a specific inhibitor of osteoclast-mediated bone resorption.
Colecalciferol (vitamin D3) is a secosterol that is the natural precursor of the calcium-regulating hormone calcitriol (1,25-dihydroxy vitamin D3).
Ind: This combined preparation is indicated for the treatment of osteoporosis in postmenopausal women and to increase bonemass in men with osteoporosis. This preparation alone should not be used to treat vitamin D deficiency.
C/I: The drug is contraindicated in abnormalities of the esophagus that delay esophageal emptying such as stricture or achalasia, inability to stand or sit upright for at least 30 minutes, hypocalcemia and hypersensitivity to any component of this product.
S/E: The most common side-effects include digestive reactions, such as- irritation, inflammation, or ulcers of the esophagus, which may sometimes bleed. This may occur specially if patients do not drink a full glass of water with the drug, or if they lie down in less than 30 minutes or before their first food of the day. Less common side-effects are nausea, vomiting, a full or bloated feeling in the stomach, constipation, diarrhea, black or bloody stools, gas, headache, a changed sense of taste, and bone, muscle, or joint pain.
Precautions: *Alendronate sodium:* Hypocalcemia must be corrected before initiating therapy with this product. Other disorders affecting mineral metabolism (such as vitamin D deficiency) should also be effectively treated. In patients with these conditions, serum calcium and symptoms of hypocalcemia should be monitored during therapy with this product.
Colecalciferol: This product alone should not be used to treat vitamin D deficiency. Patients at increased risk for vitamin D insufficiency (e.g. those who are nursing home bound, chronically ill, over the age of 70 years) should receive vitamin D supplementation in addition to that provided in combined preparation.
Pregnancy & lactation: There is no studies in pregnant women. This product should be used during pregnancy only if the potential benefit justifies the potential risk to the mother and fetus. Colecalciferol and some of its active metabolites pass into breast milk. It is not known whether alendronate is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when this preparation is administered to nursing women.
Dosage & admin: ***Treatment of osteoporosis in postmenopausal women:*** **One tablet once weekly.**
Treatment to increase bonemass in men with osteoporosis: One tablet once weekly.
Children: Not indicated for use in children.
Dosage adjustment in renal insufficiency: **No dosage adjustment is necessary for patients with mild-to-moderate renal insufficiency (creatinine clearance 35 to 60ml/min). This preparation is not recommended for patients with more severe renal insufficiency (creatinine clearance <35ml/min) due to lack of experience. This preparation must be taken in empty stomach at least one to half an hour before the first food of the day with a full glass of plain water only. The patients should not lie down for at least 30 minutes and until after their first food of the day. This preparation should not be taken at bedtime.**
Drug inter: Calcium supplements, antacids, and some oral medications may interfere with absorption of alendronate.
Olestra, mineral oils, orlistat, and bile acid sequestrants (e.g., cholestyramine, colestipol) may impair the absorption of vitamin D.
Anticonvulsants, cimetidine, and thiazides may increase the catabolism of vitamin D.

❖ **ALEN-D Tab. ACI**
Alendronate monosodium trihydrate USP equivalent to 70mg of alendronic acid, and colecalciferol BP 70mcg equivalent to 2800 IU vitamin D3/tablet.
(70mg + 70mcg or 2800 IU) x 10's pack: 250.00 IP

❖ **BONEMASS D Tab. Incepta**
Alendronate monosodium trihydrate USP equivalent to 70mg of alendronic acid, and colecalciferol BP 70mcg equivalent to 2800 IU vitamin D3/tablet.
(70mg + 70mcg or 2800 IU) x 10's pack: 300.00 MRP

❖ **OSTEL-D 10/400 Tab. Square**
Alendronate monosodium trihydrate USP equivalent to 10mg of alendronic acid, and colecalciferol BP 10mcg equivalent to 400 IU vitamin D3/tablet.
(10mg + 10mcg or 400 IU) x 30's pack: 180.00 MRP

❖ **OSTEL-D 70/2800 Tab. Square**
Alendronate monosodium trihydrate USP equivalent to 70mg of alendronic acid, and colecalciferol BP 70mcg equivalent to 2800 IU vitamin D3/tablet.
(70mg + 70mcg or 2800 IU) x 8's pack: 240.00 MRP

Other preparations: Inhibiting bone resorption

RALOXIFENE HC[126]

RALOXIFENE HCl: Tablet
Raloxifene is a drug of miscellaneous group, which helps in bone formation by inhibiting bone resorption. This is there-fore, useful in the treatment & prevention of post-menopausal osteoporosis.
Mode of action: Raloxifene is a selective

estrogen receptor modulator (SERM). The biological actions of raloxifene are largely mediated through binding to estrogen receptor. This results in activation of certain estrogenic pathways and blockade of others. Raloxifene reduces resorption of bone and decreases overall bone turnover. These effects on bone are manifested as reductions in the serum and urine levels of bone turnover markers. Clinical trials and data suggest that raloxifene lacks estrogen like effects on the uterus and breast tissues.
Ind: Treatment and prevention of post-menopausal osteoporosis.
C/I: Hepatic & renal impairment. In active or past history of venous thromboembolic events, including deep vein thrombosis, pulmonary embolism and retinal vein thrombosis. Hypersensitivity to raloxifene or any other constituents of the formulation.
S/E: Raloxifene is generally well tolerated. However, a few side effects like hot flushes, leg cramps, and influenza like symptoms, gastro-intestinal disturbances etc may be seen usually during first 6 months of treatment.
Precautions: Concurrent estrogen therapy: concomitant use of raloxifene with systemic estrogens is not recommended.
Lipid metabolism: concomitant use of raloxifene and lipid-lowering agents has not been studied.
Pregnancy & lactation: Raloxifene should not be used in women who are or may become pregnant. It is not known whether raloxifene is excreted in breast milk, therefore, lactating mother should not use raloxifene.
Dosage & admin: 60mg once daily orally, without regard to meal. High fat meal increases the absorption of raloxifene.
Drug inter: Co-administration with cholestyramin, ampicillin and amoxicillin may reduce the absorption of raloxifene.

❖ **ALOXIF Tab. Incepta**
Raloxifene hydrochloride INN 60mg/tablet
30's pack: 420.00 MRP
❖ **OXILAR Tab. Square**
Raloxifene hydrochloride INN 60mg/tablet
10's pack: 140.00 MRP
❖ **RALOX Tab. Orion**
Raloxifene hydrochloride INN 60mg/tablet
30's pack: 300.00 MRP
❖ **ROLAGE Tab. ACI**
Raloxifene hydrochloride INN 60mg/tablet
30's pack: 300.00 IP

3. Stimulation of Cartilage formation

GLUCOSAMINE & GLUCOSAMINE + CHONDROITIN[26,42]

GLUCOSAMINE & GLUCOSAMINE + CHONDROITIN: Tablet

Description & mode of action: Glucosamine (2-amino-2-deoxy-alpha-D-glucose) is a natural amino-sugar of cartilage, produced in the human body and also found in certain foods, that provides the basic raw material needed by the body to manufacture joint cartilage. It is required for biosynthesis of glycosamino-glycans (GAGs) like hyaluronic acid, keratan sulfate, and chondroitin sulfate. GAGs bind with protein and form proteoglycans. Glycosaminoglycans & proteoglycans, the two essential building blocks of articular cartilage.
Cartilage is white, smooth, rubber-like padding that covers the ends of bones and prevents them from rubbing against each other. It also helps to form ligaments, tendons and nails. When cartilage in a joint deteriorates, osteoarthritis develops. It appears that some people lack the ability to manufacture glucosamine and this has been suggested as one of the major factors leading to the development of osteoarthritis. Glucosamine acts as a supplement, as a joint lubricant and shock absorber necessary to maintain healthy cartilage and joint function. Glucosamine hydrochloride is a prodrug for glucosamine that is well absorbed after oral administration and diffuses into several tissues, including bones and articular cartilages. Glucosamine appears to be the first anti-osteoarthritis drug that treats both signs and symptoms of osteoarthritis & modifies disease progression. Chondroitin sulfate is another naturally occurring glycosaminoglycan (acid mucopolysaccharide) found in connective tissues, specially in the articular cartilage of all mammals, that stimulates cartilage production, inhibits cartilage destroying enzymes, draws fluid to the cells and helps lubricate the joints. Chondroitin sulfate supplement acts similarly as glucosamine sulfate, since it provides substrate for proteoglycans. Chondroitin also protects existing healthy cartilage from premature decline by preventing the MMP (Matrix metalloproteinase) enzyme that breaksdown the proteoglycans. Combination of glucosamine with chondroitin sulfate shows synergistic effect. Data supports that this combination has been shown to be very much effective in severe cases of osteoarthritis that treats both sign and symptoms of osteoarthritis & modifies disease progression. It prevents osteoarthritis in case of normal abults. In osteoarthritic pain, glucosamine single or incombination with chondroitin is as effective as NSAIDs with significantly better tolerability and clinical compliance. It is also helpful during the repair phase of musculo-skeletal soft tissue injuries such as tendon or ligament strains.
Ind: Treatment of osteoarthritis of fingers, shoulder joints & weight bearing joints of the body such as knee, hip, spine, hands, and other locations. As a dietary supplement to prevent osteoarthritis.
C/I: There is no known contraindication to glucosamine or chondroitin. But proven hypersensitivity to these ingredients is a contraindication.
S/E: Glucosamine sulfate & chondroitin sulfate show no demonstrable side-effects. Rarely occurring side-effects such as, mild & reversible intestinal flatulence are almost like placebo.
Precaution: Diabetics are advised to monitor blood glucose levels regularly when taking glucosamine. No special studies were formed in patients with renal and/or hepatic insufficiency. The toxicological and pharmacokinetic profile of glucosamine & chondroitin does not indicate limitations for these patients. However, administration to patients with severe hepatic or renal insufficiency should be under appropriate medical supervision. Children should not be supplemented with glucosamine and chondroitin.
Pregnancy & lactation: No studies have evaluated the use of glucosamine during pregnancy or lactation. So, women who are pregnant or could become pregnant should not be supplemented with glucosamine. Therapy during pregnancy and lactation can only be considered if potential benefit outweighs the potential risk to the fetus and infant.
Dosage & admin: See below under individual preparation.
Drug inter: There are no significant drug interactions of glucosamine and chondroitin.with antibiotics/antihypertensives/ nitrates/antiarrythmics/anxiolytics/antidepressants /hypoglycemic agents/antisecretives/ antiasthmatics. Chondroitin may enhance the blood thinning effects of anticoagulants like warfarin, heparin.

GLUCOSAMINE[26,42]

GLUCOSAMINE: Tablet

Glucosamine hydrochloride INN available as 500mg tablet.
Ind: Treatment of osteoarthritis of fingers, shoulder joints & weight bearing joints of the body such as knee, hip, spine, hands, and other locations. As a dietary supplement to prevent osteoarthritis.
C/I; S/E; Precautions: See above under the text.
Dosage & admin: 500mg 3 times daily or as directed by the physician. A single dose of 1500mg (3 tabs) daily may also be effective. Obese individuals may need higher doses, based on body weight.

❖ **DUOBON Tab. Opsonin**
Glucosamine hydrochloride INN 500mg/tablet.
50's pack: 150.00 MRP
❖ **GLUSTIN Tab. General**
Glucosamine hydrochloride INN 500mg/tablet.
50's pack: 175.00 MRP
❖ **JOINIX Tab. Incepta**
Glucosamine hydrochloride INN 500mg/tablet.
100's pack: 300.00 MRP
❖ **MASO Tab. Chemico**
Glucosamine hydrochloride INN 500mg/tablet.
50's pack: 150.00 MRP
❖ **TILEX 500 Tab. Square**
Glucosamine hydrochloride INN 500mg/tablet.
30's pack: 90.00 MRP

GLUCOSAMINE + CHONDROITIN[26,42]

GLUCOSAMINE + CHONDROITIN: Tablet/ Capsule

This combined preparation is available as glucosamine sulfate 250mg & chondroitin sulfate 200mg per tablet or capsule.
Some exceptional preparations contain glucosamine sulfate 1000mg & chondroitin sulfate 200mg per tablet or capsule.
Ind: Treatment of osteoarthritis of fingers, shoulder joints & weight bearing joints of the

body such as knee, hip, spine, hands, and other locations. As a dietary supplement to prevent osteoarthritis.

C/I; S/E; Precautions: See above under the text.

Dosage & admin: 1-2 tablets, 3 times daily. Dose may be adjusted according to the response of the drug and body weight. Doses can be tapered after 60 days as per equirement of the individual and for cost convenience. Typical dosage recommendation, based on body weight is as follows: under 54kg- 800mg chondroitin sulfate & 1000mg glucosamine sulfate per day; 54-91kg- 1200mg chondroitin sulfate & 1500mg glucosamine sulfate per day; over 91kg- 1600mg chondroitin sulfate & 2000mg glucosamine sulfate per day.

❖ **ARTH-A Tab. Acme**
Glucosamine sulfate INN 250mg & chondroitin sulfate INN 200mg/tablet.
48's pack: 384.00 MRP

❖ **AUSTOMIN Tab. Hallmark**
Glucosamine sulfate INN 250mg & chondroitin sulfate INN 200mg/tablet.
30's pack: 225.00 MRP

❖ **BONFLEX Tab. SK+F**
Glucosamine sulfate INN 250mg & chondroitin sulfate INN 200mg/tablet.
40's pack: 320.00 MRP

❖ **CARTIFIT Tab. Globe**
Glucosamine sulfate INN 250mg & chondroitin sulfate INN 200mg/tablet.
48's pack: 240.00 MRP

❖ **CARTIGEN Tab. somatec**
Glucosamine sulfate INN 250mg & chondroitin sulfate INN 200mg/tablet.
30's pack: 240.00 MRP

❖ **CARTIL Tab. Silva**
Glucosamine sulfate INN 250mg & chondroitin sulfate INN 200mg/tablet.
30's pack: 240.00 MRP

❖ **CARTILAGE Plus Tab. Renata**
Glucosamine sulfate INN 250mg & chondroitin sulfate INN 200mg/tablet.
30's pack: 240.00 MRP

❖ **CARTILEX Tab. ACI**
Glucosamine sulfate INN 250mg & chondroitin sulfate INN 200mg/tablet.
50's pack: 250.00 MRP

❖ **C-JOINTIN Cap. Puritan's Pride/Tushin Trading**
Glucosamine sulfate 1000mg, chondroitin sulfate 200mg, ascorbic acid (vitamin C) 60mg, d-alpha tocopherol (vitamin E) 10 IU, methylsulfonylmethane (MSM) 750mg, evening primrose oil 250mg, manganese gluconate 1mg & boron 1.5mg /capsule.
Dosage: 1 capsule 2 times daily or as directed by the physicians.
90's pack: 900.00 MRP
(Price: could not be revised.)

❖ **CONTILEX Tab. Square**
Glucosamine sulfate INN 250mg & chondroitin sulfate INN 200mg/tablet.
30's pack: 240.00 MRP

❖ **DUOBON Plus Tab. Opsonin**
Glucosamine sulfate INN 250mg & chondroitin sulfate INN 200mg/tablet.
30's pack: 150.00 MRP

❖ **GLUCOTIN Tab. Drug Inter.**
Glucosamine sulfate INN 250mg & chondroitin sulfate INN 200mg/tablet.
50's pack: 300.00 MRP

❖ **GLUSTIN Plus Tab. General**
Glucosamine sulfate INN 250mg & chondroitin sulfate INN 200mg/tablet.
50's pack: 400.00 MRP

❖ **JOINIX Plus Tab. Incepta**
Glucosamine sulfate INN 250mg & chondroitin sulfate INN 200mg/tablet (f.c).
50's pack: 400.00 MRP

❖ **JOINTEC Plus Tab. Beximco**
Glucosamine sulfate INN 250mg & chondroitin sulfate INN 200mg/tablet (f.c).
60's pack: 448.00 IP

❖ **JORIX Tab. Apex**
Glucosamine sulfate INN 250mg & chondroitin sulfate INN 200mg/tablet (f.c).
30's pack: 210.00 MRP

❖ **MASO Plus Tab. Chemico**
Glucosamine sulfate INN 250mg & chondroitin sulfate INN 200mg/tablet (f.c).
50's pack: 350.00 MRP

❖ **NOSTIS Tab. Ambee**
Glucosamine sulfate INN 250mg & chondroitin sulfate INN 200mg/tablet (f.c).
50's pack: 400.00 MRP

❖ **REJOIN Tab. Aristopharma**
Glucosamine sulfate INN 250mg & chondroitin sulfate INN 200mg/tablet.
50's pack: 250.00 MRP

❖ **SYNFLEX Tab. Healthcare**
Glucosamine sulfate INN 250mg & chondroitin sulfate INN 200mg/tablet.
30's pack: 240.00 MRP

DRUGS USED IN INFLAMMATORY DISEASES OF BONES & JOINTS

1. **Antirheumatic & anti-inflammatory drugs:** Discussed in the respective chapter.
2. **Drugs for Osteoarthritis (degenerative joint disease or osteoarthrosis):**
   i. **For pain relief:** ***Paracetamol & NSAIDs:*** Discussed in the respective chapter.
   ii. **Supplement of natural hyaluronic acid in the synovial fluid of the knee joint, such as-** ***Sodium hyaluronate.***

SODIUM HYALURONATE[26]

SODIUM HYALURONATE: Injection.
Sodium hyaluronate is a viscous solution consisting of a high molecular weight fraction of purified natural sodium hyaluronate in buffered physiological sodium phosphate. It is available as sodium hyaluronate BP 20mg/2ml pre-filled syringe for intra-articular injection.

Mode of action: Hyaluronic acid is an important component of the body's extracellular matrix and is present in a particularly high concentration in cartilage and synovial fluid of body joints. Endogenous hyaluronic acid provides viscosity and elasticity to synovial fluid, which is fundamental for its lubricating and shock absorbing properties. It is essential for the correct structure of proteoglycans in articular cartilage.

In osteoarthritis there is an insufficient amount of- and a chance in the quality of hyaluronic acid in synovial fluid and cartilage. The intra-articular administration of hyaluronic acid into arthritic joints with degenerating cartilage surfaces and pathologically altered synovial fluid improves functions.

Ind: Sodium hyaluronate is indicated for the treatment of pain in osteoarthritis of the knee in patients who have failed to respond adequately to conservative non-pharmacologic therapy, and to simple analgesics, e.g acetaminophen.

C/I: Known hypersensitivity to hyaluronate preparations; infections or skin diseases in the area of the injection site.

S/E: The common side-effects include gastrointestinal complaints, injection site pain, knee swelling/effusion, local skin reactions (rash, ecchymosis). pruritus, and headache.

Precautions: Exercise caution when injecting sodium hyaluronate into patients who are allergic to avian proteins, feathers, and egg products. Strict aseptic administration technique must be followed. Remove joint effusion, if present, before injecting Sodium hyaluronate. Do not use the same syringe for removing joint effusion and for injecting sodium hyaluronate. It is recommended that the patient avoid any strenuous activities or prolonged (i.e, more than 1 hour) weight-bearing activities such as jogging or tennis within 48 hours following the intra-articular injection.

Pregnancy & lactation: The safety and effectiveness of Sodium hyaluronate have not been established in pregnant women & lactating mother. It is not known if sodium hyaluronate is excreted in human milk. The safety and effectiveness of Sodium hyaluronate have not been demonstrated in children.

Dosage & admin: Sodium hyaluronate is administered by intra-articular injection. A treatment cycle consists of five injections given at weekly intervals. Some patients may experience benefit with three injections given at weekly intervals. Inject the full 2ml in one knee only. If treatment is bilateral, a separate vial should be used for each knee.

Drug inter: Since there is limited experience available, sodium hyaluronate should not be administered simultaneously or mixed with other intra-articular injections. It should not be used concomitantly with disinfectants containing quaternary ammonium salts because hyaluronic acid can precipitate in their presence.

❖ **HYRONATE Inj. Incepta**
Each pre-filled syringe contains sodium hyaluronate BP 20mg/2ml solution: intra-articular injection.
2ml pre-filled syringe x 1's pack: 400.00 MRP

Chapter-16 CARCINO-CHEMOTHERAPEUTIC & CYTOTOXIC IMMUNOSUPPRESSANTS

CARCINO CHEMOTHER-APEUTIC & CYTOTOXIC IMMUNOSUPPRE-SSANTS[21]

Carcino-chemotherapeutic & cytotoxic immunosuppressants are discussed under the following headings:

1. **Cytotoxic drugs**
2. **Drugs affecting the immune response**
3. **Sex hormones and hormone antagonists in malignant diseases**
4. **Drugs for chemotherapy induced neutropenia**

1. CYTOTOXIC DRUGS[21]

Cytotoxic drugs are classified as follows:

1.1 Alkylating drugs
1.2 Cytotoxic antibiotics
1.3 Antimetabolites
1.4 Vinca alkaloids and etoposide
1.5 Other antineoplastic drugs

Guidelines on cytotoxic drug handling:[21]

1. *Trained personnel should reconstitute cytotoxics.*
2. *Reconstitution should be carried out in designated areas.*
3. *Protective clothing (including gloves) should be worn.*
4. *The eyes should be protected and means of first aid should be specified.*
5. *Pregnant staff should not handle cytotoxics.*
6. *Adequate care should be taken in the disposal of waste material, including syringes, containers, and absorbent material.*

1.1 Cytotoxic: Alkylating Drugs[21,33]

Alkylating cytotoxic drugs include: *Busulphan, Carmustine, Chlorambucil, Chlormethine hydrochloride, Cyclophosphamide, Estramustine phosphate, Ifosfamide, Lomustine, Melphalan, Thiotepa, Treosulfan.*

BUSULPHAN[21,47]

❖ MYLERAN Tab. GlaxoSmithKline
Busulphan 2mg/tablet
Ind: Ch. myeloid leukaemia.
S/E: Excessive myelosuppression may result in irreversible bone-marrow aplasia; Hyperpigmentation of the skin and rarely progressive pulmonary fibrosis; nausea, vomiting, alopecia etc.
Precautions: See under Alkeran. Monitor blood counts as excessive myelosuppression may occur; patients should be hospitalised during induction therapy; Pregnancy.
Dosage & admin: Adult: Induction of remission, 2-4mg daily; maintenance, 0.5-2mg daily;
Child: Not recommended.
100's pack: 1030.00 MRP

CHLORAMBUCIL[21,47]

❖ LEUKERAN Tab. GlaxoSmithKline
Chlorambucil 2mg B. P/tablet.
Ind: Ch. lymphocytic leukaemia; the indolent non-Hodgkin's lymphomas, Hodgkin's disease and ovarian carcinoma.
C/I: Within 4 weeks of radiation or chemotherapy; neutropenia, thrombocytopenia.
S/E: Bone-marrow suppression; rashes, nausea, vomiting, alopecia etc.
Precautions: See under Alkeran.
Dosage & admin: Adult & Child: used alone 0.2mg/kg body-wt. daily for 3-6 week or, 5-10mg daily for 3-6 weeks; maintenance, 2-4mg daily.
25's pack: 1137.00 MRP

CYCLOPHOSPHAMIDE[21,35]

CYCLOPHOSPHAMIDE: Injection
Cyclophosphamide is an alkylating cytotoxic drug. It is available as cyclophosphamide anhydrous BP 200mg, 500mg & 1gm vial containing white powder vial for reconstitution: i.v injection.
Ind: Chronic lymphocytic leukaemia, lymphomas, solid tumours and other malignant conditions.
C/I: Bladder haemorrhage; leucopenia, thrombocytopenia; pregnancy.
S/E: Nausea, vomiting; Bone-marrow deppression; Alopecia; extravasation may cause local tissue necrosis; a urinary metabolite of cyclophosphamide may cause haemorrhagic cystitis (stop therapy).
Precautions: Haemorrhagic cystitis can be avoided by an increased (3-4 litres/day) fluid intake after i.v injection. When high dose is administered, use Uromitexan (mesna) to prevent this complication. Reduce dose in renal impairment. Concurrent admin. with suxamethonium potentiates its depolarising neuromuscular blocking effect. See also below under Alkeran.
Dosage & admin: Adult: ***Low dose therapy:*** **2-6mg/kg body wt. daily as a single i.v dose or in divided oral dose for 7 days & maintenance 100-200mg daily.**
Medium dose therapy: **10-15mg/kg as a single i.v dose weekly.**
Large or high dose therapy: **20-40mg/kg as a single i.v dose given at 10-20 days intervals.**
Child: Not recommended.

❖ ALKYLOXAN Inj. Choongwae/NTS
Cyclophosphamide anhydrous BP 200mg as white powder in vial for reconstitution: i.v injection.
200mg vial x 1's pack: 1862.40 MRP
(Price could not be revised).
❖ ENDOXAN Inj. Sanofi-aventis
Cyclophosphamide anhydrous BP 200mg, 500mg & 1gm as white powder in vial for reconstitution: i.v injection.
200mg vial x 10's pack: 1862.40 MRP
500mg vial x 1's pack: 473.52 MRP
1gm vial x 1's pack: 891.34 MRP
❖ ENDOXAN Tab. Sanofi-aventis
Cyclophosphamide BP 50mg/tablet.
50's pack: 1114.00 MRP

IFOSFAMIDE[21,35]

❖ HOLOXAN Inj. Sanofi-aventis
Ifosfamide 1gm & 2gm/vial: injection
Ind: Tumours of testies, pancreas, ear, nose & throat, overy, bone, breast, lung, g. i. tract, kidney; lymphomas & soft tissue sarcoma.
C/I: Severe renal or hepatic impairment; haemorrhagic cystitis.
S/E: Haemorrhagic cystitis (stop treatment); endothelial toxicity; and also see under Alkeran.
Cautions: See under Alkeran and also reduce dose in renal inpairment; lactation; monitor erythrocytes, blood & urine; maintain hydraureation; teratogenic & carcinogenic.
Dosage & admin: Adult: Usually 8-10gm/m2 fractionated equally to single daily doses over 5 days or a 24 hour infusion of 5-6gm/m2; only use in conjuction with Mensa (Uromitxan). For further information see manufacturer's literature.
Child: Not recommended.
Note: Uromitexan (Mensa) is used as prophylaxis of urothelial toxicity in patients treated with Ifosfamide & Cyclofosfamide.
1gm vial x 1's pack: 1885.12 MRP
2gm vial x 1's pack: 2915.73 MRP

MELPHALAN[21,47]

❖ ALKERAN Tab. GlaxoSmithKline
Melphalan 2mg/tablet.
Ind: Multiple myeloma; breast carcinoma and some other malignant conditions such as, malignant melanoma, soft tissue sarcoma.
C/I: Neutropenia, thrombocytopenia, concurrent radiotherapy.
S/E: Bone marrow suppression; exdtravasation may cause severe local tissue necrosis; agranulocytopenia; alopecia; nausea & vomiting.
Precautions: If cytotoxic agents are used in combination or with radiotherapy, doses may need adjustment. Certain agents are recommended to be used by physicians experienced in cancer chemotherapy; manufacturers detailed literature should be consulted in all cases; pregnancy. Reduce dose in renal failure.
Dosage & admin: Adult: By mouth, 150-300mcg/kg daily for 4-6 days; repeated after 4-8 weeks.
25's pack: 656.00 MRP

Drug for Urothelial toxicity: Mesna

MESNA[21,35]

❖ **UROMITEXAN Inj. Sanofi-aventis**
Mesna 100mg/ml, 4ml (400mg) ampoule: Injection
Ind: Mesna is used routinely in patients receiving ifosfamide, & in patients receiving cyclophosphamide by i.v route at a high dose (e.g more than 2gm) or in those who experienced urothelial toxicity when given cyclophosphamide previously.
C/I: Hypersensitivity to thiol-containing compounds.
S/E: Above max. therapeutic doses, nausea, vomiting (use i.v route), colic, diarrhoea, fatigue, headache, limb and joint pains, depression, irritability, lack of energy, rash, hypotension and tachycardia; rarely hypersensitivity reactions (more common in patients with autoimmune disorders).
Dosage & admin: When given by i.v injection, dose is calculated according to cyclophosphamide or ifosfamide treatment- for details consult product literature; dose given as calculated, repeated 4 and 8 hours after treatment.
15 amps pack: 2110.80 MRP

1.2 Cytotoxic: Antibiotics[21,33]

Cytotoxic antibiotics include: ***Aclarubicin, Bleomycin, Dactinomycin, Daunorubicin, Doxorubicin hydrochloride, Epirubicin hydrochloride, Idarubicin hydrochloride, Mitomycin, Mitoxantrone.***

BLEOMYCIN[21,33]

❖ **BLEOCIN Inj. Nippon Kayaku/NTS**
Bleomycin (as sulphate) 15mg/ampoule (powder for reconstitution): Injection
Ind: Squamous cell carcinoma; Hodgkins disease & other lymphomas; Testicular teratoma; Malignant eff-usions of serous cavities; metastatic malignant melanoma; Carcinoma of the thyroid, lungs & bladder.
S/E: Extravasation may cause local tissue necrosis and irritation to skin; agranulocytopenia; alopecia; nausea & vomiting (occasional); Progressive pulmonary fibrosis (common), cutaneous pigmenta-tion, mucositis; Raynauds phenomenon (rarely); hypersensitivity reactions menifest by chills and fevers commonly a few hours after drug administaration & may be prevented by simultaneous admn. of a corticosteroid (e.g hydrocortisone i.v.)
Cautions: See under Alkeran, and also caution in handling as irritant to skin; reduce dose in renal failure; basal lung crepitations or suspicious chest X-ray changes (pulm. fibrosis) are an indication to stop therapy with this drug.
Dosage & admin: ***Sq. cell carcinoma:*** **Over 80 years 15mg per week (in a single or diveded doses), total 100mg; 70-79 years 30mg/week, total 150-200mg; 60-69 years 30-60mg/week, total 200-300mg; under 60 years 30-60mg/wk, total 500mg. All slow i.v or in infusion.**
Malignant lymphomas: **15mg once or twice a week to a total dose of 225mg.**
1 amp pack: 1121.75 MRP
(Price could not be revised).

DOXORUBICIN[60]

❖ **ADRIBLASTINA Rapid Dissolution Inj. Pfizer-Pharmcia/Janata Traders**
Adriblastina rapid dissolution is available as doxorubicin hydrochloride or adriamycin hydrochioride 10mg & 50mg/vial (freeze dried powder for reconstitution): i.v injection.
Doxorubicin hydrochloride is an antimitotic and cytotoxic anthracycline antibiotic drug.
Mode of action: The mechanism of action of doxorubicin is related to the ability of the antibiotic to bind to DNA and inhibit nucleic acid synthesis. Cell culture studies have demonstrated rapid cell penetration by the antibiotic and its main localization is in the perinucleolar chromatin. Rapid inhibition of mitotic activity and nucleic acid synthesis have also been demonstrated together with the appearance of chromosomal aberrations.
Animal studies on doxorubicin have shown that the cytotoxic agent is active in a spectrum of experimental tumours and is immunosupressive. .
Ind: Doxorubicin has been used successfully to produce regression in a variety of neoplastic conditions, such as- carcinoma of the breast, lung, bladder, thyroid, and also ovarian carcinoma; bone and soft tissue sarcomas; Hodgkin's and non-Hodgkin's lymphomas, neuroblastoma, Wilm's tumour, acute lymphoblastic leukaemia and acute myeloblastic leukaemia. Doxorubicin has given positive results in superficial bladder tumours when administered intravesically, both after transurethral resection (as prophylaxis) and for therapeutic reasons.
Other solid tumours have also responded, but the study of these is at present too limited to justify specific indications.
C/I; S/E; Precautions & warnings: Please see the manufacturer's literature.
Dosage & admin: ***Intravenous route:*** **When doxorubicin is used as single antitumour agent, the recommended dose in adults is 60-75mg/m2 of body surface area by i.v injection every three weeks, dependent on bone-marrow reserves. The lower dose (60mg/m2) is recommended to patients with inadequate marrow reserves as a result of old age, previous therapy, or neoplastic marrow infiltration.**
The above dose can be given as a single injection or subdivided over 2-3 consecutive days. An alternative dosage of 30mg/m2/day i.v for three consecutive days has been suggested specifically for pediatric use; the course should be repeated every 4 weeks.
The cumulative dose of doxorubicin by the i.v route, irrespective of the dosage schedule, should not exceed 550mg/m2 of body surface area.
Doxorubicin is presently also used extensively in combination chemotherapy at ususal doses of 25-50mg/m2 every 3-4 weeks if combined with other myelosuppressive drugs, and at doses of 60-75mg/m2 if used in combination with drugs that are not myelosuppressive. The dosage of doxorubicin should be reduced in patients with impaired hepatic function, to prevent an increase of overall toxicity.
Generally, when serum bilirubin levels are approximately 1.2-3mg% and BSP retention is 9-15%, it is recommended that half the normal dose of doxorubicin be used if serum bilirubin levels and BSP retention are even higher, it is recommended that a quarter of the usual doses be given.
In view of the low renal excretion of doxorubicin, moderate inpairment of renal function does not usually require a reduction in the recommended dose.
Intravesical route: **The recommended dose for topical intravesical treatment is 30-50mg per instillation, to be administered at intervals varying from 1 week to one month. Depending on whether the treatment is prophylactic or therapeutic, the frequency of administration and duration of treatment are dependent on the physician.**
The problems involved in intravenous therapy with doxorubicin do not occur when line drug is administered intravesically, in that absorption and passage of the drug into the general circulation are very low.
Administration: **Doxorubicin rapid dissolution is not active orally, and must not be administered intramuscularly or intrathecally. Doxorubicin rapid dissolution should be administered solely by intravenous injection or- in the case of local- regional treament of tumours- by slow intra-arterial infusion or by topical intravesical administration by means of a catheter. It is recommended that doxorubicin rapid dissolution, when given intravenously, be administered through the tubing of a freely runnig infusion of physiological solution, after confirmation that the needle is correctly inserted into the vein. This technique reduces the risk of perivenous extravasation of the drug and ensures the washing of the vein after administration. Doxorubicin rapid dissolution should not be mixed with heparin as precipitate may form. Doxorubicin rapid dissolution may be used in combination with other chemotherapeutic anti-tumour agents but drugs must not be mixed in the same syringe. In the case of intravesical therapy, doxorubicin rapid dissolution should be dissolved inwater for injection at room temperature. The recommended concentration is 1mg/ml.**
Note: For further information, please consult manufacturer's literature.
10mg vial x 1's pack: 543.47 MRP
50mg vial x 1's pack: 2717.38 MRP

EPIRUBICIN[60]

❖ **FARMORUBICIN Inj. Pfizer-Pharmcia/ Janata Traders**
Epirubicin hydrochloride 50mg/vial (freeze dried powder for reconstitution): i.v injection.
Epirubicin is an antimitotic and cytotoxic

anthracycline antibiotic drug.
Ind: Cancers of breast, stomach, liver, pancreas, sigmoid colon, rectum, lungs, ovaries head & neck; leukemia; malignant lymphomas & soft tissue sarcomas.
C/I: Hypersensitivity to epirubicin or any other component of the product, hydroxybenzoates or other anthracenediones/anthracyclines such as doxorubicin; patients already treated with maximum cumulative doses of epirubicin &/or other anthracyclines; persistent myelosuppression; severe hepatic impairment; current or prior history of cardiac impairment including severe myocardial insufficiency; recent myocardial infarction & severe arrhythmias.
A/R: Important drug-related adverse events that occurred during clinical trials included leukopenia, neutropenia, anemia, thrombocytopenia, asymptomatic drops in lelt ventricular ejection fraction, congestive heart failure, acute leukemia, nausea/vomiting, mucositis/stomatitis, diarrhea, anorexia, malaise/asthenia, infection fever, amenorrhea, hot flashes, alopecia, local toxicity, rash/itch, congestive heart failure, acute leukemia, nausea/vomiting, mucositis/stomatitis, diarrhea, anorexia, malaise/asthenia, infection, fever, amenorrhea, hot flashes, alopecia, local toxicity, rash/ itch, hepatic dysfunction, conjunctivitis/keratitis.

Precautions & warnings: Leukopenia being the most common acute toxicity, hematologic profiles should be assessed before & during each cycle of therapy. Life-threatening congestive heart failure (CHF) can occur, particularly if cumulative dose of 900 to 1000mg/m2 is exceeded. Cardiac function should be assessed before starting treatment & monitored throughout therapy; prompt discontinuation of epirubicin at the first sign of impaired function is recommended. As it is excreted by liver, liver function should be evaluated before & during treatment. Epirubicin may induce hyperuricemia due to tumor-lysis syndrome. The i.v injection may produce local pain; if there is extravasation during administration, severe local tissue necrosis & cellulitis will occur. In such an event, drug infusion should be immediately stopped. Epirubicin is mutagenic & carcinogenic in animals.
Pregnancy & lactation: Epirubicin use during pregnancy & lactation is potentially hazardous. Patients should be advised against conception & breast feeding during epirubicin chemotherapy.

Dosage & admin: ***Intravenous administration:*** **As a single agent, dose per cycle in adults is 60-135mg/m2. Each treatment cycle could be repeated every 3 to 4 weeks. When used in combination with other cytotoxic drugs, the dose per cycle should be reduced. Dose of 120mg/m2 per cycle should not be exceeded in such cases.**
Reconstitution of vial: **Trained personnel should reconstitute injection vial. The vial contents should be reconstituted with either water for injection or sodium chloride injection. Dissolution will take place with gentle shaking & without inversion within 30 seconds.**
Intravesical administration: **Epirubicin rapid dissolution is used by intravesical administration for treatment of papillary transitional cell carcinoma of the bladder & carcinoma in situ. For dosage please see full prescribing information.**
Pediatric patients: **Safety & efficacy in pediatric patients is not established.**
Overdose: Treat by support & careful monitoring. Delayed cardiac failure can occur for up to 6 months after the event.
Note: Please consult the full prescribing information (manufacturer's literature) before using epirubicin injection.
50mg vial x 1's pack: 3037.22 MRP

MITOMYCIN-C[21,33]

❖ **MITOMYCIN Inj. Kyowa**
Mitomycin-C 2mg & 10mg (as powder for reconstitution)/vial
Ind: Upper gastro-intestinal and breast cancers.
S/E & Toxicity: causes delayed marrow toxicity; Prolonged use may result in permanent marrow damage; lung fibrosis and renal damage. Other side effects are nausea, alopecia and also irritant to the tissues.
Precautions: see under Alkeran. For its relative toxicity is usually administered at 6 weekly intervals.
Dosage: See literature of the manufacturer.
2mg vial: 51.25 MRP
10mg vial: 230.55 MRP
Price: Could not be revised.

❖ **MITOMYCIN-C Tab. Kyowa**
Mitomycin-C 1mg tablet
Dose: See literature of the manufacturer.
1000 tabs. pack: 1607.00 MRP
Price: Could not be revised.

1.3 Cytotoxic: Antimetabolites[21,33]

Cytotoxic antimetabolites include:
Capecitabine, Cladribine, Cytarabine, Fludarabine phosphate, Fluorouracil, Gemcitabine, Mercatopurine, Methotrexate, Raltitrexed, Tegafur with uracil, Tioguanine (Thioguanine).

CAPECITABINE[21.50]

❖ **XELODA Tab. Roche**
Capecitabine 500mg/tablet.
It is a unique, tumour-activated, oral therapy, for patients with locally advanced and metastatic solid cancers.
Mode of action: Following absorption through the intestine, capecitabine is converted to 5-fluorouracil through three steps of enzymatic action- initially in the liver cells and then either in the liver or in the tumour cells by two enzyme action, viz. carboxylesterase & cytidine deaminase respectively & finally in the tumour by the action of enzyme 'thymidine phosphorylase' (TP). 5-fluorouracil is then incorporated into tumour cell DNA and RNA and inhibits thymidylate synthetase and consequently tumour cells proliferation.
Ind: Capecitabine is indicated as first-line therapy in advanced colorectal cancer. Treatment of patients with metastatic breast cancer resistant to both paclitaxel and an anthracycline-containing chemotherapy regimen or resistant to paclitaxel and for whom further anthracycline therapy is not indicated.
C/I: Known hypersensitivity to capecitabine or fluoropyrimidine. It is also contraindicated in patients with severe renal impairment (creatinine clearance below 30ml/min).
S/E: Capecitabine is generally well tolerated. Commonly capecitabine causes low incidence of myelosuppression, hair loss, neurological toxicity, and nausea and vomiting. The majority of adverse effects occur during the first cycle of therapy.
The incidence of grade 3-4 toxicities in a clinical study is shown as following- diarrhea (14%), hand-foot syndrome (10%), fatigue and stomatitis (7%), neutropenia (3%), neurotoxicity (1%), alopecia (0%). (Hand-foot syndrome is redness or erythema and discomfort of the palms and soles).
Precautions: Patients receiving therapy with capecitabine should be monitored by a physician experienced in the use of cancer chemotherapeutic agents.
Most adverse events are reversible and do not require permanent discontinuation of therapy, although doses may need to be withheldor reduced.
Pregnancy & lactation: Capecitabine is not recommened in pregnant women. It should also be avoided in a nursing mother unless the benefit to the mother outweighs the potential risk to the nursing infant. Women of childbearing potential should be advised to avoid becoming pregnant while receiving treatment with capecitabine.

Dosage & Admin: Capecitabine tablets are administered orally with water, and are given within 30 minutes after a meal. The total daily dose of capecitabine is to be given into two divided doses (morning and evening). Intermittent therapy- the recommended dosage for capecitabine monotherapy is 2500mg/m2/day (maximum tolerated dose as 3000mg/m2/day) for 3 two weeks cycle with an interval of one-week rest following each cycle. The patients responding to initial (3 cycle) therapy should continue capecitabine till they maintain tumour response or stable disease. Continuous therapy- the maximum tolerated dose for capecitabine monotherapy is 1650mg/m2/day as continuous schedule. The rest period is avoided in continuous therapy. There is no need for prior adjustment of the dose for mild to moderate hepatic dysfunction due to liver metastases.
Combination dose with docetaxel- 500mg/m2/ day for 1-14 days can be given with 75mg/m2 of docetaxel for once in theree weeks.
Combination dose with paclitaxel- 650mg/m2/ day for day 1-14 (using the intermittent schedule) can be safely administered with paclitaxel 175mg/m2 (every 3 weeks) regardless of the extent of prior therapy.

Drug inter: Capecitabine and its metabolites do not significantly bind with plasma proteins. Capecitabine does not induce or inhibit

cytochrome P450 enzymes. It is therefore unlikely that capecitabine will interact with other pharmaceutical agents. Capecitabine can be administered concomitantly with antacids, antihistamines, NSAIDs, morphine, paracetamol, antiemetics, & H_2 antagonists without clinically significant effects.
500mg tab x 1's pack: 270.00 MRP
(Price could not be revised).

CYTARABINE[21,121]

❖ **CYTARABINE Inj. Choongwae/NTS**
Cytarabine (Cytosine arabinoside) 100mg/5ml vial: Injection for i.v infusion.
Mode of action: Cytarabine is a cytotoxic antimetabolite. It's exact mechanism of action is unknown. In the body, cytarabine is converted to cytarabine triphosphate which inhibits the synthesis of DNA (by interfering with pyrimidine synthesis- a component of DNA) by inhibiting DNA polymerase.
Ind: Predominant use in the induction of remission of acute myelocytic leukaemia. Used singly or in combination therapy with other chemotherapeutic agents for the remission induction in lymphocytic leukaemia, chronic myeloid leukaemia, erythroleukaemia and in the treatment and maintenance therapy of meningeal leukaemia and other meningeal neoplasma.
C/I: Cytarabine is contraindicated in patients with a known hypersensitivity to the drug.
A/R: The major adverse effect of cytarabine is haematologic toxicity.
Myelosuppressinon is manifested by megaloblastosis, leucopenia, anaemia, reticulopenia and thrombocytopenia. The severity of these adverse effects depend on the dose and the schedule of administration.
Nausea and vomiting usually occur more frequently following rapid i.v administration as opposed to continuous infusion of the drug.
Other adverse effects of the GI tract include- anorexia, diarrhoea, oral and anal inflmmation, abdominal pain, oesophagitis, sore throat, oesophageal ulceration and GI haemorrhage.
Due to its immunosuppressive effect viral, bacterial, fungal & parasitic infection may occur.
Hepatic dysfunction characterised by jaundice, elevation in serum bilirubin, transaminase and alkaline phosphatases have also ocurred.
Other less major adverse effects include- fever, rash, conjuctivitis, alopecia, chest pain, dizziness, myalgia, bone pain, hyperuricaemia, cardiac and respiratory distress etc.
Use in lactation: Women should be advised not to breast-feed while being treated with cytarabine.
Dosage & admin: Single drug therapy in the induction of remission in adults with acute myelocytic leukaemia:
Cytarabine 200mg/m² daily by continuous i.v infusion over 24 hrs for 5 days (120 hrs)- total dose 1000mg/m².
The course is repeated every 2 weeks.
Modifications based on haematologic response should be made. Clinical experience to date indicates that success with cytarabine therapy depends more on adeptness in modifying day to day dosage to obtain maximum leukaemia cell kill with tolerable toxicity. Therefore dosage of cytarabine must be based on clinical and haematologic response & tolerance of the patient.
Cytarabine can be administered intravenously either as a bolus push or as a continuous infusion. It may also be administered subcutaneously or intrathecally.
Cytarabine combination therapy: **Plesae see package insert.**
Drug inter: To be cautious when using other myelosuppressive drugs concurrently as the incidence and severity of haemotologic toxicity may be exacerbated.
Patient may develop acute pancreatitis during cytarabine treatment if he had prior treatment with L-asparaginase.
100mg (5ml) vial: 116.42 MRP
(Price could not be revised).

5-FLUOROURACIL[21,93]

5-FLUOROURACIL: Injection
5-Fluorouracil (as sodium salt) is available in ampoules & vials, viz 250mg in 10ml ampoule, 250mg in 5ml vial, & 500mg in 10ml vial: injection.
Ind: Treatment of choice for metastatic colon cancer. It is also used to treat other solid tumours particularly breast cancer. It may also be used topically for certain malignant skin lesions
S/E: Nausea, vomiting; Bone marrow suppression; Alopecia; extravasation may cause local tissue necrosis ; mucositis, & rarely a cerebellar syndrome.
Precautions: See above under Alkeran.
Dosage & admin: Adult: *By injection:* 12mg/kg body-wt. i.v daily on 3 consecutive days, if no signs of toxicity, give 6mg/kg daily i.v on the alternate days i.e 5th, 7th & 9th days. Maintenance, 5-15mg/kg i.v once weekly.
By infusion: **A dose of 15mg/kg daily (but not more than 1gm per infusion) is diluted in 500ml of 5% dextrose solution & infused at a rate of 40 drops/min. over 4 hours. Some patient may have received a maximum dose of 30gm at a maximum rate of 1gm daily.**

❖ **FLURACEDYL Inj. Pharmachemie**
5-Fluorouracil (as sodium salt) 250mg/10ml ampoule: injection.
250mg amp (10ml) x 1's pack: 450.00 TP
(Price could not be revised).

❖ **5-FU Inj. Choongwae/NTS**
5-Fluorouracil (as sodium salt) 250mg/5ml vial & 500mg/10ml vial: injection.
250mg vial (5ml) x 1's pack: 38.80 MRP
500mg vial (10ml) x 1's pack: 75.52 MRP
(Price could not be revised).

GEMCITABINE[95(a)]

GEMCITABINE: Injection
Gemcitabine is a nucleoside analog that exhibits antitumor activity. It is lyophilized product for intravenous use, available in two strengths, 200mg and 1000mg vial for injection.
Ind: Gemcitabine is indicated for the treatment of patients suffering from, locally advanced or metastatic non small cell lung cancer, locally advanced or metastatic adenocarcinoma of the pancreas, bladder cancer, ovarian cancer and metastatic breast cancer who have relapsed following adjuvant/neoadjuvant chemotherapy, in combination with paclitaxel. Prior chemotherapy should have included an anthracycline unless clinically contraindicated.

C/I: Known hypersensitivity to gemcitabine. Anaphylactoid reaction has been reported rarely

S/E: Myelosuppression is usually the dose-limiting toxicity with gemcitabine therapy.

Precautions: Use caution in patitnt with preexisting renal impairment or hepatic insufficiency.

Safe and effective regimens for the administration of gemcitabine with therapeutic doses of radiation have not yet been determined.

Warnings: Infusion times of gemcitabine longer than 60 minutes and more frequent than weekly. dosing have been shown to increases toxicity. Pulmonary toxicity has been reported with the use of gemcitabine. In cases of severe lung toxicity, gemcitabine therapy should be discontinued immediately and appropriate supportive care measures should be instituted. Hemolytic-uremic syndrome (HUS) and/or renal failure have been reported following one or more doses of gemcitabine. Renal failure leading to death or requiring dialysis, despite discontinuation of therapy, has been rarely reported. The majority of the cases of renal failure leading to death were due ot HUS. Serous hepatotoxicity, including liver failure and death, has been reported very rarely in patients receiving gemcitabine alone or in combination with other potentially hepatotoxic drugs.

Dosage & admin: The recommended dose for single drug chemotherapy or for concomitant use with cisplatin is 1000mg/m² administered by i.v infusion of 30 munutes. The administration must be repeated once weekly for three weeks. Followed by a one week rest period. This 4 week cycle is then repeated.

Monitoring & dosage modifications:
Myelosuppression is usually the dose-limiting toxicity with gemcitabine therapy; dosage adjustment for hematologic toxicity may be required for gemcitabine and for cisplatin. Patients should be assessed with CBC, including differential and platelet count, prior to each dose of gemcitabine. Modify or suspend therapy according to the dosage reduction guidelines in the package insert. Serum creatinine, potassium, calcium and magnesium should be monitored during combination therapy with cisplatin. Hepatic and renal function (including transaminases and serum creatinine) should be evaluated prior to therapy with gemcitabine and periodically thereafter.

❖ **GEMZAR Inj. Lilly Oncology/Int. Agencies (Bd.)**
Gemcitabine hydrochloride INN, equivalent to 200mg & 1gm of gemcitabine/vial: injection.
200mg vial x 1's pack: 2803.25 MRP
1gm vial x 1's pack: 13369.53 MRP

MERCAPTOPURINE[21,47]

❖ **PURINETHOL Tab. GlaxoSmithKline**
Mercaptopurine 50mg/tablet.
Ind: Acute leukaemias (particularly in children)
S/E: Nausea, vomiting; alopecia; higher doses cause marrow toxicity .
Precautions: Reduce dose in renal failure ; concurrent admin. of allopurinol interferes with the metabolism of mercaptopurine resulting in higher drug concentrations & marrow toxicity; see also under Alkeran; pregnancy.
Dosage & admin: Adult & Child: 2.5mg/kg body-wt. daily increasing after 4 weeks if necessary to 5mg/kg dody-wt. daily.
25's pack: 1019.00 MRP

METHOTREXATE[21,93,124]

METHOTREXATE: Tablet/Injection
Methotrexate is a folate antagonist. It is used widely & effectively as an antineoplastic chemotherapeutic agent. It is also useful in the treatment of psoriasis. Recently, methotrexate is widely used as a disease modifying anti-rheumatic drug, that is suitable for moderate to severe rheumatoid arthritis.
Methotrexate is available as 2.5mg & 10mg oral tablet and 50mg vial for parenteral injection.
Mode of action: Methotrexate inhibits the enzyme dihydrofolate reductase, essential for the synthesis of purines and pyrimidines and thus DNA and RNA synthesis are interrupted. Folate antagonists kill cells during the Sphase of the cell cycle.
Ind: *As antineoplastic drug:* Breast carcinoma, trophoblastic tumours, choriocarcinoma, hydatidiform mole. Palliative treatment of acute lymphoblastic leukaemia. Non-Hodgkin's lymphomas & a number of solid tumours. Therapy for established case of meningeal carcinoma or lymphoma.
As disease modifying anti-rheumatic drug (DMARD): Now a days, methotrexate is widely used as a disease modifying anti-rheumatic drug (DMARD) that is suitable for moderate to severe rheumatoid arthritis.
In psoriasis treatment: It is also useful in the treatment of psoriasis.
C/I: Pregnancy; Renal or hepatic impairment; Severe anaemia, leucopenia, thrombocyto-penia, bone marrow aplasia.
S/E: See under Alkeran and also mucositis.

Precautions: See under Alkeran & also reduce dose in renal failure (kidney is its main route of excretion.); dose related toxicity in hepatic impairment; avoid when serous effusions exist, as it will accumulate in them & subsequently leak out causing myelosuppression.

Dosage & admin: ***By injection:***
Adult & Child: ***Trophoblastic tumour:*** **15-30mg i.m daily for 5 days, repeat after a period of 1 or more weeks, when all toxic effects have disappeared. In general 3 to 5 courses of therapy will be given.**
Leukaemia: **A.L.L a dosage of 3.3mg/m² (or 0.2mg/kg approx.) may be used in combination with 40-60mg prednisolone/m² (or 1.3-2mg/kg) body surface area daily for 4-6 weeks. After a remission, a maintenance dosage of 20-30mg/m² (or 0.6-1mg/kg) orally or i.m, twice a week.**
Breast cancer: **Usually used in conjunction with other cytotoxic agents or radiotherapy & /or surgery (in early stage), 10-60mg/m² (0.3-2mg/kg) typical i.v dose.**
Non-Hodgkins lymphoma: **In childhood lymphosarcoma, 90-900mg/m² (or 3-30mg/kg) by i.v injection or infusion. Higher doses being followed by recovery with calcium folinate. Burkitt's lymphoma may be treated in the early stages with a 5-day course of treatment at a dose of 15mg/m² (0.5mg/kg) daily.**
Intrathecal administration of methotrexate at a rate of 15mg/day for 4 days have been used to control invasion of the nervous system.
By mouth: (Tablet)
Rheumatoid arthritis: **By mouth, 7.5mg once weekly as a single dose or divided into 3 doses of 2.5mg given at intervals of 12 horus, adjusted according to response; maximum total weekly dose 20mg.**
Leukemia in children (maintenance): **By mouth, 15mg/m² body surface weekly in combination with other drugs.**
Maintenance therapy of acute lymphoblastic leukemia: **A common dose of 15-30mg/m² body surface, once or twice weekly by mouth with other drugs.**
Choriocarcinoma: **Treated with doses of 15-30mg daily by mouth for 5 days course and for 3-5 courses at intervals of 1-2 weeks after each course. Doses of 10-16mg/m² have also been employed in the treatment of breast cancer, often in combination with cyclophosphamide & fluorouracil.**
Treatment of psoriasis: **Single weekly doses of 10-25mg may be given by mouth, adjusted according to response; elderly consider dose reduction with extreme caution; child not recommended.**
Drug inter: Please consult manufacturer's literature.
Note: For detail & more information, consult manufacturer's literature.

❖ **EMTHEXATE Inj. Pharmachemie**
Methotrexate 50mg (as sodium salt)/vial: injection
25 x 1's pack: 3250.00 TP
(Price could not be revised).
❖ **G-METHOTREXATE Tab. Gonoshasthaya**
Methotrexate BP 2.5mg/tablet
2.5mg x 18's pack: 72.00 MRP
❖ **METHOTRAX Tab. Delta**
Methotrexate BP 2.5mg & 10mg/tablet
2.5mg x 30's pack: 149.98 MRP
10mg x 10's pack: 149.99 MRP
❖ **MTX Tab. Choongwae/NTS**
Methotrexate BP 2.5mg/tablet
2.5mg x 100's pack: 539.00 MRP
(Price could not be revised).
❖ **MTX Inj. Choongwae/NTS**
Methotrexate 50mg (as sodium salt)/2ml vial: injection
50mg vial (2ml) x 1's pack: 129.47 MRP
(Price could not be revised).

Methotrexate Antidote

FOLINIC ACID[93,121]

FOLINIC ACID (As Calcium Salt): Tablet/ Injection.
Folinic acid is available as calcium salt in water for i.m or i.v injection & tablet as oral preparation.
Mode of action: Folinic acid is the formyl derivative of tetrahydrofolic acid which is a metabolite and active form of folic acid. It is effective in the treatment of megaloblastic anaemia caused by folic acid deficiency and is a potent antidote for both the haematopoietic and reticuloendothelial toxic effects of folic acid antagonists e.g methotrexate, pyrimethamine, trimethoprim. In some cancers, folinic acid enters and rescues normal cells, in preference to tumour cells, from the toxic effects of folic acid antagonists, due to a difference in membrane transport mechanism. This principle is applied in high-dose methotrexate therapy with 'folinic acid rescue'.
Ind: Calcium folinate is indicated in- i. neutralising the immediate toxic effects of folic acid antagonists, e.g methotrexate, (thus speed recovery from methotrexate-induced mucositis or myelosuppression). ii. The treatment of megaloblastic anaemias due to folic acid deficiency, e.g in sprue, malnutrition, pregnancy, infancy, liver disease and malabsorption syndromes. iii. Folinic acid rescue, i.e using calcium folinate in conjunction with folic acid antagonists, e.g methotrexate, to minimise systemic toxicity.
It does not counteract the antibacterial activity of folate antagonists such as trimethoprim.
C/I: Calcium folinate is contraindiated in the treatment of Vitmin-B12 deficiency anaemias i.e pernicious anaemia or other megaloblastic anaemias where vitamin-B12 is deficient.
A/R: Occasional allergic reactions have been reported; pyrexia has occurred after parenteral administration.
Caution: Avoid simultaneous administration of methotrexate. Pregnancy & lactation: Controlled human studies have demonstrated no foetal risks. Since it is not known whether folinic acid is excreted into breast milk, it should be used with caution in nursing mothers.

Dosage & admin: Folinic acid may be given orally or parenterally by i.m or i.v injection or i.v infusion. When required for intravenous infusion, it may be diluted in 1 litre of 5% w/v glucose in water or normal saline.
Antidote to methotrexate (Folinic acid rescue): **In general, folinic acid should not be administered simultaneously with systemic methotrexate because the therapeutic effect of the antimetabolite may be nullified. However, when methotrexate is administered by intrathecal injection, folinic acid may be given i.m, i.v or orally concomitantly to offest systemic methotrexate without abolishing the local activity of the antineoplastic drug.**
As part of a high-dose methotrexate regimen in cancer chemotherapy, 'folinic acid rescue'

therapy should begin 8-24 hours after the beginning of methotrexate administration. Generally, doses up to 120mg have heen given over 12-24 hours by i.m, or i.v injection or i.v infusion, followed by 12-15mg i.m or 15mg orally, every 6 hours for the next 48 hours. With lower doses of methotrexate, 15mg folinic acid orally every hours for 48-72 hours may be sufficient.

Treatment of overdose of folic acid antagonists: **In cases of overdosage of folic acid antagonist, folinic acid may be administered by i.v infusion in doses up to 75mg within 12 hours, followed by 12mg i.m every 6 hours for 4 doses. In general, where overdosage is suspected, the dose of folinic acid should be equal to or higher than the offending dose of the folic acid antagonist administered, and should be given as soon as possible; preferably within the first hour, after which it is much less effective.**

Treatment of megaloblastic anaemia: **15mg orally daily both adult and children.**

Overdosage: Doses of calcium folinates as high as 5000mg have been administered with no apparent adverse effects. Such doses suggest that administration of this drug is relatively safe. Signs of excessive dosing, if they occur, should be treated symptomatically.

Drug inter: No information available.

❖ **RESCUVOLIN Tab. Pharmachemie.**
Folinic acid (as calcium folinate) 15mg/tablet.
10 tabs pack: 680.00 TP
(Price could not be revised).

❖ **RESCUVOLIN Inj. Pharmachemie.**
Folinic acid (as calcium salt in water)
50mg/ampoule: injection
10 amps pack: 4700.00 TP
(Price could not be revised).

1.4 Cytotoxic: Vinca Alkaloids & Etoposide

Cytotoxic vinca alkaloids & etoposide include: ***Etoposide, Vinblastine, Vincristine, Vindesine, Vinorelbine.***

ETOPOSIDE[21,93]

ETOPOSIDE: Injection
Etoposide is a semisynthetic derivative of podophyllotoxin used in the treatment of certain neoplastic diseases. It is available as etoposide 20mg/ml; 5ml (100mg) vial: injection

Mode of action: The predominant effect of etoposide appears to be DNA synthesis inhibiton, prodably caused by interaction with topoisomerase II. It does not interfere with microtubular assembly.

Ind: small cell carcinoma of the bronchus, the lymphomas and testicular tumors, in combination with other chemotherapeutic agents.

C/I: Myelosuppression, hypersen-sitivity to etoposide or one of the other constituents.

A/R: Myelosuppression (is dose limiting & bone marrow recovery is usually complete by day 21, & no cumulative toxicity has heen reported); anaphylactic-like reactions; alopecia (reversible); transient hypotension following rapid i.v administration is reported in 1% to 2% of patients. Other effects are nausea, vomiting, diarrhoea, mucositis, peripheral neuropathy, increased liver function tests with high doses, radiation recall dermatitis have been reported.

Precautions & warnings: Repeated bone-marrow study both druing and after therapy. platelet count below 50,000/mm3 or an absolute neutropphil count below 500/mm3 is an indication to withold futher therapy until the blood counts have sufficiently recovered. Etoposide is intendend for i.v administration only. Extravations results in a severe and progressive tissue necrosis. If extravasation occurs, stop immediately and restarted in another vein. Cooling, flooding with normal saline and local infiltration with corticosteroids have been reported as therapeutic measures. Avoid any contact with Etoposide during handling.

Dosage & admin: Etoposide injection for infusion must be diluted prior to use with either 5% dextrose in water, or 0.9% sodium chloride solution to give a final concentration of 0.2 or 0.4mg/ml. If solutions are prepared at concentrations above 0.4mg/ml, precipitation may occur. The usual dose of etoposide in combination with other approved chemotherapeutic agents, ranges from 100-120mg/m²/day for 3-5 days. Chemotherapy courses are repeated at 3 to 4 week intervals after adequate recovery from any toxicity. In patients with renal function impairment the dose should be lowered. Etoposide is intended for i.v administration only. To prevent the occurrence of hypotension, the infusion should be given over at least 30-60 minutes.

Overdosage: The management of bone marrow depression is symptomatic, including antibiotics and transfusions.

❖ **EPOSIN Inj. Pharmachemie**
Etoposide 20mg/ml; 5ml (100mg) vial: injection
1 vial (100mg/5ml) pack: 560.00 TP
(Price could not be revised).

❖ **LASTET Inj. Nippon Kayaku/NTS**
Etoposide 20mg/ml; 5ml (100mg) vial: injection
1 vial (100mg/5ml) pack: 404.oo MRP
(Price could not be revised).

VINBLASTINE[21,72,121]

VINBLASTINE: Injection
It is a vinca alkaloid preparation.

Ind: Lymphomas; certain solid tumours e.g. testicular teratoma; neuroblastoma; choriocar-cinoma resistant to other therapy; certain other malignant conditions; mycosis fungoides.

C/I: Leucopenia; bacterial infection.

S/E: Myelosuppression is more, but less neurotoxicity; nausea; alopecia; leucopenia.

Precautions: Pregnancy; caution in handling-avoid contact with eyes. Monitor blood counts. See also under Alkeran.

Dosage & admin: ***Adult & child:*** **0.1mg/kg body-wt i.v weekly increasing as required by 0.05mg/kg body-wt to maximum 0.5mg/kg weekly. Maintenance maximum dose not causing leucopenia.**

❖ **VINBLASTIN-RICHTER Inj. Gedeon Richter/City Overseas**
Vinblastine sulphate (as powder for reconstitution) 10mg vial: injection
Dose: See above under the text.
10mg vial x 1's pack: 720.00 TP

VINCRISTINE[21,72,121]

VINCRISTINE: Injection
It is a vinca alkaloid preparation.

Ind: Acute leukaemias, lymphomas, certain other malignant conditions (e. g. solid tumours).

S/E: Its predominant toxicity affects the peripheral nerves and autonomic nervous system-deep tendon reflexes are usually lost and peripheral paraesthesia and numbness commonly occur; Abdominal bloating and constipation; Alopecia, and rarely hyponatraemia.

Precautions: Ii nervous symptoms are severe or motor weakness is found, doses should be reduced ; if the symptoms continue to progress, vincristine should be stopped ; recovery in these instances is usually slow but complete. Pregnancy; also see under Alkeran.

Dosage & admin: Adult: 0.025 to 0.075mg/kg body wt. to a max. recommended total dose of 2mg intravenously weekly .
Child: Initially 0.05mg/kg body-wt. followed by weekly increments of 0.025mg/kg upto a max. of 0.15mg/kg. After remission, the dosage may be reduced to 0.025mg/kg weekly.

❖ **VINCRISTIN-RICHTER Inj. Gedeon Richter/City Overseas**
Vincristine sulphate (as powder for reconstitution) 1mg vial: injection
1mg vial x 1's pack: 550.00 TP

❖ **VINCRISTINE Inj. Pharmachemie**
Vincristine sulphate (as powder for reconstitution) 1mg vial: injection
10 vials pack: 2650.00 TP
(Price could not be revised).

1.5 Other Cytotoxic Antineoplastic drugs

Drugs included in this miscellaneous group of cytotoxic antineoplastic drugs are as following: ***Amsacrine, Bevacizumab, Bexarotene, Bortezomib, Crisantaspase, Dacarbazine, Hydroxycarbamide (Hydroxyurea), Imatinib, Pentostatin, Platinum compounds (Carboplatin, Cisplatin, Oxaliplatin), Porfimer sodium, Procarbazine, Taxanes (Docetaxel, Paclitaxel), Temoporfin, Temozolomide, Topoisomerase 1 inhibitors (Irinotecan, Topotecan), Trastuzumab, Tretinoin etc.***

BEVACIZUMAB[50]

❖ **AVASTIN Tab. Roche**
Bevacizumab 25mg/ml; 4ml (100mg) vial: Injection.

Ind: Bevacizumab in combination with fluoropyrimidine-based chemotherapy is indicated for the first-line treatment of patients

with metastatic carcinoma of the colon or rectum.
C/I: Bevacizumab is contraindicated in patients with known hypersensitivity to any components of the product (chinese hamster ovary cell products or other recombinant human or humanised antibodies).
S/E: Common adverse events of any grade that were identified as possibly bevacizumab related toxicities were anorexia, constipation, epistaxis, hypertension, proteinuria and pain. Patients treated with bevacizumab with or without chemotherapy in any trials included decreased neutrophil count, decreased white blood count, protein urine present, decreased blood potassium, decreased blood phosphorus, increased blood glucose & increased blood alkaline phosphatase.
Precautions: Hypertension: Caution should be exercised before initiated bevacizumab therapy in these patients. Monitoring of blood pressure is recommended during bevacizumab therapy.
Wound healing: It is recommended that bevacizumab therapy not be initiated within 28 days following major surgery as such patients were excluded from clinical trials.

Pregnancy & lactation: Bevacizumab should not be used during pregnancy. In women with childbearing potential, appropriate contraceptive measures are recommended during bevacizumab therapy. Women should be advised to discontinue nursing during bevacizumab therapy and not to breast feed for at least 6 months following the last dose of the therapy.

Dosage & admin: The recommended dose of bevacizumab is 5mg/kg of body weight given once every 14 days as an intravenous infusion. Bevacizumab should be prepared by a healthcare professional using aseptic technique. Withdraw the volume of bevacizumab equivalent to a dose of 5mg/kg body weight and dilute in a total volume of 100ml of sterile, pyrogen-free 0.9% sodium chloride. No incompatibilities between bevacizumab and polyvinyl chloride or polyolefin bags have been observed (error! reference source not found). Bevacizumab infusions should not be administered or mixed with dextrose or glucose solutions (error! reference source not found). Do not administer as an intravenous push or bolus. The initial bevacizumab dose should be delivered over 90 minutes as an intravenous infusion. If the first infusion is well tolerated, the second infusion may be administered over 60 minutes. If the 60-minute infusion is well tolerated, all subsequent infusions may be administered over 30 minutes.
After resolution of the vial content chemical and physical in-use stability has been demonstrated for 48 hours at 2°C-30°C in 0.9% sodium chloride solution. However, from a microbiological point of view, the product should be used immediately.
Drugs inter: No formal drug interaction studies with other antineoplastic agents have been conducted. However, the existing data suggest that bevacizumab does not affect the pharmacokinetics of 5-fluorouracil (5-FU), carboplatin, paclitaxel and doxorubicin.
Storage: Store vials in a refrigerator at 2°C-8°C. Keep vial in the outer carton of the refrigerator due to light sensitivity. Do not freeze. Do not shake.
4ml (100mg) vial x 1's pack: 39375.00 MRP (Price could not be revised).

CISPLATIN[21,93]

CISPLATIN: Injection
Cisplatin is a cytotoxic antineoplastic drug belonging to platinum compounds. It is available as 10mg & 50mg in vial for injection.
Ind: Certain solid tumors including metastatic testis carcinoma, ovarian carcinoma, bladder carcinoma, and head & neck tumors.
A/R: It is a toxic drug. Common problems include severe nausea and vomiting, may persist for 1-7 days after treatment. The symptoms may be so severe that discontinuation of therapy is indicated. Anti-emetics may cause less severe nausea and vomiting.
Nephrotoxicity is dose-related and cumulative; initially it is reversible, but repeated cisplatin administration may cause irreversible renal function impairment. The risk of nephrotoxi-city can be reduced by prehydration and careful monitoring (renal abnormalities are manifested by elevations in BUN, serum uric acid and creatinine, & a decrease in creatinine clearance).
Myelotoxicity (myelosuppression occurs in 25-30% of patients receiving cisplatin, but is usually not severe).
Ototoxicity- high tone hearing loss and tinnitus in about 30% of patients; hearing loss may be unilateral and is dose dependent & it may be irreversible. Ototoxicity may be more severe in children or in the elderly.
Neurotoxicity (is dose-dependent and usually occurs after prolonged treatment)- bilateral, sensoric neuropathy, manifested by paresthesias, decreased vibratory sensation and decreased deep-tendon reflexes. Optic neuritis, with temporary blindness has been reported.
Cardiac toxicity and SGOT elevations have been reported.
There may be hypomagnesaemia, hypocalcemia, hyperuricemia.

Precautions & warnings: Patients should have a normal renal function (creatinine clearance > 90ml/min) prior to start of therapy with platosin. Before administration, adequate hydration and diuresis should be ascertained, and appropriate a nti-emetic medication should be given.
Audiometric monitoring is recommended prior to and during therapy with platosin.
The toxic effects commonly necessitate dose reduction and/or drug withdrawal. It is pre-ferable that treatment with this drug be super-vised by specialists familiar with its use.

Dosage & admin: Platosin, powder for injection 10mg and 50mg should be reconstituted with 10ml or 50ml respectively, of sterile normal saline. To decrease the nephrotoxicity pretreatment hydration with atleast 1 litre of 5% dextrose/ 0.9% saline (1:1) is recommended. When urine flow is less than 100ml per hour, 100-200ml 15% mannitol may be administered. It is recommen ded to administer Platosin in 2 litres 5% dextrose/ 0.9% saline (1:1) intravenously in 6-8 hours; after administration, hydration and diuresis should be maintained during 24 hours. The next dose of Platosin should not be given until the renal function has returned to normal (creatinine clearance > 90ml/min). The usual dose of Platosin is 50-100mg/m2 as a single intravenous administration or 20mg/m2 intravenously on each of 5 consecutive days. The dose may be adjusted, depending on combination with other cytostatics. A course can be administered once every 3-4 weeks, depending on results of blood tests, renal function tests and audiometrice tests.

❖ **CISPLATIN Inj. DBL/Globex**
Cisplatin (as powder for reconstitution) 50mg/vial: injection
50mg vial pack: 630.87 MRP
❖ **PLATOSIN Inj. Pharmachemie.**
Cisplatin (as powder for reconstitution) 10mg in 10ml vial (1mg/1ml): injection
10 x 1's pack: 1687.00 TP
(Price could not be revised).

DOCETAXEL[35]

❖ **TAXOTERE Inj. Sanofi-aventis**
Docetaxel 20mg vial with solvent.: injection
Ind: Docetaxel monotherapy is indicated for the treatment of-
1. Locally advanced or metastatic breast cancer- a) who are resistant or have recurrent disease after a cytotoxic chemotherapy; b) where adjuvant cytotoxic therapy (including anthracycline) has failed.
2. Non Small Cell Lung caner.
3. Ovarian cancer.
C/I: Severe hypersensitivy to drug or polysorbate 80; baseline neutrophil count of <1,500 x 109/L; pregnancy or breast feeding; significant liver impairment.
A/R: Neutropenia, thrombocytopenia, anaemia, hypersensitivity reactions, fluid retention, peripheral neuropathy, infectious episodes, increases in liver enzyme levels, alopecia, asthenia, mucositis, injection site reactions, gastrointestinal upsets, hypotension, arthralgia and myalgia.

Precautions & warnings: Administer in units specializing in cytotoxic chemotherapy under the supervision of an oncologist. Reduce dosage in patients with febrile neutropenia, neutrophil count <500 x109/L for more than one week, severe or cumulative cutaneous reactions or severe peripheral neuropathy. Severe hypersensitivity reactions require immediate discontinuation of the drug and appropriate therapy should then start. Severe cutaneous skin reactions, such as eruptions require interruption or discontinuation of treatment. Patients with severe fluid retention such as pleural effusion, pericardial effusion or ascites should be monitored closely. In patients who have both elevations of transaminase values (ALT and/or AST) greater than 1.5 times the upper limit of normal (ULN) & increases in alkaline phosphatase greater than 2.5 times the ULN, the reco-mmended dose of docetaxel is 75mg/m2.

Premedication: Premedication with a corticosteroid (dexamethasone) by mouth for five days, starting on the day before each course of docetaxel, is recommended for reducing fluid retention and hypersensitivity reactions.
Dosage & admin: Adult- 100mg/m2 administered as a one-hour i.v. infusion every three weeks. Elderly, no special instruction.
Child- safety and efficacy not established.
Hepatic impairment: **reduce dosage, discontinue in severe cases.**
Adminisration: **Reconstitute the concentrate preparation with accompanying solvent vial and dilute with infusion solution (0.9% sodium chloride or 5% dextrose for i.v injection) before use. The concentration of Docetaxel in infusion solution should be between 0.3-0.9mg/ml. Apply usual cytotoxic caution when preparing or handling the drug.**
Drug Inter: modification of cytochrome P450-3A by concomitant medication may alter the metabolism of docetaxel. Caution should be exercised when treating patients with such drugs.
20mg vial with solvent: 20902.50 MRP

HYDROXYCARBAMIDE (HYDROXYUREA)[51]

❖ HYDREA Cap. Bristol-Myers Squibb/ Kapricorn
Hydroxyurea USP 500mg/capsule.
Mode of action: Hydroxyurea is an antineoplastic agent. It's mode of action is still hypothetical, that hydroxyurea causes an immediate inhibition of DNA synthesis by acting as a ribonucleotide reductase inhibitor, without interfering with synthesis of ribonucleic acid or of protein. For more information, consult manufacturer's literature.
Ind: Significant tumor response to hydroxyurea has been demonstrated in melanoma, resistant chronic myelocytic leukemia, & metastatic, or inoperable carcinoma of the ovary.
Hydroxyurea used concomitantly with irradiation therapy is intended for use in the local control of primary squamous cell (epidermoid) carcinomas of the head & neck, excluding the lip.
C/I: Hydroxyurea is contraindicated in patients with marked bone marrow depression i.e leukopenia (<2500/mm3 WBC) or thrombocytopenia (<100,000/mm3), or severe anemia. Known hypersensitivity to hydroxyurea or any other component of its formulation.
A/R: Adverse reactions have been primarily bone marrow depression (leukopenia, anemia, and occasionally thrombocytopenia), and less frequently gastrointestinal symptoms (stomatitis, anorexia, nausea, vomiting, diarrhea, and constipation), and dermatological reactions such as maculopapular rash, skin ulceration, dermatomyositis-like skin changes, peripheral and facial erythema. Hyperpigmentation, atrophy of skin and nails, scaling and violet papules have been observed in some patitns after several years of long-term daily maintenance therapy with hydroxyurea.
Precautions & warnings: Therapy with hydroxyurea requires close supervision. The complete status of the blood, including bone marrow examination, if indicated, as well as kidney function and liver function should be determined prior to, and repeatedly during treatment. The determination of the hemoglobin level, total leukocyte counts, and platelet counts should be performed at least once a week throughout the course of hydroxyurea therapy. If the white blood cell count decreases to less than 2500/mm3, or the platelet count to less than 100,000/mm3, therapy should be interrupted until the values rise significantly toward normal levels. Severe anemia, if it occurs, should be managed without interrupting hydroxyurea therapy. Hydroxyurea should be used with caution in patients with marked renal dysfuncition. Patients who develop signs and symptoms of pancreatitis or hepatotoxicity should permanently discontinue therapy with hydroxyurea.
Pregnancy & lactation: Drugs which affect DNA synthesis, such as hydroxyurea, may be potential mutagenic agents. Hydroxyurea can cause fetal harm when administered to a pregnant woman. But, there are no adequate and well-controlled studies in pregnant women. If this drug is used during pregnancy or if the patient becomes pregnant while taking this drug, the patient should be apprised of the potential harm to the fetus. Women of childbearing potential should be advised to avoid becoming pregnant. Hydroxyurea is excreted in human milk. Because of the potential for serious adverse reactions with hydroxyurea, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into acount the importance of the drug to the mother.
Dosage & admin: All dosages of hydroxyurea should be based on the patients actual or ideal weight whichever is less. Concurrent use of hydroxyurea with other myelosuppressive agents may require adjustment of dosages.
Solid tumours: **Intermittent therapy: 80mg/kg administered orally as a single dose every third day. Continuous therapy: 20-30mg/kg administered orally as a single dose daily.**
Concomitant therapy with irradiation: Carcinoma of the head & neck- 80mg/kg administered orally as a single dose every third day.
Administration of hydroxyurea should begin at least seven days before initiation of irradiation & continued during radiotherapy as well as indefinitely afterwards provided that the patient may be kept under adequate observation & evidences on unusual or severe reactions.
Resistant chronic myelocytic leukemia: **Until the intermittent therapy regimen has been evaluated, continuous therapy (20-30mg/kg administered orally as a single dose daily) is recommended. An adequate trial period for determining the antineoplastic effectiveness of hydroxyurea is six weeks of therapy. When there is regression in tumour size or arrest in tumor growth, therapy should be continued indefinitely. Therapy should be interrupted if the white blood cell count drops below 2500/mm3, or the platelet count below 100,000/mm3. In these cases, the counts should be re-evaluated after three days & therapy resumed when the counts return to acceptable levels. Since the hematopoietic rebound is prompt, it is usually necessary to omit only a few doses. If prompt rebound has not occurred during combined hydroxyurea & irradiation therapy, irradiation may also be interrupted. However, the need for postponement of irradiation has been rare. Severe anemia, if it occurs, should be corrected without interrupting hydroxyurea therapy. In patients who have recently received extensive radiation therapy or chemotherapy with other cytotoxic drugs, hydroxyurea should be administered cautiously.**
Pediatric use: Safety & effectiveness in pediatric patitnts have not been established.
Drug inter: There are no data on concomitant use of hydroxyurea with other drugs in humans. Concurrent use of hydroxyurea and other myelosuppressive agents or radiation therapy may increase the likelihood of bone marrow depression or other adverse events.
Since hydroxyurea may raise the serum uric acid level, dosage adjustment of uricosuric medication may be necessary.
Note: For more information, please consult manufacturer's literature.
100's pack: 1983.00 MRP

ERLOTINIB[50]

❖ TARCEVA Tab. Roche
Erlotinib 150mg/tablet (film-coated).
Erlotinib is a highly potent selective and orally available anti-cancer drug. It is a valuable new treatment option with a proven survival benefit in advanced non-small-cell lung cancer (NSCLC).
Mode of action: Erlotinib is a human epidermal growth factor receptor (HERI/EGFR) tyrosine-kinase (TK) inhibitor. Erlotinib inhibits the binding of adenosine triphosphate to the intracellular TK domain of HERI/EGFR.
Ind: Erlotinib is indicated for: 1. The treatment of locally advanced or metastatic non-small cell lung cancer (NSCLC) after failure of at least one prior chemotherapy regimen. 2. Treatment of pancreatic cancer. 3. Treatment of other solid malignancies (glioma, head & neck etc.).
C/I: Severe hypersensitivity to erlotinib or to any of the excipients.
A/R: Rash (75%) and diarrhoea (54%) were the most commonly reported adverse reactions. Most were grade l/2 in severity and manageable without intervetion. Grade 3/4 rash and diarrhoea occurred in 9% and 6% respectively in erlotinib treated patients and each resulted in study discontinuation in 1% of patiets. Dose reduction for rash and diarrhoea was needed in 6% and 1% of patients respectively. In study BR 21, the median time to onset of rash was 8 days, and the median time to onset of diarrhoea was 12 days.
Pregnancy & lactation: There are no studies in pregnant women using erlotinib. Sudies in animals have shown some reproductive toxicity. The potential risk for humans is unknown. Women of childbearing potential must be advised to avoid pregnancy while on erlotinib. Adequate contraceptive methods should be used during therapy, and for at least 2 weeks after completing therapy. Treatment should only be continued in

pregnant women if the potential benefit to the mother outweighs the risk to the foetus. It is not known whether erlotinib is excreted in human milk. Because of the potential harm to the infant, mothers should be advised to discontinue breast feeding while receiving erlotinib.
Dosage & admin: The recommended daily dose of erlotinib is 150mg taken at least one hour before or two hours after having food. Erlotinib treatment should be supervised by a physician experienced in the use of anticancer therapies.

Drug inter: Caution should be exercised when erlotinib is combined with a potent CYP3A4 inhibitor, e.g azole antifungals (i.e ketoconazole, itraconazole, voriconazole), protease inhibitors, erythromycin or clarithromycin. If necessary, the dose of erlotinib should be reduced, particularly if toxicity is observed. Patients taking warfarin or other coumarin-derivative anticoagulants, should be monitored regularly for changes in prothrombin time or INR. Patients who are still smoking should be encouraged to stop smoking while taking erlotinib, as plasma concentrations cuould be reduced otherwise. Concomitant administration of inhibitors of Pgp, eg. cyclosporine and verapamil, may lead to altered distribution and/or altered elimination of erlotinib. The effect of antacids, proton pump inhibitors and H_2 antagonists on the absorption of erlotinib have not been investigated but absorption may be impaired, leading to lower plasma levels. Caution should be exercised when these medicinal products are combined with erlotinib.
150mg x 30's pack: 202500.00 MRP
(Price could not be revised).

IMATINIB[87]

IMATINIB: Capsule
Imatinib is a derivative of 2-phenylaminopyrimidine. It is available as imatinib mesylate INN 100mg/capsule.
Mode of action: Imatinib selectively inhibits certain protein tyrosine kinases. It specifically blocks the binding site for ATP in Abl kinase. This inhibits the ability to transfer phosphate groups from ATP and phosphorylates tyrosine residues on substrate proteins which in turn prevents the transduction of energy signals necessary for Abl induced cellular proliferation and apoptosis.
Ind: For the first line treatment in philadelphia chromosome positive chronic myeloid leukemia (CML); CML myeloid blast crisis, CML accelerated phase; CML in chronic phase prior after interferon-a therapy. Imatinib is also indicated for the treatment of patients with kit (CDI 17) positive unresectable and/or metastatic malignant gastrointestinal stromal tumors (GIST).
C/I: Hypersensitivity.
S/E: The most commonly reported drug-related adverse events are mild nausea (56%), vomiting (33%), diarrhea (24%), myalgia (11%), muscle cramps (33%), and rash (25%). Superficial oedemas are a common finding in all studies and were described primarily as periorbital (30%), or lower limb oedema (17%). Neutropenia, thrombocytopenia, febrile neutropenia, pancytopenia, anorexia, headache, dizziness, taste disturbance, paresthesia, insomnia, conjuctivitis, pleural effusion, epistaxis, nausea, vomiting, diarrhea, dyspepsia, abdominal pain, abdominal distension, flatulence, constipation, dry mouth, periorbital oedema, dermatitis, eczema, rash, face oedema, eyelid oedema, pruritus, erythema, dry skin, alopecia, night sweats, muscle spasm and cramps, musculoskeletal pain, joint swelling, fluid retention and owdema, pyrexia, fatigue, weakness, rigors, increased weight.
Precautions: Elderly patients: The efficacy of imatinib was similar in older and younger patients. Renal & hepatic insufficiency: No clinical studies are conducted, hence caution should be exercised in these patients.
Pregnancy & lactation: No adequate data are available on the use of imatinib in pregnancy and lactation.
Dosage & admin: The recommended dosage of imatinib is 400mg/day for patients in chronic phase CML and 600mg/day for patients in accelerated phase or blast crisis. The recommended dosage of imatinib is 400mg/day or 600mg/day for patients with unresectable and/or metastatic, malignant GIST. In CML, dose increase from 400mg to 600mg in patients with chronic phase disease, or from 600mg to 800mg (given as 400mg twice daily) in patients in accelerated phase or blast crisis may be considered in the absence of severe drug reaction and severe non-leukemia related neutropenia or thrombocytopenia in the following circumstances: disease progression (at any time); failure to achive a satisfactory hematologic response after at least 3 months of treatmet; loss of previously achieved hematologic response.
Children: The safety & efficacy below 18 years of age is not established.

❖ **ENLIVEN Cap. Orion**
Imatinib mesylate INN 100mg/capsule.
28's pack: 2800.00 MRP
❖ **GLIVEC Cap. Novartis**
Imatinib mesylate INN 100mg/capsule.
120's pack: 165375.00 MRP

IRINOTECAN[35]

❖ **CAMPTO Inj. Pharmacia-Pfizer/Janata**
Irinotecan hydrochloride 20mg/ml; 2ml & 5ml vial: concentrate for i.v infusion.
Ind: First and second-line treatment of adult patients with metastatic colorectal cancer. Neo adjuvant cervical cancer and recurent cervicl cancer & recurrent cervical cancer. It has been shown to be effective in lung and ovarian cancer.
C/I: Irinotecan is contraindicated in patients who have chronic inflammatory bowel disease and/or bowel obstruction, who have a history of severe hypersensitivity reactions to irinotecan hydrochloride trihydrate or to any of the excipients, during pregnacy and lactation, bilirubin >1.5 times the upper limit of the normal range, severe bone marrow failure, who performance status >2.
S/E; Cautions & Warnings: See above under Alkeran & also consult manufacturer's literature.
Dosage & Admin: Recommended dosage- 350mg/m2 administered by i.v infusion over a 30- to 90-minute period every 3 weeks as single agent. Dosage adjustments- in patients who experienced asymptomatic severe neutropenia (neutrophil count <500 cells/mm3), fever or infections associated with neutropenia (temperature > 380C and neutrophil count < 1,000 cells/mm3) or severe diarrhoea (requiring an intravenous rehydration), dosage should be reduced from 350mg/m2 to 300mg/m2; if the patient again experiences severe neutropenia, fever or infections associated with neutropenia as defined above or severe diarrhoea, the dosage should be decreased from 300mg/m2 to 250mg/m2 at the next cycle. Delayed dosing- irinotecan should not be administered until the neutrophil count returns to above 1,500 cells/mm3. In patients who experienced severe neutropenia or severe gastrointestinal adverse events such as diarrhoea, nausea and vomiting, dosing of irinotecan should be delayed until there has been a full recovery of these symptoms, specially diarrhoea. Treatment duration- treatment with irinotecan should be continued until there is an objective progression of the disease or an unacceptable toxicity.
Special populations: **patients with impaired hepatic fuction- in patients with a bilirubin < 1.5 times the ULN, patients should not be treated with irinotecan.; patients with impaired renal function- irinotecan is not recommended for use as studies in this population have not been conducted. Elderly- no specific pharmacokinetic studies have been performed in elderly, however the dose should be chosen carefully in this population due to their greater frequency of decreased biological functions, in particular hepatic function.**
Drug inter: Please consult manufacturer's literature.
Note: For further information, please consult manufacturer's literature.
2ml (40mg) vial: 4653.84 MRP
5ml (100mg) vial: 9194.16 MRP

OXALIPLATIN[35]

❖ **ELOXATIN Inj. Sanofi aventis**
Oxaliplatin 50mg/10ml concentrate solution in vial: for i.v infusion.
Oxaliplatin is a cytotoxic antineoplastic drug belonging to platinum compounds.
Ind: Oxaliplatin in combination with 5-fluorouracil (5-FU) and folinic acid (FA) is indicated for: 1. Adjuvant treatment of stage III (Duke's C) colon cancer after complete resection of primary tumour; 2. Treatment of metastatic colorectal cancer.
C/I: Oxaliplatin is contraindicated in patients- i. with known history of hypersensitivity to oxaliplatin, ii. breast feeding, iii. who have myelosuppression prior to starting first course, as evidenced by baseline neutrophils <2 x 10^9/l and/or platelet count of <100 x 10^9/l, iv. who have a peripheral sensitive neuropathy with functional impairment prior to first course, v. who have a severely impaired renal function

(creatinine clearance less than 30ml/min).
S/E; Precautions & warnings: Please see the manufacturer's literature.
Dosage & admin: For adults only.
The recommended dose for oxaliplatin in adjuvant setting is 85mg/m² intravenoulsy, repeated every two weeks for 12 eycles (6 months).
The recommended dose for oxaliplatin in treatment of metastatic colorectal cancer is 85mg/m² intravenously, repeated every 2 weeks. Dosage given should be adjusted according to tolerability.
Oxaliplatin should always be administered before 5-fluorouracil.
Oxaliplatin is administered as a 2- to 6-hour i.v infusion in 250 to 500ml of 5% glucose solution to give a concentration between 0.2mg/ml and 0.7mg/ml; 0.7mg/ml is the highest concentration in clinical practice for an oxaliplatin dose of 85mg/m².
Oxaliplatin was mainly used in combination with continuous infusion 5-fluorouracil based regimens. For the two-weekly treatment schedule 5-fluorouracil regimens combining bolus and continuous infusion were used.
After dilution oxaliplatin solution must be infused via a central venous line or peripheral vein over 2 to 6 hours. In the event of extravasation, administration must be discontinued immediately.
Renal & hepatic impairment: **Oxaliplatin has not been studied in patients with severe renal and hepatic impairment.**
In patients with moderate renal impairment, treatment may he initiated at the normally recommended dose. There is no need for dose adjustment in patients with mild renal dysfunction.
No specific dose adjustment for patients with abnormal liver function tests was performed during clinical development.
Elderly patients: **No specific dose adaptation is required for elderly patients.**
Oxaliplatin should only be used in specialised departments of oncology and should be administered under the supervision of an experienced oncologist.
Drug inter: Please see the manufacturer's literature.
Note: For full information, please consult manufacturer's literature.
50mg (10ml) vial x 1's pack: 20500.00 TP

PACLITAXEL[51]

PACLITAXEL: Injection
Paclitaxel is a natural product with anti-tumor activity. It is obtained by semi-synthetic process from Taxus baccata.
Ind: Paclitaxel is indicated as first-line and subsequent therapy for the treatment of advanced carcinoma of the ovary. As the first-line therapy, paclitaxel is indicated in combination with cisplatin.
Paclitaxel is indicated for the adjuvant treatment of node-positive breast cancer administered sequentially to standard doxorubicin-containing combination chemotherapy. In the clinical trial, there was an overall favorable effect on disease-free and overall survival in the total population of patients with receptor-positive and receptor-negative tumors, but the benefit has been specifically demonstrated by available data (median follow-up 30 months) only in the patients with estrogen and progesterone receptor-negative tumors.
Paclitaxel is indicated for the treatment of breast cancer after failure of combination chemotherapy for metastatic disease or relapse within 6 months of adjuvant chemotherapy. Prior therapy should have included an anthracycline unless clinically contraindicated.
Paclitaxel in combination with cisplatin, is indicated for the first-line treatment of non-small cell lung cancer in patients who are not candidates for potentially curative surgery and/or radiation therapy.
Paclitaxel is indicated for the second-line treatment of AIDS-related Kaposi's sarcoma.
C/I: Paclitaxel is contraindicated in patients who have a history of hypersensitivity reactions to paclitaxel or other drugs formulated in Cremophor EL (polyoxyethylated castor oil).
Paclitaxel should not be used in patients with solid tumors who have baseline neutrophil counts of <1500 cells/mm3 or in patients with AIDS-related Kaposi's sarcoma with baseline neutrophil counts of <1000 cells/mm3.
S/E; Warnings; Preaution: Please consult manufacturer's literature.
Contact of the undiluted concentrate with plasticized PVC equipments or devices used to prepare solutions for infusion is not recommended. In order to minimize patient exposure to the plasticized DEHP [di-(2-ethylhexyl) phthalate], which may be leached from PVC infusion bags or sets; diluted paclitaxel solutions should be stored in bottles (glass, polypropylene) or plastic bags (polypropylene, polyolefin) and administered through polyethylene-lined administration sets.
Dosage & admin: All patients should be premedicated prior to paclitaxel administration in order to prevent severe hypersensitivity reactions. Such premedication may consist of dexamethasone 20mg administered orally approximately 12 and 6 hours before paclitaxel, diphenhydramine (or its equivalent) 50mg I.V 30 to 60 minutes prior to paclitaxel, and cimetidine (300mg) or ranitidine (50mg) I.V 30 to 60 minutes before paclitaxel.
Treatment regimen: For patients with carcinoma of the ovary, the following regimens are recommended.

1. **For previously untreated patients with carcinoma of the ovary, one of the following recommended regimens may be given every 3 weeks. In selecting the appropriate regimen, differences in toxicities should be considered.**
   a. **Paclitaxel administered i.v over 3 hours at a dose of 175mg/m2 followed by cisplatin at a dose of 75mg/m2. Or,**
   b. **Paclitaxel administered i.v over 24 hours at a dose of 135mg/m2 followed by cisplatin at a dose of 75mg/m².**
2. **In patients previously treated with chemotherapy for carcinoma of the overy, paclitaxel has been used at several doses and schedules; however, the optimal regimen is not yet clear. The recommended regimen is paclitaxel 135mg/m2 or 175mg/m2 asministered i.v over 3 hours every 3 weeks.**

For patients with carcinoma of the breast, the following regimens are recommended.

1. **For the adjuvant treatment of node-positive breast cancer, the recommended regimen is paclitaxel, at a dose of 175mg/m2 i.v over 3 hours every 3 weeks for 4 courses administered sequentially to doxorubicin-containing combination chemotherapy.**
2. **After failure of initial chemotherapy for metastatic disease or relapse within 6 months of adjuvant chemotherapy, paclitaxel at a dose of 175mg/m2 administered intravenously over 3 hours every 3 weeks has been shown to be effective.**

Patients with non-small cell lung carcinoma: The recommended regimen is 135mg/m2 administered intravenously over 24 hours followed by cisplatin 75mg/m2 every 3 weeks.
Patients with AIDS-related Kaposi's sarcoma: Paclitaxel adminstered at a dose of 135mg/m2 given intravenously over 3 hours every 3 weeks or at a dose of 100mg/m2 given intravenously over 3 hours every 2 weeks is recommended (dose intensity 45-50mg/m2/week). In the two clinical trials evaluating these schedules, the former schedule (135mg/m2 every 3 weeks) was more toxic than the latter. In addition, all patients with low performance status were treated with the latter schedule (100mg/m2 every 2 weeks).
Drug inter: Please consult manufacturer's literature.
Note: For further information, consult manufacturer's literature.

❖ **PACLITAXEL Inj. Gosun Pharma/ Medinam**
Paclitaxel 30mg/5ml vial: injection.
5ml (30mg) vial: 3000.00 MRP
❖ **TAXOL Inj. Bristol-Myers Squibb/ Kapricorn**
Paclitaxel 30mg/5ml vial: injection.
5ml (30mg) vial: 4320.32 MRP

RETINOIC ACID[50]

❖ **VESANOID Cap. Roche**
All trans retinoic acid 10mg/capsule (soft gelatin).
Mode of action: Tretinoin is not a cytolytic agent but instead induces cyto-differentiation and decreased proliferation of APL cells in culture and in vivo.
Ind: Retinoic acid is indicated for the induction of remission in patients with acute promyelocytic leukemia (APL), French-American-British (FAB) classification M3 (including the M3 variant), or who are refractory to, or who have relapsed from, anthracycline chemotherapy, or for whom anthracycline-based chemotherapy is

contraindicated. All patients should receive consolidation and/or maintenance therapy after completion of induction therapy with retinoic acid.
C/I: Retinoic acid is contraindicated in patients with a known hypersensitivity to retinoids.
S/E: Virtually all patients experience some drug related toxicity, specially headache, fever, weakness, and fatigue. These adverse effects are seldom permanent or irreversible nor do they usually require interruption of therapy. Some of the adverse events are common in patients with APL, including hemorrhage, infections, gastrointestinal hemorrhage, disseminated intravascular coagulation, pneumonia, septicemia, and cerebral hemorrhage.
Precautions & warnings: Retinoic acid syndrome (RAS): In up to 25% of patients with APL treated with retinoic acid, a syndrome occurs which can be fatal. High dose dexamethasone for 2-3 days should be initiated immediately. Anthracycline based chemotherapy can be added when WBC counts are higher (5x109/l).
Pregnancy & lactation: Retinoic acid should not be used during pregnancy and lactation. Effective contraception must be used by all females during retinoic acid therapy and for 1 month following discontinuation of therapy.
Dosage & admin: The recommended dose is 45mg/m2/day administered as two equally divided doses until complete remission is documented. Therapy should he discontinued 30 days after achievement of complete remission or after 90 days of treatment, whichever occurs first.
Note: Full details are available from the manufacturing authority on request.
100's pack: 25875.00 MRP
(Price could not be revised).

TRASTUZUMAB[50]

❖ **HERCEPTIN Inj. Roche**
Trastuzumab 440mg/vial; powder for concentrate solution for infusion; reconstituted concentrate solution contains 21 mg/ml of trastuzumab.
Ind: Trastuzumab is indicated for the treatment of patients with metastatic breast cancer who have tumors that overexpress HER2: a) in combination with chemotherapy as first-line treatment of those patients who have not received chemotherapy for their metastatic disease, b) as monotherapy who have pre-treated with chemotherapy.
C/I: Trastuzumab is contraindicated in patients with known hypersensitivity to trastuzumab or to any other component of the product.
S/E: The most common adverse reactions are infusion-related symptoms, such as fever and chills, usually following the first infusion of trastuzumab.
Cardiac toxicity: Signs and symptoms of cardiac dysfunction, such as dyspnea, orthopnea, increased cough, pulmonary edmea, S3 gallop, or reduced ejection fraction, have been observed in patients treated with trastuzumab.
Hematological toxicity: Leukopenia, thrombocytopenia and anemia occurring in <1% of patients. No WHO grade IV toxicities were observed.
Precautions & warnings: Serious adverse reactions to trastuzumab infusion including dyspnea, hypotension, wheezing, bronchospasm, tachycardia, reduced oxygen saturation and respiratory distress have been reported infrequently. The trastuzumab infusion should be discontinued and the patient monitored until resolution of any observed symptoms. Serious reactios have been treated successfully with supportive therapy such as oxygen, beta-agonists and corticosteroids.
Pregnancy & lactation: Trastuzumab should be avoided during pregnancy and lactation unless the potential benefit for the mother outweighs the potential risk to the fetus.
Dosage & admin: HER2 testing is mandatory prior to initiation of trastuzumab therapy.
***Loading dose:* The recommended initial loading dose is 4mg/kg body weight as a 90-minute intravenous infusion. Subsequent doses: The recommended weekly dose of trastuzumab is 2mg/kg body weight. If the initial dose does not cause any intolerance, the following dose can he administered as a 30-minute infusion; should not administer as an intravenous push or bolus. In clinical studies, patients were treated with trastuzumab until progression of disease. Elderly: Data suggest that the disposition of trastuzumab is not altered based on age.**
***Storage:* Store vials at 2-8°C. Reconstituted solution is stable for 28 days when stored refrigerated at 2-8°C. The reconstituted solution contains preservative and is therefore suitable for multiple use.**
440mg vial x 1's pack: 15500.00 MRP
(Price could not be revised).

2. DRUGS AFFECTING THE IMMUNE RESPONSE[21]

2.1 Cytotoxic immunosuppressants- viz. *Azathioprine, Mycophenolate mofetil*
2.2 Corticosteroids & other immunosuppressants- viz. *Prednisolone, Cyclosporin, Basiliximab, Tacrolimus*
2.3 Rituximab- viz. *Rituximab*
2.4 Interferons- viz. *Interferon alfa, Interferon beta*
2.5 Aldesleukin- viz. *Aldesleukin*

2.1 Cytotoxic Immuno-suppressants

AZATHIOPRINE[47]

❖ **IMURAN Tab. GlaxoSmithKline**
Azathioprine 50mg/tablet.
Ind: Cytotoxic immunosuppressants for transplant recipients and are also used to treat a variety of auto-immune and collagen diseases, usually when corticosteroid therapy alone has provided inadequate control.
S/E: Myelosuppression; hepatotoxicity; rashes; nausea; vomiting; alopecia.
Caution: See under Alkeran; also reduce doses in severe renal failure; Monitor for toxic effects especially blood counts; infection, concurrent admin. of allopurinol, cytostatics and muscle relaxants; Pregnancy; under sun exposure.
Adult & Child: by mouth, 1-5 mg/kg body-wt daily.
100's pack: 1394.00 MRP

MYCOPHENOLATE MOFETIL / MYCOPHENOLIC ACID[21,50,54]

MYCOPHENOLATE MOFETIL / MYCOPHENOLIC ACID: Tablet/Injection
Mycophenolate mofetil/mycophenolic acid (as sodium salt) is an immunosuppressive agent. Mycophenolate mofetil is available as 500mg tablet for oral administration. Injection preparation is not yet available in our market. Mycophenolic acid is available (as sodium salt) 180mg or 360mg tablet (gastroresistant) for oral administration.
Equivalence: Mycophenolic acid 720mg is approximately equivalent to mycophenolate mofetil 1gm, but avoid unnecessary switching because of pharmacokinetic differences.
Ind: Renal & cardiac transplant: Mycophenolate mofetil/mycophenolic acid (as sodium salt) is indicated for the prophylaxis of organ rejection and for refractory organ rejection in patients receiving allogeneic renal transplants and in patients receiving allogeneic cardiac transplants.
C/I: Mycophenolate mofetil/mycophenolic acid (as sodium salt) is contraindicated in patients hypersensitive to this drug or any of it's components.
S/E: The principal adverse reactions associated with the administration of mycophenolate mofetil/mycophenolic acid include diarrhoea, constipation, leukopenia, sepsis and vomiting. Most common undesirable side effects are CMV infections, upper respiratory tract and skin infections, cold sores, unexpected heartburn and unexpected bruising and bleeding.
Precautions & warnings: Patients receiving immunosuppressive regimens involving combinations of drugs, including mycophenolate mofetil or mycophenolic acid (as sodium salt), as part of an immunosuppressive regimen are at increased risk of developing lymphomas and other malignancies, particularly of the skin. As usual for patients with increased risk for skin cancer, exposure to sunlight and ultra-violet light should be limited by wearing protective clothing and using a sunscreen with a high protection factor. Patients should be given complete dosage instructions and informed of the incrased risk of lymphoproliferative disease and certain other malignancies.
Safety and effectiveness in pediatric patients have not been established.
Pregnancy & lactation: Women of childbearing potential should be instructed of the potential risks during pregnancy, and that they should use effective contraception before beginning mycophenolate mofetil or mycophenolic acid (as sodium salt) therapy, during therapy and for 6 weeks after therapy has been stopped.
Dosage & admin: See under individual preparation.
Drug inter: Caution with concomitant use of

cholestyramine and drugs which interfere with enterohepatic circulation. Caution with concomitant use of azathioprine, aciclovir and antacids containing magnesium and aluminium hydroxides.

❖ **CELLCEPT Tab. Roche**
Mycophenolate mofetil 500mg/tablet.
Ind: Renal & cardiac transplant: Mycophenolate mofetil is indicated for the prophylaxis of organ rejection and for refractory organ rejection in patients receiving allogeneic renal transplants and in patients receiving allogeneic cardiac transplants.
C/I; S/E; Precautions & warnings: See above under the text.
Dosage & admin: Renal transplantation: Prophylaxis of rejection: A dose of 1gm administered orally or intravenously (over 2 hours) twice a day (daily dose of 2gm) is recommended for use in renal transplant patients. Treatment of refractory rejection: The dose of 1.5gm administered twice daily (daily dose of 3gm) is recommended. Cardiac transplantation: A dose of 1.5gm administered intravenously (over no less than 2 hours) twice daily or 1.5gm orally twice daily (daily dose of 3gm) is recommended.
Note: Before prescribing, consult full prescribing information.
500mg tab x 1's pack: 146.25 MRP
(Price could not be revised).

❖ **MYFORTIC Tab. Novartis**
Mycophenolic acid (as sodium salt) 180mg & 360mg/tablet (gastroresistant).
Ind: Prophylaxis of acute transplant rejection in patients receiving allogeneic renal transplants in combination with ciclosporin for microemulsion and corticosteroids.
C/I; S/E; Precautions & warnings: See above under the text.
Dosage & admin: Recommended dose is 720mg administered twice daily (1440mg daily dose). Patients with severe chronic renal impairment (glomerular filtration rate <25 ml/min/1-1.73 m²) should be carefully followed up. Very limited experience in children.
Note: Before prescribing, consult full prescribing information.
180mg x 120's pack: 7940.40 MRP
360mg x 120's pack: 15880.80 MRP

2.2 Corticosteroids & Other immuno-suppressants

CYCLOSPORIN[21,54,82]

CYCLOSPORIN: Capsule/Injection
It is a fungal metabolite & potent immunosuppressant, which is virtually non-myelotoxic but markedly nephrotoxic.
Oral preparations are available as cyclosporin 25mg, 50mg & 100mg capsule.
Ind: It has found particular use in the field of- i. solid organ (kidney, liver, pancreas, heart & heart-lung) & tissue transplantation ii. for prevention of graft rejection following solid organ & bone marrow transplantation, iii. for prophylaxis of graft-versus-host disease, iv. atopic dermatitis, v. severe psoriasis, vi. severe active rheumatoid arthritis where conventional therapy inappropriate or ineffective.
C/I: In abnormal renal function, hypertension not under control, infections not under control, and malignancy. Measure serum creatinine at least twice before treatment and monitor every 2 weeks for first 3 months, then every 4 weeks (or more frequently if dose increased or concomitant NSAIDs introduced or increased; reduce dose if serum creatinine increases more than 30% above baseline in more than 1 measurement; if above 50% reducing dose by 50% (even if within normal range) and discontinuing if reduction not successful within 1 month; monitor blood pressure (discontinue if hypertension develops that cannot be controlled by antihypertensive therapy); monitor hepatic function if concomitant NSAIDs given.
Apart from specialist use in transplant patients preferably avoid other immunosuppressants with the exception of corticosteroids (over suppression may increase susceptibility to infection and lymphoma).
S/E: Commonly dose-dependent increase in serum creatinine and urea during first few weeks (see also under cautions), and less commonly renal structural changes on long-term administration; also hypertrichosis, tremor, hypertension (especially in heart transplant patients), hepatic dysfunction, fatigue, gingival hypertrophy, gastro-intestinal disturbances, and burning sensation in hands and feet (usually during first week); occasionally headache, rash (possibly allergic), mild anaemia, hyperkalaemia, hyperuricaemia, hypomagnesaemia, weight increase, oedema, pancreatitis, neuropathy, confusion, paraesthesia, convulsion, dysmenorrhoea or amenorrhoea; muscle weakness, cramps, myopathy, gynaecomastia, colitis also reported; thrombocytopenia (sometime with haemolytic uraemic syndrome) also reported; incidence of malignancies and lymphoproliferative disorders similar to that with conventional immunosuppressive therapy.
Cautions: Monitor kidney function-dose dependent increase in serum creatinine and urea during first few weeks may necessitate dose reduction in transplant patients (exclude rejection if kidney transplant) or discontinuation in non-transplant patients. Monitor liver function (dosage adjustment based on bilirubin and liver enzymes may be needed). Monitor blood pressure- discontinue if hypertension develops that cannot be controlled by antihypertensives. Caution in hyperuricaemia. Monitor serum potassium especially in marked renal dysfunction (and avoid high dietary potassium).
Measure blood lipids before and after 1 month- if increases, restrict dietary fat and (if appropriate) reduce dose.
Pregnancy & lactation: Avoid in pregnancy & breast-feeding (or avoid breast-feeding during therapy).
Dosage & admin: Organ transplantation- used alone, 10-15 mg/kg as a single dose by mouth 4-12 hours before transplantation followed by 10-15mg/kg daily for 1-2 weeks post-operatively then reduced to 2-6 mg/kg daily for maintenance (dose should be adjusted by monitoring blood concentrations and renal function); dose lower if given concomitantly with other immunosuppressant therapy (e.g. corticosteroids); if necessary 1/3 oral dose can be given by i.v infusion over 2-6 hours. Bone marrow transplantation, prevention and treatment of graft-versus-host disease, 3-5mg/kg daily by i.v infusion over 2-6 hours from day before transplantation to 2 weeks post-operatively (or 12.5-15 mg/kg daily by mouth) then 12.5 mg/kg daily by mouth for 3-6 months then tailed off. Counselling- total daily dose may be taken as a single dose (transplant recipients) or in 2 divided doses. To mask taste, mix with cold milk, cold chocolate drink, cola, or orange juice immediately before taking (and rinse with more to ensure total dose). Do not use plastic cup. Keep medicine measure away from other liquids (including water).
Dosage for severe psoriasis, severe atopic dematitis & severe active rheumatoid arthritis: **Please see in the dermatological section.**
Drug inter: There may be interactions with the following drugs when used or administered concomitantly- such as aminoglycosides, amphotericin B, ciprofloxacin, melphalan, trimethprim; NSAIDs; lovastatin, colchicine; ketoconazole, erythromycin, josamycin, doxycycline, oral contraceptives, propafencone, calcium channel blockers; barbiturates, carbamazepine, phenytoi, metamizole, rifampicin, nafcilli, sulfadimidine and trimethoprim i.v; prednisolone, methylprednisolone.
Note: For further information, please consult manufacturer's literature.

❖ **NEORAL Cap. Novartis**
Cyclosporin 25mg, 50mg & 100mg/capsule
25mg x 50's: 2900.00 MRP
50mg x 50's: 5650.00 MRP
100mg x 50's: 11300.00 MRP

2.3 Rituximab

RITUXIMAB[50]

❖ **MABTHERA Inj. Roche**
Rituximab 10mg/ml; 10ml & 50ml vial: i.v injection for infusion.
Ind: Treatment of patients with stage III-IV follicular lymphoma who are chemoresistant or are in their second or subsequent relapse after chemotherapy. Treatment of patients with CD20 positive diffuse large B-cell non-Hodgkin's lymphoma in combination with CHOP.
C/I: Known hypersensitivity to any component of this product or to murine proteins.
S/E: *Monotherapy:* Infusion related adverse reactions occur in more than 50% of patients. These events mainly comprise fever, chills and rigors. Other symptoms include flushing, angioedema, nausea, urticaria/rash, fatigue, headache, throat irritation, rhinitis, vomiting and tumour pain. These symptoms accompanied by hypotension and bronchospasm in about 10% of the cases.

Cardiovascular system: Severe cardiac events, including heart failure, cardiac arrhythmias and myocardial infarction have been observed, mainly in patients with prior cardiac disease and/or cardiotoxic chemotherapy and are mostly associated with infusion-related reactions.
Respiratory system: Pulmonary adverse reactions include severe bronchoconstriction and rare fatalities.
Skin & appendages: Severe bullous skin reactions, including fatal cases of toxic epidermal necrolysis, have been reported rarely.
Nervous system: Cranial neuropathy with or without peripheral neuropathy. Symptoms (e.g loss of senses and facial nerve palsy) can occur up to several months following completion of therapy.
Body as a whole: Serum sickness like reactions.
Others: Serious or opportunistic infections were considerably less than reported with conventional chemotherapy. During treatment and up to one year following therapy, approximately 17% and 16% respectively, of patients developed infections which were usually common, non-opportunistic and mild. For additional adverse events which occurred in about1% of patients please see full prescribing information. Severe adverse events occurring in <l % of patients were coagulation disorder, asthma and lung disorder.

Precautions: Patients with a high number (>25,000 mm3) of circulating malignant cells or high tumour burden, are at a higher risk of severe cytokine release syndrome. These patients should be treated with caution and should be closely monitored during the first infusion. A reduced infusion rate should be considered for the first infusion. This syndrome may be associated with some features of tumour lysis syndrome. The syndrome frequently manifests itself within one or two hours of initiating the first infusion. Patients with a history of pulmonary insufficiency, those with pulmonary tumour infiltration and patients with a history of cardiac disease and/or cardiotoxic chemotherapy should be treated with caution. Further treatment of patients after complete resolution of signs and symptoms has rarely resulted in repeated severe cytokine release syndrome. Anaphylactic and other hypersensitivity reactions have been reported. These may typically occur within minutes after starting the infusion. Clinical manifestations of anaphylaxis may appear similar to clinical manfestations of the cytokine release syndrome. Since hypotension may occur, consideration should be given to withholding anti-hypertensive medications 12 hours prior to the infusion. There is limited clinical experience in patients with neutrophils <1.5 x 109/1 and/or platelet counts <75 x 1091. Periodic monitoring of a full blood count (including platelets) should be considered during monotherapy. When rituximab is given in combination with CHOP, regular full blood counts should be performed.

Pregnancy & lactation: Rituximab should not be given to a pregnant women unless the potential benefit outweighs the potential risk. Rituximab may cause B-cell depletion in the foetus. Women of childbearing potential should use effective contraception both during and for up to 12 months following rituximab therapy. Rituximab should not be given to nursing women.
Dosage & admin: Rituximab solution should be administered as an IV infusion tbrough a delicated line. Premedication consisting of paracetamol and an antihistamine should be administered before each infusion. Premedication witb corticosteroids should be considered. Patients should be closely monitored for the onset of cytokine release syndrome.
Follicular non-Hodgkin's lymphoma: 375mg/m2, as an intravenous infusion once weekly for four weeks.
***First infusion:* The recommended initial rate for infusion is 50mg/hour; after the first 30 minutes, it can be escalated in 50mg/hour increments every 30 minutes to a maximum of 400mg/hour. If hypersensitivity or an infusion related event develops, the infusion should be temporarily slowed or interrupted and can continue at one half the previous rate upon improvement of symptoms. If the same adverse reactions occur severely for second time the decision to stop treatment should be considered. The infusion rate may be increased upon improvement of symptoms.**
***Subsequent infusions:* Infuse at initial rate of 100mg/hour and increase by 100mg/hour increments at 30 minute intervals, to a maximum of 400mg/hour. Patients who have responded to rituximab have been retreated with comparable response rates to first treatment.**
***Children:* Safety and efficacy of rituximab in children have not been established.**
Drug inter: Currently, no data are available on possible drug interactions with rituximab.
100mg (10ml) vial x 1's pack: 28125.00 MRP
500mg (50ml) vial x 1's pack: 135000.00 MRP
(Price could not be revised).

2.3 Immunosuppre-ssants: Interferon

INTERFERON[21,33,47]

INTERFERON: Injection
Interferons are naturally occuring proteins with complex effects on immunity & cell function. Recently -Interferons (formerly called lymphoblastoid interferon) has shown some anti-tumour action in certain lymphomas & solid tumors. The precise role of interferon in cancer treatment is controversial & often ill defined.
Ind: Chronic myelogenous leukaemia, multiple myeloma, malignant melanoma, hairy cell leukaemia, renal cell carcinoma, Kaposi's sarcoma in AIDS patients, follicular non-Hodgkins lymphoma & for improvement of viraemia of chronic active hepatitis-B
S/E: Side-effects are dose-related, but commonly include influenza-like symptoms. Initially tiredness, somnolence, weight loss, dizziness, nausea, vomiting, loss of taste, diarrohea & headache.
Myelosuppression may also occur, particularly affecting granulocyte counts. CVS problems (hypotension, hypertension & arrhythmias), & hepatotoxicity have been reported. Other side-effects include thyroid abnormalities, psoriasiform rash, coma & seizures (usually with high doses in elderly).
Cautions: It is unwise to use Interferon in patients over 75 yrs. of age because of neurotoxicity. During treatment the leucocyte count should be maintained at low levels between 2 and 5x109/L.
Dose: In chronic myeloid leukaemia, this is given i.m or s.c 3-9 mega units (m.u) daily. It can induce control & maintain control of this disease in chronic phase in about 70% of patients.
Multiple myeloma & renal cell carcinoma- 3 to 18 million units by i.m injection once daily according to the clinical judgement of the physician.
Malignant melanoma- 12 million units/m2 of body surface area by i.m injection 3 times weekly.
Improvement of viraemia of chronic hepatitis B- 9 to 18 million units daily by i.m injection. Dosage may be increased to 18 million units after the initial 3 days of treatment with 9 million units according to the patient's condition.

❖ **ROFERON-A Inj. Roche**
Recombinant human Interferon a-2a, 3 million & 4.5 million units vial: injection.
3 MIU vial x 1's pack: 1417.50 MRP
4.5 MIU vial x 1's pack: 2092.50 MRP
(Price could not be revised).

3. SEX HORMONES & HORMONE ANTAGONISTS IN MALIGNANT DISEASES[21]

3.1 Sex hormones:
I. Oestrogen prepns. - viz. ***Diethylstilboestrol, Ethinylestradiol, Fosfestrol.***
II. Progestogen prepns. - viz. ***Gestonorone caproate, Medroxyprogesterone, Megestrol acetate, Norethisterone.***
III. Androgen prepns. - viz. ***Testosterone & esters, Mesterolone.***

3.2 Hormone antagonists:
I. Used in breast cancer - viz. ***Tamoxifen, Aminoglutethimide, Anastrozole, Formestane, Letrozole, Toremifene, Trilostane.***
II. Used in Prostate cancer - viz. ***Gonadorelin analogues, such as - Buserelin, Goserelin, Leuprorelin, Triptorelin.***
Anti-androgens, such as - Bicalutamide, Cyproterone acetate, Flutamide.
III. Somatostatin analogues - viz. ***Octreotide, Lanreotide.***

Sex Hormones

Sex hormones used in the treatment of malignant diseases- discussed in the chapter of endocrine drugs under sex hormones.

Sex hormone Antagonists

Drug used in breast cancer

ANASTROZOLE[95]

❖ **ARIMIDEX Tab. AstraZeneca/ACI**
Anastrozole 1mg/tablet (film-coated).
Ind: Anastrozole is indicated for. 1. Adjuvant treatment of postmenopausal women with hormone receptor positive early breast cancer. The effectiveness of anastrozole in early breast cancer is based on an analysis of recurrence-free survival in patients treated for a median of 31 months. Further follow-up of study patients will be required to determine long-term outcomes. 2. Treatment of advanced breast cancer in post-menopausal women.
Efficacy has not been demonstrated in oestrogen receptor negative patients unless they had a previous positive clinical response to tamoxifen.
C/I: Pre-menopausal women, pregnant or lactating women, patients with severe renal impairment, patients with moderate or severe hepatic disease & patients with known hypersensitivity to anastrozole or to any of the excipients. Co-administration with oestrogen containing therapies & concurrent tamoxifen therapy.
A/R: Anastrozole is generally well tolerated. Pharmacologically predicted side-effects include- hot flushes, vaginal dryness & hair thinning. Other adverse events include gastrointestinal disturbances (anorexia, nausea, vomiting, diarrhoea), asthenia, joint pain/stiffness, somnolence, headache or rash. Vaginal bleeding has been reported infrequently- evaluate further if it persists. Slight increase in total cholesterol. Hepatic enzyme changes and thromboembolic events, but no causal relationships established.
Precautions & warnings: Menopause should be defined biochemically in any patients where doubt about hormonal status. Care in driving or operating machinery. No data to support safety in patients with moderate or severe hepatic impairment or severe renal inpairment. Women with osteoporosis or at risk of osteoporosis should have their bone mineral density assessed at the commencement of treatment and at regular intervals thereafter. Treatment or prophylaxis for osteoporosis should be initiated as appropriate and carefully monitored. No information on use in combination with other anticancer drugs.
Pregnancy & lactation: As this drug is indicated for the treatment of breast cancer in postmenopausal women, this is not applicable for using in pregnancy & lactation.
Dosage & admin: 1mg (one tablet) to be taken orally once a day
Drug inter: Co-administration of anastrozole with other drugs (e.g antipyrine and cimetidine) is unlikely to result in clinically significant drug interactions mediated by cytochrome P450. A review of the clinical trial safety database did not reveal evidence of clinically significant interactions in patients treated with anastrozole receiving other commonly prescribing drugs.
1mg tablet x 28's pack: 11005.96 MRP

LETROZOLE[54]

LETROZOLE: Tablet
Letrozole is a non-steroidal aromatase inhibitor; antineoplastic agent. It is available as 2.5mg tablet.
Ind: Advanced breast cancer in women with natural or artificially induced post-menopausal status, who have previously been treated with antiestrogens.
C/I: Hypersensitivity to letrozole or excipients. Premenopausal endocrine status; pregnancy, lactation.
S/E: The commonest adverse reactions that may experience are- headache, nausea, peripheral edema, fatigue, hot flushes.
Precautions/Warnings: Careful consideration of risk/benefit in patients with creatinine clearance < 10ml/min, & in patients on dialysis (due to anticipated removal of letrozole from circulation).
Dosage: 2.5mg once daily.
Note: For further information please see full prescribing information.

❖ **FEMARA Tab. Novartis**
Letrozole 2.5mg/tablet.
30's pack: 8100.00 MRP
❖ **LEROZOL Tab. Square**
Letrozole 2.5mg/tablet.
5's pack: 200.00 MRP
❖ **LETROL Tab. Renata**
Letrozole 2.5mg/tablet.
5's pack: 200.00 MRP
❖ **ZOLETA Tab. Nuvista**
Letrozole USP 2.5mg/tablet (f.c).
5's pack: 75.00 MRP

TAMOXIFEN[21,33,72,95]

TAMOXIFEN: Tablet
Tamoxifen is an oestrogen receptor antagonist.
Ind: Breast cancer (post menopausal metastatic breast cancer) ; Anovulatory infertility.
C/I: Pregnancy.
S/E: Patients with widespread bone meta-stases may experience exacerbation of bone pain and occasionally hypercalcae-mia. Visual disturbance on long term therapy.
Caution: Monitor for visual disturbances on long term therapy. See also under Alkeran.
Pregnancy & lactation: Contra-indicatied.
Dosage & admin: Adult: 20mg daily increasing to 40mg daily if necessary (in divided doses). For anovulatory infertility 20mg daily on four successive days commencing on 2nd day of menstruation. Increase if necessary to 40mg then 80mg daily for subsequent courses. Child: Not recommended.

❖ **G-TAMOXIFEN Tab. Gonoshas**
Tamoxifen citrate 10mg & 20mg/tablet.
10mg x 30's pack: 180.00 MRP
20mg x 30's pack: 300.00 MRP
❖ **TAMONA Tab. Beximco**
Tamoxifen citrate 10mg & 20mg/tablet.
10mg x 30's pack: 300.00 IP
20mg x 30's pack: 480.00 IP
❖ **TAMOXEN Tab. General**
Tamoxifen citrate 10mg & 20mg/tablet.
10mg x 30's pack: 225.00 MRP
20mg x 30's pack: 360.00 MRP

Drugs used in prostate cancer

BICALUTAMIDE[95]

❖ **CASODEX Tab. AstraZeneca/ACI**
Bicalutamide 50mg/tablet (film-coated).
Mode of action: Bicalutamide is a non-steroidal anti-androgen, devoid of other endocrine activity. It binds to androgen receptors without activating gene expression, and thus inhibits the androgen stimulus. Regression of prostatic tumours results from this inhibition. Clinically, discontinuation of bicalutamide can result in antiandrogen withdrawal syndrome in a subset of patients. Bicalutamide is a recemate with its antiandrogenic activity being almost exclusively in the (R)-enantiomer.
Ind: Treatment of advanced prostate cancer in combination with LHRH analogue therapy or surgical castration.
C/I: Bicalutamide is contra-indicated in females and children. Patient who has shown a hypersensitivity reaction to this drug. Co-administration of terfenadine, astemizole or cisapride with bicalutamide is contra-indicated.
A/R: Bicalutamide in general, has been well tolerated with a few withdrawals due to adverse events. In addition, some adverse experiences were reported in clinical trials (with a frequency of 1%) during treatment with bicalutamide plus an LHRH analogue. No causal relationship of these experiences to drug treatment has been made and some of the experiences reported are those that commonly occur in elderly patients. These include: Heart failure; anorexia, dry mouth, dyspepsia, constipation, flatulence; headache, dizziness, insomnia, somnolence, decreased libido; dyspnoea; impotence, nocturia; anaemia; alopecia, rash, sweating, hirsutism; diabetes mellitus, hyperglycemia, oedema, weight gain, weight loss; body pain, abdominal pain, chest pain, pelvic pain, chills.
Precautions & warnings: Bicalutamide is extensively metabolised in the liver, so bicalutamide should be used with caution in patients with moderate to severe hepatic impairment. Periodic liver function tests should be considered due to the possibility of hepatic

changes. The majority of changes are expected to occur within the first 6 months of bicalutamide therapy.
Severe hepatic changes have been observed rarely with bicalutamide, and in that case, therapy should be discontinued.
Pregnancy & lactation: Bicalutamide is contra-indicated in females and must not be given to pregnant women or nursing mothers.
Dosage & admin: Adults & elderly: 50mg (one tablet) once a day. Treatment with bicalutamide should be started at the same time as treatment with an LHRH analogue (such as goserelin) or surgical castration. No dosage adjustment is necessary for patients with renal impairment, and for patients with mild hepatic impairment. Increased accumulation may occur in patients with moderate to severe hepatic impairment. Children: Bicalutamide is cantra-indicated in chidren.
Drug inter: Please consult manufacturer's literature.
50mg x 28's pack: 16814.84 MRP

GOSERELIN[95]

❖ ZOLADEX Inj. AstraZeneca/ACI
Each pre-filled injection contains goserelin acetate equivalent to 3.6mg peptide base in a sustained release depot. It is supplied as a single dose pre-filled syringe applicator (with a protective sleeve in a sealed pouch which comtains a desiccant) to be administered every 4 weeks.
Mode of action: Goserelin is a synthetic analogue of naturally occurring LHRH (luteinizing hormone releasing hormone). On chronic administration, goserelin results in inhibition of pituitary LH secretion leading to a fall in serum estrogen and testosterone concentrations in women and men, respectively. Initially, there may be a transient increase in serum sex steroid hormone concentration. By around 21days after the first depot injection, estrogen or testosterone concentrations fall to within castrate range and remain suppressed with continuous treatment every 28 days. This inhibition leads to breast or prostate tumour regression and symptomatic improvement in the majority of patients.
Ind: 1. Prostate cancer - Goserelin is indicated in the management of prostate cancer suitable for hormonal manipulation. 2. Breast cancer - Goserelin is indicated in the management of breast cancer in premenopausal and perimenopausal women suitable for hormonal manipulation. 3. Endometriosis - in the mangement of endometriosis, goserelin alleviates symptoms, including pain and reduces the size and number of endometrial lesions. 4. Uterine fibroids - in conjunction with iron therapy in the haematological improvement of anaemic patients with fibroids prior to surgery. 5. Endometrial thinning - Goserelin is indicated for the prethinning of the uterine endometrium prior to endometrial ablation or resection. 6. Assisted reproduction. (Pituitary downregulation in preparation for superovulation).
C/I: Hypersensitivity to goserelin or other LHRH analogues. Pregnancy and lactation.
S/E: Rarely hypersensitivity, skin rashes; generally mild. arthralgia. Changes in blood pressure. Occasional mild bruising at injection site.
Males: Hot flushes, decrease in potency, infrequently breast swelling and tenderness; temporary increase in bone pain, isolated case of ureteric obstruction and spinal cord compression have been recorded.
Females: Hot flushes and sweating, change in libido, headaches, mood changes including depression, change in breast size. Temporary increase in signs and symptoms. Degeneration of fibroids.
Precautions: *Males:* Use in patients at particular risk of developing ureteric obstruction or spinal core compression should be considered carefully and patients monitored during first month of therapy. *Females:* Exclude pregnancy before treatment. Non-hormonal contraception should be employed during therapy. Loss of bone mineral density, which may recover on cessation of therapy. Caution in women with known metabolic bone disease. Increase in cervical resistance, requiring care if dilating the cervix. Currently, there are no clinical data on the effects of treating benign endometriosis conditions with goserelin for periods in excess of six months. An increase in benign pituitary tumours has been observed in male rats following long-term repeated dosing (relevance to man not established). Pancreatic islet cell hyperplasia and benign proliferative condition in the pyloric region of the stomach observed in mice following long-term repeated dosing with human dose (relevance to man is unknown). There is no evidence that goserelin results in impairment of ability to drive or operate machinery.
Pregnancy & lactation: Goserelin is contraindicated during pregnancy & lactation.
Dosage & admin: Adults: One 3.6mg depot goserelin injection to be given subcutaneously into the anterior abdominal wall, every 28 days. No dosage adjustment is necessary for patients with renal & hepatic impairment. No dosage adjustment is necessary in the elderly. Children: Goserelin is not indicated for use in children.
Drug inter: Please consult manufacturer's literature.
Storage: Store below 25°C.
Note: For further information, please consult manufacturer's literature.
3.6mg pre-filled syringe x 1's pack: 15082.39 MRP

Hormone Antagonists

Somatostatin analogues

OCTREOTIDE[54,145]

❖ SANDOSTATIN SC Inj. Novartis
Octreotide acetate 50mcg/1ml ampoule: subcutaneous injection.
Octreotide acetate is a long-acting octapeptide with pharmacologic actions similar to the natural hormone somatostatin (i.e somatostatin analogue).
Mode of action: Octreotide acetate (sandostatin) is an even more potent inhibitor of growth hormone, glucagon, and insulin than somatostatin. Like somatostatin, it also suppresses LH response to GnRH, decreases splanchnic blood flow, and inhibits release of serotonin, gastrin, vasoactive intestinal peptide, secretin, motilin, and pancreatic polypeptide.
By virtue of these pharmacological actions, octreotide acetate (sandostatin) has been used to treat the symptoms associated with metastatic carcinoid tumors (flushing and diarrhea), and vasoactive intestinal peptide (VIP) secreting adenomas (watery diarrhea).
Octreotide acetate (sandostatin) substantially reduces growth hormone and/or IGF-I (somatomedin C) levels in patients with acromegaly.
Single doses of octreotide acetate (sandostatin) have been shown to inhibit gallblader contractility and to decrease bile secretion in normal volunteers. In controlled clinical trials the incidence of gallstone or biliary sludge formation was markedly increased.
Octreotide acetate (sandostatin) suppresses secretion of thyroid stimulating hormone (TSH).
Ind: Emergency management to stop bleeding and to protect from re-bleeding owing to gastro-esophageal varices in patients with cirrhosis, acromegaly, control of symptoms of neuro-endocrine tumors.
C/I: Known hypersensitivity to octreotide or to any component of the formulations.
Precautions: Please see manufacturer's literature.
Pregnancy & lactation: Experience with sandostatin in pregnant or nursing women is limited, and they should therefore be given the drug only under compelling circumstances.
S/E: Anorexia, nausea, vomiting, crampy abdominal pain, abdominal bloating flatulence, loose stools, diarrhoea, steatorrhoea, hypersensitivity, isolated cases of bradycardia.
Dosage & admin: 50mcg (1 ampoule) IV bolus or subcutaneously followed by 25mcg (½ ampoule)/hour in continuous infusion (total of 12 ampoules in 1000ml of NS, DA or DNS to be infused over 24 hours) for 3-5 days. The injection should be inspected and brought to room temperature before administration.
Overdose: Doses of up to 2000mcg octreotide given as s.c. injection t.i.d. for several months have been well tolerated. The maximum i.v. single dose so far given to an adult has been 1mg by bolus injection. The signs and symptoms observed were a brief drop in heart rate, facial flushing, abdominal cramps, diarrhoea, an empty feeling in the stomach, and nausea, all of which resolved within 24 hours of drug administration.
Drug inter: Sandostatin has been associated with alterations in nutrient absorption, so it may have an effect on absorption of orally administred drugs. Concomitant admnistration of sandostatin with cyclosporine may decrease blood levels of cyclosporine and result in transplant rejection. Patients receiving insulin, oral hypoglycemic agents, beta blockers, calcium chamel blockers, or agents to control fluid and electrolyte balance, may require dose adjustments of these therapeutic agents.

Note: For full information, please consult manufacturer's literature.
50mcg (1 ampoule) x 5's pack: 6200.00 MRP

4. DRUGS FOR CHEMOTHERAPY INDUCED NEUTROPENIA

FILGRASTIM[50]

❖ **NEUPOGEN Inj. Roche**
Filgrastim- recombinant human granulocyte-colony stimulating factor (rHuG -CSF), 30 million units/1ml ampoule: injection
Ind: For the reduction of duration of neutropenia and incidence of febrile neutropenia in patients treated with established cytotoxic chemotherapy for nonmyeloid malignancy; reduction in duration of neutropenia in myeloablative therapy followed by bone-marrow transplantation; mobilisation of peripheral blood progenitor cells for harvesting and subsequent autologous infusion; severe congenital neutropenia; cyclic neutropenia or idiopathic neutropenia.
C/I: Known sensitivity to the product or its constituents. Severe congenital neutropenia with abnormal cytogenetics (Kostman's syndrome). Filgrastim should not be used to increase doses of cytotoxic chemotherapy beyond established regimens.
S/E: Musculoskeletal pain (alleviated by standard analgesics); urinary abnormalities (predominantly dysuria); reversible dose-dependent elevations of lactate dehydrogenase, alkaline phosphatase, serum uric acid, and gammaglutamyl transpeptidase. There have been occasional reports of decrease of blood pressure, but not requiring clinical treatment.
Precautions: Safety and efficacy have not been established in myelodysplasia, acute myelogenous leukaemia, or chronic myelogenous leukaemia. Exercise caution in any malignant or premalignant myeloid condition. Leucocytosis (WBC> 100 x109/L) has been seen at doses seen above 0.3 million units (3mcg)/kg/day in less than 5% of patients. In addition, as higher doses of chemotherapy may be administered, resulting in an increased risk of thrombocytopenia and anaemia, regular haematological monitoring is recommended. For sustained response, filgrastim should be continued until after the expected nadir and until the neutrophil count has recovered.
Bone density monitoring is advised for patients with osteoporotic disease receiving filgrastim for longer than 6 months.
Use of filgrastim in severe renal or hepatic impairments is not recommended.
Pregnancy & lactation: No evidence of teratogenicity but increased embryo-loss has been seen in rabbits. Administer to expectant mothers only if benefits is likely to exceed potential risk to foetus. Not recommended in nursing mothers.
Dosage & admin: Cytotoxic-induced neutropenia- adult & child, 0.5 million units (5mcg)/kg/day (first dose started not less than 24 hours after chemotherapy) as a daily s.c injection or i.v infusion (over 30 minutes). Treatment should be continued until neutrophil count in normal range, usually for up to 14 days (up to 38 days in acute myeloid leukaemia). Elderly- no specific dosage recommendations are made.
In patients treated with cytotoxic chemotherapy & outologous bone-marrow transplantation- the recommended starting dose of filgrastim is 1 million units (10mcg)/kg/day given by continuous s.c infusion over 24 hours or by continuous i.v infusion over 30 minutes or over 24 hours (first dose started not less than 24 hours after chemotherapy & within 24 hours of bone-marrow infusion).
Mobilisation of peripheral blood progenitor cells- used alone, by s.c injection or infusion over 24 hours, 1 million units/kg/day for 6 days; used following adjunctive myelosuppressive chemotherapy (to improve yield), by s.c injection, 0.5 million units/kg/day started the day after completion of chemotherapy & continued until neutrophilo count in normal range.
Severe chronic neutropenia- adult & child, by s.c injection, in severe congenital neutropenia, initially 1.2 million units/kg/day in single or divided doses, (in idiopathic or cyclic neutropenia, initially 0.5 million units/kg/day) adjusted according to response.
Filgrastim may be diluted in 5% glucose i.v solution BP. Dilution below 0.2 million units (2mcg)/ml is not recommended. When diluted below this range, add human serum albumin to a final concentration of 2mcg/ml. Diluted filgrastim solution should not be prepared more than 24 hours before use. Filgrastim and diluted filgrastim solutions should be stored at 2- 8°C. Filgrastim should not be diluted with saline. Filgrastim is for s.c or i.v administration. Sites of s. c injection should be varied.
Drug inter: Administration of filgrastim is not recommended in the period 24 hours before to 24 hours after chemotherapy.
30 MIU (1ml) amp x 1's pack: 6187.50 MRP (Price could not be revised).

LENOGRASTIM[35,50]

❖ **GRANOCYTE 34 MIU Inj. Sanofi-aventis**
Lenograstim- recombinant human granulocyte-colony stimulating factor (rHuG-CSF). Each vial contains 33.6 million units (263mcg) as powder for reconstitution in 1ml water for injection.
Ind: Reduction in duration of neutropenia and associated complications in patients undergoing bone-marrow transplantation or cytotoxic chemotherapy with febrile neutropenia, and mobilisation of peripheral blood progenitor cell (PBPCs).
C/I: Known hypersensitivity to product or constituents. Not to be used for intensification of cytotoxic chemotherapy beyond established regimens. Not to be administered concurrently with cytotoxic chemotherapy or to patients suffering from myeloid malignancy. Not recomm-ended in pregnancy & nursing women.
S/E: Musculoskeletal pain (alleviated by standard analgesics); asthenia; abdominal pain & generalised pain reported in healthy donors. Urinary abnormalities (predominantly dysuria). Reversible dose-dependent elevations of lactate dehydrogenase, alkaline phosphatase, serum uric acid, and gammaglutamyl transpeptidase. There have been occasional reports of decrease of blood pressure, but not requiring clinical treatment.
Precautions: Safety and efficacy have not been established in myelodysplasia, acute myelogenous leukaemia, or chronic myelogenous leukaemia. Exercise caution in any malignant or premalignant myeloid condition. Leucocytosis (WBC> 100 x109/L) has been seen at doses seen above 0.3 million units (3mcg)/kg/day in less than 5% of patients. In addition, as higher doses of chemotherapy may be administered, resulting in an increased risk of thrombocytopenia and anaemia, regular haematological monitoring is recommended.
For sustained response, lenograstim should be continued until after the expected nadir and until the neutrophil count has recovered. Bone density monitoring is advised for patients with osteoporotic disease receiving lenograstim for longer than 6 months.
Use of lenograstim in severe renal or hepatic impairments is not recommended.
Pregnancy & lactation: Risk to human foetus unknown. Some abortifacient effect in rabbits has been seen. Not reconunended in nursing women.
Dosage: Granocyte 34 (33.6 million units/vial) is used in patients with body surface area up to 1.8 m2.
Bone-marrow transplantation: **adult & child over 2 years- the recommended dose is 19.2 million units (150mcg)/m2/day, start treatment 24 hours after transplantation by i.v infusion in 30minutes, diluted in isotonic saline solution; the treatment should be continued until neutrophil count stable in acceptable range (max. 28 days).**
Cytotoxic chemotherapy induced neutropenia: **adult & child over 2 years- by s.c injection, 19.2 million units (150mcg)/m2/day, start treatment 24 hours after completion of chemotherapy; treatment should continue until neutrophil count stable in acceptable range (max. 28 days).**
PBPCs mobilisation: **when lenograstim is used alone, by s.c injection, 1.28 million units (10mcg)/kg/day for 4-6 days (5-6 days in healthy donors); used following adjunctive myelosuppressive chemotherapy (to improve yield), by s.c injection, 19.2 million units (150mcg)/m2/ day, start treatment 24 hours after completion of chemotherapy & continue treatment until neutrophil count stable in acceptable range.**
Leukapheresis should be performed between day 5 and 7. In both cases, one leukapheresis is often sufficient to obtain the acceptable minimum yield (? 2.0 x 106 CD34+ cells per kg).
Elderly: **As per adult dose. Children: As per adult dose, safety demonas-trated in children**

older than 2 years in bone marrow transplantation.
Administration: **Granocyte is for s.c or i.v administration following reconstitution with water for injection.**
After reconstitution, Granocyte should be stored at 2 to 8°C and used within 24 hours. For i.v infusion, Granocyte should be diluted in 0.9% NaCl solution.
Granocyte 34 (33.6 million units/vial) should not be diluted below 1 vial into 100ml.
Granocyte vials are for single dose use only.

Drug interaction: Treatment not recommended from one day before until one day after chemotherapy. Interactions with other haemopoietic growth factors and cytokines not established.
34 million units vial: 7355.25 MRP

Chapter-17

IMMUNOLOGICAL PRODUCTS & VACCINES

IMMUNOLOGICAL PRODUCTS & VACCINES

Drugs discussed in this chapter include:

1. **Bacterial & Viral vaccines**
   - **a) Chicken pox vaccine**
   - **b) Diphtheria vaccine**
   - **c) Diphtheria, Pertussis & Tetanus (DPT) mixed vaccine**
   - **d) DPT + HB combined vaccine**
   - **e) Hemophilus Influenzae vaccine**
   - **f) Hapatitis-A virus vaccine**
   - **g) Hapatitis-B virus vaccine**
   - **h) Measles vaccine**
   - **i) Meningococcal vaccine**
   - **j) Mumps vaccine**
   - **k) MMR vaccine**
   - **l) Pertussis vaccine**
   - **m) Poliomyelitis vaccine**
   - **n) Rabies vaccine**
   - **o) Tetanus vaccine**
   - **p) Tuberculosis vaccine**
   - **q) Typhoid fever vaccine**
2. **Immunogolbulin Prepns.**
   - **a) Human normal immunoglobulins**
   - **b) Human specific immunoglobulins**
     - **i) Hapatitis B immune globulins**
     - **ii) Human anti-tetanus immunoglobulin**
     - **iii) Human anti-D immunoglobulins**

Bacterial & Viral Vaccines

CHICKEN POX[83]

❖ VARILRIX Inj. GlaxoSmithKline
Varilrix is a lyophilised preparation of the live attenuated Oka strain of varicella-zoster virus, obtained by propagation of the virus in MRC human diploid cell cultre.
Each dose of the reconsituted vaccine contains not less than 10 plaque-forming units (PFU) of the attenuated varicella-zoster virus.
Ind: Active immunisation against varicella of healthy subjects from the age of 12 months onwards; active immunisation against varicella of susceptible high-risk patients and their susceptible healthy close-contacts.

S/E: In healthy subjects- side-effects are very low and rare in all age groups.
In age group 9 mon. to 12 years: papulov-esicular eruptions (4%); mild fever (5%).
In age group 13 years & above with a 2-dose schedule-no papulo-vesicular eruptions have been reported.
General symptoms, such as headache, fever, paresthesia & fatigue are reported in 2.5% cases after each dose.
In high-risk patients, papulo-vesicular eruptions, rarely accompanied by mild to moderate fever as in leukaemic patients (less than a quarter of patients). The appearanec of these eruptions do not influence the clinical mamagement of the patients.

Precautions & warnings: After reconstitution, Varilrix TM should be administered immediately. Alcohol and other disinfecting agents must be allowed to evaporate from the skin before injection of the vaccine since they may inactivate the viruses. As with all injectable vaccines, appropriate medical treatment should always be readily available in case of rare anaphylactic reactions following the administration of the vaccine. For this reason, the vaccinee should remain under medical supervision for 30 minutes after immunisation.
Varilrix should not be administered intradermally & under no circumstances be administered intravenously.

Dose & Admin: 0.5ml of reconstituted vaccine contains one immunising dose.
From the age of 12 months up to and including *12 years of age:* 1 dose.
13 years & above: 2 doses with an interval of 6 to 10 weeks.
The same schedule should be applied for the high-risk patients also. In these patients, periodic measurement of varicella antibodies after vaccination may be indicated in order to identify those who may benefit from revaccination.
Administration: **Varilrix is for subcutaneous use only.**

Drug inter: Subjects who have received immunoglobulins or a blood transfusion, immunisation should be delayed for at least three months because of the likelihood of vaccine failure due to passively acquired varicella antibodies.
Varilrix can be administered at the same time as any other vaccines. Different injectable vaccines should always be adiminstered at different injection sites.
But, measles vaccine should not be given at the same time as Varilrix, at least at an interval of one month, since it is recognised that measles vaccination may lead to short lived supperssion of the cell mediated immune response.
In high-risk patients, Varilrix should not be administered at the same time as other live attenuated vaccines. Inactivated vaccines may be administered in any temporal relationship to Varilrx, given that no specific contra-indications had been established.
0.5ml dose vial: 1324.00 MRP

CHOLERA VACCINE[21]

CHOLERA VACCINE: Injection
Vaccines contain heat killed inaba and ogawa subtype of cholera bacteria; 1 ml & I.5ml ampoule and 10ml & 50ml vial.
Ind: Active immunisation against cholera.
Period of immunity-6 months
Dosage & admin: Adult: First dose-0.5ml s. c. or i. m.
2nd dose- 1ml s.c. or i.m (or 0.2ml intradermally) after 4 weeks (or 7days if rapid immunisation is necessary)
Child: First dose- under 1 year not recommended; 1-5 years 0.1 ml s. c. or i. m; 5-10 yrs, 0.3ml s. c. or i. m.
2nd dose- 1-5 yrs, 0.3ml s. c. or i. m . (or 0.1ml intradermally) ; 5-10 yrs, 0.5ml s. c. or i. m. (or 0.1ml intradermally). Interval, same as adult.
Booster dose- necessary after 6 months; give the same as 2nd dose.
Preparation: May not be available.

DIPHTHERIA VACCINE[21,33]

❖ ADS Inj. Behring
Diphtheria antitoxin (Anti-diphtheric serum) 20,000 i. u/ampoule
Ind: Passive immunisation (after exposure) and treatment of diphtheria.
Dose: Prophylaxis- 500-2000 i. u, s. c or i. m injection.
Therapeutic-10000 to 30000 i. u. by i. m injection, or 40000 to 100000 i. u. by i. v. injection in 2 divided doses with an interval of 1/2-2 hours.
5ml vial: 182.55 MRP
Preparation: May bot be available; price could not be revised.

DIPHTHERIA, PERTUSSIS & TETANUS (DPT) MIXED VACCINE[21,33]

DIPHTHERIA, PERTUSSIS & TETANUS (DPT): Injection
Diphtheria, Tetanus and Pertussis vaccine-prepared from diphtheria formol toxoid, tetanus formol toxoid and pertussis vaccine (killed B pertusis not less than 4 i. u. from not more than

20000 million organisms/0.5ml); 0.5 ml ampoule: Injection.
Ind: Active immunisation against diphtheria, tetanus and pertussis.
C/I: Acute febrile illness; history of convulsions, cerebral irriation or damage in the neonatal period. Severe local or general reaction to a preceeding dose. History of neurological disease, family epilepsy and history of severe allergy.
Child: Under 5 yrs, primary immunisation-3 doses of 0.5ml vaccine by i. m or deep s.c injection, each dose at an interval of minimum 4 weeks; Over 5 yrs, not recommended.

❖ **D.P.T Vaccine Behring werke**
Diphtheria, Tetanus and Pertussis vaccine; 0.5 ml ampoule: injection
10 amps pack: 179.50 MRP
(Price: could not be revised).

❖ **DPT Vaccine Chairon SPA**
Diphtheria, Tetanus and Pertussis vaccine; 0.5 ml ampoule: injection
1 amp pack: 15.35 MRP
(Price: could not be revised).

❖ **D.T Vaccine Behring werke**
A mixture of Diphtheria formol toxoid and tetanus formol toxoid; 0.5ml ampoule: injection.
Ind: Active immunisation against diphtheria and tetanus.
C/I: See under D.P.T vaccine.
Dose: Re-inforcing (or booster) doses for children , 0.5ml by i. m or deep s. c injection.
1 amp of 0.5 ml: 17.50 MRP
(Price: could not be revised).

DPT + HB COMBINED VACCINE

❖ **TRITANRIX HB Inj. GlaxoSmithKline**
Tritanrix HepB, a combination vaccine of DPT and Hepatitis B; 0.5ml/vial: injection.
Tritanrix HB vaccine contains diphtheria, tetanus toxoids, inactivated pertussis bacteria and the purified major surface antigen of the hepatitis B virus (HBV), adsorbed on aluminium salts.
Ind: Tritanrix HB is indicated for active immunisation against diphtheria, pertussis, tetanus, and hepatitis B in infants from 6 weeks onwards.
C/I: Known hyersensitivity to any component of the vaccine, or history of hypersensitivity after administration of diphtheria, tetanus, pertussis or HB vaccines previously. ii. Acute severe febrile illness. iii. child suffering from encephalopathy of unknown aetiology, occurring within 7 days following previous vaccination with pertussis containing vaccine. In these circumstances the vaccination course should be continued with DT and Hb vaccines. iv. Collapse or shock-like state (hypotonic-hyporesponsive episode) within 48 hours. v. convulsions with or without fever, occurring within 3 days.
S/E: Unusual crying, drowsiness, irritability, gastrointestinal symptoms and feeding problems were observed during clinical trials. These events were reported within 48 hours and in less than 5.0% of the cases were considered as severe. Fever was recorded in 40% but in most cases it was mild to moderate. These events lasted only for a few days.
Very rare anaphylaxis, allergic reactions including anaphylactoid reactions and serum sickness like disease, have been reported.
Convulsions and thrombocyto-penia have been reported very rarely with hepatitis B containing vaccines.
Fatigue, malaise, headache, arthralgia, myalgia and urticaria have also been reported.

Precautions & warnings: Persistent crying lasting >3 hours, occurring within 48 hours.
There may be circumstances, such as a high incidence of pertussis, when the potential benefits outweigh possible risks.
Trianrix hepb should under no circums-tances be administered intravenously.

Dosage & admin: the recommended dose (0.5ml) of the vaccine must be administered by deep intramuscular (i.m) injection, preferably in the anterolateral part of thigh. In patients with thrombocytopenia or bleeding disorders, the vaccine should be admini-stered subcutaneously. The primary vaccination schedule consists of 3 doses within the first six months of life.

Vaccination schedule & booster dose:
Where hepatitis B vaccine is not given at birth, the combined vaccine can be administered beginning as early as 8 weeks of age. Where there is a high endemicity of hepatitis B, the practice to administer hepatitis B vaccine at birth should be continued. In these circums-tances, vaccina-tion with the combined vaccine should start at 6 weeks of age. 3 vaccine doses must be administered at intervals of at least 4 weeks.
At this moment, insufficient data are available to support the recommendation of a booster dose of the combined vaccine. The administration of a booster dose with DPT vaccine is recommended before the end of the second year of life. For longterm protection, a booster dose of HB vaccine could also be administered after the first year of life. However, the need for this dose is currently not established.

Vaccination for infants born to HBs Ag+positive mothers:
In the case of children born of known hepatitis B carrier mothers the immunoprophylactic measures for hepatitis B should not be modified. This may require separate vaccination with hepatitis B and DPT vaccines and also include the administration of HBIg at birth.

Drug inter*:* Previous experiences with simultaneous administration of DPT, OPV and HB vaccines have not shown any interference. no interference in the immune response to any of the antigens was observed as compared to the responses observed following adminis-tration of the vaccines at separate sites.
In patients receiving immunosuppressive therapy or patients with immunodeficiency, an adequate response may not be achieved.
Shelf-life: The tritanrix HB vaccine should be stored at a temperature between +2°C to +9° C. when the vaccine is stored under prescribed conditions the shelf-life is 36 months.
Note: For further information, see below under the text of Hepatitis B vaccine.
0.5ml vial: 393.00 MRP

HAEMOPHILUS INFLUENZAE VACCINE[35,83]

❖ **ACT-HIB Inj. Sanofi-aventis**
Freeze-dried Haemophilus influenzae type b polysaccharide conjugated to tetanus protein 10mcg/vial. Other ingredients- trometamol 0.6mg & saccharose 42.5mg/vial. Single dose presentation with diluent for injection 0.5ml: s.c or i.m injection
Ind: Act-HIB is indicated for the prevention, in infants from 2 months, of invasive diseases caused by H. influenzae type b (viz. meningitis, septicaemia, cellulitis, arthritis, epiglottitis etc). Act-HIB does not protect against infections due to other types of H. influenzae, nor against other meningitis of other origins.
C/I: Subjects with known hypersensitivity to any component of the vaccine, particu-larly the tetanus protein, or to subjects
having shown signs of hypersensitivity with administration of Hib vaccines.
Fever or acute infection (a minor infection is not contraindicated).
S/E: No serious local or general reaction observed following administration of the vaccine. The reported local signs/symptoms that occur within the first 48 hours are mild redness, swelling and pain at the site of injection, which resolves spontaneously. The general symptoms that reported within the first 48 hours are fever, loss of appetite, restlessness, vomiting, diarrhoea and unusual crying, wich are also mild and resolves spontaneously.
Precautions & Warnings: As with all injectable vaccines, appropriate medical treatment and supervision should always be readily available in case of a rare anaphylactic event following the administration of the vaccine. For this reason, medical supervision should continue for 30minutes after immunistion.
Although limited immune response to the tetanus toxoid component may occur, vaccination with ACT HIB alone does not subsitute for rutine tetanus vaccination.
Dosage & admin: Primary vaccination: from 2 months- 3 injections at 1 or 2 months intervals followed by a booster 12 months after the third dose.
Second chance vaccination: when it has not been possible to give the child a primary vaccination- (i) between 6 and 12 months: 2 injections at 1 or 2 months intervals followed by a booster 12 months after the second dose; (ii) from 12 months and up to 5 years: a single injection.
Drug inter: ACT HIB can be administered either simultaneously or at any time before or after a different inactivated or live vaccine. Other injectable vaccines should always be administered at different injection sites. In patients receiving immunosuppressive therapy or patients with immunodefici-ency, an adequate response may not be achieved.
10 vials pack with diluent: 5400.00 MRP

❖ **HIBERIX Inj. GlaxoSmithKline**
Hiberix is a vaccine for Haemophilus influenzae type b (Hib). It is a lyophilised vaccine of purified polyribosyl-ribitol-phosphate capsular

polysaccharide (PRP) of Hib. Each single dose of vaccine is formulated to contain 10mcg of purified capsular polysaccharide, covalently bound to approximately 30mcg tetanus toxoid.
Ind: Active immunisation of all infants from the age of 6 weeks against Hib infection disease (viz. meningitis, septicaemia, cellulitis, arthritis, epiglottitis etc). Hiberix does not protect against infection due to other types of H. influenzae nor against meningitis caused by other organisms.
C/I; S/E; Cautions: See above under ACT HIB vaccine.
Dosage & Admin: The primary vaccination schedule consists of three doses in the first 6 months of life and can start from the age of 6 weeks. Infants between the ages of 6 and 12 months previously unvaccinated should receive 2 injections, given with an interval of one month, followed by a booster in the second year of life. Previously unvaccinated children aged 1-5 years should be given one dose of vaccine. To ensure a long-term protection, a booster dose is recomme-nded in the second year of life. As vaccination schemes vary from country to country, the schedule for eah country may be used in accordance with the different national recomme-ndations.
Method of administration: The reconstituted vaccine is for intramuscular injection, and under no circumstances be administered intravenously. But however, in patients with thrombocytopenia or bleeding disorders, it is good clinical practice that the vaccine should be administered subcutaneously.
Drug inter: See above, under ACT HIB vaccine.
Single dose (0.5ml) vial with diluent: 575.00 IP

❖ **VAXEM Hib Inj. Novartis Vaccines/Renata**
Haemophilus influenzae type b (Hib) glycoconjugate vaccine is composed of bacterial capsular oligosaccharides conjugated to a carrier protein 'Cross Reacting Material 197 (CRM 197)', a nontoxic mutant of diphtheria toxin.
Each single dose of 0.5ml contains: Active ingredient- 10mcg of capuslar oligosaccharide of H. influenzae type b conjugated to approximately 25mcg of CRM 197 protein.
Ind: Active immunisation against invasive disease caused by Haemophilus influenzae type b (Hib) in children from 2 months of age.
C/I: Hypersensitivity to any component of the vaccine. Hypersensitivity reaction after previous administration of Hib vaccines. As with other vaccines, vaccination should be postponed in subjects suffering from acute severe febrile illness. The presence of a minor non-febrile infection, however, is not a contraindication to vaccination.
Precautions: Recipients of the vaccine should remain under observation, until they have been seen to be in good health and not to be experiencing an immediate adverse reaction. Vaxem Hib should be administered with caution to subjects with thrombocytopenia or a bleeding disorder since bleeding may occur following an intramuscular administration to these subjects. In these subjects the vaccine may be administered by deep subcutaneous injection. In the presence of congenital or acquired immune deficiency, Vaxem Hib may be administered but a protective immune response may not be elicited. Although a limited immune response to the diphtheria toxin component may occur, vaccination with Vaxem Hib does not substitute for routine diphtheria vaccination. Vaxem Hib does not elicit protection against diseases caused by other H. influenzae serotypes and does not protect against meningitis caused by other pathogenic agents. Vaxem Hib should under no circumstances be administered intravascularly.
A/R: Primary courses in infants 2-6 months of age: Adverse reactions (onset within 6 days of primary vaccination): Very common (10%): Tenderness, erythema, induration, unusual crying, irritability, vomiting, diarrhoea, change in eating habits, sleepiness, fever; Common (1% and <10%): Rash, agitation; Uncommon: Screaming syndrome. Primary courses in children 12-15 months of age: Adverse reactions (onset within 6 days of primary vaccination): Very common (10%): Unusual crying, irritability, vomiting, diarrhoea change in eating habits, sleepiness, fever; Common (1% and <10%): Tenderness; Uncommon: Rash, erythema, induration. Booster dose in children 16-20 months of age: Adverse reactions (within 6 days of booster dose): Very common (10%): Irritability; Common (1% and <10%): Vomiting, diarrhoea, change in eating habits and sleepiness; Uncommon: Agitation, unusual crying and rash.
Dosage & admin: Primary courses: Under 13 months of age: Three 0.5ml doses, with an interval of at least 4 weeks between doses, the first dose to be given not earlier than two months of age.
13 months of age & over: A single 0.5ml dose. Vaxem Hib is not recommended for healthy children aged more than four years.
Booster: Following completion of primary courses in which all three doses were administered before the age of 6 months, an additional (fourth) dose of Hib conjugate vaccine should be administered. The timing of the Hib conjugate booster dose should be in accordance with official recommendations. Children who were primed with Vaxem Hib may be boosted with Vaxem Hib or with another Hib conjugate vaccine. Similarly, Vaxem Hib may be used to boost children who were primed with other Hib conjugate vaccines.
Administration: Vaxem Hib should be administered intramuscularly. Do not administer intravascularly. Patients with thrombocytopenia or bleeding disorders may be vaccinated by the subcutaneous route.
Drug inter: In clinical studies, concomitant administration of vaxem Hib with various vaccines containing the following antigens did not affect immune responses to these other antigens- diphtheria and tetanus toxoids, whole cell or acellular pertussis components, polioviruses (live attenuated), hepatitis B, or live attenuated measles, mumps and rubella viruses. As with other vaccines it may be expected that in patients receiving immunosuppressive therapy or patients with immunodeficiency, an adequate immune response may not be achieved. Different injectable vaccines must not be mixed in the same syringe and should be administered at different injection sites.
0.5ml amp x 1's pack: 461.95 MRP

DPT + POLIOMYELITIS + HAEMOPHILUS INFLUENZAE TYPE B (HIB) CONJUGATE VACCINE[35]

❖ **PENTAXIM Inj. Sanofi aventis**
Pentaxim: A pentavalent combined antibacterial and antiviral vaccine comprising diphtheria, tetanus, acellular pertussis and inactivated poliomyelitis vaccine, adsorbed and haemophilus influenzae type b conjugate vaccine. It is available as powder and suspension for suspension for injection in prefilled syringe.
Comp: Each single dose of 0.5ml ampoule contains: Diphtheria toxoid ≥30 iu; Tetanus toxoid ≥40 iu; Bordetella pertussis antigens toxid 25mcg; Filamentous haemagglutinin 25mcg; inactivated type I poliomyelitis virus D antigen 40 units, inactivated type 2 poliomyelitis virus D antigen 8 units, inactivated type 3 poliomyelitis virus D antigen 32 units; Haemophilus influenzae type b polysaccharide (conjugated to tetanus protein) 10mcg.
Ind: This vaccine is indicated in the combined prevention of invasive infections caused by haemophilus influenzae type b (meningitis, septicaemia, cellulitis, arthritis, epiglottitis etc.), diphtheria, tetanus, pertussis and poliomyelitis- for primary vaccination in infants over 4 months of age, for booster vaccination, one year after the primary vaccination during the second year of life. This vaccine does not protect against infectious disease due to other types of haemophilus influenzae or against meningitis caused by other micro-organisms.
C/I: 1. Progressive encephalopathies, with or without convulsions. 2. Major reaction(s) within 48 hours of a previous vaccine injection (such as- fever greater than or equal to 40°C, persistent crying syndrome, febrile or afebrile convulsions, hypotonic hyporesponsive episodes), in such cases, vaccination should be completed with a vaccine which does not contain the pertussis vaccine. 3. Immediate hypersensitivity reactions following a previous injection (generalized urticaria, Quincke's oedema, anaphylactic shock). 4. Hypersensitivity reactions to active substances, excipients, neomycin, streptomycin or polymyxin B.
S/E; Precautions & wamings: Please see manufacturer's literature.
Dosage & admin: ***Primary vaccination:*** **The course of vaccination is 3 injections at one or two month intervals from 2 months of age.**
Booster vaccination: **1 injection one year after the primary vaccination, generally between 16 and 18 months.**
Method of administration: **This vaccine should be administered intramuscularly. The prefered injection site is the anterolateral surface of the thigh (middle third).**
Instructions for use & handling: Reconstitute the solution by injection of combined diphtheria, tetanus, acellular pertussis and poliomyelitis vaccine in the powder vial of haemophilus influenzae type b vaccine. Shake until complete dissolution of the powder. The whitish-turbid aspect of the suspension after reconstitution is normal. The vaccine must be injected immediactely after reconstitution.

Storage: Store at 2°C to 8°C (in a refrigerator). Do not freeze.
Note: For further information, please consult manufacturer's literature.
Single dose vial (0.5ml) with prefilled syringe: 2044.83 MRP

HEPATITIS-A VIRUS VACCINE[47]

HEPATITIS-A VIRUS VACCINE: Injection
Hepatitis A virus vaccine is a purified sterile suspension containing formaldehyde-inactivated hepatitis A virus adsorbed onto aluminium hydroxide; the viral antigen content is determined by an ELISA test.
Mode of action: 'Hepatitis A virus vaccine' causes active immunisation against hepatitis A virus (HAV) infection.
Ind: Active immunisation against hepatitis A virus (HAV) infection in subjects at risk of exposure to HAV.
C/I: 'Hepatitis A virus vaccine' should not be administered to subjects with known hypersensitivity to any component of the vaccine, or to subjects having shown signs of hypersensitivity after previous administration of 'Hepatitis A virus vaccine'.
S/E: 'Hepatitis A virus vaccine' is well-tolerated. Most events reported were mild and did not last for more than 24 hours. The most frequently reported was injection site soreness (less than 0.5% reported as severe) which resolved, besides, mild local redness and swelling with a frequency of about 4% of all vaccinations. The systemic adverse events reported are headache, malaise, vomiting, fever, nausea, and loss of appetite, with a frequency varying between 0.8% and 12.8% of vaccinations, these are all mild & resolved within 24 hours.

Precaution & warnings: 'Hepatitis A virus vaccine' should be administered with caution to subjects with thrombocytopenia or a bleeding disorder since bleeding may occur following an i.m injection to these subjects. Firm pressure should be applied to the injection site (without rubbing) for at least 2 minutes.
As with other vaccines, 'Hepatitis A virus vaccine' should not be given in a subject suffering from acute severe febrile illness. A minor infection, however, is not a contra-indication for vaccination.
In haemodialysis patients and in subjects with an impaired immune system, adequate anti-Hav antibody titre may not be obtained after a single dose of 'Hepatitis A virus vaccine' and such patients may therefore require administration of additional doses of vaccine.
As with injectable vaccines, appropriate medical treatment and supervision should always be readily available in case of a rare anaphylactic event following the administration of the vaccine.
'Hepatitis A virus vaccine' can be given to HIV infected persons.
It is not known whether 'Hepatitis A virus vaccine' will prevent hepatis A in such a case, who was infected by hepatitis A virus and was in incubation period at the time of vaccination.

Pregnancy & lactation: Due to lack of adequate human data on use of 'Hepatitis A virus vaccine' during pregnancy and lactation and lack of adequate animal reproduction studies, it should be used during pregnancy and lactation only when clearly needed.

Dosage & admin: See below under individual presentation.
***Instructions for use, handling & disposal of vaccine*: The vaccine should be inspected visually for any foreign particulate matter and/or variation of physical appearance prior to administration. Before use of 'Hepatitis A virus vaccine', the vial/syringe should be well shaken to obtain a slightly opaque white suspension. Discard the vaccine if the content appears otherwise.**
Drug inter: Since ' Hepatitis A virus vaccine' is an inactivated vaccine, its concomitant use with other inactivated vaccines is unlikely to result in interference with the immune responses.
Concomitant administration of typhoid, yellow fever, cholera (injectable) or tetanus does not interfere with 'Hepatitis A virus vaccine' immune response.
Concomitant administration of immunoglo-bulins dose not impact the protective effect of the vaccine.
When concomitant administration of other vaccines or of immunoglobulins is considered necessary, the products must be given with different syringes and needles and at different injection sites.
Storage: Vaccine should be stored at +2°C to +8°C. Do not freeze, discard if vaccine has heen frozen.

❖ **AVAXIM Inj. Sanofi-aventis**
Avaxim, an inactivated hepatitis A virus vaccine: purified sterile suspension for i.m injection.
Avaxim, adult dose contains 160 units of viral antigens in 0.5ml ampoule; child dose contains 80 units of viral antigens in 0.5ml ampoule.
Dosage & admin: Adults and adolescents from 16 years onwards- a single dose of 'Avaxim' 160 units (0.5ml dose) is used for primary immunisation.
Children & adolescents from age between 1 to 15 years- a single dose of 'Avaxim' 80 units (0.5ml dose) is used for primary immunisation. a booster dose is recommeded at any time between 6 and 12 months after the primary immunisation, in order to ensure long term protection.
'Avaxim' is administered by i.m injection. The site of injection is the deltoid region in adults and older children, and antero-lateral part of the thigh in young children. The vaccine should not be administered in the gluteal region.
The vaccine should not be administered subcutaneously or intradermally since administration by these routes may result in a less than optimal anti-HAV antibody response.
'Avaxim' should under no circumstances be administered intravenously.
Avaxim 80 amp x 1's pack: 753.35 MRP
Avaxim 160 amp x 1's pack: 1275.55 MRP

❖ **HAVRIX Inj. GlaxoSmithKline**
Havrix, an inactivated hepatitis A virus vaccine: purified sterile suspension for i.m injection.
Havrix, adult dose contains 1440 ELISA units of viral antigens in 1ml vial; child dose contains 720 ELISA units of viral antigens in 0.5ml vial.
Dosage & admin: Adults and adolescents from 16 years onwards- a single dose of 'Havrix 1440 adult' (1ml dose) is used for primary immunisation.
Children & adolescents from age between 1 to 15 years- a single dose of 'Havrix 720 Junior' (0.5ml dose) is used for primary immunisation.
A booster dose is recommeded at any time between 6 and 12 months after the primary immunisation, in order to ensure long term protection.
Havrix is administered by i.m injection. The site of injection is the deltoid region in adults and older children, and antero-lateral part of the thigh in young children. The vaccine should not be administered in the gluteal region.
The vaccine should not be administered subcutaneously or intradermally since administration by these routes may result in a less than optimal anti-HAV antibody response.
Havrix should under no circumstances be administered intravenously.
0.5ml vial (junior): 800.00 IP
1.0ml vial (adult): 1325.00 IP

HEPATITIS-B VACCINE[65,97]

HEPATITIS- B Vaccine: Injection.
Hepatitis-B vaccine (yeast derived), prepared by recombinant DNA technique.
Ind: 1. Prevention of hepatitis B virus infection (all known subtypes) by active immunization. 2. Prevention of vertical transmission of Hepatitis B virus infection (should be administered in combination with Hepatitis B immunoglobulin). 3. Protection of transmi-ssion of Hepatitis-B virus infection after acute exposure to blood containing HBs Ag.
C/I: Hypersensitivity to any component of the vaccine.

Precautions: i. Avoid injecting at the site of nerve. ii. Immediately drawout the needle when serious pain or back flow of blood into the syringe occurs. Reinject at a different site.
S/E: i. Hypersensitivity. ii. Digestive system-nausea, diarrhoea, loss of appetite. iii. psychoneurologic- headache. iv. others- fatigue, joint pain.

Dosage & Admin: See under individual praparation.
Vaccination for intants born to HBs Ag+positive mothers:
Infants born to HBs Ag positive mothers are at high risk of becoming chronic carriers of Hepatitis-B virus & of developing the chronic sequelae of Hepatitis-B virus infection. Results of clinical studies have shown that administration of one 0.5ml dose of Hepatitis-B immune globulin at birth & three 0.5ml (5mcg) doses of Hepatitis-B vaccine, the first dose given within one week after birth, 2nd dose at 1 month & 3rd dose at 6 months of age was 96% effective in preventing establishment of the chronic carrier state in infants born to HBs Ag & HBeAg positive mothers.
The first dose of Hepatitis-B vaccine may be

given at birth at the same time as Hepatitis-B immune globulin, but should be administered in the opposite anterolateral thigh. This procedure may be preferable to ensure absorption of the vaccine.
Testing for HBsAg & anti-HB, is recommended at 12-15 months to monitor the final success or failure of therapy. If HBsAg is not detectable & anti-HBs is present, the child has been protected.
Acute exposure to blood containing HBsAg:
Hepatitis-B immune globulin 0.06ml/kg should be given as soon as possible after exposure & within 24 hours if possible. Hepatitis-B vaccine 1.0ml (10mcg) should be given i.m within 7 days of exposure & 2nd & 3rd doses given one & six months respectively after the first dose.
Site of injection: **Preferably into the deltoid muscle in adults & the anterolateral aspect of thigh in infants & young children.**
Time interval: **a minimum of one month should seperate successive injections of vaccine. Accelerated regimens (e.g 0, 1 and 2 months or 0, 2 and 4 months) may induce protective antibody earlier in a slightly larger proportion of vaccines.**
Storage: Store vials at 2-8°C. Storage above or below the recommended temperature may reduce potency.
Do not freeze, since freezing destroys potency.
Note: For additional information, please consult manufacturer's literature.

❖ **ENGERIX-B Inj. GlaxoSmithKline**
Hepatitis-B vaccine (yeast derived), prepared by recombinant DNA technique.
Each adult dose contains 1ml (20mcg) and child dose contains 0.5ml (10mcg) of Hepatitis-B surface antigen protien in vial & prefilled syringe: i.m injection.
Ind; C/I; S/E; Cautions: See above under hepatitis-B vaccine.
Dosage & Admin: Adult- 2 doses of 1ml each of the vaccine should be administered s.c or i.m on the outer site of upper arm at an interval of 1 month. A third dose of 1ml should be given 5 to 6 months after the first inoculation. For more rapid immunization the 3rd dose can be given 2 months after initial dose with a booster at 12 months.
Children- under 10 years old, 3 doses of 0.5ml each should be injected in the same mannar (as adult).
0.5ml in prefilled syringe: 400.00 MRP
1ml in prefilled syringe: 600.00 MRP
10ml vial (multi-dose): 4500.00 MRP

❖ **EUVAX-B Inj. L.G Chemical/City Overseas**
Hepatitis-B vaccine (yeast derived), prepared by recombinant DNA technique.
Each adult dose contains 1ml (20mcg) and child dose contains 0.5ml (10mcg) of Hepatitis-B surface antigen protien per vial: i.m injection.
Ind; C/I; S/E; Cautions: See above under hepatitis-B vaccine.
Dosage & Admin: Adult- 2 doses of 1ml each of the vaccine should be administered s.c or i.m on the outer site of upper arm at an interval of 1 month. A third dose of 1ml should be given 5 to 6 months after the first inoculation. For more rapid immunization the 3rd dose can be given 2 months after initial dose with a booster at 12 months.
Children- under 10 years old, 3 doses of 0.5ml each should be injected in the same mannar (as adult).
0.5ml vial (child): 230.00 TP
1ml vial (adult): 340.00 TP

❖ **HEPAVAX-GENE Inj. Berna Biotech/ Tajarat**
Hepatitis-B vaccine (yeast derived), prepared by recombinant DNA technique.
Each adult dose contains 1ml (20mcg) and child dose contains 0.5ml (10mcg) of Hepatitis-B surface antigen protien per vial: i.m injection.
Ind; C/I; S/E; Cautions: See above under hepatitis-B vaccine.
Dosage & Admin: Adult- 2 doses of 1ml each of the vaccine should be administered s.c or i.m on the outer site of upper arm at an interval of 1 month. A third dose of 1 ml should be given 5 to 6 months after the first inoculation. For more rapid immunization the 3rd dose can be given 2 months after initial dose with a booster at 12 months.
Children- under 10 years old, 3 doses of 0.5ml each should be injected in the same mannar (as adult).
0.5ml vial x 10's pack:
1.0ml vial x 10's pack:
10ml vial (multi-dose) x 10's pack:

MEASLES VACCINE[21,33]

❖ **MORVILVAX Inj. Chairon SpA**
Live attenuated measles vaccine (schwarz strain); freeze-dried powder in single dose vial with water for injection .
Ind: Prophylaxis (immunisation) against measles.
C/I: Pregnancy; infection (overt or incubating), malignant disease, active tuberculosis; allergy to hens eggs; hypog-ammaglobulinaemia; treatment with corti-costeroids; cytotoxic drugs, irradiation.
S/E: Fever, parotits.
Caution: Children with history of convulsions , parental history of epilepsy.
Avoid administration within 3 weeks of other live vaccines or 12 weeks of transfusions or immunoglobulin injection.
Dosage & admin:
Adult: 0.5 ml by i. m or s. c injection
Child: Under 1 year, not recommended; others same as adult.
1 dose vial with diluent: 53.94 MRP
Preparation: May not be available; price could not be revised.

MENINGOCOCAL VACCINE[35]

MENINGOCOCAL VACCINE: Injection
Meningococcal polysaccharide vaccince, prepared from Neisseria meningitidis (meningococus): injection.
Ind: Active immunisation in adults and children over 18 months of age against meningococcal infection.
This is indicated for areas of the world where the risk of acquiring meningococcal infection is much higher. These areas include Bangladesh & other subcontinental countries & many of the intercontinental countries.
Saudi Arabia specially requires vaccination of pilgrims to Mecca during the Haj annual pilgrimage; this may apply to others visting Saudi Arabia in the months leading up to August.
Dosage & admin: See below under individual product.

❖ **MENCEVAX ACWY Inj. GlaxoSmithKline**
Meningococcal polysaccharide vaccince, prepared from Neisseria meningitidis (meningococcus) serogroup A, C, W135 and Y: injection.
Dosage & admin: Adult and child aged over 18 months 0.5ml by deep s/c injection.
1 vial + diluent: 1140.00 MRP
Note: For further information consult manufacturer's literature.

❖ **MENINGOCOCCAL (A+C) Inj. Sanofi-aventis**
Meningococcal polysaccharide vaccince, prepared from Neisseria meningitidis (meningococcus) groups A and C: injection.
Dosage & admin: Adult and child aged over 18 months 0.5ml by deep s.c or i.m injection.
1 vial + diluent: 354.38 MRP
Note: For further information consult manufacturer's literature.

MUMPS VACCINE[21,33]

❖ **MUMPSVAX Inj. Morson**
Live mumps virus vaccine (Jeryl Lynn strain) single dose vial with syringe containing solvent.
Ind: Mumps immunisation in adults and children over 1 year of age.
C/I; Cautions: See (same as) Morbilvax.
Dosage & admin: Adult: Inject total volume (0.5 ml) of reconstituted vaccine by s. c. route.
Child: Under 1 year, not recomme-nded; over 1 year, same as adult.
Preparation: may not be available.

MMR VACCINE[21.35,97]

MMR Vaccine: Injection
MMR is a combination vaccine of live measles, mumps, and rubella virus vaccine; available as 0.5ml vial (single dose) injection for subcutaneous or intramuscular use.
Ind: 1. It is indicated for combined immunization against measles, mumps & rubella. As a general guide, the first dose of MMR vaccine is administered to children aged from 12 months. A second (booster) dose of MMR or monovalent measles vaccine is recommended before starting school at 3-6 years of age. Children presenting for their pre-school booster who have not received their first dose of MMR vaccine should be given a dose of MMR vaccine then followed by a second dose 3 months later.
2. MMR vaccine can be used in place of measles vaccine for children & should be given irrespective of previous measles, mumps or rubella infection.
3. To control outbreaks of measles and should be

offered to susceptible children within 3 days of exposure to infection.
C/I: 1. Children with untreated malignant disease or altered immunity, & those receiving immunosuppressive drugs or radiotherapy, or high-dose corticosteroids
2. Children who have received another live vaccine by injection within 3 weeks.
3. Children with allergies to neomycin or kanamycin.
4. Children with acute febrile illness.
5. If given to women of childbearing age, pregnancy
should be avoided for 3 months (as for rubella vaccine).
6. Should not be given within 3 months of an immunoglobulin injection.
7. Children with partial or totally impaired immune responsiveness, should not receive any live vaccine.
8. MMR vaccine is not suitable for prophylaxis following exposure to mumps or rubella since the antibody response to the mumps and rubella components is too slow for effective prophylaxis.
A/R: Malaise, fever or a rash may occur following the fist dose of MMR vaccine, most commonly about a week after immunisation and lasting about 2 to 3 days, (paracetamol may be given for fever). Nausea, vomiting, & diarrhoea may occasionally occur. Parotid swelling also reported, usually in the third week. rarely local allergic reactions, urticaria anaphylaxis & anaphylactoid reactions may occur. After a second dose of MMR vaccine, adverse reactions are considerably less common than after the first dose. Post- vaccination meningoencephalitis was also reported (rarely & with complete recovery).
Precautions: 1. Adequate treatment provisions including adrenaline injection should be available for immediate use as in anaphylactic reaction (if any).
2. Children with a personal or close family history of convulsions should be given MMR vaccine, provided the parents understand that there may be a febrile response; doctors should seek specialist paediatric advice rather than withold vaccination; there is increasing evidence that MMR vaccine can be given safely even when the child has had an anaphylactic reaction to food containing egg.
Dosage & admin: The dosage of vaccine is the same (0.5ml) for all age groups. Inject the total volume of the single dose vial (0.5ml) reconstituted vaccine deef subcutaneously or intramuscularly (do not inject intravenously), preferably into the outer aspect of upper arm. Reconstitute the powder of the vial with the diluent supplied.
Storage: Before reconstitution store MMR vaccine at 2-8°C & protect from light.

❖ **PRIORIX Inj. GlaxoSmithKline**
Live measles, mumps, and rubella virus vaccine, 0.5ml vial (single dose): for deep s.c or i.m injection.
0.5ml vial (single dose) with diluents: 603.59 MRP

❖ **TRIMOVAX Inj. Sanofi-aventis**
Live measles, mumps, and rubella virus vaccine, 0.5ml vial (single dose): for deep s.c or i.m injection.
0.5ml vial (single dose) with diluent x 10's pack: 3448.10 MRP

PERTUSSIS VACCINE

Vaccine preparations- see as mixed vaccine products under diphtheria vaccines (above).

POLIOMYELITIS VACCINE[21,33]

❖ **ORAL VIRELON Drop. Behring**
A suspension of suitable live attenuated strains of poliomyelitis virus, type 1, 2 & 3; available as single dose and 5 doses ampoules.
Ind: Active immunisation against Poliomyelitis.
C/I: Diarrhoea; Hypogammaglobulina-emia; Febrile illness or any active infection is present.
S/E: Paralysis (very rarely reported).
Dose: 3 doses course, each dose (2-3 drops) given orally at an interval of 6-8 weeks (see immun. schedule).
10 amps of 5 doses: 965.25 MRP
Price: Could not be revised.

❖ **POLI ORAL Drop Chairon SpA**
A suspension of suitable live attenuated strains of poliomyelitis virus, types 1, 2 & 3
Ind: Active immunisation against poliomyelitis.
C/I; S/E: See above (oral virelon)
Dose: 3 doses course, each dose (2-3 drops) given orally at an interval of 6-8 weeks (see immunisation schedule).
10 doses vial: 68.28 MRP
Preparation: May not be available.

RABIES VACCINE[35,41]

ANTI-RABIES Vaccine: Injection
Anti-rabies vaccines are inactivated rabies vaccine.
Ind: The vaccine is used for-1. pre-exposure prophylaxis and 2.post exposure treatment of rabies.
C/I: 1. Patients with fever or severe malnutrition. 2. acute, aggravating cardiac, renal or hepatic disorders. 3. hypersensitivity to eggs, chicks or chicken products. 4. pregnant mother. 5. history of convulsion within one year before inoculation.
S/E: See above- common to vaccinations in general.
Dosage & Admin: Adults & children:
1. Preventive action or pre-exposure prophylaxis: **2 doses of 1ml injection each should be given s.c or i.m one month apart. Booster- 1 year later 1 injection (1ml). Subsequent boosters- every three years 1 injection (1ml) if the risk persists.**
This preventative vaccination is recommended for those living in an endemic area.
2. Curative action or treatment of rabies after exposure:
a) If the subject has not been vaccinated- after being bitten by an animal with rabies or suspected rabies, 6 subcutaneous injections should be given on days: D-O, D-3, D-7, D-14, D-30, D-90. b) If the subject has had preventive vaccination those vaccinated less than one year ago- give a booster on day: D-O. Subjects vaccinated more than one year ago depending on the seriousness of the case give:
First booster on day D-O
Second booster on day D-3
Third booster on day D-7
c) Finally, in cases of very severe biting, on day D-O, give additional treatment of 20 i.u per kg of human antirabies immunoglobulin; or 40 i. u per kg of a purified antirabies serum of equine origin.
Note: Dosage for children is the same as for adults.

❖ **VERORAB RABIES Vaccine Sanofi-aventis**
The Verorab is a purified Vero-rabies vaccine (PVRV) presented in freeze- dried form, as a single vaccinating dose of the inactivated virus. The virus is produced on VERO cell cultures.These are heteroploid cells, derived from a mon-key kidney cell culture (cercopithecus aethiops) and adapted for mass cultivation on microcarriers. The vaccine is reconsti-tuted with 0.5ml of solvent (sodium chloride solution) at the time of use.
Dosage & Admin: Adults & children:
1. Preventive action or pre-exposure prophylaxis: **3 injections of 0.5ml vial on D-0, D-7, D-28.**
Booster- 1 year later 1 injection & then every five years 1 injection if the risk persists (a variation of a few days is not important).
2. Post-exposure treatment or immunization:
a) If the subject has not been vaccinated- after being bitten by an animal with rabies or suspected rabies, 5 s.c or i.m injections (each dose 0.5ml) should be given on days D-0, D-3, D-7, D-14, D-28.
b) If the subject has had preventive vaccination those vaccinated less than one year ago- give a booster on day: D-O.
Subjects vaccinated more than one year ago depending on the seriousness of the case give:
First booster on day D-O
Second booster on day D-3
Third booster on day D-7
c) Finally, in cases of very severe biting, on day D-O, give additional treatment of 20 i.u/kg of human antirabies immun-oglobulin; or 40 i.u/kg of a purified antirabies serum of equine origin.
Note: Dosage for children is the same as for adults.
1vial + diluent: 540.00 MRP

❖ **RABIPUR Vaccine Chiron Behring/Renata**
Purified chick embryo cell rabies vaccine, 1ml vial: injection
Dosage & Admin: See above under Anti-Rabies vaccine.
1ml vial: 550.00 MRP

ROTAVIRUS VACCINE[47]

❖ **ROTARIX Oral Vaccine GlaxoSmithKline**
Rotavirus vaccine containing live attenuated human rotavirus RIX4414 strain. Rotarix vaccine is presented as 1ml vial for oral administration.
Ind: Rotarix is indicated for the prevention of gastro-enteritis caused by rotavirus, G1 and non G1 serotypes (such as G2, G3, G4, G9).

C/I: Rotarix should not be administered to subjects with know hypersensitivity after previous administration of Rotarix vaccine or to any component of the vaccine. Rotarix should not be adminstered to subjects with any history of chronic gastrointestinal disease including any uncorrected congenital malformation of the gastrointestinal tract.
A/R: In controlled clinical studies, the adverse reaction profile observed in the subjects receiving Rotarix was similar to the adverse reaction profile observed in subjects receiving placebo. No increase in the incidence or severity of these reactions was seen with the second dose. However, some adverse reactions considered as being at least possibly related to Rotarix vaccination were reported. Very common are- irritability, loss of appetite; common are- diarrhoea, vomiting, flatulence, abdominal pain, regurgitation of food, fever, fatigue; uncommon are- crying, sleep disorder, somnolence, constipation rare; upper respiratory tract infection hoarseness, rhinorrhoea, dermatitis, rash, muscle cramp; very rare- gastro-enteritis. In a large safety trial, subjects vaccinated with Rotarix gave evidence of no increased risk of intussusception when compared with subjects receiving a placebo.
Precautions: Vaccination should be preceded by a review of the medical history (specially with regard to previous vaccination and possible occurence of undesirable events) and clinical examination. The administration of 'Rotarix' should be postponed in subjects suffering from acute severe febrile illness and suffering from diarrhoea or vomiting. The presence of a minor infection, however, is not a contra-indication for immunisation. Rotarix has not specifically been studied in subjects with known primary and secondary immunodeficiencies including HIV positive infants. A protective immune response may not be elicited in all vaccines. Rotarix does not protect against gastro-enteritis due to other pathogens than rotavirus. Rotarix is for oral use only. Rotarix should under no circumstances be injected.
Pregnancy & lactation: Rotarix is not intended for use in adults.

Dosage & admin: The vaccination course consists of two doses. The first dose may be administered from the age of 6 weeks. There should be an interval of at least 4 weeks between the dosages. The vaccination course should be completed by the age of 24 weeks. Lyophilised vaccine to be recostituted with a liquid diluent before oral administration. After reconstitution, 1 dose (1ml) contains- live attenuated human rotavirus RIX4414 strain not less than 10^6 CCID50. Repeat dosing is not indicated if an infant should spit out, regurgitate or vomit during or after the administration of the vaccine. The vaccination course should be completed as recommended above. There are no restrictions on the infant's consumption of food or liquid, including breast-milk, either before or after vaccination.

Drug inter: Rotarix can be given concomitantly with any of the following administered either as monovalent or as combination vaccines: Diphtheria-tetanus-whole cell pertussis vaccine (DTPw), Diphtheria-tetanus-acellular pertussis vaccine (DTPa), Haemophilus influenzae type b vaccine (Hib), inactivated Polio vaccine (IPV), Hepatitis B vaccine and Pneumococcal vaccine. Concomitant administration of Rotarix and oral polio vaccine (OPV) does not affect the immune response to the polio antigens. Although concomitant administration of OPV may slightly reduce the immune response to rotavirus vaccine there is currently no evidence that clinical protection against severe rotavirus gastroenteritis would be affected. The immune response to Rotarix is unaffected when OPV is administered two weeks apart from Rotarix. Effects on ability to drive and use machines- not applicable.
1ml vial (oral single dose): 1355.00 MRP

TETANUS VACCINE

Vaccine preparations- See as mixed vaccine products (DPT) under diphtheria vaccines (above).

TETANUS TOXOID[21,33]

TETANUS VACCINE: Injection
Tetanus vaccine prepared from purified tetanus formol toxoid, adsorbed on to a mineral carrier (usually aluminium hydroxide gel); 0.5ml ampoule: injection.
Ind: Active immunisation against tetanus.
C/I: Concurrent acute infections disease except in a tetanus prone wound.
Dosage & admin: 0.5ml by i.m or deep s.c injection followed after 4 weeks by a second dose and after a further 4 weeks by a third dose (see immunisation schedule).
Reinforcing doses: **0.5ml at 18 months to 2 years of age; 2nd booster, at 5-6 years (school going age); 3rd booster at 10 years of age.**
In the event of injuries which may give rise to tetanus, administer a single dose of 0.5ml unless a booster has been given in the preceding year. All by deep s.c or i.m injection.

❖ **TETAVAX Inj. Sanofi-aventis**
Purified tetanus toxoid 40 i.u/0.5ml ampoule: injection
20 amps pack: 2126.21 MRP

TETANUS ANTITOXIN (ATS)[21,72]

❖ **TETANUS ANTITOXIN (ATS) Inj. Medimpex**
Tetanus antitoxin (anti-tetanus serum) 10,000 i.u/vial: injection.
Ind: Passive immunisation against (& treatment of) tetanus.
C/I: History of hypersensitivity to tetanus antitoxin.
S/E: Hypersensitivity.
Caution: Skin test for hypersensitivity.
Dose: See treatment of tetanus in the medicine section.
5ml vial: 135.00 MRP

Preparation: May not be available; price could not be revised.

TUBERCULOSIS VACCINE[21,98]

❖ **BCG Inj. Connaught/ Sanofi-aventis**
Bacillus Calmette-Guerin vaccine- a freeze dried preparation of live bacteria of a strain derived from the bacillus of Calmette & Guerin; 1ml vial (20 doses for neonates or 10 doses for the olders): injection.
Ind: Active immunisation against tuberculosis.
S/E: Fever and local pain with formation of a papular rash at the site of injection .
Dose: 0.1ml (infants under 3 months 0.05ml) by intradermal injection.
1ml vial: 176.00 MRP
Preparation: May not be available; price could not be revised.

TYPHOID FEVER VACCINE[47,98]

❖ **TYPHERIX Inj. GlaxoSmithKline**
Typherix is a Vi polysaccharide typhoid vaccine, extracted from Salmonella typhi Ty2 strain. Each 0.5ml dose of vaccine contains 25mcg of the cell surface Vi polysaccharide of Salmonella typhi : solution for i.m injection.
Ind: Active immunisation against typhoid fever for adults and children older than two years of age.
C/I: Known hypersensitivity to any component of the vaccine or subjects having shown signs of hypersensitivity after previous administration.
A/R: In clinical studies, in the majority of instances, redness, pain and swelling were usually reported only during the first 48 hours following immunisation; most common reaction is pain, not exceeding 7%. Systemic reactions were also transient, and the reported symptoms are fever, headache, general aches, malaise, nausea and itching, not exceeding 9%. Anaphylaxis, allergic reactions, including anaphylactoid reactions and urticaria have been reported very rarely with Typherix.
Precautions & warnings: As with other vaccines, administration of Typherix should be postponed in subjects suffering from acute severe febrile illness. Typherix should under no circumstances be administered intravenously. The vaccine protects against typhoid fever caused by Salmonella typhi. Protection is not conferred against paratyphoid fever or illness caused by non-invasive Salmonellae.
Pregnancy & lactation: Adequate data on use in human during pregnancy or lactation and adequate animal reproduction studies are not available.
Dosage & Admin: 0.5ml single dose vaccine for both children and adult by intramuscular injection.
Shelf-life: 24 months when stored at + 2°C to + 8°C.
Storage: Before reconstitution store the vaccine at + 2°C to +8°C; do not freeze.
0.5ml vial: 407.05 MRP

❖ **TYPHIM VI Inj. Connaught/Sanofi-aventis**
Salmonella typhi Vi purified capsular polysaccharide 0.025mg (with other preservative ingedients) per single dose pre-filled syringe with water as diluent qs 0.5ml: i.m (or s.c)

injection

Ind: Prevention of typhoid fever in adults and children over 5 years of age, specially travellers to endemic areas, immigrants, health care professionals, and military personnel. Between 2 and 5 years of age, the decision to vaccinate should be based on careful evaluation of the risk of typhoid fever in the light of the epidemiological situation.

C/I: Hypersensitivity to a constituent of the vaccine. Children under 5 years- the antibody response as yet undocumented, vaccination is usually not advised; and as because typhoid fever is rare in infants, vaccination of children under 2 years of age is also not recommended.
S/E: Mild pain at the site of injection; infrequent erythema or induration may also occur at the injection site. Mild fever is observed in 1-5% of cases.

Precaution & warnings: This vaccine protects against infection by Salmonella typhi but does not protect against Salmonella paratyphi A or B. Immunization should be postponed in subjects with faver or acute infection. Pregnancy and lactation- the risk during pregnancy is not yet known; expected benefits must be carefully evaluated in the light of the epidemiological situation.
Preservation- to be kept refrigerated (between +2?C and + 8?C).

Dosage & admin: A single injection ensures protection, a second injection is not justified, (but to a limited number of subjects, a second injection has been given). Protection lasts for at least 3 years. The preferred route of administration is intramuscular although it may also be given subcutaneously.
1 syringe of 1 dose (0.5ml) vaccine: 406.65 MRP

IMMUNOGLOBULIN PREPNS.[1,21,123]

Immunoglobulins are protein molecules that exhibit antibody activity. They are glycoproteins composed of polypeptides (82-96%) and carbohydrates (4-18%). The polypeptide components possess almost all the biological properties associated with the antibody activity. Antibodies are multifunctional molecules. Above all, they bind antigens and initiate a range of secondary phenomena such as complement activation which is independent of their antigen specificity.
There are 5 classes of immunoglobulins- IgG, IgA, IgM, IgD, IgE. Among these, IgG comprises about 85% of total serum immunoglobulins. IgG immunoglobulins are formed during the course of the humoral immune response from B-lymphocytes and plasma cells, and are distributed in the extracellular fluid. They are the only antibody class able to cross the placenta.

Immunoglobulins are prepared from two origins:
I. Animal origin (known as antisera), were frequently associated with hypersensitivity which led to their virtual abundonment.
2. Human immunoglobulins- (which have replaced animal immunoglobulins).
Again human immunoglobulins are of 2 types- i. Normal immunoglobulin & ii. Specific immunoglobulin.

Human Normal Immunoglobulins (HNIG) - These are the gamma globulins, prepared from pools of at least 1000 donations of human plasma; and contains antibody to measles, mumps, hepatitis A, rubella, varicella and other viruses currently prevalent in the general population.

Human Specific Immunoglobulins (HSIG) - These are the gamma globulins, that are prepared as antibodies against different specific infections, viz. Hepatitis-B immunoglobulin (HBIG),
Rabies immunoglobulin,
Tetanus immunoglobulin (HTIG),
Varicella zoster immunoglobulin (VZIG)

Mechanisms of action of immunoglobulins:
Immunoglobulins are the main players of humoral immune activity. They neutralise toxins or viruses, activate complement and stimulate phagocytosis by opsonisation.
In functional terms, immunoglobulins play the role of mediators between the specific recognition and binding of antigens and the activation of unspecific effector mechanisms in the organism.
Antigen-specific binding occurs via the variable part of the Fab region of immunoglobulin structure. Immunoglobulin as a bivalent antibody- it has two antibody binding sites allows a three-dimensional cross-linking of antigens. They play an important role in the counter-regulation of autoantibody formation by lymphocytes.

Human Normal Immunoglobulin[21,33]

HUMAN NORMAL IMMUNOGLOBULIN: Injection

Ind: 1. Protection of susceptible contacts against hepatitis-A virus, measles, mumps, varicella & to a lesser extent rubella in pregnant woman.
2. Treatment of hypogammaglobulinaemia and other immune deficiency states, following burns.

C/I: Known case of hypersensitivity to any component of normal human immunoglobulins.
S/E: Hypersensitivity reactions.

Precautions: Live virus vaccine should not be given untill 3 months after a dose of normal immunoglobulin injection. If a live virus vaccine has been given, normal immunoglobulin inj. should not be given for at least 2 weeks, except in special circumstances. For example, the concomi-tant admin. of measles vaccine with a suitable immunoglobulin is recommended for children with certain neurological disorders. Rubella vaccine may be administered in the post-partum period with anti-D(Rh) immunoglobulin injection. Monitor for signs of anaphylactoid reactions during injection.

Dosage & admin: Normal immunoglo-bulin for i.m use: Hepatitis-A prophylaxis- travel prophylaxis for short period (2 months or less abroad) adult 250mg & child under 10 years 125mg by deep i.m injection; for longer travel prophylaxis (3-5 months or more) & to control outbreaks, adult 500mg & child under 10 years 250mg by deep i.m injection.
Measles prophylaxis- child under 1 year 250mg, 1-2 years 500mg, 3 years and over 750mg by deep i.m injection.
Rubella in pregnancy, & prevention of clinical attack- 750mg by deep i.m injection.
Normal immunoglobulin for i.v use: Normal human immunoglobulin preparations for i.v administration are available for replacement therapy as in hypogammaglobulinaemia and other immune deficiency states, following burns etc.
The usual dose is 0.2-0.8ml/kg body weight, to be repeated every 4-8 weeks. The administration must be performed at a high dilution (at least 1:20) & very slowly (15 drops/min.) while the patient is kept under close clinical supervision.
Note: For further information- consult product literature.

❖ **HUMAGLOBIN Inj. Human Co./City Overseas**
Freeze-dried normal human immune globulin preparation, 2.5gm vial with 50ml solvent & 5gm vial with 100ml solvent: for i.v injection or infusion

Ind; C/I; S/E; Cautions: See above under the text of normal human immunoglobulin
Dose & admin: 0.2-0.8ml/kg body weight, by i.v administration, to be repeated every 4-8 weeks. It is advisable to administer in i.v infusion. The administration must be performed at a high dilution (at least 1:20) & very slowly (15 drops/min.) while the patient is kept under close clinical supervision.
Note: For further information-consult product literature.
2.5gm vial with 50ml solvent: 18500.00 TP
5gm vial with 100ml solvent: 36500.00 TP

❖ **PENTAGLOBIN Inj. Biotest Pharma/ UniHealth**
1ml solution contains- human plasma protein 50mg, of which immunoglobulin at least 95%, IgM 6mg, IgA 6mg, IgG 38mg.

Ind: Adjuvant therapy of severe bacterial infections additional to antibiotic therapy. Immunoglobulin substitution in immunoco-mpromised patients.

C/E; S/E; Cautions: See above under normal human immunoglobulin.

Dose & Admin: Neonates, infants, children and adults- 5ml/kg body weight daily on 3 consecutive days. Further infusions may be required depending on the clinical course. Immunoglobulin substitution in immunocompro-mised patients- 3-5ml/kg body weight, repetition at weekly intervals if necessary. Pentaglobin should be infused i.v at the following rates- in neonates and infants, 1.7ml/kg/hour by infusion pump; in children and adults, 0.4ml/kg/hour or alternatively, first 100ml at 0.4ml/kg/ hour then 0.2ml/kg/ hour continuously until 15ml/kg is reached within 72 hours.
10ml ampoule: 4019.18 MRP

Human Specific Immunoglobulin

HEPATITIS-B IMMUNE GLOBULIN[116]

❖ **HEPABIG Inj. Green Cross Corp./Tajarat**
Hepabig injection is a sterile solution containing hepatitis-B immune globulin (HBIG) which is prepared by Cohn fractionation from plasma of human individuals with high titres of antibody to hepatitis-B surface antigen (anti-HBs) and whose plasma does not show serologic evidence of hepatitis-B surface antigen (HBsAg). Also, donors are always checked up to exclude HIV and HCV infection before preparation of Hepabig. Hepabig injection contains- the specific antibody titre against the HBsAg- Hepatitis-B immune globulin 200 i.u/ml.
Pharmacological action: Hepatitis-B immune globulin is used to provide passive immunity to hepatitis-B infection in the prophylactic treatment of individuals exposed to hepatitis-B virus of HBsAg positive materials.
Antibodies specific to HBsAg (anti-HBs), which are present in Hepabig combine with HBsAg and neutralize the hepatitis-B virus, so that its infective or pathogenic properties are inhibited.
Ind: 1. Prophylaxis in neonates born to HBsAg positive mothers. 2. Post-exposure prophylaxis following percutaneous exposure to (e.g needlestick), direct mucous membrane contact with (e.g oral, ophthalmic), or ingestion (e.g pipetting accident) of material containing hepatitis-B virus or an HBsAg positive sourece of known identity. 3. Post-exposure prophylaxis following sexual or intimate contacts to an HBsAg positive individual.
C/I: Hepabig should not be administered to HBsAg positive individuals. But, no adverse reactions have been seen in individuals with pre-existing hepatitis-B surface antigen although data regarding this occurrence are limited.
A/R: Adverse reactions are infrequent, mild, and transient following administration of hepatitis-B immune globulin (HBIG). Local pain and tenderness at the injection site, urticaria and angioedema may occur.
Precautions: Should not be administered intravenously. Should be given with caution to patients with a history of prior systemic allergic reaction following the administration of human immune globulin preparation. Should be given with caution to patients with Ig A deficiency syndrome, since these individuals may have serum antibodies to Ig A and anaphylaxis could result from following administration of blood products containing IgA. Following the administration of Hepabig, the application of live virus vaccine should be avoided for a period of 3 months because the antibody content of Hepabig may interfere with the immune response to the vaccination.
Dosage & admin: Hepabig should only be administered by intramuscular injection. Following exposure to hepatitis-B virus (HBV), should be administered within 7 days (preferably within 48 hours) and, if necessary, repeat the same or increased quantity of dose. The recommended dose for adult is 1,000 to 2,000 I.U.
In prophylaxis in neonates born to HBsAg positive mothers, should be injected within 5 days after birth (preferably within 48 hours) and repeated after fifteen days or 2/3 months after the first administration. The recommended initial dose is 100 to 200 I.U (0.5 to 1ml) and booster dose is 32 to 48 I.U per kg of body weight.
Although post-exposure prophylaxis with hepatitis-B immune globulin (HBIG) alone was previously recommended for neonates born to HBsAg positive women, combined passive imumunization with HBIG and active immunization with hepatitis-B virus vaccine is currently recommended in these neonates.
0.5ml vial x 10's pack:
1ml vial x 10's pack:

HUMAN ANTI-TETANUS IMMUNOGLOBULIN[21,99,116,119]

HUMAN ANTI-TETANUS IMMUNOGLOBULIN: I.M Injection
Human anti-tetanus immunoglobulin (TIG) 250 i.u/vial or syrine: i.m injection.
Human anti-tetanus immunoglobulin is a liquid or lyophilized concentrate for intramuscular administration prepared from pooled human plasma of donors who have been immunized against tetanus and who have received a booster injection of tetanus vaccine prior to donation. Human tetanus immunoglobulin (TIG) is available in vials, ampoules or preloaded syringe for instant administration.
Ind: Passive immunisation against tetanus in non-vaccinated individual or treatment for declared tetanus. Sustained wounds possibly contaminated with tetanus bacilli.
In all cases of passive immunization, tetanus vaccine (adsorbed) should be administered as soon as practicable.
S/E: Slight local reactions like inflammation and tenderness may occur.
Dosage & admin: ***Prophylaxis:*** **in case of injury, thorough debridement and cleansing of the wound should be performed. Prompt i.m administration of 250 i.u.(1ml) of TIG is usually adequate. (Child- 4 units/kg body wt). In severe multiple injuries or of a highly potential tetanus infectivity the dose should be doubled.**
Passive immunization with immunoglobulin should be accompanied by simultaneous active immunization with adsorbed tetanus vaccine with seperate syringe & into saperate site. TIG usually provides a protective level of tetanus antitoxin over 0.01 i.u per ml serum for a period of 4 wks.
Treatment: **TIG could be used for the treatment of declared tetanus in conjunction with other therapeutic measures. The doses would range between 3,000 i.u. and 6,000 i.u.**

❖ **TETABULIN S/D 250 IU Inj. Baxter/Ultra Pharma**
Human anti-tetanus immunoglobulin (TIG) 250 I.U in preloaded syringe for instant administration: i.m injection.
Dosage & admin: See above under the text.
250 I.U preloaded syringe: 467.00 MRP
Preparation: May not be available now.

HUMAN ANTI-D IMMUNOGLOBULIN[21,119]

HUMAN ANTI-D IMMUNOGLOBULIN: Injection.
Anti-D immunoglobulin is produced from the plasma of selected healthy donors with a high content of Rho(D) antibodies.
Glycine and merthiolate are added as stabilizer and preservative.
Indications:
1. Rh-negative mother (not previously sensitized to the RhoD factor) after delivery of a Rh-positive child.
2.All nonsensibilized Rh-negative women after spontaneous or induced abortions, amniocentesis and transplacental haemorrhage.
3. Prophylaxis of erythroblastosis foetalis of every type. Anti-D (Rho) immunoglobulin is recommended for every first deliveries and all subsequent deliveries (also miscarriage) where Rho(D) sensitization may be expected.
Contraindications:
ANTI-D(Rho) Inumunoglobulin must not be administered to- i. Rho(D) positive patients, ii. Rho(D) positive neonates, iii. mother previously sensitized to Rho(D) positive factor, & iv. known sensitivity to human protein.
Precautions & warnings: For intramuscular use only; do not give intravenously.
S/E: Generally well tolerated, on rare occasions anaphylactoid reactions may occur in a patient, or hypogammaglobulinaemic patients with antibodies to IgA. also in patients who have shown an atypical reaction to blood or blood products.
Dosage & admin: See below under individual product.
Note: For further information- see manufacturer's literature.

❖ **PARTOBULIN SDF Inj. Baxter/Ultra Pharma**
Anti-D immunoglobulin 1250 i.u (250mcg) in 1ml single dose prefilled syring: i.m injection.
Dosage & admin: One dose 1250 i.u (250mcg) should be given i.m immediately or as soon as possible after delivary, or abortion of a Rh positive child, preferably within 48 hours, but not later than 72 hours post partum.
Following any potentially sensitising episode (e.g stillbirth, amniocentesis) up to 20 weeks of gestation 650 i.u (125mcg) per episode (after 20 weeks of gestation, 1250 i.u) immediately or within 72 hours.
For antenatal prophylaxis 1250 i.u (250mcg) should be given in week 28 and also week 34 of pregnancy.
The injection must only be given deep intramuscularly.
Warning: Do not inject intravenously !!
Storage: Partobulin SDF should be stored between +2°C and +8°C. The product should be brought to room or body temperature before use.
1ml single dose prefilled syringe: 2497.00 MRP
Preparation: May not be available now.

Chapter-18

ANAESTHETICS & MUSCLE RELAXANTS

ANAESTHETICS & MUSCLE RELAXANTS

1. **General anaesthetics**
2. **Local anaesthetics**

GENERAL ANAESTHETICS[21]

1.1 Intravenous anaesthetics
1.2 Inhalational anaesthetics
1.3 Antimuscarinic drugs
1.4 Sedative & analgesic peri-operative drugs
1.5 Muscle relaxants used in general anaesthesia
1.6 Anticholinesterases used in anaesthesia
a) Anticholinesterases used in general anaesthesia
b) Reversal of the centrally sedative effects of benzodiazepines used in general anesthesia
1.7 Misc. preparations: preparation for cardiopulmonary bypass & open-heart surgery

Intravenous Anaesthetics

ETOMIDATE[133]

ETOMIDATE: I.V Injection.
Etomidate, a hypnotic drug without analgesic activity, used for the induction of general anesthesia. It is available as etomidate BP 20mg in 10ml ampoule with propylene glycol 35% v/v, for intravenous (i.v) injection.
Mode of action: Etomidate i.v injection produces hypnosis characterized by a rapid onset of action, usually within one minute. Duration of hypnosis is dose dependent but relatively brief, usually 3 to 5 minutes when an average dose of 0.3mg/kg is employed.
Ind: Etomidate is indicated for the induction of general anesthesia. When considering use of etomidate, the usefulness of its hemodynamic properties should be weighed against the high frequency of transient skeletal muscle movements. Etomidate is also indicated for the supplementation of subpotent anesthetic agents, such as nitrous oxide in oxygen, during maintenance of anesthesia for short operative procedures such as dilation and curettage or cervical conization.
C/I: Etomidate is contraindicated in patients who have shown hypersensitivity to it.
A/E: The most frequent adverse reactions associated with use of i.v etomidate are transient venous pain on injection and transient skeletal muscle movements, including myoclonus. Skeletal muscle movements appear to be more frequent in patients who also manifest venous pain on injection.
Respiratory system: Hyperventilation, hypoventilation, apnea of short duration (5 to 90 seconds with spontaneous recovery); laryngospasm, hiccup and snoring suggestive of partial upper airway obstruction have been observed in some patients. These conditions were managed by conventional counter measures.
Circulatory system: Hypertension, hypotension, tachycardia, bradycardia and other arrhythmias have occasionally been observed during induction and maintenance of anesthesia. One case of severe hypotension and tachycardia, judged to be anaphylactoid in character, has been reported.
Elderly patients, particularly those with hypertension, may be at increased risk for the development of cardiac depression following etomidate administration. Therefore, these patients may require lower doses of etomidate than younger patients.
Gastrointestinal system: Postoperative nausea and/or vomiting following induction of anesthesia with etomidate is probably no more frequent than the general incidence. When etomidate was used for both induction and maintenance of anesthesia in short procedures such as dilation and curettage, or when insufficient analgesia was provided, the incidence of postoperative nausea and/or vomiting was higher than that noted in control patients who received thiopental.
Precautions & warnings: Etomidate is known to be substantially excreted by the kidney, and the risk of toxic reactions to this drug may be greater in patients with impaired renal function. As elderly patients are more likely to have decreased renal function, in these cases care should be taken and it may be useful to monitor renal function. *Plasma cortisol levels:* Induction doses of etomidate have been associated with reduction in plasma cortisol and aldosterone concentrations. These have not been associated with changes in vital signs or evidence of increased mortality; however, where concern exists for patients undergoing severe stress, exogenous replacement should be considered.
Intravenous etomidate should be administered only by persons trained in the administration of general anesthetics and in the management of complication encountered during the conduct of general anesthesia.
Because of the hazards of prolonged suppression of endogenous cortisol and aldosterone production, this formulation is not intended for administration by prolonged infusion.
Pregnancy & lactation: Etomidate should be used during pregnancy only if the potential benefit justifies the potential risks to the fetus.
Labor & delivery: There are insufficient data to support use of i.v etomidate in obstetrics, including caesarean section deliveries. Therefore, such use is not recommended.
It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when etomidate is administered to a nursing mother.
Dosage & admin: Etomidate injection is intended for administration only by the i.v route. The dose for induction of anesthesia in adult patients and in pediatric patients above the age of 10 years will vary between 0.2 and 0.6mg/kg of body weight, and it must be individualized in each case. The usual dose for induction in these patients is 0.3mg/kg, injected over a period of 30 to 60 seconds. There are inadequate data to make dosage recommendations for induction of anesthesia in patients below the age of 10 years; therefore, such use is not recommended. Geriatric patients may require reduced doses of etomidate.
Smaller increments of i.v etomidate may be administered to adult patients during short operative procedures to supplement subpotent anesthetic agents, such as nitrous oxide. The dosage employed under these circumstances, although usually smaller than the original induction dose, must be individualized. There are insufficient data to support this use of etomidate for longer adult procedures or for any procedures in pediatric patients; therefore, such use is not recommended. The use of i.v fentanyl and other neuroactive drugs employed during the conduct of anesthesia may alter the etomidate dosage requirements. Etomidate hypnosis does not significantly alter the usual dosage requirements of neuromuscular blocking agents employed for endotracheal intubation or other purposes shortly after induction of anesthesia.
Pediatric use: **There are inadequate data to make dosage recommendations for induction of anesthesia in patients below the age of 10 years; therefore, such use is not recommended.**
Overdosage: Overdosage may occur from too rapid or repeated injections. Too rapid injection may be followed by a fall in blood pressure. No adverse cardiovascular or respiratory effects attributable to etomidate overdose have been reported.
In the event of suspected or apparent overdosage, the drug should be discontinued, a patent airway established (intubate, if necessary) or maintained and oxygen administered with assisted ventilation, if necessary.

❖ **ETOMID Inj. Popular**
Etomidate BP 20mg in 10ml ampoule with propylene glycol 35% v/v, for intravenous (i.v) injection.
10ml (20mg) amp x 10's pack: 750.00 MRP

KETAMINE[21,58]

KETAMINE HCl: Injection
Ind: It is a general anaesthetic with short onset of action, and applied for operations of short duration & in case of instrumental or painful diagnostic interventions. Also used for induction of anaesthesia prior to the admin. of i.v anaesthetics. It potentiates the effect of inhalation anaesthetics of low potency (e.g N2 0).
C/I: Eclampsia, hypertension
S/E: Elevated blood pressure, tachycardia. Hallucination, psychomotor agitation, mental confusion. It is incompatible with soluble barbiturates. Post-anaesthetic restlessness can

usually be prevented with droperidol (0.1 mg/ kg i.m).
Cautions: Resp. deppression may occur with overdose or very rapid rate of admn., in Which case supportive ventilation should be employed. It should be injected slowly (over a period of longer than 60 seconds.
Dosage & admin: Initial i.v dose varies between 1-4.5mg/kg. The average dose, 2mg/kg resulting in anaesthesia of 5-10 min. duration.
The initial i.m dose varies between 6.5-13 mg/kg. The average dose,10 mg/kg brings anaesthesia of about 12-25 min. duration. Anaesthesia can be maintained by the initial or by the half of the initial doses.

❖ CALYPSOL Inj. Gedeon Richter/City Overseas
Ketamine hydrochloride 50mg/ml; 10ml vial: injection
10ml (500mg) vial x 1's pack: 100.00 TP
❖ G-KETAMINE Inj. Gonoshastha
Ketamine hydrochloride 50mg/ml; 10ml vial: injection
10ml vial x 1's pack: 101.14 MRP
❖ KETALAR Inj. Popular
Ketamine hydrochloride 50mg/ml; 10ml vial: injection
10ml vial x 1's pack: 115.00 MRP
❖ KETAMINE-ROTEX Inj. Rotex Medica/ City Overseas
Ketamine hydrochloride 50mg/ml; 10ml vial: injection
10ml (500mg) vial x 1's pack: 75.00 TP
❖ PENTYL Inj. ACI
Ketamine hydrochloride 50mg/ml; 10ml vial: injection
10ml vial x 1's pack: 115.00 IP

PROPOFOL[95]

PROPOFOL: Injection
Ind: Induction & maintenance of general anaesthesia; sedation of ventilated patients receiving intensive care. for upto 3 days. Propofol is associated with rapid recovery without hangover effect.
C/I: If history of propofol allergy.
S/E: Occasional reports of convulsions, anaphylaxis, & delayed recovery from anaesthesia; bradycardia, occasionally profound. There is sometimes pain on i.v injection.
Cautions: Monitor blood lipid conc. in patients at risk of fat overload. If profound bradycardia develops, i.v administration of an antimuscarinic may be necessary to prevent this bradycardia.
Dosage & admin: Induction, by i.v injection, 2-2.5mg/kg (less in elderly) at a rate of 20-40mg every 10 seconds; Child over 3 yrs. 2-5mg/kg adjusted as necessary. Maintenane, by i.v infusion, 4-12mg/kg/hour; Child, over 3 yrs. 9-15 mg/kg/hour.
Sedation during intensive care (with assisted ventilation), by i.v infusion, 1-4 mg/kg/hour for upto 3 days.
Child, not recommended.

❖ FRESOFOL Inj. Fresenius Kabi/Hyeimpex
Propofol 10mg/ml; 20ml ampoule & 50ml bottle: injection.
20ml amp x 5's pack: 1758.00 MRP
50ml bot x 1's pack: 779.00 MRP
Price: Could not be revised.
❖ POFOL I.V Inj. Popular
Propofol 10mg/ml; 20ml ampoule: i.v injection.
20ml amp x 1's pack: 200.00 MRP
❖ RECOFOL Inj. Bayer Schering Oy/Tajarat
Propofol 10mg/ml; 20ml ampoule: injection.
20ml amp x 1's pack:
50ml vial x 1's pack:

THIOPENTONE SODIUM[21,33]

THIOPENTONE SODIUM: I.V Injection or rectal instillation.
Thiopentone sodium is a barbiturate drug without analgesic property. It is widely used as an intravenous anaesthetic.
Ind: Induction of general anaesthesia; anaesthesia of short duration; it has no analgesic properties but induction is generally smooth & rapid & potent in action.
C/I: Porphyria
S/E; Cautions: Owing to its narrow therapeutic margin, overdosage with cardiorespiratory depression may occur. Repeated doses have a cumulative effect. Sedative effects may persist for 24 hours. The reconstituted solution is highly alkaline and therefore irritant on misplaced injection outside the vein; arterial injection is particularly dangerous. Reduce induction dose in severe liver desease. interactions: Appendix (anaesthetics)
Dosage & admin: By i.v injection, in fit premedicated adults, initially 100-150mg (4-6ml of 2.5% solution) over 10-15 seconds, followed by further quantity if necessary according to response after 30-60 seconds; or up to 4mg/kg.
Children: Induction, 2-7mg/kg.

❖ ANESTHO Inj. Incepta
Thiopental sodium USP 500mg & 1gm/vial (powder for reconstitution): i.v injection or rectal instillation.
500mg vial x 1's pack: 69.59 MRP
1gm vial x 1's pack: 100.00 MRP
❖ G-THIOPENTAL Inj. Gonoshasthaya
Thiopental sodium USP 500mg & 1gm/vial (powder for reconstitution): i.v injection or rectal instillation.
500mg vial x 1's pack: 60.00 MRP
1gm vial x 1's pack: 100.00 MRP
❖ THIOPEN Inj. ACI
Thiopental sodium USP 500mg & 1gm/vial (powder for reconstitution): i.v injection or rectal instillation.
500mg vial x 1's pack: 69.59 IP
1gm vial x 1's pack: 100.00 IP
❖ THIOPENTONE-ROTEX Inj. Rotex Medica/City Overseas
Thiopental sodium USP 500mg & 1gm/vial (powder for reconstitution): i.v injection or rectal instillation.
500mg vial x 1's pack: 80.00 TP
1gm vial x 1's pack: 110.00 TP
❖ THIOTON Inj. Techno Drugs
Thiopental sodium USP 500mg & 1gm/vial (powder for reconstitution): i.v injection or rectal instillation.
500mg vial x 1's pack: 60.00 MRP
1gm vial x 1's pack: 100.00 MRP
❖ TPS 1 Inj. Popular
Thiopental sodium USP 1gm/vial (powder for reconstitution): i.v injection or rectal instillation.
1gm vial x 1's pack: 100.00 MRP
❖ TPS 500 Inj. Popular
Thiopental sodium USP 500mg/vial (powder for reconstitution): i.v injection or rectal instillation.
500mg vial x 1's pack: 69.59 MRP

Inhalational Anaesthetics

DIETHYL ETHER[21,33]

❖ ETHER ANAESTHETIC J.T Beker
Diethyl ether, an inhalation anaesthetic.
Ind: Used in general anaesthesia (but now is less popular due to increased risk of use)
S/E: High incidence of nausea and vomiting
Caution: Ether vapour forms inflammable and explosive mixtures with oxygen; both induction and recovery from anaesthesia are slow.
Dosage & admin: From an open mark or a suitable vaporiser. Induction upto 20%, maintenance 3-10%.
946ml bot:
Preparation: May not be available.

HALOTHANE[21,95,110]

HALOTHANE: Inhalation anaesthetic
Halothane is a most widely used inhalation anaesthetic.
Ind: For induction and maintenance of general anaesthesia in major surgery with oxygen or nitrous oxide-oxygen mixtures.
C/I: History of unexplained jaundice or pyrexia after a previous exposure to halothane is an absolute contraindication to its future use in that patient. Halothane is contraindicated in patients with known, or suspected, genetic predisposition to malignant hyperpyrexia.
S/E & Cautions: Cardio-respiratory depression, bradycardia, fall of arterial pressure. Halothane can induce liver damage, therefore, any changes or disturbances of liver function including jaundice and enzyme activity (serum aminotransferase), usually following repeated administrations (within 4-6 wks), should be monitored & in the case of hepatic impairment, an alternative agent should be used if necessary in this period.
Pregnancy & lactation: Halothane should be used with care in obstetrics as uterine relaxation and post-partum haemorrhage may result. In early pregnancy, it is better to avoid unless its use is essential. In case of nursing mother, breast feeding should be with-held for about 24 hours after halothane anaesthsia.
Dosage & admin: Using a suitable vaporiser, for induction of anaesthesia in the adult patient, a concentration of 2-4% halothane in oxygen or oxygen/nitrous oxide may be used. In children, a concentation of 1.5-2% halothane in oxygen or oxygen/nitrous oxide is used. A concentration of 0.5-2G is usually

adequate for manintenance of anaesthesia in both adults and children. The lower concentration is usually most suitable for elderly patients.

Drug inter: Cardiac arrhythmias may occur when adrenaline is used concurrently. All commonly used muscle relaxants may be used in conjunction with halothane, but, as halothane potentiates the actions of gallamine and d-tubocurarine, the doses of these muscle relaxants must be reduced. The association of d-tubocurarine with halothane may lead to a marked fall in blood pressure. Potentiation occurs between halothane and hypotensive agents, such as pentolinium and trimetaphan. These drugs must not be used in reduced dosagewhen administered in conjunction with halothane.

The use of beta-adrenoceptor antagonists during halothane anaesthesia is at the discretion of the anaesthetist.

Note: For further information, please consult manufacturer's literature.

❖ **HALOSIN Inh. ACI**

Halothane BP 100% v/v: inhalation anaesthetic. 250ml pack: 1650.00 MRP

ISOFLURANE[63]

ISOFLURANE: Inhalation Anaesthetic

Isoflurane is a colorless non-flammable general inhalation anaesthetic which contains no additive or stabiliser. It is 1-chloro 2,2,2-trifluoroethyl difluoromethyl ether.

Ind: General inhalation anaesthetic for use in induction and maintenance.

C/I: Known sensitivity to isoflurane or to other halogenated agents. Isoflurane should never be given to patients with known or suspected susceptibility to malignant hyperthermia.

Isoflurane must not be used in patients who have developed an icterus and/or fever of unknown origin, hepatic impairment or eosinophilia after administration of isoflurane or another halogenated anaesthetic.

S/E: Adverse reactions encountered with isoflurane are similar to those observed with other halogenated anaesthetics; these are hypotension, respiratory depression and arrhythmias.

Other minor side effects encountered while using isoflurane are an increase in the white blood cell count (even in the absence of surgical stress) and also shivering, nausea and vomiting during the postoperative period. These side effects are only observed in a similar number of patietns to other anaesthetics.

Increase in heart rate has been reported.

Rare cases of bronchospasm have been reported.

During marketing there have been rare reports of mild, moderate and severe (some fatal) post-operative hepatic dysfunction. The causal relationship is unknown.

Precautions: Isoflurane has got a profound respiratory depressant action, this effect is being accentuated by narcotic premedication or concurrent use of other respiratory depressants.

Isoflurane causes an increase in cerebral blood flow at deeper levels of anaesthesia, (1.5%), and this may give rise to an increase in cerebral spinal fluid pressure. Where appropriate, this can be prevented or reversed by hyper-ventilating the patient before or during anaesthesia. As with other halogenated anaesthetics, isoflurane must be used with caution in patients with increased intracranial pressure. Again, in such cases, hyperventilation may be necessary.

As with all halogenated anaesthetics, repeat anaesthesia within a short period of time should be approached with caution since the risk of hepatotoxicity is not fully understood. There is insufficient experience of use in repeated anaesthesia to make a definite recommendation in this regard.

Isoflurane has been reported to interact with dry carbon dioxide adsorbents during closed circuit anaesthesia, to form carbon monoxide. Inhalation of carbon monoxide may lead to formation of significant levels of carboxyhaemoglobin in exposed patients. Carboxyhaemoglobin is toxic even in low concentrations and is not easily detected by standard anaesthesia monitors such as pulse oximeters. Direct measurement of carboxyhaemoglobin should be carried out in the event that a patient on closed circuit anaesthesia with an implicated agent develops oxygen desaturation which does not respond to the usual therapeutic measures. All necessary precautions should be taken to ensure that carbon dioxide adsorbents are not allowed to dry out.

Caution should be exercised when administering isoflurane to patients with pre-existing liver disease.

Isoflurane is a powerful systemic and coronary arterial dilator. The effect on systemic arterial pressure is easily controlled in the normal healthy patient and has been used specifically as a means of inducing hypotension. However, the phenomenon of 'coronary steal' means that isoflurane should be used with caution in patients with coronary artery disease. In particular, patients with subendocardial ischaemia might be anticipated to be more susceptible.

Salivation and tracheo-bronchial secretions may be stimulated in children but pharyngeal and laryngeal reflexes are quickly diminished.

As because, levels of anaesthesia can be altered easily and quickly with isoflurane, only vaporisers which produce a predictable concentration with a good degree of accuracy should be used. The degree of hypotension and ventilatory depression may provide some indication as to the level of anaesthesia. The level of anaesthesia may be changed quickly with isoflurane. Heart rhythm remains stable but spontaneous breathing thould be monitored closely and supported where necessary.

It is recommended that vapour from this and other inhalational agents are efficiently extracted from the area of use.

Isoflurane should only be administered by, or in the presence of, anaesthetists with the appropriate anaesthesia and resuscitation equipment.

Pregnancy & lactation: There are insufficient data are available on human studies to estimate the risk of teratogenicity in children of women who receive isoflurane anaesthesia during pregnancy. However, isoflurane is not recommended during the first trimester of pregnancy.

All anaesthetics should be avoided during pregnancy if possible. Unavoidable anaesthesia with isoflurane should be undertaken with due caution. A suitable level of anaesthesia for caesarean section can be maintained with 0.5-0.75% isoflurane in oxygen/nitrous oxide. Increased blood loss has been observed, comparable with other volatile anaesthetics (e.g halothane), in patients undergoing uterine curettage or other gynaecological surgical procedures.

In nursing mother, if isoflurane is necessary to be administered, lactation is to be interruped after the anaesthesia. Lactation can be restarted after the drug has been discharged from the circulation.

Dosage & admin: Isoflurane has a slight pungent ethereal odour, which may limit the rate of gas induction but, despite this , induction and particularly recovery are rapid. The use of isoflurane-specific vaporisers will facilitate accurate control of the administered concentration of anaesthetic. The MAC (Minimum Alveolar Concentration), the standard measure of potency for anaesthetics, is 1.15% in pure oxygen, decreasing to 0.5% when given with 75% nitrous oxide, for middle-aged humans. There is an age-relationship: the MAC is significantly higher in children and lower in the elderly.

	MAC	
Age	*Ave. Conc. in Oxygen*	*Ave. Conc. with 75% N_2O*
Upto 12 mon	1.60-1.85%	0.49 to 0.69
1 to 5 years	1.50-1.60%	0.49 to 0.67
		Ave. Conc. with 70% N_2O
Mid-twenties	1.25-1.30%	0.40 to 0.63
Mid-forties	1.10-1.20%	0.43 to 0.57
Mid-sixties	1.00-1.10%	0.33 to 0.41

Premedication: **Premedication drugs should be selected according to the needs of the patient. The ventilatory depressant effect of isoflurane should be taken into account. Anticholinergic drugs (e.g atropine, glycopyrrolate USP) may be used for their effects in drying oral secretions (antisialogogue) at the discretion of the anaesthetist, but they may enhance the weak effects of isoflurane in increasing heart rate.**

Induction: **As isoflurane has a mild pungency, inhalation should usually be preceded by the use of a short acting barbiturate, or other intravenous induction agent, to prevent coughing. Salivation and coughing may be troublesome in small children induced with isoflurane. Alternatively, isoflurane with oxygen or with an oxygen/nitrous oxide mixture may be administered. It is recommended that induction with isoflurane be initiated at a concentration of 0.5%. Concentrations of 1.5-3.0% usually produce surgical anaesthesia in 7-10 minutes. Blood pressure decreases during induction but this may be compensated by surgical stimulation.**

Maintenance: **Adequate anaesthesia for surgery may be sustained with an inspired isoflurane concentration of 1.0-2.5 % in an**

oxygen/70% nitrous oxide mixture. Additional inspired isoflurane (0.5-1.0%) will be required with lower nitrous oxide levels, or when isoflurane is given witb oxygen alone or with air/oxygen mixtures. Blood pressure decreases during maintenance anaesthesia in relation to the depth of anaesthesia. That is, blood pressure is inversely related to the isoflurane concentration. Provided there are no other complicating factors, this is probably due to peripheral vasodilation. Cardiac rythm remains stable. Excessive falls in blood pressure may be due to the depth of anaesthesia and in such circumstances this can be corrected by reducing the inspired isoflurane concentration.
Induced hypotesion can be achieved by artificially ventilating patients with isoflurane 2.5-4.0%. Pre-treatment with Clonidine significantly decreases the isoflurane requirement for maintaining induced hypotension.
Recovery: **The concentration of isoflurane can be reduced to 0.5% at the start of closing the operation wound, and then to 0% at the start of closing the operation wound, and then to 0% at the end of surgery, provided that the anaesthetist is satisfied that the effect of any neuromuscular blocking durgs has been reversed and the patients is no longer paralysed. After discontinuation of all anaesthetics, the airways of the patient should be ventilated several times with oxygen 100% until complete recovery.**
Drug inter: Please see manufacturer's literature.
Note: For further information, please contact manufacturing authority.

❖ **FORANE Inh. Abbott Pharma/UniMed**
Isoflurane USP, a colourless non-flammable general inhalation anaesthetic, containing no additive or stabiliser.
100ml bot: 2961.16 MRP

SEVOFLURANE[63]

❖ **SEVORANE Inh. Abbott Pharma/UniMed**
Sevoflurane USP, a colourless, nonpungent, nonflammable and nonexplosive liquid administered by vaporization, is a halogenated general inhalation anesthetic drug. The finished product is comprised only of the active drug substance, sevoflurane (about 99.9875% w/w on anhydrous basis). It is miscible with ethanol, ether, chloroform and petroleum benzene, and is slightly soluble in water.
Chemical name: Fluoromethyl 2,2.2-trifluoro-l-(trifluoromethyl)ethyl ether.
Molecular formula: $C_4H_3F_7O$.
Sevoflurane is available in 250ml plastic bottles with closures.
Ind: Sevoflurane is indicated for induction and maintenance of general anesthesia in adult and pediatric surgery.
C/I: Sevoflurane is contraindicated in patients with known sensitivity to sevoflurane or to other halogenated agents.
Sevoflurane is contraindicated in patients in whom liver dysfunction, jaundice or unexplained fever, leucocytosis, or eosinophilia has occurred after a previous halogenated anesthetic.
Sevoflurane is contraindicated in patients with known or suspected genetic susceptibility to malignant hyperthermia, or in patients with a known or suspected history of malignant hyperthermia.
Sevoflurane should not be used when general anesthesia is contraindicated.
Precoutions & warnings: Please see the manufacturer's literature.

Dosage & admin:
Dosing considerations: **Fresh gas flow rates of less than 2 lit./min in a circle absorber system are not recommended, as safety at lower rates has not yet been established.**
The concentration of sevoflurane being delivered from a vaporizer during anesthesia should be known. This may be accomplished by using a vaporizer calibrated specifically for sevoflurane. The administration of general anesthesia must be individualized based on the patient's response.
Pre-anesthetic medication: **No specific premedication is either indicated or contraindicated with sevoflurane. The decision as to whether or not to premedicate and the choice of premedication is left to the discretion of the anesthesiologist.**
Induction: **Sevoflurane has a non-pungent odour and does not cause respiratory irritability; therefore, it is suitable for mask induction in pediatrics and adults.**
Maintenance: **Surgical levels of anesthesia can usually be achieved with concentrations of 0.5 to 3% sevoflurane with or without the concomitant use of nitrous oxide. Sevoflurane can be administered with any type of anesthesia circuit.**
Recommended dose & dosage adjustment:

MAC (Minimum alveolar concentration) values according to age:

Age of Pt.	MAC	
	MAC in Oxygen	MAC in 65% N_2O/35% O_2
1 - < 6 months[1]	3.0%	--
6 - < 12 months	2.8%	--
1 - < 3 years[2]	2.6%	2.0%
3 - 12 years	2.5%	--
25 years	2.5%	1.4%
40 years	2.1%	1.1%
60 years	1.6%	0.9%
80 years	1.4%	0.7%

Note 1: In 12 neonates of full-term gestational age, MAC was determined to be 3.3%.
Note 2: In 1 - < 3 yrs old pediatric patients, 60% N_2O / 40% O_2 was used.

Minimum alveolar concentration (MAC) of sevoflurane in oxygen for a 40 year old adult is 2.1%.
The MAC of sevoflurane decreases with age.

Administration: **Sevoflurane should be administered only by persons trained in the administration of general anesthesia.**
In the event of overdosage, or what may appear to be overdosage, the following action should be taken: discontinue administration of sevoflurane, maintain a patent airway, initiate assisted or controlled ventilation with oxygen & maintain adequate cardiovascular function.
Hepatic impairment: **Sevoflurane may cause sensitivity hepatitis in patients who have been sensitized by previous exposure (specially if the interval is less than 3 months), to halogenated anesthetics. Therefore, appropriate alternative anesthetic agent(s) should be considered, this is especially important in patients with pre-existing hepatic conditions.**
In a limited number of patients with mild-to-moderate hepatic impairment the hepatic function was not affected by sevoflurane. The safety of sevoflurane in patients with severe hepatic impairment has not been established; therefore, sevoflurane should be used with caution in these patients.
Renal impairment: **Because clinical experience in administering sevoflurane in patients with renal insufficiencies (creatinine > 1.5 mg/dl) is limited, its safety in these patients has not been established. Therefore, sevoflurane should be used with caution in patients with renal insufficiency.**
Storage: Sevoflurane should be stored between 15 and 25°C.
250ml bot: 14325.45 MRP

Antimuscarinic Drugs[21]

Antimuscarinic drugs are used in anaesthesia as premedication to dry bronchial and salivary secretions. These are also used before or with neostigmine halothane, propofol, and suxamethonium to prevent bradycardia, hypotension and excessive salivation. But, now a day this are being rarely used for premedication. However, still these drugs playing emergency role in the treatment
of vagotonic side-effects, and in acute arrhythmias after myocardial infarction.

These drugs include: *Atropine, Hyoscine, Glycopyrronium, Phenothiazines.*

Note: For detail see in the respective chapter.

Sedative & Analgesic Prei-operative Drugs

1. **Anxiolytics and neuroleptics**
2. **Non-opioid analgesics**
3. **Opiod analgesics**

Anxiolytics & neuroleptics[21]

Anxiolytic benzodiazepines are in wide use in anaesthesia for premedication, but. neuroleptics are rarely used as premedication currently. Benzodiazepines that are used as premedication include: ***Diazepam, Lorazepam, Midazolam, Temazepam etc.***
Note: For detail see in the respective chapter.

Non-opioid analgesics used in post-operative pain

KETOROLAC[21,39,50]

KETOROLAC TROMETHAMINE: Tablet/ Injection

Ind: Relief of pain associated with surgical procedures such as major abdo-minal, orthopaedic, dental, or gynaecological surgery; acute & chronic musculo-skeletal pain, renal colic, cancer pain.

C/I: Active peptic ulceration, history of peptic ulcer; coagulation disorders; hypersensitivity to ketorolac trometamol; aspirin/NSAID-induced allergy; concomitant treatment with lithium salts. Avoid in pregnant and breast-feeding women.

S/E: *Gastrointestinal-* nausea, vomiting, dyspepsia, diarrhoea, peptic ulcer, haemorrhage, perforation, liver function abnormalities. *CNS/musculoskeletal-* drowsiness, dizziness, sweating, convulsions. *Renal-* acute renal failure, flank pain, haematuria. Other- hypersensitivity reactions (anaphylaxis, bronchospasm, laryngeal oedema, hypotension, flushing, rash), oedema, purpura, myalgia, post-operative wound haemorrhage, injection site pain.

Precautions: Use with care in the elderly, in patients with a history of gastro-intestinal disease, those with asthma, cardiac, renal, hepatic, or allergic disease, and those who are hypovolaemic. Ketorolac should not normally be used in severe renal impairment. NSAIDs have been associated with renal disease. Ketorolac inhibits platelet aggregation and prolongs bleeding time. Caution is advised where strict haemostasis is critical. Monitor prothrombin time of patients on oral anticoagulants. Salicylates reduce plasma protein binding of ketorolac. Renal clearance of ketorolac is decreased by probenecid. NSAIDs decrease renal clearance of methotrexate. Ketorolac reduces the diuretic response to frusemide. Concomitant use of other NSAIDs is not recommended.

Dosage & admin: ***By mouth:*** **Adult- 10mg every 4-6 hourly (elderly 6-8 hourly); max 40mg daily; maximum duration of treatment 7 days; Child- under 16 years, not recommended.** ***By i.m or i.v injection:*** **Adult- short-term management of post-operative pain, initially 10mg i.m or i.v followed by 10-30mg 4-6 hourly (2 hourly in initial post-operative period); max. 90mg daily (elderly & patients weighing less than 50kg max. 60mg daily); maximum duration of treatment 2 days. Short-term management of pain on a regular schedule- 30-60mg i.m as a loading dose, followed by 15-30mg 6 hourly; max. 150mg for 1st day & 120mg/day thereafter. Pain associated with surgical procedures- 30mg i.m followed by 10-30mg 4-6 hourly. Parenteral use of ketorolac is not recommended for longer period (not more than 5 days).**

Note: For further information- consult individual product literature.

❖ **ACUPAIN Tab. Beacon**
Ketorolac tromethamine 10mg/tablet (f.c)
30's pack: 300.00 MRP

❖ **ACUPAIN Inj. Beacon**
Ketorolac tromethamine 30mg/1 ml ampoule: i.m/i.v injection
30mg (1ml) amp x 5's pack: 275.00 MRP

❖ **ANALAC Tab. Ziska**
Ketorolac tromethamine 10mg/tablet (f.c)
20's pack: 200.00 MRP

❖ **ANALAC 30 Inj. Ziska**
Ketorolac tromethamine 30mg/1ml ampoule: i.m/i.v injection
30mg (1ml) amp x 5's pack: 275.00 MRP

❖ **AROLAK Tab. Ambee**
Ketorolac tromethamine 10mg/tablet (f.c)
20's pack: 200.00 MRP

❖ **AROLAK Inj. Ambee**
Ketorolac tromethamine 10mg/1ml ampoule & 30mg/1ml ampoule: i.m/i.v injection
10mg (1ml) amp x 5's pack: 150.00 MRP
30mg (1ml) amp x 5's pack: 275.00 MRP

❖ **E-KET-10 Tab. Edruc**
Ketorolac tromethamine 10mg/tablet (f.c)
20's pack: 200.00 IP

❖ **E-KET Inj. Edruc**
Ketorolac tromethamine 30mg/1 ml ampoule: i.m/i.v injection
30mg (1ml) amp x 5's pack: 250.00 MRP

❖ **EMODOL Tab. Jayson**
Ketorolac tromethamine 10mg/tablet (f.c)
20's pack: 200.00 IP

❖ **EMODOL Inj. Jayson**
Ketorolac tromethamine 10mg/1ml ampoule & 30mg/1ml ampoule: i.m/i.v injection
10mg (1ml) amp x 10's pack: 331.30 IP
30mg (1ml) amp x 5's pack: 250.00 IP
30mg (1ml) amp x 10's pack: 556.30 IP

❖ **ETOLAC Tab. Ibn Sina**
Ketorolac tromethamine 10mg/tablet (f.c)
20's pack: 200.00 MRP

❖ **ETOLAC Inj. Ibn Sina**
Ketorolac tromethamine 10mg/1ml ampoule & 30mg/1ml ampoule & 60mg/2ml ampoule: i.m/i.v injection
10mg (1ml) amp x 10's pack: 320.00 MRP
30mg (1ml) amp x 10's pack: 550.00 MRP
60mg (2ml) amp x 1's pack: 95.00 MRP

❖ **ETORAC Tab. Incepta**
Ketorolac tromethamine 10mg/tablet (f.c)
30's pack: 300.00 MRP

❖ **ETORAC Inj. Incepta**
Ketorolac tromethamine 30mg/1ml ampoule & 60mg/2ml ampoule: i.m/i.v injection
30mg (1ml) amp x 1's pack: 55.00 MRP
60mg (2ml) amp x 1's pack: 95.00 MRP

❖ **KELAC Tab. Chemist**
Ketorolac tromethamine 10mg/tablet (f.c)
20's pack: 160.00 MRP

❖ **KELAC Inj Chemist**
Ketorolac tromethamine 10mg/1ml ampoule & 30mg/1ml ampoule: i.m/i.v injection
10mg (1ml) amp x 5's pack: 125.00 MRP
30mg (1ml) amp x 5's pack: 175.00 MRP

❖ **KENODOL Tab. Rangs**
Ketorolac tromethamine 10mg/tablet (f.c)
20's pack: 240.00 MRP

❖ **KENODOL Inj. Rangs**
Ketorolac tromethamine 30mg/1 ml ampoule: i.m/i.v injection

30mg (1ml) amp x 6's pack: 300.00 MRP

❖ **KEROLAC Tab. Gaco**
Ketorolac tromethamine 10mg/tablet (f.c)
20's pack: 200.00 MRP

❖ **KETEKS Tab. RAK Pharma**
Ketorolac tromethamine USP 10mg/tablet (f.c)
30's pack: 300.00 MRP

❖ **KETOBE 10 Tab. Benham**
Ketorolac tromethamine USP 10mg/tablet (f.c)
30's pack: 298.20 MRP

❖ **KETOFLEX Tab. Somatec**
Ketorolac tromethamine 10mg/tablet (f.c)
20's pack: 200.00 MRP

❖ **KETONIC Tab. SK+F**
Ketorolac tromethamine 10mg/tablet (f.c)
20's pack: 200.00 MRP

❖ **KETONIC Inj. SK+F**
Ketorolac tromethamine 10mg/1ml ampoule & 30mg/1ml ampoule: i.m/i.v injection
10mg (1ml) amp x 5's pack: 160.00 MRP
30mg (1ml) amp x 5's pack: 275.00 MRP

❖ **KETORIN Tab. Orion**
Ketorolac tromethamine 10mg/tablet (f.c)
20's pack: 200.00 MRP

❖ **KETORIN Inj. Orion**
Ketorolac tromethamine 30mg/1 ml ampoule: i.m/i.v injection
30mg (1ml) amp x 5's pack: 250.00 MRP

❖ **KETROMIN Tab. Pacific**
Ketorolac tromethamine 10mg/tablet (f.c)
20's pack: 200.00 MRP

❖ **KFLAM Tab. Apex**
Ketorolac tromethamine 10mg/tablet (f.c)
20's pack: 120.00 MRP

❖ **KFLAM Inj. Apex**
Ketorolac tromethamine 30mg/1ml ampoule: i.m/i.v injection
30mg (1ml) amp x 5's pack: 200.00 MRP

❖ **LOPADOL Tab. Popular**
Ketorolac tromethamine 10mg/tablet (f.c)
20's pack: 200.00 IP

❖ **LOPADOL Inj. Popular**
Ketorolac tromethamine 30mg/1ml ampoule: i.m/i.v injection
30mg (1ml) amp x 5's pack: 250.00 IP

❖ **MINOLAC Tab. ACI**
Ketorolac tromethamine 10mg/tablet (f.c)
20's pack: 200.00 IP

❖ **MINOLAC Inj. ACI**
Ketorolac tromethamine 30mg/1ml ampoule: i.m/i.v injection
30mg (1ml) amp x 1's pack: 55.00 IP

❖ **OFPAIN Tab. Chemico**
Ketorolac tromethamine 10mg/tablet (f.c)
20's pack: 200.00 MRP

❖ **OFPAIN Inj. Chemico**
Ketorolac tromethamine 30mg/1 ml ampoule: i.m/i.v injection
30mg (1ml) amp x 1's pack: 50.00 MRP

❖ **ORADOL Tab. Aristopharma**
Ketorolac tromethamine 10mg/tablet (f.c)
20's pack: 200.00 MRP

❖ **ORADOL Inj. Aristopharma**
Ketorolac tromethamine 30mg/1 ml ampoule & 60mg/2ml ampoule: i.m/i.v injection

30mg (1ml) amp x 1's pack: 55.00 MRP
60mg (2ml) amp x 1's pack: 95.00 MRP

❖ **ORC Tab. Navana**
Ketorolac tromethamine 10mg/tablet (f.c)
20's pack: 200.00 MRP

❖ **PAIR Tab. Drug Inter.**
Ketorolac tromethamine 10mg/tablet (f.c)
30's pack: 300.00 MRP

❖ **PAIR-30 Inj. Drug Inter.**
Ketorolac tromethamine 30mg/1ml ampoule: i.m/i.v injection
30mg (1ml) amp x 5's pack: 250.00 MRP

❖ **PERILAC Tab. Bio-pharma**
Ketorolac tromethamine 10mg/tablet (f.c)
20's pack: 200.00 MRP

❖ **PERILAC Inj. Bio-pharma**
Ketorolac tromethamine 10mg/1ml ampoule, 30mg/1ml ampoule: i.m/i.v injection
10mg (1ml) amp x 5's pack: 150.00 MRP
30mg (1ml) amp x 5's pack: 250.00 MRP

❖ **ROKET 10 Tab. Globe**
Ketorolac tromethamine 10mg/tablet (f.c)
20's pack: 200.00 MRP

❖ **ROKET 30 Inj. Globe**
Ketorolac tromethamine 30mg/1ml ampoule: i.m/i.v injection
30mg (1ml) amp x 5's pack: 250.00 MRP

❖ **ROLAC Tab. Renata**
Ketorolac tromethamine 10mg/tablet (f.c)
30's pack: 300.00 MRP

❖ **ROLAC Inj. Renata**
Ketorolac tromethamine 10mg/1ml ampoule, 30mg/1ml ampoule & 60mg/2ml ampoule: i.m/i.v injection
10mg (1ml) amp x 1's pack: 32.00 MRP
30mg (1ml) amp x 1's pack: 55.00 MRP
60mg (2ml) amp x 2's pack: 190.00 MRP

❖ **ROTEK Tab. Novo Healthcare**
Ketorolac tromethamine 10mg/tablet (f.c)
20's pack: 200.00 MRP

❖ **ROTEK Inj. Novo Healthcare**
Ketorolac tromethamine 30mg/1ml ampoule: i.m/i.v injection
30mg (1ml) amp x 5's pack: 250.00 MRP

❖ **TODOL Tab. Opsonin**
Ketorolac tromethamine 10mg/tablet (f.c).
30's pack: 300.00 MRP

❖ **TODOL Inj. Opsonin**
Ketorolac tromethamine 30mg/1ml ampoule & 60mg/2ml ampoule: i.m/i.v injection
30mg (1ml) amp x 5's pack: 280.00 MRP
60mg (2ml) amp x 1's pack: 95.00 MRP

❖ **TOLEC Tab. Alco Pharma**
Ketorolac tromethamine USP 10mg/tablet (f.c).
20's pack: 200.00 MRP

❖ **TORADOL Tab. Roche**
Ketorolac tromethamine 10mg/tablet (f.c).
20's pack: 460.20 MRP

❖ **TORAX 10 Tab. Square**
Ketorolac tromethamine 10mg/tablet (f.c).
30's pack: 300.00 MRP

❖ **TORAX Inj. Square**
Ketorolac tromethamine 10mg/1ml ampoule, 30mg/1ml ampoule & 60mg/2ml ampoule: i.m/i.v injection
10mg (1ml) amp x 5's pack: 150.00 MRP
30mg (1ml) amp x 5's pack: 275.00 MRP
60mg (2ml) amp x 1's pack: 95.00 MRP

❖ **TOROLAC 10 Tab. Silva**
Ketorolac tromethamine 10mg/tablet (f.c).
20's pack: 200.00 MRP

❖ **WINOP Tab. Acme**
Ketorolac tromethamine 10mg/tablet (f.c).
20's pack: 200.00 MRP

❖ **WINOP Inj. Acme**
Ketorolac tromethamine 10mg/1ml ampoule & 30mg/1ml ampoule: i.m/i.v injection
10mg (1ml) amp x 5's pack: 150.00 MRP
30mg (1ml) amp x 1's pack: 50.00 MRP

❖ **XENOLAC-10 Tab. SAPL**
Ketorolac tromethamine 10mg/tablet (f.c).
20's pack: 200.00 MRP

❖ **XIDOLOC Tab. Beximco**
Ketorolac tromethamine 10mg/tablet (f.c).
20's pack: 200.00 IP

❖ **ZEPAC Tab. Sandoz/Novartis**
Ketorolac tromethamine 10mg/tablet f.c).
30's pack: 300.00 MRP

❖ **ZEPAC Inj. Sandoz/Novartis**
Ketorolac tromethamine 30mg/1ml ampoule: i.m/i.v injection
30mg (1ml) amp x 5's pack: 300.00 MRP

❖ **ZEROPAIN Tab. Healthcare**
Ketorolac tromethamine 10mg/tablet (f.c).
20's pack: 240.00 MRP

Opioid analgesics used in general anaesthesia & severe pain

FENTANYL[106,111]

FENTANYL CITRATE: Injection
Fentanyl citrate 78.5mcg equivalent to 50mcg per ml fentanyl base: injection

Ind: Fentanyl is an opioid analgesic used:
- in low doses to provide analgesia during short surgical procedures.
- in high doses as an analgesic/respiratory depressant in patients requiring assisted ventilation.
- in combination with a neuroleptic in the technique of neuroleptanalgesia.
- in the treatment of severe pain, such as the pain of myocardial infarction.

C/I: Respiratory depression, obstructive airways disease. Concurrent administration with monoamine inhibitors, or within 2 weeks of their discontinuation. Known intolerance to fentanyl or other morphinomimetics.

S/E: The side effects are those associated with intravenous opioids e.g respiratory depression, apnoea, muscular rigidity (which may also involve the thoracic muscles), myoclonic movements, bradycardia, transient hypotension, nausea, vomiting and dizziness.
Other less frequently reported adverse effects are- laryngospasm, allergic reactions (e.g anaphylaxis, bronchospasm, pruritus, urticaria) and asystole although it is uncertain whether there is a causal relationship as several drugs were co-administered; secondary rebound respiratory depression has rarely been reported.
When a neuroleptic such as droperidol is used with fentanyl, the following adverse ereactions may be observed- chills and/or shivering, restlessness, post operative hallucinatory episodes and extrapyramidal symptoms.

Precautions & warnings: Tolerance and dependence may occur. Following i.v administration of fentanyl, a transient fall in blood pressure may occur, specially in hypovolaemic patients. Appropriate measures to maitain a stable arterial pressure should be taken.
Significant rcspiratory depression will occur following the administration of fentanyl in doses in excess of 200mcg. This, and the other pharmacological effects of fentanyl, can be reversed by specific narcotic antagonists (e.g naloxone).
Additional doses of the latter may be necessary because the respiratory depression may last longer than the duration of action of the opioid antagonist.
Bradycardia and possibly asystole can occur in non-atropinised patients, and can be antagoninsed by atropine.
Muscular rigidity (morphine-like effect) may occur.
Rigidity, which may also involve the thoracic muscles, can be avoided by the following measures:
- slow i.v injection (usually sufficient for lower doses).
- premedication with benzodiazepines.
- use of muscle relaxants.

As with all opioid analgesics, care should be taken when administering fentanyl to patients with myasthenia gravis. It is wise to reduce dosage in the elderly and debilitated patients.
In hypothyroidism, pulmonary disease, decreased respiratory reserve, alcoholism and liver or renal impairment- the dosage should be titrated with care and prolonged monitoring may be required.
Patients on chronic opioid therapy or with a history of opioid abuse may require higher doses.
Administration in labour may cause respiratory depression in the new born infant.
As with all potent opioids, profound analgesia is accompanied by marked respiratory depression, which may persist into or recur in the early postoperative period. Care should be taken after large doses or infusions of fentanyl to ensure that adequate spontaneous breathing has been established and maintained before discharging the patient from the recovery area.
Resuscitation equipment and opioid antagonists should be readily available. Hyperventilation during anaesthesia may alter the patients response to CO2, thus affecting respiration postoperatively.
The use of rapid bolus injections of opioids should be avoided in patients with compromised intracerebral compliance; in such patients the transient decrease in the mean arterial pressure has occasionally been accompanied by a transient reduction of the cerebral perfusion pressure.

Pregnancy & lactation: As there is not sufficient data are available to evaluate any harmful effects in human, before using the drug in pregnancy, possible risks should be weighed against potential benefits to the patient.
Administration during childbirth (including

caesarean section) is not recommended because fentanyl crosses the placenta and the foetal respiratory centre is particularly sensitive to opioids. Nevertheless, if fentanyl is administered, an antidote for the child should always be at hand. As fentanyl may be excreted in the maternal milk, it is therefore recommeded not to initiate breast feeding within 24 hours of treatment.

Dosage & admin: Fentanyl injection can be administered intravenously either as a bolus or by infusion & by intramuscular route also. The dose of fentanyl should be individualised according to age, body weight, physical status, underlying pathological condition, use of other drugs and type of surgery and anaesthesia.

The usual dosage regimen is as follows:

	Adults		Children	
	Initial	Supplemental	Initial	Supplemental
Spontaneous Respiration	50-200 mcg	50mcg	3-5mcg/kg	1mcg/kg
Assisted Ventilation	300-3500 mcg	100-200 mcg	15mcg/kg	1-3mcg/kg

Doses in excess of 200mcg are for use in anaesthesia only. As a premedicant, 1-2ml fentanyl may be given intramuscularly 45 minutes before induction of anaesthesia. After i.v administration in unpremedi-cated adult patients, 2ml fentanyl may be expected to provide sufficient analgesia for 10-20 minutes in surgical procedures involving low pain intensity. 10ml fentanyl injected as a bolus gives analgesia lasting about one hour. The analgesia produced is sufficient for surgery involving moderately painful procedures. Giving a dose of 50mcg/kg fentanyl will provide intense analgesia for some four to six hours, for intensely stimulating surgery.

Fentanyl may also be given as an infusion. In ventilated patients, a loading dose of fentanyl may be given as a fast infusion of approximately 1mcg/kg/min for the first 10 minutes followed by an infusion of approximately 0.1mcg/kg/min. Alternatively the loading dose of fentanyl may be given as a bolus. Infusion rates should be titrated to individual patient response; lower infusion rates may be adequate. Unless it is planned to ventilate post-operatively, the infusion should be terminated at about 40 minutes before the end of surgery.

Lower infusion rates, e.g 0.05-0.08mcg/kg/min. are necessary if spontaneous ventilation is to be maintained. Higher infusion rates (up to 3mcg/kg/min) have been used in cardiac surgery.

Fentanyl is chemically incopatible with the induction agents thiopentone & methohexitone because of wide differences in pH.

Use in elderly and debilitated patients: It is wise to reduce the dosage in the elderly and debilitated patients. The effect of the initial dose should be taken into account in determining supplemental doses.

Overdose: Please consult manufacturer's literature.

Drug inter: The use of opioid premedication, barbiturates, benzodiazepines, neuroleptics, halogenic gases and other non-selective CNS depressants (e.g alcohol) may enhance or prolong the respiratory depression of fentanyl. When patients have received CNS-depressants, the dose of fentanyl required will be less than usual.

Likewise, following the administration of fentanyl the dose of other CNS-depressant drugs should be reduced.

❖ **FENTANYL-JANSSEN Inj. Janssen/ Tajarat Healthcare**

Fentanyl citrate 50mcg/ml; 2ml & 10ml ampoule: injection

100mcg (2ml amp) x 5's pack:

500mcg (10ml amp) x 5's pack:

❖ **FENTANYL-ROTEX Inj. Rotex Medica/ City Overseas**

Fentanyl citrate 50mcg/ml; 2ml ampoule: injection

100mcg (2ml amp) x 10's pack: 750.00 TP

❖ **FENTYL Inj. Popular**

Fentanyl citrate 50mcg/ml; 2ml ampoule: injection

100mcg (2ml amp) x 10's pack: 200.00 MRP

❖ **OPIFEN Inj. Incepta**

Fentanyl citrate 50mcg/ml; 2ml ampoule: injection

100mcg (2ml amp) x 5's pack: 200.00 MRP

❖ ❖ ❖

FENTANYL CITRATE: Transdermal Patch

Fentanyl citrate transdermal delivery system has been discussed under Durogesic (below).

❖ **DUROGESIC Transdermal Patch Janssen-Cilag/UniHealth**[106]

Durogesic is a transdermal system providing continuous systemic delivery of fentanyl for 72 hours.

Durogesic patch is a rectangular transparent unit comprising a protective liner and four functional layers. From the outer surface to the surface adhering to skin, these layers are: i. a backing layer of polyester film; ii. a drug reservoir of fentanyl (2.5mg/10 cm2) and alcohol USP (0.1ml/10 cm2) gelled with hydroxyethyl cellulose; iii. an ethylene-vinyl acetate copolymer membrane that controls the rate of fentanyl delivery; and iv. a layer of silicone adhesive. Before use, the protective liner is removed and discarded.

Durogesic is available in four different strengths, the composition of which per unit area is identical.

The 10-, 20-, 30- and 40 cm2 systems are designed to deliver fentanyl 25, 50, 75 and 100 g/hour respectively to the systemic circulation, which represent about 0.6, 1.2, 1.8 and 2.4mg per day. The other components are pharmacologically inactive. Less than 0.2ml of alcohol is released from the system during a 72-hour use.

Ind: Management of chronic cancer pain and intractable pain requiring opioid analgesia.

C/I: Please see above under the text of fentanyl.

S/E: The most serious adverse reaction, as with all potent opioids, is hypoventilation. Other opioid-related adverse reactions include- nausea, vomiting, constipation; hypotension; somnolence, confusion, hallucinations, euphoria; pruritus and urinary retention.

Skin reactions such as rash, erythema and itching have occasionally been reported. These reactions usually resolve within 24 hour of removal of the patch.

Precautions & warnings: Please see above under the text of fentanyl.

Dosage & admin: Durogesic doses should be individualized based upon the status of the patient and should be assessed at regular intervals after application.

It should be applied to non-irritated and non-irradiated skin on a flat surface of the torso or upper arms. Hair at the application site (a non-hairy area is preferable) should be clipped (not shaved) prior to application. If the site of Durogesic application requires to be cleansed prior to application of the patch, this should be done with clear water. Soaps, oils, lotions, or any other agent that might irritate the skin or alter its characteristics should not be used. The skin should be completely dry before the patch is applied.

Durogesic should be applied immediately upon removal from the sealed package. The transdermal patch should be pressed firmly in place with the palm of the hand for approximately 30 seconds, making sure the contact is complete, specially around the edges. Durogesic may be worn continuously for 72 hours. A new patch should be applied to a different skin site after removal of the previous transdermal patch. Several days should elapse before a new patch is applied to the same area of the skin.

1. ***Initial dose selection:*** **The size of the initial durogesic dose should be based on the patient's opioid history, including the degree of opioid tolerance, if any, as well as on the current general condition and medical status of the patient.**

- **In opioid-naive patients, the lowest durogesic dose, 25 g/h, should be used as the initial dose.**
- **In opioid-tolerant patients, to convert from oral or parenteral opioids to transdermal system, the following procedure should be followed:**

a. **Calculate the previous 24-hour analgesic requirement.**
b. **Convert this amount to the equianalgesic morphine dose using conversion table (please see manufacturer's literature).**

Both in opioid-naive and opioid-tolerant patients, the initial evaluation of the maximum analgesic effect of durogesic, cannot be made before the system is worn for 24 hours. This delay is due to the gradual increase in serum fentanyl concentration in the 24 hours following initial system application.

Previous analgesic therapy should therefore be gradually phased out after the initial dose application until analgesic efficacy with durogesic is attained.

2. ***Dose titration and maintenance therapy:***

The durogesic patch should be replaced every 72 hours. The dose should be titrated individually until analgesic efficacy is attained. If analgesia is insufficient after the initial application the dose may be increased after 3 days. Thereafter, dose adjustment can take place every 3 days. Dosage titration should normally be performed in 25 g/h increments,

although the supplementary analgesic requirements (oral morphine 90mg/day= durogesic 25 g/h) and pain status of the patient should be taken into account. More than one durogesic patch may be used for doses greater than 100 g/h. Patients may require periodic supplemental doses of a short-acting analgesic for 'breakthrough' pain. Some patients may require additional or alternative methods of opioid administration when the durogesic dose exceeds 300 g/h.
3. *Discontinuation of durogesic:* If discontinuation of durogesic is necessary, replacement with other opioids should be gradual, starting at a low dose and increasing slowly. This is because fentanyl levels fall gradually after durogesic is removed; it takes 17 hours or more for the fentanyl serum concentration to decrease 50 %. In general, the discontinuation of opioid analgesia should be gradual.
Overdose: Please consult manufacturer's literature.
Drug inter: Please see above under the text of fentanyl.

Tiansdermal patch 25mcg/ h (Fentanyl 2.5mg) x 5's pack: 2754.25 MRP
Tiansdermal patch 50mcg/h (Fentanyl 5mg) x 5's pack: 5456.50 MRP

MUSCLE RELAXANTS[21]

Muscle relaxants used in anaesthesia are also known as neuromuscular blocking drugs. By specific blockade of the neuromuscular junction they enable light levels of anaesthesia to be employed with adequate relaxation of the muscles of the abdomen and diaphragm. They aslo relax the vocal cords and allow the passage of a tracheal tube.

Two types of muscle relaxants-
1. **Non-depolarising muscle relaxants**
2. **Depolarising muscle relaxants**
3. **Central muscle relaxants**

Non-depolarising Muscle Relaxants[21]

Action & properties: Non-depolarising muscle relaxants (also known as competitive muscle relaxants) compete with acetylcholine for receptor sites at the neuromuscular junction and their action may be reversed with anticholinesterases such as neostigmine.
Non-depolarising muscle relaxants have a slower onset of action than depolarising muscle relaxants (suxamethonium).
These drugs can be classified by their duration of action as- short-acting (15-30minutes), intermediate-acting (30-40 minutes), and long-acting (60-120 minutes), although duration of action is dose-dependent.
Non-depolarising muscle relaxants have no sedative or analgesic effects.
Classification: Non-depolarising muscle relaxants may be divided into:
(a) Aminosteroid group- which includes- ***pancuronium, rocuronium and vecuronium.***
(b) Benzylisoquinolinium group- which includes- ***atracurium, cisatracurium, gallamine and mivacurium.***
S/E: See under individual preparation.
Precautions: Allergic cross-reactivity between neuromuscular blocking agents has been reported; caution is advised in cases of hypersensitivity to these drugs. Their activity is prolonged in patients with myasthenia gravis and in hypothermia, therefore lower doses are required. Resistance may develop in patients with burns who may require increased doses.
Dosage: See under individual preparation.

ATRACURIUM[21,47]

ATRACURIUM BESYLATE: Injection
Atracurium is a mixture of 10 isomers and is a benzylisoquinolinium muscle relaxant with an intermediate duration of action.
Mode of action: See above under the text of non-depolarising muscle relaxants.
Ind: Non-depolarising (competitive) muscle relaxant of medium duration (15-40 mins.) for use in surgical & anaesthetic procedures.
Advantage- it has an advantage over other non-depolarising muscle relaxants in patients with renal or hepatic impairment, as it is degraded by non-enzymatic Hofmann elimination. It is non-cumulative on repeated dosage. Its action is reversed by Neostigmine.
Disadvantage- its cardiovascular effects are associated with significant histamine release.
S/E & Cautions: As benzylisoquinolinium non-depolarising muscle relaxants (except cisatracurium) are associated with histamine release which can cause skin flushing, hypotension, tachycardia, bronchospasm and rarely, anaphylactoid reactions. Special precaution on concurrent admin. of aminoglycosides or polypeptide antibiotics.
Adult: O.3-0.6mg/kg i.v. Full block can be prolonged with supplementary doses of 0.1-0.2 mg/kg as required. Endotracheal intubation can usually be accomplished within 90 seconds of i.v injection of 0.5-0.6mg/kg.
Child: Under 1 year, not recommended; over 1 year, same as adult in proportion to body-wt.
Continuous Infusion: Suitable for admin. by continuous infusion at a rate of 0.005-0.01mg/kg/min. (0.3-0.6 mg/kg/hour) to maintain neuromuscular block during long surgical procedures.

❖ **RELAXTON Inj. Techno Drugs**
Atracurium besylate 10mg/ml; 2.5ml ampoule: injection.
2.5ml amp x 5's pack: 375.00 MRP
❖ **TRACRIUM Inj. GlaxoSmithKline**
Atracurium besylate 10mg/ml; 2.5ml ampoule: injection.
2.5ml amp x 5's pack: 722.95 MRP

PANCURONIUM[21,33]

PANCURONIUM BROMIDE: Injection
Pancuronium bromide belongs to non-depolarising neuromuscular blocking agents.
Mode of action: See above under the text of non depolarising muscle relaxants.
Ind: Non-depolarising muscle relaxant of medium action (& duration), usually used during surgery.
S/E: It does not cause significant histamine release or significant changes in blood pressure; there is no evidence that it causes ganglionic blockade.
Cautions: Pregnancy; renal insufficiency; hypertension & tachycardia & increased doses may be necessary in patients with liver disease; reduce doses in obesity & renal impairment.
Adult: Initially 50-100mcg/kg for intubation, then 10-20mcg/kg according to the patients response. All by i.v. injection.
Child: Neonates, 30-40mcg/kg initially, then 10-20mcg/kg; others, initially 60-100mcg/kg. then 10-20mcg/kg. All by i.v. injection.
Intensive care, by i.v. inj. 60mcg/kg every 1 to 1 & half an hour; by i.m inj. 30-60mcg/kg every 1-2 hours.

❖ **PANALON Inj. Techno Drugs**
Pancuronium bromide 2mg/ml; 2ml ampoule: injection
2ml amp x 5's pack: 275.00 MRP
❖ **PANCURONIUN ROTEX Inj. Rotex Medica/City Overseas**
Pancuronium bromide 2mg/ml; 2ml ampoule: injection
2ml amp x 10's pack: 650.00 TP

PIPECUROMIUM BROMIDE[58]

PIPECUROMIUM BROMIDE: Injection
Pipecuromium bromide belongs to non-depolarising (competitive) neuromuscular blocking agents.
Mode of action: See above under the text of non-depolarising muscle relaxants.
Ind: It is indicated as an adjunct to general anaesthesia, to facilitate tracheal intubation and to provide skeletal muscle relaxation during surgery or mechanical ventilation. It produces effective skeletal muscle relaxation for approximately 40-60 min. Reduced supplemental doses maintain muscle relaxation as long as necessary.
C/I; S/E; Cautions: See under pancuronium bromide; reduce dose in renal impairment; should not be given with depolarising muscle relaxants (as they may cause intensification or reduction of action, depending on dose, time of application and individual response).
Warnings: It should be administered under the supervision of experienced clinicians who are familiar with the possible complications that might occur following its use.
Dosage & Application: *Adult & elderly:* the usual initial dose for intubation and subsequent surgery is 0.07-0.08mg/kg body-weight intravenously. This dose produces relaxation suitable for intubation within 90-120 sec lasting for 50-70min. In patients intubated by succinylcholine the usual initial dose after intubation is 0.04-0.05mg/kg body-weight. Duration of action is of 15-25 min depending on individual response. Higher doses produce prolonged action. To patients

with renal failure not higher doses than 0.04mg/kg body-weight are suggested (prolongation of effect may occur). Repeated dose is usually 25% of the initial dose, i.e 0.010-0.015mg/kg body-weight.
Children & neonates: **in case of diazepam-ketamine-fentanyl-nitrous oxide is applied in children, larger than the adult doses, i.e 80-90 mcg/kg are suggested. In neonates, lower than the children doses, i.e. 50-60 mcg/kg are suggested. These doses produce relaxation for surgical interventions of 25-35 min duration. If necessary, muscle relaxation can be prolonged for further 25-35 min by the supplemental administration of the one third of the initial dose. Residual relaxation can be reversed rapidly and safely by the administration of neostigmine and atropine. Due to the great variety of individual response, monitoring of drug effect by a peripheral nerve stimulator is highly recommended.**

❖ **ARDUAN Inj. Gedeon Richter/City Overseas**
Pipecuronium bromide 4mg/2ml ampoule with solvent: injection
2ml amp x 5's pack: 470. TP

❖ **PYCURON Inj. Techno Drugs**
Pipecuronium bromide 4mg/2ml ampoule with solvent: injection
2ml amp x 5's pack: 400. MRP

ROCURONIUM[21.40]

❖ **ESMERON Inj. Nuvista**
Rocu ronium bromide 10mg/ml; 5ml (50mg) vial:.injection
Ind & action: It is a non-depolarising (aminosteroid) muscle relaxant with an intermediate duration of action. It exerts its effect within 2 minutes and has the most rapid onset of action of any of the competitive muscle relaxants.
S/E; Caution: See above under non-depolarising muscle relaxants; it has minimal histamine-releasing and cardiovascular effects; high doses produce mild vagolytic activity.
Dosage & admin: ***By i.v injection:*** **intubation, 600mcg/kg; maintenance 150mcg/kg.**
By i.v infusion: **300-600mcg/kg/hour (after initial i.v injection of 600mcg/kg).**
Child: same as adult; neonate- not recommended.
12 vials pack: 3229.08 MRP

VECURONIUM[21.40]

VECURONIUM: Injection
Vecuronium bromide, available as powder for reconstitution or in lyophilized cake form in 4mg vial & 10mg vial: i.v injection/infusion.
Ind: Non-depolarising muscle relaxant of short to medium duration.
C/I: Should avoid in myasthenia gravis.
S/E: It has the fewest side-effects, because it does not generally cause histamine release, sympathetic blockade or vagolytic effects.
Precaution: Reduce dose in renal impairment.
Dosage & admin: By i.v injection: Intubation, 80-100mcg/kg; maintenace, 20-30mcg/kg according to response; Neonate and Infant up to 4 months, initially 10-20 mcg/kg then incremental doses to achieve response; Child over 5 months, as adult dose (up to 1 year onset more rapid and high intubation dose may not be required).
By i.v infusion: 50-80mcg/kg/hour (after initial i.v injection of 40-100mcg/kg).

❖ **CURON Inj. Techno Drug**
Vecuronium bromide INN 4mg/vial & 10mg/vial (in lyophilized cake form for reconstitution): i.v injection/infusion.
4mg vial x 5's pack: 410.00 MRP
10mg vial x l's pack: 185.00 MRP

❖ **NORCURON Inj. Nuvista**
Vecuronium bromide 10mg/vial (powder for reconstitution): i.v injection/infusion.
10mg vial x 10's pack: 2785.00 MRP

❖ **VECURON Inj. ACI**
Vecuronium bromide INN 4mg/1ml vial (in lyophilized cake form for reconstitution): i.v injection/infusion.
4mg vial x 5's pack: 410.00 IP

Depolarising Muscle Relaxants

SUXAMETHONIUM[21.33]

SUXAMETHONIUM: Injection
Suxamethonium chloride 50mg/ml; 2ml ampoule: injection
Ind: Depolarising muscle relaxant of short duration. It produces rapid, complete, and predictable paralysis, and recovery is spontaneous. Unlike the non-depolarising muscle relaxants its action cannot be reversed and clinical application is therefore limited.
C/I: Severe liver disease and in burned patients.
S/E; Cautions: It should be given after induction of anaesthesia because paralysis is usually preceded by painful muscle fasciculation. Premedication with atropine is desirable. There is a transient rise in plasma potassium and creatine phosphokinase and there may be muscle pains postoperatively.
Dosage & admin: ***By i.v injection:*** **Adult, 600mcg/kg (range 0.3-1.1 mg/kg depending on degree of relaxation required); usual range 20-100mg; Infant, under 1 year, 2mg/kg. Child, 1-12 years, 1-2mg/kg.**
By i.v infusion: **As a 0.1% solution, 2-5mg/minute (or 2-5ml/minute).**

❖ **NEOSUXA Inj. Popular**
Suxamethonium chloride 100mg/2ml ampoule: i.m/i.v injection
100mg (2ml) amp x 10's pack: 84.01 MRP

❖ **RAPILAX Inj. ACI**
Suxamethonium chloride 100mg/2ml ampoule: i.m/i.v injection
100mg (2ml) amp x 10's pack: 84.00 MRP

❖ **SUXA Inj. Chemist**
Suxamethonium chloride 100mg/2ml ampoule: i.m/i.v injection
100mg (2ml) amp x 5's pack: 41.50 MRP

❖ **SUXONIUM Inj. Techno Drugs**

Suxamethonium chloride 100mg/2ml ampoule: i.m/i.v injection
100mg (2ml) amp x 10's pack: 84.00 MRP

Central Muscle Relaxants

TOLPERISONE[21,58]

TOLPERISONE: Tablet/Injection
Tolperisone hydrochloride is available as parenteral injection (Tolperisone 100mg with lidocaine hydrochloride 2.5mg/1ml ampoule & 50mg as oral tablet).
Mode of action: It is a centrally acting muscle relaxant. The drug reduces experimental hypertonia and decerebration rigidity. It inhibits reticulospinal reflex facilitaion without affecting cortical functions. It improves peripheral blood flow. The circulatory effect is supposed to be based on peripheral mechanism and is independent from the cerebral centres of vasoregulation.
Ind: Increased tone of skeletal muscles due to organic neurologic disorders (e.g injury of the pyramidal tract, multiple sclerosis, myelopathy, encephalomyelitis etc), muscular hypertension, muscular spasm, muscular contracture, rigidity, spinal automatism and discopathy. Obliterative vascular diseases (obliterative arteriosclerosis, diabetic angiopathy, obliterative thromboangitis, Raynaud's disease, diffuse scleroderma), and disorders due to injured innervation of the vessels (acrocyanosis, intermittent angioneurotic dysbasia). In individual cases post-thrombotic venous & lymphatic circulation disorders, crural ulcer.
C/I: Myasthenia gravis. The drug cannot be given in pregnancy, to nursing mothers and to children.
S/E: Muscular weakness, somnolence. At rare occasions hypersensitivity reactions (anaphylactic shock, dyspnoea); skin symptoms (pruritus, erythema, maculopapulous eruptions); hypotension; nausea, vomiting and abdominal discomfort may occur.
Adverse reactions can be eliminated by reducing the dose.
Dosage & admin: ***By injection:*** **daily 200mg given intramuscularly or daily 100mg with slow intravenous administration.**
By mouth: **Adult, 150-450mg 3 times daily according to the individual requirements and tolerance of the patient. Children, from 3 mon to 6 yrs- 5-10mg/kg/day divided into 3 doses (1-3 tabs. daily). 6-14 yrs. 4-2mg/kg/day, divided into 3 doses.**

❖ **A-CALM Tab. Acme**
Tolperisone hydrochloride 50mg/tablet.
50's pack: 150.00 MRP
❖ **LEXATON Tab. Drug Inter.**
Tolperisone hydrochloride INN 50mg/tablet.
50's pack: 150.00 MRP
❖ **MUSCLEX Tab. Aristopharma**
Tolperisone hydrochloride 50mg/tablet.
50's pack: 150.00 MRP
❖ **MYDOCALM Tab. Gedeon Richter/City Overseas**
Tolperisone hydrochloride 50mg/tablet.
30's pack: 148.00 TP
❖ **MYOLAX Tab. Incepta**
Tolperisone hydrochloride INN 50mg & 100mg/tablet.
50mg x 100's pack: 300.00 MRP
100mg x 50's pack: 250.00 MRP
❖ **MYOLAX Inj. Incepta**
Tolperisone hydrochloride INN 100mg/1ml ampoule: injection.
1ml amp (100mg) x 5's pack: 150.00 MRP
❖ **MYOLAX Plus Inj. Incepta**
Tolperisone hydrochloride INN 100mg & lidocaine hydrochloride 2.5mg/1ml amp: injection.
1ml amp x 5's pack: 150.00 MRP
❖ **PERILAX Tab. Beximco**
Tolperisone hydrochloride 50mg/tablet.
100's pack: 300.00 MRP
❖ **RISON Tab. Chemico**
Tolperisone hydrochloride 50mg/tablet.
50's pack: 150.00 MRP
❖ **TOLCALM Tab. General**
Tolperisone hydrochloride 50mg/tablet.
50's pack: 125.00 MRP
❖ **TOLSON Tab. Opsonin**
Tolperisone hydrochloride 50mg/tablet.
50mg x 50's pack: 150.00 MRP
❖ **TOPERIN Tab. SK+F**
Tolperisone hydrochloride 50mg & 100mg/tablet.
50mg x 60's pack: 180.00 MRP
100mg x 40's pack: 200.00 MRP

RECOVARY FROM GENERAL ANESTHESIA

Anticholinesterases used in General anesthesia to reverse the action of non-depolarising neuromuscular agents

NEOSTIGMINE[21,33]

NEOSTIGMINE: Injection
Neostigmine is an anticholinesterase, used in general anaesthesia to reverse the action of non-depolarising neuromuscular agent.
Ind: Reversal of non-depolarising neuromuscular blockade, premedication for surgical & anaesthetic procedures; treatment & diagnosis of Myasthenia gravis.
C/I: Intestinal or urinary obstruction.
S/E: Nausea, vomiting, increased salivation, diarrhoea, abdominal cramps; signs of overdoses are increased g.i. discomfort, bronchial secretions & sweating, involuntary defaecation & micturition, miosis, nystagmus, bradycardia, hypotension, agitation, excessive dreaming & weakness eventually leading to fasciculation & paralysis.
Precautions: Asthma, bradycardia, recent myocardial infarction, epilepsy, hypotension, parkinsonism, vagotonia, pregnancy, peptic ulcer; atropine or other antidote to muscarinic effect may be necessary (particularly when neostigmine given by i.m. inj.) but it should not be given routinely as it may mask the signs of over dosage.
Dosage & admin: Adult: 1-5mg i.v. with 0.4-1.25mg atropine given some minutes before.

Child: 0.125mg-1mg i.v. with atropine 0.02-0.03mg/kg.

❖ **G-NEOSTIGMINE Inj. Gonoshastha**
Neostigmine methylsulphate 0.5mg/1ml ampoule: injection
5 amps pack: 30.15 MRP

❖ **NEOSTIG Inj. Popular**
Neostigmine methylsulphate 0.5mg/1ml ampoule: injection
1ml amp x 5's pack: 30.15 MRP

❖ **NEOSTIGMINE-ROTEX Inj. Rotex Medica/City Overseas**
Neostigmine methylsulphate 0.5mg/1ml ampoule: injection
1ml amp x 10's pack: 180.00 TP

❖ **PROSTIG Inj. Chemist**
Neostigmine methylsulphate 0.5mg/1ml ampoule: injection
10 amps pack: 80.00 MRP

❖ **STIGMIN Inj. Techno Drugs**
Neostigmine methylsulphate 0.5mg/1ml ampoule: injection
1ml amp x 10's pack: 60.00 MRP

❖ **STIGNAL Inj. ACI**
Neostigmine methylsulphate 0.5mg/1ml ampoule: injection
1ml amp x 5's pack: 30.14 MRP

Reversal of the centrally acting sedative effects of benzodiazepines used in General anesthesia

FLUMAZENIL[50]

❖ **ANEXATE Inj. Roche**
Flumazenil 0.5mg/5ml ampoule: i.v injection
Ind: Flumazenil is indicated for reversal of the centrally acting sedative effects of benzodiazepines. It is therefore used in anesthesia and intensive care in the following indications:
In anesthesia: 1. Termination of general anesthesia induced & maintained with benzodiaze- pines in inpatients. 2. Reversal of benzodiazepine sedation in short diagnostic & therapeutic procedures in both inpatients & outpatients.
In intensive care: 1. Flumazenil provides diagnostic indications of intoxication with benzodiazepines or rules such intoxication out. 2. As a diagnostic measure in unconsciousness of unknown origin to differentiate between involvement of benzodiazepines, other drugs or brain damage. 3. As specific reversal of the central effects of benzodiazepines in drug overdose (return to spontaneous respiration & consciousness in order to render intubation unnecessary or allow extubation).
C/I: Flumazenil is contraindicated in patients with known hypersensitivity to the drug.
In mixed intoxications with benzodiazepines & tricyclic antidepressants, the toxicity of the antidepressants can be masked by protective benzodiazepine effects. In the presence of autonomic (anticholinergic), neurological (motor abnormalities) or cardiovascular symptoms of severe intoxication with tricyclics/tetracyclics, flumazenil should not be used to reverse benzodiazepine effects.
S/E: Flumazenil was well tolerated even at high parenteral doses of up to 100mg. In rare cases during use in anesthesia, flush, nausea and/or vomiting have been reported. Complaints such as feelintg of anxiety, palpitations & fear have been infrequently observed after rapid injection of flumazenil. These undesirable effects usually did not necessitate special treatment.
Very rarely, seizures have been reported, particularly in patients known to suffer from epilepsy.
Rapid injection of flumazenil in patients with long-term exposure to benzodiazepines ending at any time within the weeks preceding flumazenil administration may produce withdrawal symptoms & should therefore be avoided. If such symptoms arise, a slow i.v injection of 5mg diazepam or 5mg midazolam should be given.
Precautions: The use of flumazenil is not recommended in epileptic patients who have been receiving benzodiazepine treatment for a prolonged period. Although flumazenil exerts a slight intrinsic anticonvulsant effect, its abrupt suppression of the protective effect of a benzodiazepine agonist can give rise to convulsions in epileptic patients.
Pateints with severe head injury (and/or unstable intracranial pressure) treated with flumazenil to reverse the effects of benzodiazepines may develop raised intracranial pressure.
Avoid such works & activities requiring complete mental alertness, e.g operating machineries, driving etc.

Pregnancy & lactation: Although there are no controlled studies involving pregnant women, a general medical principle has been adopted, that no drugs should be administered in the early stages of pregnancy except where absolutely necessary.
Parenteral administration of flumazenil in emergencies is not contraindicated during lactation.

Dosage & admin: Flumazenil should be administered i.v by an anesthesiologist or experienced physician.
For infusion, flumazenil may be diluted with dextrose 5% or sodium chloride 0.9%; it may also be used concurrently with other resuscitative procedures.
***In anesthesia:* The recommended initial dose is 0.2mg administered i.v within 15 seconds. If the desired degree of consciousness is not obtained within 60 seconds, a second dose (0.1mg) can be injected, and this may be repeated at 60-second intervals where necessary, up to a total dose of 1mg. The usual dose is 0.3-0.6mg.**
***Note:* When used in anesthesiology at the end of an operation, flumazenil should not be injected until the effect of peripheral muscle relaxants has subsided.**
***In the intensive care unit:* The recommended initial dose is 0.3mg i.v. If the desired degree of consciousness is not obtained within 60 seconds, flumazenil may be injected repeatedly until the patient awakes or up to a total dose of 2mg. If drowsiness recurs, an i.v infusion of 0.1-0.4mg/hour has been shown to be useful. The rate of infusion should be individually adjusted up to the desired level of arousal.**
In the intensive care unit, patients treated for a long time with high doses of benzodiazepines, the individually titrated injections of flumazenil, slowly administered, should not produce withdrawal syndromes. If unexpected signs of overstimulation occur, 5mg diazepam or 5mg midazolam should be given intravenously.
If a significant improvement in consciousness or respiratory function is not obtained after repeated doses of flumazenil, a nonbenzodiazepine etiology must be assumed.
Overdosage: When given at a dosage of 100mg i.v, no symptoms of overdosage were observed.
Drug inter: Flumazenil blocks the central effects of benzodiazepines by competitive interaction at the receptor level.
The effects of nonbenzodiazepine agonists at benzodiazepine receptors, such as zopiclone, triazolopyridazines & others, are also blocked by flumazenil.
Particular caution is necessary when using flumazenil in cases of mixed drug overdose since the toxic effects (such as convulsions & cardiac dysrhythmias) of other drugs taken in overdose (specially cyclic antidepressants) may emerge with the reversal of the benzodiazepine effects by flumazenil.
The pharmacokinetics of benzodiazepine agonists are unaltered in the presence of flumazenil & vice versa.
0.5mg (5ml) amp x 5's pack: 8156.25 MRP

MISC. PREPARATIONS: PREPARATION FOR CARDIOPULMONARY BYPUSS & OPEN-HEART SURGERY

CARDIOPLEGIA SOLN[121]

❖ **CARDIOPLEGIA Soln. DBL/Globex**
Cardioplegia solution is a sterile, clear, colourless solution containing magnesium chloride 162.7mg, potassium chloride 59.6mg and procaine hydrochloride 13.64mg in each ml: solution for infusion.
Ind: To induce ischaemic cardiac arrest in cardiopulmonary bypass and open-heart surgery. It is usually combined with hypothermia to further assist the cardiac arrest.
C/I: None known
A/R: Any adverse reactions are often related to the potential hazards associated with open-heart surgery: Myocardial infarction, electrocardiographic abnormalities and arrhythmias. Delayed or absent recovery after circulation is restored following chemically-induced cardiac arrest.
Precautions & warnings: Do not use solution unless it is clear and free from particulate matter. Cardioplegia solution must be diluted before use. The solution is not for intravenous injection but only of instillation into coronary arteries during cardiopulmonary bypass when the coronary circulation is isolated from the systemic circulation.

Cardioplegia solution should be cooled to 8°C prior to administration.
Monitoring of myocardial activity & temperature should continue throughout the procedure.
Appropriate equipment should be available to defibrillate the heart following instillation with Cardioplegia solution.
Pregnancy & lactation: It is not known if cardioplegia solution adversely affects the foetus or infant when given to pregnant or breast feeding mothers. The benefits must be weighed against the potential adverse effects.
Dosage & admin: 20ml Cardioplegia solution is added to I litre Ringer's solution. The solution is cooled (2-8°C) prior to use. The solution is then administered by rapid infusion into the aortic root at a rate of about 300ml/m2/min for 3 minutes initially. Reinfusion is usually done every 30minutes or sooner if the myocardial temperature reaches 18°C or returning cardiac activity is observed. Discard any unused portion.
Overdosage: Excessive administration may manifest unnecessary dilatation of coronary vessels and leakage into the perivascular myocardium, which may lead to oedema.
Drug inter: No information is available. But, cardioplegia solution is potentially incompatible with aminophylline, barbiturates, magenesium sulphate, phenytoin sodium, sodium bicarbonte, amikacin sulphate, dobutamine hydrochloride and amphotericin.
20ml ampolue: 359.00 MRP

2. LOCAL ANAESTHETICS

ETHYL CHLORIDE[21,33]

❖ ETHYL CHLORIDE Spray Tube Chinoin/City Overseas
Ethyl chloride spray, 100ml tube: local anesthetic.
Ind: Instant surface analgesia (for minor local or surface surgery).
Use: Spray locally over the area to be operated.
100ml tube x 1's pack: 560.00 TP

❖ ETHYLCHLORIDE Spray Heming
Ethyl chloride spray, 100ml tube: local anesthetic.
Ind: Instant surface analgesia.
100ml pack: 89.40 MRP
Price: Could not be revised.

LIGNOCAINE HCl[21,33,39]

LIGNOCAINE HCl: Injection/Gel/Ointment/ Spray.
Ind: Local anaesthesia by surface, infiltration, regional, epidural & caudal routes; dental anaesthesia, ventricular arrhythmia.
C/I: Myasthenia gravis, hypovolaemia, complete heart block. (Do not use prepns. containing adrenaline for anaesthesia in appendages).
S/E: Hypotension, bradycardia, cardiac arrest. CNS effects include agitation, euphoria, resp. depression, convulsions.
Precautions: Epilepsy, hepatic impairment, impaired cardiac conduction, bradycardia. Reduce dose in elderly or debilitated patients. Resuscitative equipment should be available.
Dosage & admin: Adjusted according to the site of opn. and response of the patient.
By injection: **Maximum dose 200mg without adrenaline, 500mg with adrenaline, (maximum dose of adrenaline 500mcg).**
Infiltration anaesthesia: **0.25 to 0.5%, with adrenaline 1 in 200000, using 2-50ml of a 0.5% solution in minor surgery & upto 60ml in more extensive surgery.**
Nerve blocks: **With adrenline 1 in 200000, 1% to a maximum of 50ml, 2% to a maximum of 25ml.**
Epidural & Caudal block: **With adrenaline 1 in 200000, 1% to a maximum of 50ml, 2% to a maximum of 25ml.**
Surface anaesthesia: **Usual strengths 2-4%. Mouth, throat & upper gastrointestinal tract maximum 200mg.**
Child: In proportion to dose for 70 kg adult.
Other prepns: **See under individual product.**

❖ G-LIDOCAINE Inj. Gonoshasthaya
Lignocaine hydrochloride 2% injection.
2% x 2ml amp x 10's pack: 27.50 MRP
2% x 50ml vial x 1's pack: 18.20 MRP

❖ G-LIDOCAINE With ADRENALINE Gonoshas.
Lignocaine hydrochloride 2% with adrenaline: injection
50ml vial x 1's pack: 28.32 MRP

❖ JASOCAINE Inj. Jayson
Lignocaine hydrochloride 1%, 2% & 4%: injection
1% x 50ml vial x 1's pack: 16.81 MRP
2% x 50ml vial x 1's pack: 18.20 MRP
4% x 2ml amp x 10's pack: 35.40 MRP

❖ JASOCAINE-A Inj. Jayson
Lignocaine hydrochloride 1% & 2% with adrenaline 0.002%: injection.
2% x 50ml vial: 28.32 MRP

❖ JASOCAINE 2% Jelly Jayson
Lignocaine hydrochloride 2%: jelly.
Ind: Local anaesthesia by application on the surface.
C/I; S/E; Cautions; Use: see above.
30gm tube: 50.00 IP

❖ LEECAINE T/Gel Gaco
Lignocaine hydrochloride 2% gel for topical use.
Ind: Urethral & vaginal anaesthesia; Instrument lubrication.
Use: Women- 3 to 5ml; Men- initially 10ml, then 3-5ml.
Child: Not recommended.
20gm tube: 26.24 MRP

❖ LIDOCAINE Inj. Medimet
Lignocaine hydrochloride 2% injection.
2% x 2ml amp x 10's pack: 27.00 MRP

❖ XYLONE Inj. ACI
Lignocaine (Lidocaine) hydrochloride 2% & 4% injection.
2% x 2ml amp x 10's pack: 35.50 MRP
4% x 2ml amp x 10's pack: 37.23 MRP

LIDOCAINE + PRILOCAINE[133]

LIDOCAINE + PRILOCAINE: Cream
Lidocaine and prilocaine are amide-type local anaesthetic agents. The combined cream preparation of these two agents provides dermal anaesthesia during superficial surgical procedures. Each gram cream contains lidocaine BP 25mg & prilocaine BP 25mg.
Mode of action: This combined cream preparation provides dermal anaesthesia through the release of lidocaine and prilocaine from the cream into the epidermal and dermal layers of the skin and the accumulation of lidocaine and prilocaine in the vicinity of dermal pain receptors and nerve endings. They both stabilise neuronal membranes by inhibiting the ionic fluxes required for the initiation and conduction of impulses, thereby producing local anaesthesia.
Ind: Topical analgesia of the skin in connection with needle insertion e.g i.v catheters or blood sampling; superficial surgical procedures such as split skin grafting; leg ulcers to facilitate mechanical cleansing/debridement, female genital mucosa, male genital skin e.g prior to superficial surgical procedures or infiltration anaesthesia.
C/I: Hypersensitivity to local anaesthetics of the amide type or to any other component of the product.
S/E: Most commonly seen intact skin, leg ulcer, and genital mucosa. In rare cases, local anaesthetic preparations have been associated with allergic reactions (in the most severe instances anaphylactic shock). Methaemoglobinaemia in children. Rare cases of discrete local lesions at the application site, described as purpuric or petechial, have been reported, specially after longer application times in children with atopic dermatitis or mollusca contagiosa. Corneal irritation after accidental eye exposure.
Precautions: Should not be used extensively during pregnancy. If used for prolonged period, it may be absorbed in an amount to produce systemic effect.
Dosage & admin: In the morning and evening and after each stoolation, cream should be applied in the pruritic area. A thick layer of cream is applied to intact skin and covered with an occlusive dressing.
Drug inter: Prilocaine in high doses may cause an increase in the methaemoglobin level particularly in conjunction with methaemoglobin inducing agents (e.g sulphonamides). With large doses of cream consideration should be given to the risk of additional systemic toxicity in patients receiving other local anaesthetics or agents structurally related to local anaesthetics, since the toxic effects are additive. Specific interaction studies with lidocaine/prilocaine and anti-arrhythmic drugs class III (eg. amiodarone) have not been performed, but caution is advised.

❖ TOPICAN Cream Popular
Each gram of topican cream contains lidocaine BP 25mg (2.5%) & prilocaine BP 25mg (2.5%).
5gm tube: 130.00 MRP

BUPIVACAINE HC[39]

BUPIVACAINE HCl: Injection
Bupivacaine hydrochloride is a long acting anaesthetic agent of the amide type.

Ind: See under dosage.
C/I; S/E; Cautions: See under Lignocaine hydroch loride; myocardial depression may be more severe & more resistant to treatment; contraindicated in intravenous regional anaesthesia (Bier's block).
Dosage & admin: Adjusted according to site of operation and response of patient.
Local infiltration- 0.25% (up to 60ml).
Peripheral nerve block- 0.25% (max. 60ml), 0.5% (max. 30ml).

Epidural block-

Surgery:
Lumbar - 0.5-0.75% (max. 20ml of either).
Caudal- 0.5% (max. 30ml).

Labour:
Lumbar- 0.25-0.5% (max. 12ml of either),
Caudal- 0.25% (max. 30ml) or 0.5% (max. 20ml).

Note: 0.75% contra-indicated for epidural use in obstetrics.

❖ **BUPI Plain Inj. Popular**
Bupivacaine hydrochloride 0.5%: injection.
0.5% x 30ml vial: 60.00 MRP

❖ **PIVACAIN Inj. ACI**
Bupivacaine hydrochloride 0.25% & 0.5%: injection.
0.25% x 20ml vial: 45.00 IP
0.5% x 30ml vial: 60.00 IP

❖ **ULTRACAINE Inj. Jayson**
Bupivacaine hydrochloride 0.25% & 0.5%: injection.
0.25% x 20ml vial: 35.40 IP
0.5% x 30ml vial: 60.00 IP

❖ **BUPIVACAINE HCL: Heavy Injection**[39]
Bupivacaine heavy injection is a solution containing bupivacaine hydrochloride and dextrose. Each ml contains bupivacaine hydrochloride (as anhydrous) USP 5mg & dextrose (as monohydrate) USP 80mg.
Bupivacaine heavy has rapid onset of action and long duration. The duration of analgesia in the T10-T12 segments is 2-3 hours.
Ind: Spinal anaesthesia for:
Urological surgery (lasting 2-3 hours)
Lower limb surgery (lasting 2-3 hours)
Abdominal surgery (lasting 45-60 minutes)
C/I; S/E; Cautions: See above under bupivacaine hydrochloride injection.
Dosage & admin: The doses recommended below should be regarded as a guide for use in the average adult.
Spinal anaesthesia for surgery: **2-4ml (10-20mg). The spread of anaesthesia obtained with Bupivacaine heavy depends on several factors including the volume of solution and the position of the patient during and following the injection. When injected in the L3-L4 intervertebral space with the patient in the sitting position, 3ml of Bupivacaine heavy spreads to the T7-T10 spinal segments. With the patient receiving the injection in the horizontal position and then turned supine, the blockade spreads to T4-T7 spinal segments. It should be understood that the level of spinal anaesthesia achieved with any local anaesthetic can be unpredictable in a given patient.**
The effects of bupivacaine heavy exceeding 5ml have not yet been studied and such volumes can therefore not be recommended.

❖ **BUPICAIN Heavy Inj. Chemist**
'Bupicain heavy injection' is a solution containing bupivacaine hydrochloride and dextrose. Each ml contains bupivacaine hydrochloride (as anhydrous) USP 5mg & dextrose (as monohydrate) USP 80mg.
4ml amp x 10's pack: 280.00 MRP

❖ **BUPI Heavy Inj. Popular**
'Bupicain heavy injection' is a solution containing bupivacaine hydrochloride and dextrose. Each ml contains bupivacaine hydrochloride (as anhydrous) USP 5mg & dextrose (as monohydrate) USP 80mg.
4ml amp x 5's pack: 150.00 MRP

❖ **G-BUPIVACAINE Heavy Inj. Gonoshastha.**
'G-bupivacaine heavy injection' is a solution containing bupivacaine hydrochloride and dextrose. Each ml contains bupivacaine hydrochloride (as anhydrous) USP 5mg & dextrose (as monohydrate) USP 80mg.
4ml amp x 5's pack: 75.00 MRP

❖ **PIVACAIN-D Inj. ACI**
'Pivacain-D injection' is a solution containing bupivacaine hydrochloride & dextrose. Each ml contains bupivacaine hydrochlor. (as anhydrous) USP 5mg & dextrose (monohydrate) USP 80mg.
4ml amp x 10's pack: 300.00 IP

❖ **ULTRACAINE Heavy Inj. Jayson**
'Ultracaine heavy injection' is a solution containing bupivacaine hydrochloride & dextrose. Each ml contains bupivacaine hydrochloride (as anhydrous) USP 5mg & dextrose (as monohydrate) USP 80mg.
4ml amp x 10's pack: 300.00 IP

Reversal of Hypotension induced by Spinal or Epidural Anaesthesia

EPHEDRINE[26,39]

EPHEDRINE HYDROCHLORIDE: Injection
Ephedrine hydrochloride 5mg/ml; 5ml (25mg) ampoule: injection.
Mode of action: Ephedrine is a sympathomimetic agent which stumulates both alpha and beta adrenergic receptors, with direct and indirect effects. It acts indirectly by releasing neurotransmitter from storage sites in the sympathetic nerves to the effector organ.
The most common adverse effects associated with spinal or epidural anaesthesia involve the cardiovascular system. Sympathetic block results in venodilatation, reduced venous return, decreased cardiac output and hypotension. Patients with hypovolaemia due to any cause can develop sudden and severe hypotension during spinal anaesthesia. Ephedrine hydrochloride injection is used as vasoconstrictor sympathomimetic for the reversal of hypotension from spinal or epidural anaesthesia. In therapeutic doses ephedrine has an important effect as relaxation of bronchial smooth muscle. It has also been recommended for prophylactic use before spinal or epidural block in patients at high risk of hypotension.
Ind: It is indicated to reverse hypotension induced by spinal or epidural anaesthesia & to prevent hypotension from spinal anaesthesia.
C/I: Breast-feeding; closed angle glaucoma; pheochromocytoma; asymmetric septal hypertrophy (idiopathic hypertrophic subaortic stenosis); tachyarrhythmias or ventricular fibrillation; patients with psychoneurosis; hypersensitivity to ephedrine
S/E: Nausea, vomiting, anorexia; tachycardia (sometimes bradycardia), arrhythmias, anginal pain, vasoconstriction with hypertension, vasodilation with hypotension, dizziness and flushing; dyspnoea; headache, anxiety, restlessness, confusion, psychoses, insomnia, tremor; difficulty in micturition, urine retention; sweating, hypersalivation, changes in blood glucose concentration.
Precautions: It should be given with care in patients with hyperthyroidism, diabetes mellitus, ischaemic heart disease, hypertension, or renal impairment or angle-closure glaucoma. It may cause acute urine retention in prostatic hypertrophy.
Pregnancy & lactation: Injection of ephedrine during labour can cause fetal tachycardia. It is contraindicated for breast-feeding women.
Dosage & admin: ***IV administration:*** **To reverse hypotension induced by spinal or epidural anaesthesia, preferably 3-6mg (max. 9mg) repeated every 3-4 minutes to max. 30mg by slow intravenous injection or as advised by the concerned physician.**
IM administration: **To prevent hypotension from spinal anaesthesia, 15-30mg may be given by intramuscular injection before induction of anaesthesia.**
Drug inter: *Monoamine oxidase inhibitors:* The administration of ephedrine to patients taking monoamine oxidase inhibitors (MAOIs) can result in severe hypertension.
Cyclopropane or halogenated hydrocarbons: Ephedrine hydrochloride is contraindicated in patients undergoing general anesthesia with cyclopropane or halothane or other halogenated hydrocarbons.
Acetazolamide: Acetazolamide induced alkalization of urine reduces the urinary clearance of ephedrine.
Dexamethasone: Ephedrine has been shown to increase the clearance and prolong the half life of dexamethasone in asthmatic patients.
Antihypertensive agents: Loss of blood pressure control has been detected in patients given ephedrine & adrenergic neuron blocking drugs concurrently.

❖ **FEDRIN-5 Inj. Jayson**
Ephedrine hydrochloride 5mg/ml; 5ml (25mg) ampoule: i.m/i.v injection.
5ml amp x 10's pack: 120.00 MRP

❖ **NORDRINE Inj. Incepta**
Ephedrine hydrochloride 5mg/ml; 5ml (25mg) ampoule: i.m/i.v injection.
5ml amp x 10's pack: 120.00 MRP

Chapter-19

DRUGS ACTING ON UROGENITAL SYSTEM

DRUGS ACTING ON UROGENITAL SYSTEM

Drugs discussed in this chapter include:

1. **Urinary Anti-infectives**
   a) **Systemic urinary anti-infectives**
   b) **Other systemic anti-infectives effective in urinary tractinfections**
   c) **Irrigation solution used in urological surgery**
2. **Urinary retention: Benign prostatic hyperplasia**
3. **Anti-kidney stone preparations**
4. **Drugs used in Genital problem**
   a) **Drugs acting on the uterus**
   b) **Drugs using in vaginal & vulval conditions**

URINARY ANTI-INFECTIVES

Systemic Urinary Anti-infectives

NALIDIXIC ACID[21,33]

NALIDIXIC ACID: Tablet/ Suspension/ Sachet
Ind: Urinary tract infections (acute & chronic); Shigellosis.
C/I: Infants under 3 months, epilepsy and convulsive disorders, CNS lesions.
S/E: G.I. disturbances including nausea, vomiting, diarrhoea; haemolysis in G6PD deficiency; allergic reactions including urticaria, rashes, fever, arthralgia, eosinophylia, also myalgia, muscle weakness, phototoxicity, jaundice, visual disturbances, convulsions.
Precautions: impaired hepatic or renal function, breast feeding, avoid strong sunlight, interference with tests using copper salts (e.g. Benedict's test)
Dosace & admin: Adult: ***Acute infections:*** **1 gm every 6 hours daily for minimum 7 days, reducing to 500 mg every 6 hours.**
Chronic infections: **500 mg every 6 hours daily.**
Child: Under 3 months not recommended; 3 months-12 yrs. upto 50mg/kg body-wt. daily in divided doses (6 hourly)

❖ **DEGRAM Susp. Doctor's**
Nalidixic acid 300mg/5ml: suspension
50ml bot: 30.00 MRP
❖ **DIXICON Tab. Jayson**
Nalidixic acid 500mg/tablet
100's pack: 384.00 MRP
❖ **DIXICON Susp. Jayson**
Nalidixic acid 300mg/5ml: suspension
50ml bot: 30.24 MRP
❖ **NALIDEX Tab. Ambee**
Nalidixic acid 500mg/tablet
100's pack: 406.00 MRP
❖ **NALIDEX Susp. Ambee**
Nalidixic acid 250mg/5ml: suspension
50ml bot: 30.34 MRP
❖ **NALIDIXIN Tab. Pharmadesh**
Nalidixic acid 500mg/tablet.
50's pack: 232.50 MRP
❖ **NALIDIXIN Susp. Pharmadesh**
Nalidixic acid 300mg/5ml: suspesion
50ml bot: 30.34 MRP
❖ **NALID Tab. Square**
Nalidixic acid 500mg/tablet
60's pack: 243.60 MRP
❖ **NALID Syp. Square**
Nalidixic acid 300mg/5ml: syrup
50ml bot: 30.34 MRP
❖ **NALIGRAM Tab. Acme**
Nalidixic acid 500mg/tablet
100's pack: 400.00.00 MRP
❖ **NALIGRAM Susp. Acme**
Nalidixic acid 300mg/5ml: suspension
50ml bot: 30.34 MRP
❖ **NALITRUM Susp. Salton**
Nalidixic acid 300mg/5ml: suspension
50ml bot: 30.00 MRP
❖ **NEBACTIL Susp. Beximco**
Nalidixic acid 250mg/5ml: suspesion.
50ml bot: 30.35 MRP
❖ **ULTRAGRAM Susp. Globe Pharma**
Nalidixic acid 300mg/5ml: suspesion.
50ml bot: 30.00 MRP

NITROFURANTOIN[21,26]

NITROFURANTOIN: Tablet/Capsule/ Suspension
Nitrofurantoin is an antibacterial agent specific for urinary tract infections. It is highly soluble in urine Nitrofurantoin may be available in the form of tablet capsule & suspension.
Mode of action: Nitrofurantoin inactivates or alters bacterial ribosomal proteins & other macromolecules. Nitrofurantion has been shown to be active against the following bacteria: Gram-positive aerobes- Staphylococcus saprophyticus, Coagulase-negative staphylococccus aureus, Staphylococcus epidermidis, Group D streptococci, Viridans group streptococci. Gram-negative aerobes: Escherichia coli, Citrobacter amalonaticus, Citrobacter diversus, Citrobacter freundii, Klebsiella oxitoca, Klebsiella ozaenaa.
Ind: Urinary tract infections.
C/I: Impaired renal functions, anuria, oliguria; infants less then 1 month old; glucose 6-phosphate dehydrogenase deficiency.
S/E: Nausea, vomiting,rahses, peripheral neuropathy, pulmonary infiltration, allergic liver damage, peripheral neuropathy, angioedema, rash, pruritus, exfoliative dermatitis, erythema multiforme, pancreatitis, arthralgia, blood disorder, trasient alopecia.
Precaution: Ineffective in alkaline urine; pregnanacy.
Pregnancy & lactation: There are no adequate & well-controlled studies in pregnant woman. This drug should be used during pregnancy only if clearly needed.
Nitrofurantoin has been detected in human breast milk in trace amounts. Because of the potential for serious adverse reactions from nitrofurantoin in nursing infants under one month of age, a decision should be made whether to discontinue nursing or discontinue the drug, considering the importance of the drug to the mother.
Dose & admin: Adult: 50-100mg every 6 hourly daily with meals or milk for 14 days. In chronic infections, 100-200mg daily. The lower dosage level is recommended for uncomplicated urinary tract infections.
For long-term suppressive therapy in adults, a reduction of dosage to 50-100mg at bedtime may be adequate.
Child: Infants less than 1 month (or under 2.5 kg) not recommended. Others, acute infections- 5-7mg/kg/day in 4 divided doses; chronic infections, 2-4mg/kg/day in 4 divided doses.
For long-term suppressive therapy in children, doses as low as 1mg/kg/day, given in a single dose or in 2 divided doses, may be adequate.
Drug inter: Antacids containing magnesium trisilicate, when administered concomitantly with nitrofurantoin, reduce both the rate & extent of absorption. Uricosuric drugs, such as probenecid & sulphinpyrazone can inhibit renal tubular secretion of nitrofurantoin.

❖ **NINTOIN Tab. Incepta**
Nitrofurantoin USP 100mg/tablet.
30's pack: 120.00 MRP

Other Systemic Anti-infectives Effective in Urinary tract infections

See under systemic anti-microbial drugs, in the therapeutic chapter-7.

Irrigation Soln. used in Urological Surgery[21,33]

GLYCINE IRRIGATION SOLN: Injection
Glycine 1.5% solution in water for bladder irrigation during urological surgery.
Ind: Bladder irrigation during urological surgery. (Endoscopic surgery within the urinary tract requires an isotonic irrigant since there is a high risk of fluid absorption. Glycine 1.5% solution is the irrigant of choice for transurethral resection of the prostate gland and bladder tumour. Sterile normal saline is usually used for percutaneous renal surgery).
S/E; Cautions: No significant side-effect is noted.
Use & admin: Irrigation solution is administered as drip through the bi-luminal catheter and can be continued as required

❖ **GLYCINE IRRIGATION Soln. Opsosaline**
Glycine 1.5% solution in water for bladder irrigation during urological surgery.
1000ml bag: 70.00 MRP

❖ **IRIGON Soln. Beximco**
Glycine 1.5% solution in water for bladder irrigation during urological surgery.
1000ml bag: 70.80 IP

❖ **STERISOL Soln. Popular**
Glycine 1.5% solution in water for bladder irrigation during urological surgery.
2000ml bag: 140.00 MRP

URINARY RETENTION: BENIGN PROSTATIC HYPERPLASIA

ALFUZOSIN[26]

ALFUZOSIN HCl : Tablet.
Alfuzosin hydrochloride is a selective antagonist of post-synaptic α_1-adrenoreceptors, which are located in the prostate, bladder base, bladder neck, prostatic capsule, and prostatic urethra. It is available as Alfuzosin hydrochloride BP 10mg tablet in extended release (XR) form.
Mode of action: Alfuzosin hydrochloride relaxes the tone of the prostate smooth muscle, prostate capsule, bladder neck and proximal urethra. It competitively and selectively binds to the post synaptic α_1-adrenergic receptors in the lower urinary tract. It also relaxes sympathetic nervous stimulation, reduces resting urethral pressure and inhibits urethral hypertonia-induced sympathetic nervous stimulation. As an uroselective agent, Alfuzosin hydrochloride preferentially binds to prostatic α_1-receptors, blockage of these receptors result in reduction of BPH symptoms, improvement of urine flow and decreased potential for hypertensive events.
Ind: Alfuzosin hydrochloride is indicated for the treatment of the signs and symptoms of benign prostatic hyperplasia (BPH), lower urinary tract symptoms (LUTS) including urinary frequency, nocturia, incomplete emptying and urinary hesitancy associated with BPH.
C/I: Moderate or severe hepatic insufficiency, since Alfuzosin hydrochloride blood levels are increased in these patients; co-administered with potent CYP3A4 inhibitors such as ketoconazole, itraconazole, and ritonavir; known hypersensitivity to Alfuzosin hydrochloride or any component of Alfuzosin hydrochloride tablets.
S/E: Alfuzosin hydrochloride is generally well tolerated. But, some adverse events have been reported, such as- abdominal pain, dyspepsia, constipation, nausea, impotence, bronchitis, sinusitis and pharyngitis.
Precautions: Alfuzosin should not be given to patients with moderate or severe hepatic insufficiency. Caution should be exercised when Alfuzosin is administered in patients with severe renal insufficiency. If symptoms of angina pectoris should newly appear or worsen, Alfuzosin hydrochloride should be discontinued. Pregnancy & lactation: Alfuzosin hydrochloride is not indicated for use in pregnant and lactating mother.
Dosage & admin: The recommended dosage is 10mg (1 tablet) daily to be taken immediately after the same meal each day. The tablets should not be chewed or crushed.
Drug inter: The pharmacokinetic and pharmacodynamic interactions between Alfuzosin hydrochloride and other α-blockers have not been determined. However, interactions may be expected, and Alfuzosin hydrochloride should not be used in combination with other α-blockers.

❖ **ALFASIN XR Tab. Incepta**
Alfuzosin hydrochloride BP 10mg/tablet (extended release).
10mg x 24's pack: 240.00 MRP

❖ **URITEN Tab. Square**
Alfuzosin hydrochloride BP 10mg/tablet.
10mg x 30's pack: 300.00 MRP

❖ **ZATRAL Tab. SK+F**
Alfuzosin hydrochloride BP 10mg/tablet.
10mg x 24's pack: 240.00 MRP

DUTASTERIDE[21,129]

DUTASTERIDE: Liquid-filled caplsule
Dutasteride is an androgen-antagonist, and used in the treatment of benign prostatic hyperplasia. It is available as dutasteride INN 0.5mg liquid-filled capsule.
Mode of action: Dutasteride specifically inhibits the enzyme 5 α-reductase which metabolises testosterone into the more potent androgen-dehydrotestosterone. This anti-androgen action thus leads to reduction in prostate size, with improvement in urinary flow, rate & obstructive symptoms.
Ind: Dutasteride is indicated for the treatment of symptomatic benign prostatic hyperplasis (BPH) in men with an enlarged prostate to- improve symptoms, reduce the risk of acute urinary retention, reduce the risk of the need for BPH-related surgery.
C/I: Dutasteride is contra-indicated for use in women and children and for patients with known hypersensitivity to dutasteride, and other 5 α-reductase inhibitors. A/E: Most adverse reactions were mild to moderate and generally resolved while on treatment in both the dutasteride and placebo groups. Long-term treatment (up to 4 years): There is no evidence of increased drug-related sexual adverse events (impotence, decreased libido and ejaculation disorder) or gynecomastia with increased duration of treatment. The relationship between long-term use of dutasteride and male breast neoplasia is currently unknown.
Precautions: *General:* Lower urinary tract symptoms of BPH can be indicative of other urological diseases, including prostate cancer. Patients should be assessed to rule out other urological diseases prior to treatment with dutasteride. Patients with a large residual urinary volume and/or severely diminished urinary flow may not be good candidates for 5 α-reductase inhibitor therapy and should be carefully monitored for obstructive uropathy. *Use in hepatic impairment:* The effect of hepatic impairment on dutasteride pharmacokinetics has not been studied. Because dutasteride is extensively metabolized and has a half-life of approximately 5 weeks at steady sate, caution should be used in the administration of dutasteride to patients with liver disease. *Effects on prostate-specific antigen & prostate cancer detection:* Digital rectal examinations, as well as other evaluations for prostate cancer, should be performed on patients with BPH prior to initiating therapy with dutasteride and periodically thereafter. Dutasteride reduces total serum PSA concentration by approximately 40% following 3 months of treatment and approximately 50% following 6, 12, and 24 months of treatment. This decrease is predictable over the entire range of PSA values, although it may vary in individual patients.
Geriatric use: No overall differences in safety or efficacy were observed between elderly and adult subjects
Warnings: *Exposure of women-risk to male fetus:* Dutasteride is absorbed through the skin. Therefore, women who are pregnant or may be pregnant should not handle dutasteride capsules because of the possibility of absorption of dutasteride and the potential risk of a fetal anomaly to a male fetus. If contact is made with leaking capsules, the contact area should be washed immediately with soap and water. *Blood donation risk:* Men being treated with dutasteride should not donate blood until at least 6 months have passed following their last dose. The purpose of this deferred period is to prevent administration of dutasteride to a pregnant female transfusion recipient. *Reproductive function:* The clinical significance of dutasteride's effect on semen characteristics for an individual patient's fertility is not known.
Pregnancy & lactation: Dutasteride is contra-indicated for use in women.
Dosage & admin: The recommended dose is 0.5mg orally daily. The capsules should be swallowed whole. It may be administered with or without food. No dosage adjustment is necessary for subjects with renal impairment or for the elderly. Due to the absence of data in patients with hepatic impairment, no dosage recommendation can be made.
Overdosage: In volunteer studies, single doses of dutasteride up to 40mg (80 times the therapeutic dose) for 7 days have been administered without significant safety concerns. In a clinical study, daily doses of 5mg (10 times the therapeutic dose) were administered to 60 subjects for 6 months with no additional adverse effects to those seen at therapeutic doses of 0.5mg. There is no specific antidote for dutasteride. Therefore, in cases of suspected overdosage symptomatic and

supportive treatment should be given as appropriate, taking the long half-life of dutasteride into consideration.
Drug inter: Care should be taken when administering dutasteride to patients taking potent. chronic CYP3A4 inhibitors. Dutasteride does not inhibit the in vitro metabolism of model substrates for the major human cytochrome P450 isoenzymes at a concentration of 1000ngm/ml, 25 times greater than steady state serum concentrations in humans. In vitro studies demonstrate that dutasteride does not displace warfarin, diazepam, or phenytoin from plasma protein binding sites, nor do these model compounds displace dutasteride.

❖ **DUTAMAX Cap. Drug Inter.**
Dutasteride INN 0.5mg/capsule (liquid-filled).
20's pack: 160.00 MRP
❖ **URODART Liquid-filled Cap. UniMed/ UniHealth**
Dutasteride INN 0.5mg/capsule (liquid-filled).
28's pack: 280.00 MRP

FINASTERIDE[21,33]

FINASTERIDE: Tablet
Finasteride is an androgen-antagonist, and used in the treatment of benign prostatic hyperplasia. It is available as finasteride 1mg & 5mg tablet.
Mode of action: See above under the text of dutasteride.
Ind: Benign prostatic hyperplasia.
Precautions: Obstructive uropathy, prostate cancer (may decrease markers such as prostate specific antigen); use of condoms recommended if sexusal partner is pregnant or is likely to become pregnant (finasteride is excreted in semen); women of child-bearing potential should avoid handling crushed or broken tablets.
S/E: Impotence, decreased libido and ejaculate volume, breast tenderness and enlargement, hypersensitivity reactions (including lip swelling and rash).
Dosage & admin: 5mg daily, review treatment after 6 months (may require several months treatment before benefit is obtained).

❖ **PRONOR Tab. Square**
Finasteride 5mg/tablet
30's pack: 300.00 MRP
❖ **PROSFIN Tab. Beximco**
Finasteride 5mg/tablet
30's pack: 300.00 IP
❖ **RECUR Tab. Beximco**
Finasteride 1mg/tablet
30's pack: 120.00 IP

FLAVOXATE[26]

FLAVOXATE HCl: Tablet
Flavoxate is a synthetic urinary tract spasmolytic. It is available as flavoxate hydrochloride BP 100mg & 200mg tablet.
Mode of action: Flavoxate, as a urinary tract spasmolytic, it counteracts smooth muscle spasm of the urinary tract and exerts its effect directly on the muscle, as a result relaxation of the urinary tract muscles.
Ind: Flavoxate is indicated for symptomatic relief of dysuria, urgency, nocturia, suprapubic pain, frequency and incontinence as may occur in cystitis, prostatitis, urethritis and urethrocystitis.
C/I: Flavoxate is contraindicated in patients who have any of the following obstructive conditions: Pyloric or duodenal obstruction, obstructive intestinal lesions or ileus, achalasia, gastrointestinal hemorrhage and obstructive uropathies of the lower urinary tract.
S/E: *Gastrointestinal:* Nausea, vomiting, dry mouth.*CNS:* Vertigo, headache, mental confusion, especially in the elderly, drowsiness, nervousness. *Hematologic:* Leukopenia (which is reversible upon discontinuation of the drug). *Cardiovascular:* Tachycardia and palpitation. *Allergic:* Urticaria and other dermatoses, eosinophilia and hyperpyrexia. *Ophthalmic:* Increased ocular tension, blurred vision, disturbance in eye accommodation.
Precautions: Flavoxate should be given cautiously in patients with suspected glaucoma.
Pregnancy & lactation: This drug should be used during pregnancy only if clearly needed. It is not known whether this drug is excreted in human milk. Caution should be exercised when flavoxate is administered to a nursing woman.
Dosage & admin: Adults & children over 12 years of age: 100mg or 200mg 3 times a day. With improvement of symptoms, the dose may be reduced.
Children: Below the age 12 years, not recommended.

❖ **FLAVOX Tab. Somatec**
Flavoxate hydrochloride BP 100mg & 200mg/tablet
100mg x 30's pack: 210.00 MRP
200mg x 20's pack: 260.00 MRP
❖ **URILAX Tab. Incepta**
Flavoxate hydrochloride BP 100mg & 200mg/tablet
100mg x 30's pack: 300.00 MRP
200mg x 30's pack: 540.00 MRP

OXYBUTYNIN CHLORIDE[48]

OXYBUTYNIN CHLORIDE: Tablet
Oxybutynin is an antispasmodic, anticholinergic agent. It is available as oxybutynin chloride 5mg once-a-day controlled release tablet.
Mode of action: Oxybutynin chloride relaxes bladder smooth muscles in patients with conditions characterized by involuntary bladder contractions. It increases bladder (vesical) capacity, diminishes the frequency of uninhibited contractions of the detrusor muscle, and delays the initial desire to void. This drug thus decreases urgency and the frequency of both incontinent episodes and voluntary urination.
Ind: Oxybutynin chloride is indicated for the treatment of overactive bladder with symptoms of urge urinary incontinence, urgency for urination, frequent urination and nocturnal enuresis.
C/I: Oxybutynin is contraindicated in patients with urinary retention, gastric retention, or uncontrolled narrowangle glaucoma and in patients who are at risk for these conditions. Oxybutynin is also contraindicated in patients who have demonstrated hypersensitivity to the drug substance or other components of the product.
S/E: The most common side effects reported are due to anticholinergic effects, such as- dry mouth (which is dose-related), abdominal pain, dry nasal and sinus mucous membranes, back pain, hypertension, palpitation, vasodilatation, flatulence, gastroespohageal reflux, insomnia, nervousness, confusion, cough, sinusitis, bronchitis, dry skin, rash, impaired urination (hesitancey), urinary retention, etc.
Precautions: Oxybutynin chloride should be used with caution in patients with hepatic or renal impairment, clinically significant bladder outflow obstruction because of the risk of urinary retention, gastrointestinal obstructive disorders becuase of the risk of gastric retention, conditions such as ulcerative colitis, intestinal atony, and myasthenia gravis, gastroesophageal reflux and/or who are concurrently taking drugs (such as bisphosphonates) that can cause or exacerbate esophagitis.
Pregnancy & lactation: The safety of oxybutynin administration to women who are or who may become pregnant has not been established. Therefore, oxybutynin should not be given to pregnant women unless, in the judgement of the physician, the probable clinical benefits outweigh the possible hazards. It is not known whether oxybutynin is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when oxybutynin is administered to a nursing woman.
Dosage & admin: Oxybutynin chloride may be administered with or without food. The recommended starting dose is 5mg once daily. Dosage may be adjusted in 5mg increments to achieve a balance of efficacy and tolerability (up to a maximum of 30mg/day). In general, dosage adjustment may proceed at approximately weekly intervals.
Drugs inter: The concomitant use of oxybutynin with other anticholinergic drugs or with other agents which produce dry mouth, constipation, drowsiness, and/or other anticholinergic-like effects may increase the fequency and/or severity of such effects. Anticholinergic agents may potentially alter the absorption of some concomitantly administerd drugs due to anticholinergic effects on gastrointestinal motility. Pharmacokinetic studies with patients concomitantly receiving cytochrome P450 enzyme inhibitors, such as antimycotic agents (e.g ketoconazole, itraconazole, and miconazole) or macrolide antibiotics (e.g erythromycin and clarithromycin), havd not been performed. No specific drug interaction studies have been performed with oxybutynin.

❖ **URICON Tab. Beximco**
Oxybutynin chloride 5mg/tablet (controlled release)
30's pack: 180.00 IP

TAMSULOSIN[87]

TAMSULOSIN HCl: Capsule/Tablet.
Tamsulosin is a sulfonamethylamine derivative 1A-adrenergic blocking agent. Clinically found useful in the conservative treatment of benign

prostatic hyperplasia.
Mode of action: The drug is pharmaco-logically related to doxazosin, prazosin, and terazosin; but, unlike these drugs, tamsulosin has higher affinity and selectivity for 1A-adrenergic receptors, which are mainly located in nonvascular smooth muscle (e.g prostate), than for 1B-adrenergic receptors located in vascular smooth muscle (e.g internal iliac artery). Such selectivity of tamsulosin for 1A-receptors may result in a reduced incidence of adverse cardiovascular effects (e.g syncope, dizziness, hypotension). The selective affinity of tamsulosin for 1A-adrenergic receptors, located mainly in the prostate causes relaxation of smooth muscle in benign prostatic hyperplasia producing an increase in urinary flow-rate and an improvement in obstructive symptoms.
Ind: Tamsulosin is used in benign prostatic hyperplasia. It relaxes smooth muscle in benign prostatic hyperplasia producing an increase in urinary flow-rate and an improvement in obstructive symptoms.
C/I: Tamsulosin should be avoided in patients with a history of orthostatic hypotension and micturition syncope.
S/E: Side effects of tamsulosin include drowsiness, asthenia, depression, headache, dry mouth, nausea, vomiting, diarrhea, constipation, oedema, blurred vision, rhinitis, erectile disorders, tachyca-rdia and palpitations. Hypersensitivity reactions including rash, pruritus, angioe-dema have been reported in some cases.
Precaution: Caution may be required in the elderly and in patients with hepatic impairment and severe renal impairment.
Pregnancy & lactation: Not applicable.

Dosage & admin: Tamsulosin 0.4mg (tablet or capsule) once daily is recommended as the dose for the treatment of the signs and symptoms of benign prostatic hyperplasia (BPH). It should be administered approximately one and half hour following the same meal each day. For those patients who fail to respond to the 0.4mg dose after 2 to 4 weeks of treatment, the dose can be increased to 0.8mg once daily.
Drug inter: The pharmacokinetic and pharmacodynamic interactions between tamsulosin and other -adrenergic blocking agents have not been determined. However, interactions may be expected and it should not be used in combination with other -adrenergic blocking agents. The pharmacokinetic interaction between cimetidine and tamsulosin was investigated, the results indicated significant changes in tamsulosin clearance (26% decrease) and AUC. Therefore, tamsulosin should be used with caution in combination with cimetidine, particularly at doses higher than 0.4mg. Caution should be exercised with concomitant administration of warfarin and tamsulosin.

❖ **FLONOR Cap. Novo Healthcare**
Tamsulosin hydrochloride INN 0.4mg/capsule.
16's pack: 160.00 MRP
❖ **MAXFLO-U Cap. Rangs Pharma**
Tamsulosin hydrochloride INN 0.4mg/capsule.
28's pack: 280.00 MRP
❖ **MAXRIN Cap. Square**
Tamsulosin hydrochloride INN 0.4mg/capsule.
20's pack: 200.00 MRP
❖ **PROSTACIN Cap. Incepta**
Tamsulosin hydrochloride INN 0.4mg/capsule.
20's pack: 200.00 MRP
❖ **PROSTAM Cap. Drug Inter.**
Tamsulosin hydrochloride INN 0.4mg/capsule.
30's pack: 240.00 MRP
❖ **TAMISOL MR Tab. Healthcare**
Tamsulosin hydrochloride INN 0.4mg/tablet.
30's pack: 300.00 MRP
❖ **TAMLOSIN Tab. Orion**
Tamsulosin hydrochloride INN 0.4mg/tablet.
20's pack: 200.00 MRP
❖ **TAMOSIN Cap. Supreme**
Tamsulosin hydrochloride INN 0.4mg/capsule
20's pack: 200.00 MRP
❖ **URINOM Tab. Opsonin**
Tamsulosin hydrochloride INN 0.4mg/tablet
20's pack: 200.00 MRP
❖ **UROFLO Cap. Beximco**
Tamsulosin hydrochloride INN 0.4mg/capsule.
20's pack: 200.00 IP
❖ **UROLOSIN Tab. General**
Tamsulosin hydrochloride INN 0.4mg/tablet
28's pack: 280.00 MRP
❖ **UROMAX Cap. UniHealth**
Tamsulosin hydrochloride INN 0.4mg/capsule.
28's pack: 280.00 MRP
❖ **UROSIN SR Cap. SK+F**
Tamsulosin hydrochloride INN 0.4mg/capsule (sustained release).
18's pack: 180.00 MRP

TOLTERODINE[42,129]

TOLTERODINE TARTRATE: Tablet/Capsule
Tolterodine is an antimuscarinic drug, used in the treatment of urinary incontinence due to overactive bladder for better urinary control. It is available as tolterodine tartrate INN 1mg, & 2mg film-coated tablet; & tolterodine tartrate INN 2mg, & 4mg extended release capsule.
Mode of action: Tolterodine is a competitive, specific muscarinic receptor antagonist, which exhibits a selectivity for the urinary bladder over salivary glands. It has a high specificity for muscarinic receptors. A major active metabolite (5-hydroxymethyl derivative) of tolterodine exhibits a pharmacological profile which is similar to that of the parent compound. In extensive metabolisers this metabolite contributes significantly to the therapeutic effect of tolterodine. The effect of treatment can be expected within 4 weeks.
Ind: Tolterodine is indicated in the treatment of overactive bladder with symptoms of urinary urgency, frequency, and/or urge incontinence.
C/I: Tolterodine is contraindicated in those patients with urinary retention, uncontrolled narrow angle glaucoma, known hypersensitivity to tolterodine or any other component of the drug.
S/E: Tolterodine may cause mild to moderate antimuscarinic effects, like dryness of mouth, dyspepsia and/or reduced lacrimation.

Precautions: Tolterodine should be used with caution in the following conditions- i. at risk for urinary retention, ii. at risk for decreased gastrointestinal motility, iii. with impaired renal function, iv. with impaired hepatic function. Organic reasons for urge and frequency should be considered before treatment.

Pregnancy & lactation: There are no studies in pregnant women. Therefore, tolterodine should be used during pregnancy only if the potential benefit justifies the potential risk to the foetus. Use of tolterodine during lactation should be avoided since no data on excretion of the drug into humans breast milk is available.

Dosage & admin: *1mg & 2mg tablet (f.c):* The recommended dose for tolterodine is 2mg twice daily. In case of troublesome side-effects the dose may be reduced from 2mg to 1mg twice daily.
***2mg & 4mg LA capsule:* The recommended dose is tolterodine 4mg (one 4mg LA capsule) once daily. The dose may be lowered to 2mg (one 2mg LA capsule) once daily based on individual response & tolerability.**
For patients with significantly impaired renal or hepatic function, or receiving medication currently or concomitantly with potent CYP3A inhibitors, such as macrolide antibiotics (e.g erythromycin and clarithromycin) or azole antifungal agents (e.g ketoconazole, itraconazole and miconazole), the recommended total daily dose of tolterodine is 2mg (1mg twice daily or 2mg LA capsule once daily). After 6 months the need for further treatment should be considered.
Children: Safety and effectiveness of tolterodine in children have yet not been established.

Drug inter: Phamacokinetic interactions are possible with other drugs metabolised by or inhibiting cytochrome P450 2D6 (CYP2D6) or CYP3A. Concomitant treatment with fluoxetine does not result in a clinically significant interaction.
Ketoconazole, a potent inhibitor or other CYP3A, significantly increased plasma conce-ntrations of tolterodine when coadministered to poor metabolisers (i.e persons devoid of CYP2D6 metabolic pathway).
Clinical studies have shown no interactions with warfarin or combined oral contraceptives (ethinyloestradiol/levonorgestrel).

❖ **DETRUSIN LA Cap. UniMed/UniHealth**
Tolterodine tartrate INN 2mg & 4mg/capsule (extended release).

Dosage & admin: See above under the text.
2mg x 20's pack: 120.00 MRP
4mg x 20's pack: 240.00 MRP

❖ **TOLORIN Tab. General**
Tolterodine tartrate INN 2mg/tablet.
28's pack: 84.00 MRP

❖ **TOLTER Tab. Renata**
Tolterodine tartrate INN 1mg & 2mg/tablet.
1mg x 30's pack: 60.00 MRP
2mg x 30's pack: 90.00 MRP

❖ **UCOL 2 Tab. Square**
Tolterodine tartrate INN 2mg/tablet.
30's pack: 90.00 MRP

❖ **URITOL Tab. SK+F**
Tolterodine tartrate INN 1mg & 2mg/tablet.
1mg x 30's pack: 60.00 MRP
2mg x 30's pack: 90.00 MRP

ANTI-KIDNEY STONE PREPARATIONS

POTASSIUM CITRATE

❖ **UROKIT 5/10 Tab. SK+F**
Urokit 5- Potassium citrate 540mg/tablet (wax matrix extended release tablet).
Urokit 10- Potassium citrate 1080mg/tablet (wax matrix extended release tablet).

Mode of action: Kidney stones are formed by crystallization of calcium and other salts present in acidic urine. Once a person has a kidney stone, their chance of getting another one ranges from 65% to 90%. Potassium citrate urokit has developed to prevent further stone formation. When Urokit is given orally, the metabolism of absorbed citrate produces an alkaline load may lead to increase urinary pH to 7.0 and produced a sustained increase in urinary citrate excretion from low values to within normal limits. The absorbed citrate binds to calcium in the urine and hence preventing the calcium from crystallizing and developing into a stone. Again, the rise in urinary pH increases the ionization of uric acid to more soluble urate ion, reducing the risk of developing uric acid stone.
Urokit utilizes a wax-matrix delivery system. This wax-matrix system delivers a slow, sustained release of medication that allows-convenient dosing, less gastrointestinal upset and enhanced patient compliance. Demonstrates outstanding success: Urokit is clinically proven to inhibit the formation of most kidney stones.

Ind: Prevention of repeated kidney stone formation.
C/I; S/E; Precautions: See manufacturer's literature.

Use & admin: Consult manufacturer's literature; (not provided by the authority).
Urokit 5 x 15's pack: 75.00 MRP
Urokit 10 x 15's pack: 150.00 MRP

HAEMODIALYSIS SOLUTIONS

Bicarbonate Haemodialysis Solution

Bicarbonate haemodialysis concentrate solution is prepared by mixing 2 solutions, viz:
1. Solution-A (or Acidic component),
2. Solution-B (or Bicarbonate component).

SOLUTION-A (Acidic Component):

Haemodialysis solution-A (acidic component) contains essential salts like sodium chloride, potassium chloride, magnesium chloride, calcium chloride and acetate ions as a buffer. Bicarbonate is best replaced by acetate in order to avoid the release of carbon dioxide into the solution. Bicarbonate is the physiological buffer.
Each 1 litre of concentrated Solution-A contains:
Sodium chloride BP..... 161.43gm
Potassium chloride BP..... 5.49gm
Calcium chloride dihydrate BP 9.75gm
Magnesium chloride hexahydrate BP... 3.74gm
Glacial acetic acid BP..... 8.85gm
Highly purified water BP.....q.s. to 1 litre

SOLUTION-B (Bicarbonate Component):

Haemodialysis solution-B (bicarbonate component) contains essential salts like sodium chloride and sodium bicarbonate. Bicarbonate is the physiological buffer. Bicarbonate concentrate is used with acid concentrate.

Each 1 litre of concentrated Solution-B contains:
Sodium chloride BP..... 30.5gm
Sodium bicarbonate B P..... 66.0gm
Highly purified water BP.....q.s. to 1 litre

How to prepare mixure dilution:
In this formulation, the ideal haemodialysis concentrate is achieved by mixing two solutions, solution-A (Acidic component) & solution-B (Bicarbonate component) in a definit ratio. That, 1 part of Solution-A (Acid component) is to be mixed with 1.83 part of Solution-B (Bicarbonate component) & diluted with 34 parts of water of suitable quality.
Solution-A (Acidic component)..... 1.00 vol.
Solution-B (Bicarbonate component)..1.83 vol.
Purified water BP .....34.00 vol.

Ready to use composition:
After dilution of 1 part of Solution-A (Acid component) with 1.83 parts of Solution-B (Bicarbonate component) & 34 parts of purified water BP or suitable quality water, yield a 'ready to use' bicarbonate haemodialysis solution. The electrolyte concentrations of this diluted 'ready to use' bicarbonate haemodialysis solution stand as following:

Sodium ion (Na+).....75.00 mmol/L
"Sodium ion (Na+).....65.00 mmol/L
Potassium ion (K+).....2.00 mmol/L
Calcium ion (Ca++).....1.80 mmol/L
Magnesium ion (Mg++).....0.50 mmol/L
Chloride ion (Cl-).....81.60 mmol/L
Acetate ion (CH3COO-).....4.00 mmol/L
"Chloride ion (Cl-).....26.00 mmol/L
"Bicarbonate (HCO3-).....35.00 mmol/L
Calc. Osmolarity .....290.90 mOsm/L
"(From bicarbonate component)

Note: Electrolyte concentration may need to be adjusted according to patient's requirements.
Ind: 1. Acute renal failure. 2. Chronic renal failure. 3. Overhydration. 4. To correct electrolyte and acid-base imbalance. 5. In treatment of poisoning. 6. Treatment of renal failure occurring with P. Falciparum infection (malignant tertian malaria).
Precautions:
1. Do not use solution-A or solution-B alone. Solution-A to be mixed with solution-B for haemodialysis and must be diluted immediately before use with water of suitable quality.
2. Untreated tap or portable water is not suitable for the preparation of dialysates. Freshly prepared distilled water obtained under sterile conditions should be used for diluting bicarbonate haemodialysis concentrates. Purified water can be also used but is not recommended to monitor trace elements and chemical elements. Concetration of aluminium ions in purified water must be less than 10mcg/ml. The water also should be free from the chloride and ozone.
3. Discard container in case of visible solid particles inside.
4. This haemodialysis solution is not for i.v injection or infusion. It is used for haemodialysis purposes only.
Dosage & admin: Recommended dose: 5 lit. concentrate per dialysis (or as required). Dosage schedule: 2-3 dialaysis per week (or as required). Route of administration: It is used for haemodialysis purposes only.
Storage: Store in a cool dry place. Do not freeze. Close the container tightly immediately after use. Discard content 96 hours after first opening.

❖ **DIALYTE-A Soln. Popular**
Acidic component (solution-A) of bicarbonate haemodialysis solution.
Comp: See above under the text.
10 litres container: 515.00 IP

❖ **DIALYTE-B Soln. Popular**
Bicarbonate component (solution-B) of bicarbonate haemodialysis solution.
Comp: See above under the text.
10 litres container: 410.00 IP

❖ ❖ ❖

Acetate Haemodialysis Solution

In acetate formulation of haemodialysis solution, essential salts contained are- sodium chloride, potassium chloride, magnesium chloride, calcium chloride and acetate ions as a buffer. In this formulation, sodium acetate is added as the buffer in place of bicarbonate because, primarily this salt is more soluble in water than the sodium bicarbonate, secondarily this sodium acetate is metabolized in the liver into bicarbonate, which is the physiological buffer.
In acetate formulation (Solution-AC), each 1 litre of concentrated solution contains:

Sodium chloride BP……...198.40gm
Potassium chloride BP..... 5.22gm
Calcium chloride dihydrate BP ……....5.15gm
Magnesium chloride hexahydrate BP....3.56gm
Sodium acetate trihydrate BP.....181.01gm
Highly purified water BP..... .....q.s. to 1 litre

Dilution of solution-AC:
1 part of the concentrate haemodialysis solution (soluton-AC) is to be diluted or mixed with 34 parts of water of suitable quality to form a 'ready to use' acetate haemodialysis solution.

Ready to use composition:
Electrolytes immediately after dilution with purified water BP:

Sodium ion (Na+)……...135.00 mmol/L
Potassium ion (K+)……...2.00 mmol/L
Calcium ion (Ca++)……1.00 mmol/L
Magnesium ion (Mg++)……...0.50 mmol/L
Chloride ion (Cl-)……...102.00 mmol/L
Acetate ion (CH3COO-)…….....38.00 mmol/L
Calc. Osmolarity……...278.50 mOsm/L

Ind: 1. Acute renal failure. 2. Chronic renal failure. 3. Overhydration. 4. To correct electrolyte and acid-base imbalance. 5. In treatment of poisoning. 6. Treatment of renal failure occurring with P. Falciparum infection (malignant tertian malaria).
Precautions:
1. Solution-AC must be diluted immediately before use with water of suitable quality.
2. Untreated tap or portable water is not suitable for the preparation of dialysates. Freshly prepared distilled water obtained under sterile conditions should be used for diluting bicarbonate haemodialysis concentrates. Purified water can be also used but is not recommended to monitor trace elements and chemical elements.
Concetration of aluminium ions in purified water must be less than 10mcg/ml. The water also should be free from the chloride and ozone.
3. Discard container in case of visible solid particales inside.
4. This haemodialysis solution is not for i.v injection or infusion. It is used for haemodialysis purposes only.
Dosage & admin: ***Recommended dose:*** **5 litres concentrate per dialysis (or as required).**
Dosage schedule: 2-3 dialaysis per week (or as required).
Route of administration: **It is used for haemodialysis purposes only.**
Storage: Store in a cool dry place. Do not freeze. Close the container tightly immediately after use. Discard content 96 hours after first opening.

❖ **DIALYTE-C Soln. Popular**
Acetate formulation (solution-AC) of acetate haemodialysis solution.
Comp: See above under the text.
10 litres container: 560.00 IP

DRUGS USING IN GENITAL PROBLEMS

Drugs acting on the Uterus

ERGOMETRINE MALEATE[21,33]

ERGOMETRINE MALEATE: Tablet/ Injection
Ind: Post partum haemorrhage, active management of third stage of labour, menorrhagia, metrorrhagia following caesarean section or following induced or spontaneous abortion.
C/I: 1st and 2nd stages of labour, vascular disease, imparied hepatic & renal function, multiple pregnancy.
S/E: Nausea, voniting, transient hypertension, vasoconstriction.
Precautions: Toxaemia, cardiac disease, hypertension, sepsis. In case of breech position or multiple pregnancy, ergometrine should be injected after delivery of the last baby.
Dosage & admin: ***By mouth:*** **0.5-1 mg (onset of action about 8 mins; duration about 1 hour) daily in divided doses.**
By i.m. injection: **200-500mcg (onset about 2 mins).**
By i.v. injection: **for emergency control of baemorrhage, 100-500mcg (onset about 1 min) Atonic post partum haemorrhage can be controlled by 125-250mcg. by i.v. injection. In menorrhagia, 0.125-0.250mg orally 3-4 times daily.**

❖ **G-ERGOMETRINE Tab. Gonoshasth**
Methyl ergometrine maleate 0.125mg/ tablet
100's pack: 56.00 MRP
❖ **G-ERGOMETRINE Inj. Gonoshastha**
Methyl ergometrine maleate 0.2mg/1ml ampoule: injection
5 amps pack: 19.40 MRP
❖ **HEMERGIN Tab. Gaco**
Methyl ergometrine maleate 0.20mg/tablet
100's pack: 64.93 MRP
❖ **HEMERGIN Inj. Gaco**
Methyl ergometrine maleate 0.2mg/1ml ampoule: injection
1 ampoule: 7.00 MRP
❖ **METHERSPAN Tab. Opsonin**
Methyl ergometrine maleate 0.125mg/tablet
100's pack: 55.00 MRP
❖ **METHERSPAN Inj. Opsonin**
Methyl ergometrine maleate 0.2mg/1ml ampoule: injection
25 amps pack: 75.00 MRP
❖ **URGOTIN Inj. Chemist**
Methyl ergometrine maleate 0.2mg/1 ml ampoule: injection
10 amps pack: 30.00 MRP

OXYTOCIN[21,33]

OXYTOCIN: Injection/Nasal spray
Ind: Induction and augmentation of labour, stimulation of labour where uterine effort is inadequate; management of missed and incomplete abortion; postpartum haemorrhage; also facilitation of lactation (as nasal spray).
C/I: Mechanical obstruction to delivery; failed trial labour, hypertonic uterine dysfunction; placental praevia, foetal distress, predisposition to amniotic fluid embolism, severe toxaemia.
S/E: High doses cause violent uterine contractions leading to rupture and foetal distress, arrhythmias, maternal hypertension and subarachnoid haemorrhage, water intoxication.
Precautions: Cardiovascular disease, hypertension; previous caesarean section; abnormal presentation; multiple pregnancy.
Dosage & admin: Adult:by slow i.v. infusion-induction and augmentation of labour, as i.v. fluid containing 1 unit per litre, 1-3 milliunits (1-3 ml of fluid or 15-45 drops) per minute, adjusted according to response.
Missed abortion, as a fluid containing 10-20 units/500ml given at a rate of 10-30 drops/minute, increased in strength by 10-20 units/500ml every hour to a max. strength of 100 units/500ml.
Postpartum haemorrhage, 5-10 units/500ml given at a rate of 15 drops/min. adjusted according to response. By nasal spray-facilitation of lactation, 1 squeeze (about 2 units) into one or both nostrils 2-5 minutes before feeding infant.
Child: Not applicable

❖ **LINDA-S Inj. Nuvista**
Oxytocin 5 i.u/1ml ampoule: injection
10 amps pack: 105.00 MRP
❖ **OCIN Inj. Opsonin**
Oxytocin 5 i.u/1ml ampoule: injection
25 amps pack: 197.50 MRP
❖ **PITOCIN Inj. Chemist**
Oxytocin 5 i.u/1ml ampoule: injection
10 amps pack: 80.00 MRP
❖ **SYNTOCIN Inj. Techno Drugs**
Oxytocin 5 i.u/1ml ampoule: injection
10 amps pack: 75.00 MRP

Drugs using in Vaginal and Vulval conditions

CLINDAMYCIN[26]

CLINDAMYCIN: Vaginal cream

Clindamycin is a water soluble ester derived from the parent antibiotic Lincomycin. It is available as clindamycin phosphate BP equivalent to clindamycin 20mg/gm (i.e 2% w/w). It is specially prepared for vaginal use.
Mode of action: Clindamycin inhibits bacterial protein synthesis by binding preferentially to the 50s ribosomal subunit and affects the process of peptide chain initiation. In vitro clindamycin is active against most strains of the following organisms that have been reported to be associated with bacterial vaginosis: *Bacteroides spp., Gardnerella vaginalis, Mobiluncus spp., Mycoplasma hominis Peptostreptococcus spp.*
Ind: Clindamycin 2% cream is indicated in the treatment of bacterial vaginosis. Clindamycin cream can be used to treat non-pregnant women and pregnant women during the second and third trimester.
C/I: Known hypersensitivity to clindamycin, lincomycin, or any of the components of this vaginal cream. Individuals with a history of regional enteritis, ulcerative colitis, or a history of 'antibiotic-associated' colitis.
S/E: Clindamycin may results the following side-effects: Genital tract- vaginitis, vulvo-vaginal irritation; Central nervous system- dizziness, headache, vertigo; Gastro-intestinal- heartburn, nausea, vomiting, diarrhea, constipation, abdominal pain; Dermatological- rash, exanthema; Hypersensitivity- urticaria.
Precautions: The patient should be instructed not to engage in vaginal intercourse, or use other vaginal products during treatment with this product. This cream contains mineral oil that may weaken latex or rubber products such as condoms or vaginal contraceptive diaphragms. Therefore, use of such products within 72 hours following treatment with clindamycin cream is not recommended.
Dosage & admin: One applicator full (approximately 5 gram) intravaginally at bedtime for 7 consecutive days. In patients in whom a shorter treatment course is desirable, a 3 day regimen has been shown to be effective.
Children: Not recommended in children under 12 years of age.

❖ **CLINDACIN Cream Incepta**
Clindamycin phosphate BP equivalent to clindamycin 20mg/gm (i.e 2% w/w): vaginal cream
20gm tube: 70.00 MRP

CLOTRIMAZOLE[21,42,46,48]

CLOTRIMAZOLE VT: Vaginal Tablet/ Vaginal Suppository
Clotrimazole vaginal tablet is available as clotrimazole BP 100mg, 200mg & 500mg tablet with applicator.
Clotrimazole vaginal suppository is available as clotrimazole BP 200mg/suppository.
Ind: Vaginal and vulval candidiasis, mixed candidal/trichomonal vaginal infections.
C/I: Clotrimazole is contraindicated for patients who are hypersensitive to clotrimazole.
S/E: Local irritation, possibly including burning, oedema, erythema.
Pregnancy & lactation: Avoide in first trimester. Using in second or third trimesters demonstrated no harmful affects on the fetus.
Use & application: ***100mg & 200mg tablet:***
First infection: **In general a 3-day treatment course is sufficient for candida vaginitis. Insert 200mg (100mg 2 tablets or 200mg 1 tablet) high into the vagina with applicator at night, on 3 consecutive days.**
Reinfections: **In general a 6-day treatment course is sufficient. Insert 100mg 1 tablet (or if necessary, 200mg 1 tablet) high into the vagina with applicator at night, on 6 consecutive days. If necessary, 100mg 2 tablets can be used daily, (1 in the morning and 1 in the evening) for 6-12 days without any hesitation.**
Treatment should be timed so as to avoid the menstrual period.
For prevention of reinfection the partner should be treated locally with clotrimazole cream at the same time.
Child: Not applicable.
500mg tablet: **In general, a single dose (500mg) treatment is sufficient for candida vaginitis. Insert 1 tablet high into the vagina with applicator preferably at night.**
If necessary a second treatment may be carried out. It is recommended that the treatment should be timed so as to avoid the menstrual period.
For prevention of reinfection the partner should be treated locally with clotrimazole cream at the same time.
Child: Not applicable.
Supppository: **One suppository should be inserted intravaginally daily (preferably at night) for 3 consecutive days. The suppository should be inserted into the vagina, as high as possible. This is best achieved when lying back with legs bent up.**

❖ **AFUN VT Tab. Square**
Clotrimazole BP 100mg/tablet (vaginal) with applicator.
100mg x 6's pack: 60.00 MRP
❖ **CLOTRIM V. Suppository Acme**
Clotrimazole BP 200mg/suppository (vaginal).
200mg x 3's pack: 60.00 MRP
❖ **CLOZOL VT Tab. Chemist**
Clotrimazole BP 200mg/tablet (vaginal) with applicator.
200mg x 3's pack: 60.00 MRP
❖ **DERMASIM VT Tab. ACI**
Clotrimazole BP 200mg & 500mg/tablet (vaginal) with applicator.
200mg x 3's pack: 60.00 MRP
500mg x 1's pack: 60.00 MRP
❖ **NEOSTEN VT Tab. Beximco**
Clotrimazole BP 200mg/tablet (vaginal) with applicator.
200mg x 3's pack: 60.00 IP

ECONAZOLE[21,33]

ECONAZOLE NITRATE VT: Vaginal Tablet
Econazole vaginal tablet is available as econazole nitrate 150mg tablet with applicator.
Ind: Candidal vaginitis, vulvitis.
S/E: Local mild burning or irritation.
Use & application: Adult, 1 tablet to be inserted high into the vagina for 3 consecutive nights regardless of any intervening menses. Child, not applicable.

❖ **ECONATE-VT Tab. Incepta**
Econazole nitrate 150mg/tablet (for vaginal use).
3 tabs pack: 70.00 MRP
❖ **ECOREN VT Tab. ACI**
Econazole nitrate 150mg/tablet (for vaginal use).
3 tabs pack: 72.00 IP
❖ **ECOZOL-VT Tab. Opsonin**
Econazole nitrate 150mg/tablet (for vaginal use).
3 tabs pack: 70.00 MRP

❖ ❖ ❖

ECONAZOLE NITRATE: Gynaecological Cream
Econazole gynaecological cream is available as econazole nitrate 1% cream for gynaecological use.
Ind: Fungal (candidal) infections of the anogenital area.
S/E: Local irritation, possibly including burning, oedema, erythema.
Use: Apply twice daily in the affected area.

❖ **ECONATE-G Cream Incepta**
Econazole nitrate 1% cream for gynaecological use.
30gm tube: 70.00 MRP

METRONIDAZOLE + MICONAZOLE[21,58]

METRONIDAZOLE + MICONAZOLE: Vaginal tablet
Metronidazole 100mg & miconazole nitrate 100mg in each vaginal tablet.
Ind: Vaginal treatment of female urogenital trichomonas infection, prevention & local therapy of candidiasis.
C/I: Oral metronidazole is contraindi-cated during pregnancy, possible risk of vaginal treatment with metronidazole should be taken into consideration.
S/E: Vaginal treatment is concomitantly followed by oral metronidazole. Side effects of oral metronidazole, see under antimicrobial drugs.
Dose & Admin: In trichomoniasis, concurrently with oral metronidazole treatment 1 vaginal tablet should be inserted high up into the vagina once a day (preparably before going to bed at night) for 10 days. Long-term recovery may be expected only is response to the simultaneous oral treatment of

both partners.
In candidiasis or otherfungal infections, 1 vaginal tablet has to be inserted high up into the vagina for 10 days.
The vaginal tablet should be slightly moistened before application.

❖ **AMETROL-VT Tab. Ambee**
Metronidazole 100mg & miconazole nitrate 100mg/vaginal tablet.
10's pack: 110.00 MRP

POVIDONE-IODINE[39]

❖ **POVISEP GYNO Gel Jayson**
Each gram of povisep gyno gel contains povidone-iodine USP 100mg (i.e 10%). It is available as a pack of 30gm gel in tube with an applicator.
Mode of action: Povidone-iodine is a complex of iodine and an organic polymer, povidone. This polymerization makes iodine complex superior to ordinary elemental iodine. It prolongs the germicidal activity of iodine by liberating elemental iodine slowly. Consequently it has a lower toxicity than elemental iodine.
It gives rapid microbicidal activity against both gram-positive and gram-negative bacteria, protozoa, viruses and fungi/yeasts. It is also sporicidal. It is the only microbicide with this broad spectrum of activity. It is non-staining, exerts prolong germicidal action and also active in the presence of soap, blood, serum, pus, mucosal secretions and water.
Ind: Povisep gyno gel is used for the management of vaginitis due to candidal, trichomonal, non-specific or mixed infections & for pre-operative preparation of vagina.
C/I: Known or suspected iodine hypersensitivity. Regular use is contraindicated in patients and users with thyroid disorders (in particular nodular colloid goiter, endemic goiter and Hashimoto's thyroiditis). The porduct is not recommended for pre-puberty children.
S/E: Povidone-iodine may cause hypersensitivity reactions and irritation of the skin and mucous membranes. Local application of povidone-iodine may produce systemic adverse reactions associated with iodine such as metabolic acidosis, hypernatremia and impairment of renal function, although severe reaction are rare and povidone-iodine is considered less irritant than that of elemental iodine.
Precautions: Special caution is needed when regular applications to the patients with pre-existing renal insufficiency. If local irritation, redness or swelling develops, discontinue treattment.
Pregnancy & lactation: Regular use of povidone-iodine should be avoided in pregnant women as absorbed iodine cab cross the placental barrier. Although no adverse effects have been reported from limited use. Caution should be recommended and therapeutic benefit must be balanced against possible effects of the absorption of iodine on foetal thyroid function and development.
Dosage & admin: Povisep gyno gel is only for intra-vaginal use for adults and the elderly women. Insert one applicatorful of gel (5gm) every night for up to 14 days. During insertion of applicator in to the vagina patient should lie down on her back with knees bent and put the applicator in to the vagina as far as one can. Then remove the applicator from vagina and wash all parts in soapy water, rinse well and dry cornpletely. If menstruation occurs during treatment, it is important to continue treatment during the days of the period.
30gm tube x 1's pack: 75.00 MRP

TIOCONAZOLE[46]

❖ **TYCON Suppo. Acme**
Tioconazole BP 300mg: vaginal suppository.
Tioconazole is a member of the imidazole class of antifungal agents.
Ind: Vulvo-vaginal candidiasis.
C/I: History of sensitization to tioconazole or to any of the other components of vaginal suppository or to other imidazole antifungal agents.
S/E: The most frequently observed local side-effects are burning (6%) and itching (5%). Isolated local vaginal symptoms such as irritation, discharge, labial swelling, vaginal pain, dysuria, nocturia, dyspareunia, dryness of vaginal secretions, vulva edema are observed.
Precautions: Constituents of the vaginal suppository may be incompatible with rubber in both contraceptive condoms and diaphragms. Skin and mucosal sensitization may occur. If so, use of tioconazole vaginal suppository should be discontinued.
Pregnancy & lactation: There are no adequate and well controlled studies which establish the safety of tioconazole vaginal suppository in pregnant women. So, the use of vaginal suppository during pregnancy should be considered only if the potential benefit outweighs the potential risk to the fetus.
Tioconazole should not be used by nursing women unless the potential benefit outweighs the possible risk.
Dosage & admin: One 300mg suppository to be used intravaginally as single dose, preferably at bedtime for one night only; for patients who are improved but not completely cured a second application may be effective if administered one week later.
Vaginal candidiasis may be accompanied by vulval infection. Therefore, concomitant local treatment with the tioconazole cream should be applied to the vulva and as far as the anal region once or twice daily for up to 7 days (as needed) is advisable. To treat the male partner, a small amount of cream should be applied onto the glans penis once or twice daily for up to 7 days as needed or to help prevent reinfection by the partner.
10's pack: 600.00 MRP

MIXED PREPNS.[21,33]

❖ **GYNOMIX Soft Cap. Drug Inter**
Each soft gelatin capsule (vaginal suppository) contains- neomycin sulphate BP 35,000 i.u, polymyxin B sulphate BP 35,000 i.u, nystatin BP 100, 000 i.u, acetarsol BP 150mg and postassium sorbate BP 7.5mg + dimethylpolysiloxane BP 2gm as excipients.
Ind: Vaginal trichomoniasis, mixed vaginal infections, vaginal leucorrhoeas (mycotic or bacterial).
S/E: Skin rash, urticaria may occur rarely.
Precautions: Impaired renal function.
Dosage & Admin: Use in vagina 1 capsule at night (bed time) for 12 days or as directed by the physician.
6 caps pack: 145.56 MRP

❖ **GYNORIL Suppos. Opsonin**
Each vaginal suppository contains- neomycin sulphate BP 35,000 i.u, polymyxin B sulphate BP 35,000 i.u, nystatin BP 100, 000 i.u & metronidazole BP 200mg: suppository for vaginal use.
Ind: Vaginal trichomoniasis, mixed vaginal infections, vaginal leucorrhoeas (mycotic or bacterial).
S/E: Skin rash, urticaria may occur rarely.
Dosage & Admin: 1 suppository to be introduced into the vagina at night (bed time) for 12 days or as directed by the physician.
12's pack: 288.00 MRP

OTHER PREPN.

❖ **HEXITANE Obstetric Cream ACI** [52]
Chlorhexidine gluconate 1% w/w cream in a pourable water-miscible basis.
Ind: Use in obstetrics as a vaginal lubricant and for application to the vulva and perineum during labour.
Use: to be applied liberally to the skin on and around vulva, to hand, prior to vaginal application
60ml bot: 50.00 MRP

Chapter-20
DRUGS USED IN THE OPHTHALMIC PROBLEMS

OPHTHALMIC PREPARATIONS

Drugs discussed in this chapter include:

1. **Anti-infective preparations**
   a) **Antibacterial preparations**
   b) **Antifungal preparations**
   c) **Antiviral preparations**
2. **Anti-inflammatory, Anti-allergic & Antibiotic combined preparations**
   a) **Steroid & steroid/antibiotic combined preparations**

b) Non-steroid drugs
3. Mydriatics & Cycloplegics
4. Myotics & Glaucoma drugs
5. Drugs in dry eyes
6. Treatment for Age-releted Macular Degeneration (AMD)
7. Ocular peri-operative drugs
8. Diagnostics & preparations for ophthalmic examinations.

ANTI-INFECTIVE PREPNS.

Antibacterial products

AZITHROMYCIN[133]

AZITHROMYCIN: Eye Drop
Azithromycin is a macrolide antibiotic. It is available as 1% eye drop for topical application.
Ind: Azithromycin is indicated for the treatment of bacterial conjunctivitis caused by susceptible isolates of the following microorganisms: CDC coryneform group G, Haemophilus influenzae, Staphylococcus aureus, Streptococcus mitis group, and Streptococcus pneumoniae.
C/I: None.
S/E: The most frequently reported ocular adverse reaction is eye irritation. This reaction occurred in approximately 1-2% of patients. Other adverse reactions are less than 1% of patients and include- burning, stinging and irritation upon instillation, contact dermatitis, corneal erosion, dry eye, dysgeusia, nasal congestion, ocular discharge, punctate keratitis, and sinusitis.
Precautions & warnings: Anaphylaxis and hypersensitivity have been reported with systemic use of azithromycin. Growth of resistant organisms may occur with prolonged use. Patients should not wear contact lenses if they have signs or symptoms of bacterial conjunctivitis.
Pregnancy & lactation: Reproduction studies in animal, could prove no evidence of harm to the fetus due to azithromycin. There are, however, no adequate and well-controlled studies in pregnant women. It is not known whether azithromycin is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when azithromycin is administered to a nursing woman.
Dosage & admin: Bacterial conjunctivitis: Instill 1 drop in the affected eye(s) twice daily, 8 to 12 hours apart for the first two days and then instill 1 drop in the affected eye (s) once daily for the next five days.
Children: The safety and effectiveness of azithromycin eye drop in pediatric patients below one year of age have not been established.
Drug inter: Drug interaction studies have not been conducted with azithromycin ophthalmic solution.

❖ **AZ Ophthalmic Soln. Aristopharma**
Azithromycin 1% eye drop
2.5ml drop: 110.00 MRP
❖ **ZIBAC Eye Drop Popular**
Azithromycin 1% eye drop
2.5ml drop: 110.00 MRP

CHLORAMPHENICOL[21,33]

CHLORAMPHENICOL: Eye prepns.
Available as drop and ointment
Ind: Local treatment of ocular bacterial infections- Bacterial conjunctivitis.
S/E: Local hypersensitivity reactions.
Precautions: Discontinue immediately if local hypersensitivity reactions occur.
Dosage & admin: Adult & Child: 2 drops or 1 application of oint. 3 hourly or more frequently if requd. Admin. should be continued 48 hours after symptoms have disappeared.

❖ **A-PHENICOL Eye Drop Acme**
Chloramphenicol 0.5% eye drop.
10ml bot: 23.00 MRP
❖ **A-PHENICOL Eye Oint. Acme**
Chloramphenicol 1% eye ointment.
5gm tube: 11.63 MRP
❖ **ARISTOPHEN Eye Drop Aristovision**
Chloramphenicol 0.5% eye drop.
10ml bot: 25.81 MRP
❖ **ARISTOPHEN Eye Oint. Aristovision**
Chloramphenicol 1% eye ointment.
3gm tube: 8.34 MRP
❖ **CHEMOPHENICOL Eye Drop Chemist**
Chloramphenicol 0.5% eye drop.
10ml bot: 25.79 MRP
❖ **CHLORAMEX E/E Drop Renata**
Chloramphenicol 0.5% eye/ear drop.
10ml bot: 25.29 MRP
❖ **CHLORPHEN Eye Drop Nipa**
Chloramphenicol 0.5% eye drop.
10ml bot: 20.23 MRP
❖ **CHLORPHEN Eye Oint. Nipa**
Chloramphemicol 1% ointment
3gm tube: 8.09 MRP
5gm tube: 12.00 MRP
❖ **CLORAM Eye Drop Ibn Sina**
Chloramphenicol 0.5% eye drop
10ml bot: 25.00 MRP
❖ **CLORAM Eye Oint. Ibn Sina**
Chloramphemicol 1% ointment
3gm tube: 8.50 MRP
5gm tube: 12.50 MRP
❖ **E-COL Eye Oint. Alco Pharma**
Chloramphemicol 1% eye ointment
3gm tube: 8.00 MRP
5gm tube: 9.05 MRP
❖ **EDRUMYCETIN Eye Drop Edruc**
Chloramphenicol 0.5% eye drop
10ml bot: 15.00 MRP
❖ **G-CHLORAMPHENICOL Eye Drop Gonoshasthaya**
Chloramphenicol 0.5% eye drop.
10ml drop: 20.00 MRP
❖ **G-CHLORAMPHENICOL Eye Oint. Gonoshasthaya**
Chloramphenicol 1% eye ointment.
5gm tube: 8.00 MRP
❖ **ICOL Eye Drop ACI**
Chloramphenicol 0.5% eye drop.
10ml bot: 25.51 MRP
❖ **I-GUARD Eye Drop Incepta**
Chloramphenicol 0.5% eye drop.
10ml bot: 25.81 MRP
❖ **OPSOPHENICOL Eye Drop Opso Saline**
Chioramphenicol 0.5% eye drop.
10ml bot: 20.00 MRP
❖ **OPSOPHENICOL Eye Oint. Opso Saline**
Chloramphenicol 1% eye ointment.
3gm tube: 8.50 MRP
❖ **OPTABAC Eye Drop Popular**
Chloramphenicol 0.5% eye drop.
10ml bot: 25.81 MRP
❖ **OPTAPHENICOL Eye Drop Reman**
Chloramphenicol 0.5% eye drop.
10ml bot: 25.80 MRP
❖ **OPTAPHENICOL Eye Oint. Reman**
Chloramphenicol 1% ointment.
3gm tube: 8.09 MRP
❖ **OPTHACOL Eye Drop Drug Inter.**
Chloramphenicol BP 0.5% eye drop.
10ml. bot: 25.50 MRP
❖ **OPTICHLOR Eye Drop Jayson**
Chloramphenicol 0.5% eye drop.
10ml. bot: 20.23 MRP
❖ **OPTICOL Eye Drop Asiatic**
Chloramphenicol 0.5% eye drop.
10ml bot: 25.00 MRP
❖ **OPTICOL Eye Oint. Asiatic**
Chloramphenicol 1% ointment.
3gm tube: 8.33 MRP
❖ **SQ-MYCETIN E\E Drop Square**
Chloramphenicol 0.5% eye\ear drop
10ml drop: 25.81 MRP
❖ **SUPRAPHEN Eye Drop Gaco**
Chloramphenicol 0.5% Eye drop.
10ml bot: 25.80 MRP
❖ **SUPRAPHEN Eye Oint. Gaco**
Chloramphenicol 1% eye ointment.
5gm tube: 11.00 MRP

CIPROFLOXACIN[21,33]

CIPROFLOXACIN: Eye Drop/Ointment
Ciprofloxacin is a synthetic quinolone broad-spectrum antimicrobial agent; available as ciprofloxacin hydrochloride monohydrate USP equivalent to ciprofloxacin base 0.3% w/v (i.e 3mg/ml): eye drop & ointment.
Mode of action: The antibacterial action of ciprofloxacin and other quinolone derivatives results from inhibition of DNA gyrase & topoisomerase IV. DNA gyrase is an essential enzyme that is involved in the replication, transcription & repair of bacterial DNA. Topoisomerase IV is an enzyme known to play a key role in the partitioning of the chromosomal DNA during bacterial cell division.
Ind: Ciprofloxacin eye preparation is indicated for the topical treatment of a variety of external infections of the eye and its adnexa caused by susceptible strains of the gram-positive and gram-nagetive bacteria. It can also be indicated in preoperative prophylaxis in ocular surgery and treatment of post operative infections.
C/I: Patients hypersensitive to any of the quinolones.
S/E: Discomfort or burning sensation, lid margin crusting, foreign body sensation, itching, conjunctival hyperaemia and bad taste following instillation. Corneal staining, keratopathy, allergic reactions, lid oedema, corneal infiltration, tearing, photophobia etc. are also reported.
Precautions: Prolonged use may result in overgrowth of nonsusceptible organisms including fungi. Not recommended for use during

pregnancy and lactaion. Safety and effectiveness in children below the age of 12 years have not been established. The drug should be discontinued if the sign of hypersensitive reaction.

Pregnancy & lactation: There is no adequate and well controlled studies of ciprofloxacin and other quinolone ophthalmic preparation in pregnant women. So, ciprofloxacin should be used during pregnancy only if the potential benefit justifies the potential risk to the feuts. Ciprofloxacin has not been measured in human milk; based upon data from ofloxacin it can be presumed that ciprofloxacin may be excreted in human milk. So, caution should be exercised when ciprofloxacin is administered to a nursing mother.

Dosage & Admin:

Bacterial corneal ulcer- ciprofloxacin 2 drops to be instilled into the affected eye every 15 minutes for the first six hours and then every 30 minutes for the rest of the day while patient awake. On the second day 2 drops every hour, from the third day every 4 hours. Treatment may be continued more than two weeks if corneal re-epithelialization has not occured. Bacterial conjunctivitis- ciprofloxacin 1 to 2 drops to be instilled to the affected eye every two hours for 2 days, then every 4 hours for the next five days.

❖ **APROCIN Eye Drop Aristovision**
Ciprofloxacin 0.3% eye drop.
10ml drop: 40.00 MRP

❖ **APROCIN Eye Oint. Aristovision**
Ciprofloxacin 0.3% eye ointment.
3gm tube: 25.00 MRP

❖ **BACTIN Eye Drop Ibn Sina**
Ciprofloxacin 0.3% eye drop.
5ml drop: 35.00 IP
10ml drop: 40.00 IP

❖ **BACTIN Eye Oint. Ibn Sina**
Ciprofloxacin 0.3% eye ointment.
3gm tube: 25.00 IP

❖ **BEUFLOX Eye Drop Incepta**
Ciprofloxacin 0.3% eye drop.
10ml drop: 35.00 MRP

❖ **CERO Eye Drop Gaco**
Ciprofloxacin 0.3% eye drop.
5ml drop: 30.00 MRP
10ml drop: 35.00 MRP

❖ **CERO Eye Oint. Gaco**
Ciprofloxacin 0.3% eye ointment.
5gm tube: 25.00 MRP

❖ **CIFLOX E/E Drop Reman**
Ciprofloxacin 0.3% eye/ear drop.
5ml drop: 24.50 MRP
10ml drop: 40.00 MRP

❖ **CIFLOX Eye Oint. Reman**
Ciprofloxacin 0.3% eye ointment.
5gm tube: 32.00 MRP

❖ **CIP Eye Drop Asiatic**
Ciprofloxacin 0.3% eye drop.
10ml drop: 35.00 MRP

❖ **CIP Eye Oint. Asiatic**
Ciprofloxacin 0.3% eye ointment.
3gm tube: 20.00 MRP

❖ **CIPRIN Eye Drop Nipa**
Ciprofloxacin 0.3% eye drop.
5ml drop: 28.00 MRP
10ml drop: 40.00 MRP

❖ **CIPRIN Eye Oint. Nipa**
Ciprofloxacin 0.3% eye ointment.
3gm tube: 20.00 MRP

❖ **CIPRO-A Eye Drop Acme**
Ciprofloxacin 0.3% eye drop.
5ml drop: 24.00 MRP

❖ **CIPRO-C Eye Drop Chemist**
Ciprofloxacin 0.3% eye drop.
5ml drop: 30.00 MRP

❖ **CIPROCIN Eye Drop Square**
Ciprofloxacin 0.3% eye drop.
5ml drop: 35.00 MRP

❖ **CIPROX Eye Drop Opso Saline**
Ciprofloxacin 0.3% eye drop.
10ml drop: 22.00 MRP

❖ **CIPROX Eye Oint. Opso Saline**
Ciprofloxacin 0.3% eye ointment.
3gm tube: 20.00 MRP

❖ **CIPROZID Eye Drop Drug Inter.**
Ciprofloxacin 0.3% eye drop.
10ml drop: 35.00 MRP

❖ **CIVOX Eye Drop Popular**
Ciprofloxacin 0.3% eye drop.
5ml drop: 35.00 MRP

❖ **DUMAFLOX Eye Oint. Alco Pharma**
Ciprofloxacin 0.3% eye ointment.
3gm tube: 20.00 MRP

❖ **EYPRO Eye Drop ACI**
Ciprofloxacin 0.3% eye drop.
5ml drop: 35.00 MRP

❖ **FLONTIN Eye Drop Renata**
Ciprofloxacin 0.3% eye drop.
10ml drop: 25.29 MRP

❖ **G-CIPRO Eye Drop Gonoshas**
Ciprofloxacin 0.35% eye drop.
10ml drop: 15.00 MRP

❖ **SPECTRA Eye Drop Jayson**
Ciprofloxacin 0.3% eye drop.
5ml drop: 15.00 IP

GATIFLOXACIN[26]

GATIFLOXACIN: Eye drop

Gatifloxacin eye drop is an 8-methoxyfluoroquinolone anti-infective ophthalmic preparation for topical use. It is available as gatifloxacin sesquihydrat INN 0.3% (3mg/1ml) eye drop.

Mode of action: See above under the text of ciprofloxacin preparation.

Ind: Gatifloxacin eye drop is indicated for the treatment of bacterial conjunctivitis by susceptible strains of the following organisms:
Aerobic gram-positive bacteria: Corynebacterium propinquum, staphylococcus aureus, staphylococcus epidermidis, streptococcus mitis, streptococcus pneumoniae.
Aerobic gram-negative bacteria: Haemophilus influenza.

C/I: Known hypersensitivity to gatifloxacin, to other quinolones, or to any of the components of the preparation.

A/R: The most frequently reported adverse events are conjunctival irritation, increased lacrimation etc.

Precautions: Patients should be advised not to wear contact lenses if they have signs & symptoms of bacterial conjunctivitis. Avoid contaminating the applicator tip with material from the eye, fingers or other sources.
Gatifloxacin eye drops should not be injected subconjunctivally, nor should it be introduced directly into the anterior chamber of the eye.

Pregnancy & lactation: See above under the text of ciprofloxacin preparation.

Dosage & admin: The recommended dosage regimen for the treatment of bacterial conjunctivitis is:

Days 1 & 2: Instill one drop every 2 hours in the affected eye (s) while awake, up to 8 times daily.

Days 3 through 7: Instill one drop up to 4 times daily while awake.

***Pediatric use:* Safety & effectiveness in infants below one year have not been established.**

Drug inter: Specific drug interaction studies have not been conducted with gatifloxacin eye drop.

❖ **GATIFLOX Eye Drop Incepta**
Gatifloxacin sesquihydrat INN 0.3% eye drop.
5ml drop: 90.00 MRP

GENTAMICIN[21,33]

GENTAMICIN: Eye Prepns.
Available as Gentamicin Sulph. 0.3% Drop & Ointment.
Ind: Ocular bacterial infections (effective for treating infections due to pseudomonas aeruginosa).
Adult & Child: 1-3 drops 3-6 times daily or 4 hourly. Oint. apply 3 or 4 times daily

❖ **GENTA Eye/Ear Drop Renata**
Gentamicin 0.3% eye/ear drop.
10ml bot: 31.93 MRP

❖ **GENACYN Eye Drop Square**
Gentamicin 0.3% eye drop.
10ml bot: 31.91 MRP

❖ **GENTIN Eye Drop Opso Saline**
Gentamicin sulph. 0.3% eye/ear drop.
10ml bot: 31.25 MRP

❖ **GENTIN Eye Oint. Opso Saline**
Gentamicin sulph. 0.3% eye ointment.
3gm tube: 9.00 MRP

❖ **GENTO Eye Drop Gaco**
Gentamicin 0.3% w/v eye drop.
10ml bot: 31.50 MRP

❖ **GENTO Eye Oint. Gaco**
Gentamicin sulph. 0.3% eye ointment.
5gm tube: 10.10 MRP

❖ **G-GENTAMICIN E/E Drop Gonoshasthaya**
Gentamicin sulph. 0.3% eye/ear drop.
10ml bot: 25.00 MRP

❖ **GISIN E\E Drop Nipa**
Gentamicin sulphate 0.3% eye\ear drop.
10ml bot: 30.36 MRP

❖ **IGEN Eye Drop ACI**
Gentamicin sulphate 0.3% eye\ear drop.
10ml bot: 31.91 MRP

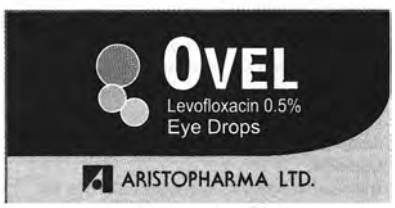
❖ **RECIN E/E Drop Reman**
Gentamicin 0.3% eye/ear drop.
10 ml pack: 31.91 MRP

LEVOFLOXACIN[36]

LEVOFLOXACIN: Eye drop

Levofloxacin is a synthetic quinolone broad-

spectrum antimicrobial agent; available as 0.5% (5mg/ml) eye drop.
Mode of action: See above under the text of ciprofloxacin preparation.
Ind: Levofloxacin eye drop is indicated for the treatment of bacterial conjunctivitis caused by susceptible strains of the gram-positive and gram-nagetive bacteria. In some study it has been found that levofloxacin is also indicated in post-operative ocular infections and endophthalmitis.
C/I; S/E; Precautions: See above under the text of ciprofloxacin eye preparations.
Pregnancy & lactation: See above under the text of ciprofloxacin eye preparations.
Dosage & admin: Days I & 2: Instill 1-2 drops in the affected eye(s) every 2 hours while awake, up to 8 times per day. Days 3 to 7: Instill 1-2 drops in the affected eye(s) every 4 hours while awake, up to 4 times per day. Children: Safety and efficacy in infants below the age of 1 year have not been established.



❖ **LEVOBAC Eye Drop Popular**
Levofloxacin hemihydrate INN equivalent to levofloxacin 0.5% (i.e 5mg/ml): eye drop.
5ml drop: 80.00 MRP
❖ **LEVOFLOX Eye Drop Drug Inter.**
Levofloxacin hemihydrate INN equivalent to levofloxacin 0.5% (i.e 5mg/ml): eye drop.
5ml drop: 60.00 MRP
❖ **LEVOSINA Eye Drop Ibn Sina**
Levofloxacin hemihydrate INN equivalent to levofloxacin 0.5% (i.e 5mg/ml): eye drop.
5ml drop: 80.00 MRP
❖ **LEVOXIN Eye Drop Incepta**
Levofloxacin hemihydrate INN equivalent to levofloxacin 0.5% (i.e 5mg/ml): eye drop.
5ml drop: 80.00 MRP
❖ **LIVACIN Eye Drop Gaco**
Levofloxacin hemihydrate INN equivalent to levofloxacin 0.5% (i.e 5mg/ml): eye drop.
5ml drop: 80.00 MRP
❖ **LOVICIN Eye Drop Nipa**
Levofloxacin hemihydrate INN equivalent to levofloxacin 0.5% (i.e 5mg/ml): eye drop.
5ml drop: 80.00 MRP
❖ **OVEL Eye Drop Aristopharma**
Levofloxacin hemihydrate INN equivalent to levofloxacin 0.5% (i.e 5mg/ml); benzalkonium chloride solution 0.005% v/v is present as preservative: eye drop.
5ml drop: 80.00 MRP

LOMEFLOXACIN[21,54]

LOMEFLOXACIN: Eye Drop & Ointment
Lomefloxacin is a synthetic quinolone broad-spectrum antimicrobial agent; available as eye drop and ointment.
Mode of action: See above under the text of ciprofloxacin preparation.
Ind: Ocular bacterial infections of the anterior segment including conjunctivitis, blepharitis and blepharo conjunctivitis which are due to lomefloxacin susceptible germs.
C/I; S/E; Precautions: See above under the text of ciprofloxacin eye preparations.
Warnings: Patient should be advised to avoid the maximum extent possible direct or indirect sunlight during and several days after therapy; to discontinue therapy if any sign/symptom of phototoxicity reaction.
Pregnancy & lactation: See above under the text of ciprofloxacin eye preparations.
Dosage & admin: Adult: 1 drop 2-3 times daily. At the beginning of the treatment application should be more frequent, apply 5 drops within 20 minutes or 1 drop every hour during 6 to 10 hours. Duration of treatment- 7 to 9 days.

❖ **LOFLOX Eye Drop Opso Saline**
Lomefloxacin hydrochloride 0.3% or 3mg/ml: eye drop
5ml drop: 45.00 MRP
❖ **LOMEBAC Eye Drop Popular**
Lomefloxacin hydrochloride 0.3% w/v: eye drop
5ml drop: 50.00 MRP
❖ **LOMECIN Eye Drop Reman**
Lomefloxacin hydrochloride 0.3% w/v: eye drop
5ml drop: 60.00 MRP
❖ **LOMECIN Eye Oint. Reman**
Lomefloxacin hydrochloride 0.3% or 3mg/gm: eye ointment
3gm tube: 35.00 MRP
❖ **LOMEFLOX Eye Drop Aristopharma**
Lomefloxacin hydrochloride 0.3% w/v: eye drop
5ml drop: 60.00 MRP
❖ **LOMEQUIN Eye Drop Incepta**
Lomefloxacin hydrochloride 0.3% w/v: eye drop
5ml drop: 60.00 MRP
❖ **LUMEX Eye Drop Gaco**
Lomefloxacin hydrochloride 0.3% w/v: eye drop
5ml drop: 50.01 IP
❖ **LYFLOX Eye Drop Ibn Sina**
Lomefloxacin hydrochloride 0.3% w/v: eye drop
5ml drop: 60.00 MRP
❖ **MEXLO Eye Drop Square**
Lomefloxacin hydrochloride 0.3% w/v: eye drop
5ml drop: 60.00 MRP
❖ **NAMICIN Eye Drop Nipa**
Lomefloxacin hydrochloride 0.3% w/v: eye drop
5ml drop: 60.00 MRP
❖ **OMEFLOX Eye Drop ACI**
Lomefloxacin hydrochloride 0.3% w/v: eye drop
5ml drop: 50.00 IP
❖ **OPTHAFLOX Eye Drop Drug Inter.**
Lomefloxacin hydrochloride 0.3% w/v: eye drop
5ml drop: 50.00 MRP
❖ **OPTIFLOX Eye Drop Jayson**
Lomefloxacin hydrochloride 0.3% w/v: eye drop
5ml drop: 50.00 IP

MOXIFLOXACIN[42]

MOXIFLOXACIN: Eye Drop
Moxifloxacin is an 8-methoxy fluoroquinolone with a diazabicyclononyl ring at the C7 position. It is available as moxifloxacin hydrochloride INN 0.5% (or 5mg/ml) eye drop.
Mode of action: See above under the text of ciprofloxacin preparation.
Ind: Moxifloxacin eye drop is indicated for the treatment of bacterial conjunctivitis caused by susceptible strains of the aerobic gram-positive and gram-negative microorganisms and chlamydia trachomatis.
C/I: Patients with a history of hypersensitivity to moxifloxacin, or other quinolones, or any components of the product.
S/E: The most frequently reported ocular adverse events were conjunctivitis, decreased visual acuity, dry eye, keratitis, ocular discomfort, ocular hyperemia, ocular pain, ocular pruritus, subconjunctival hemorrhage, and tearing. These events occurred in approximately 1-6% of patients. Nonocular adverse events reported (1-4%) were- fever, increased cough, infection, otitis media, pharyngitis, rash, and rhinitis.
Precautions: As with other anti-infectives, prolonged use may result in overgrowth of non-susceptible organisms, including fungi. If superinfection occurs, discontinue use and institute alternative therapy. Whenever clinical judgement dictates, the patients should be examined with the aid of magnification, such as slitlamp biomicroscopy, and, where appropriate, fluorescein staining. Patients should be advised not to wear contact lenses if they have signs and symptoms of bacterial conjunctivitis.
Pregnancy & lactation: See above under the text of ciprofloxacin preparation.
Dosage & admin: 1 drop in the affected eye(s) 3 times a day for 7 days.
Drug inter: Drug interaction studies have not been conducted with moxifloxacin hydrochloride ophthalmic solution. In vitro studies indicate that moxifloxacin is unlikely to alter the pharmacokinetics of drugs metabolized by the cytochrome P450 isozymes.

❖ **EYEMOX Eye Drop Acme**
Moxifloxacin hydrochloride INN 0.5% (or 5mg/ml): eye drop.
5ml drop: 75.00 MRP
❖ **FLOMOX Eye Drop Opso Saline**
Moxifloxacin hydrochloride INN 0.5% (or 5mg/ml): eye drop.
5ml drop: 75.00 MRP
❖ **FLOROMOX Eye Drop Ibn Sina**
Moxifloxacin hydrochloride INN 0.5% (or 5mg/ml): eye drop.
5ml drop: 90.00 MRP
❖ **IVENTI Eye Drop Square**
Moxifloxacin hydrochloride INN 0.5% (or 5mg/ml): eye drop.
5ml drop: 100.00 MRP
❖ **MAXIFLOX Eye Drop ACI**
Moxifloxacin hydrochloride INN 0.5% (or 5mg/ml): eye drop.
5ml drop: 75.00 IP
❖ **MOXIBAC Eye Drop Popular**
Moxifloxacin hydrochloride INN 0.5% (or 5mg/ml): eye drop.
5ml drop: 90.00 MRP
❖ **MOXQUIN Eye Drop Incepta**
Moxifloxacin hydrochloride INN 0.5% (or 5mg/ml): eye drop.
5ml drop: 90.00 MRP
❖ **OCUMOX Eye Drop Reman**
Moxifloxacin hydrochloride INN 0.5% (or

5mg/ml): eye drop.
5ml drop: 90.00 IP

❖ **OPTIMOX Eye Drop Aristopharma**
Moxifloxacin hydrochloride INN 0.5% (or 5mg/ml): eye drop.
5ml drop: 100.00 MRP

NATAMYCIN[103]

NATAMYCIN: Eye Prepans.
Natamycin USP 2% & 5% w/v: Eye drop
Ind: Fungal ocular infections like blepharitis, conjunctivitis and keratitis caused by susceptible organisms including fusarium solani.
C/I: History of hypersensitivity to natamycin or any of its components.
S/E: Conjunctival chemosis and hyperemia, thought to be allergic in nature has been reported.
Pregnancy & Lactation: Natamycin ophthalmic preparation can be given to a pregnant woman if clearly needed. When natamycin is administered to a nursing woman caution should be exercised.
Dosage & Admin: ***Fungal keratitis:*** **1 drop instilled in the conjunctival sac at hourly or two hourly intervals; the frequency of application can be reduced to 1 drop 6 to 8 times daily after the first 3 to 4 days. Therapy should generally be continued for 14 to 21 days or until there is resolution of active fungal infection. In many cases it may be helpful to reduce the dosage gradually 4 to 7 days interval to assure that the replicating organism has been eliminated.** ***Fungal conjunctivitis:*** **Less frequent initial dosage (I drop 4 to 6 times daily) may be sufficient in fungal conjunctivitis.**

❖ **NATACIN Eye Drop Gaco**
Natamycin USP 5%: eye drop
5ml drop: 80.00 MRP

❖ **NATADROP Eye Drop Reman**
Natamycin USP 5%: eye drop
5ml drop: 80.56 MRP

❖ **NATOPH Eye Drop Ibn Sina**
Natamycin USP 5%: eye drop
5ml drop: 80.00 IP

❖ **NICIN Eye Drop Nipa**
Natamycin USP 5%: eye drop
5ml drop: 80.00 MRP

❖ **N-MYCIN Eye Drop Aristopharma**
Natamycin USP 5%: eye drop
5ml drop: 80.00 MRP

OFLOXACIN[30]

❖ **VISTA Eye/Ear Drop Aristopharma**
Ofloxacin USP 0.3%: eye/ear drop
Mode of action: Ofloxacin is a bacterial DNA gyrase inhibitor, the enzyme responsible for duplication, transcription and repair of bacterial DNA.
Ind: It is indicated for the treatment of external ocular infections such as acute & sub-acute conjunctivitis, kerato-conjunctivitis, blepharo-conjunctivitis, blepharitis, corneal ulcer and pre-operative prophylaxis in ocular surgery.
C/I: Known hypersensitivity to ofloxacin or any other component of this preparation.
S/E: Transient ocular irritation, burning, stinging, redness, itching or photophobia have been reported.
Precautions: Prolonged use of eye drops may result in overgrowth of non-susceptible organisms and secondary infection respectively.
Pregnancy & lactation: There are no adequate and well-controlled studies in pregnant women. This drug should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.
It is not known whether ofloxacin is excreted in human milk. Cautions should be taken when ofloxacin eye & ear drop is administered during lactation.
Dosage & admin: Instill 1 drop in the affected eye(s) every 2 to 4 hours for the first two days and then 4 times daily. The lenght of treatment should not exceed 10 days.
5ml drop: 85.00 MRP

SULPHACETAMIDE[21,33]

SULPHACETAMIDE: Eye Prepns.
Available as sulphacetamide sodium 10%, 20%, 30% eye drops & 2'5%, 6% & 10% eye ointment.
Ind: *10% drops:* Indiacated in mild infections of the conjunctiva and eye lids, prophylaxis against eye infections. *20% drops:* Conjunctivitis, & ophthalmia neonatorum. *30% drops:* Severe conjunctivitis, corneal ulceration including dendritic ulceration, trachoma.
2.5% & 6% eye ointment: Used in general infection. *10% ointment:* In blepharitis and styes.
C/I: Known sensitivity to sulphonamides.
S/E: Slight transient irritation may occur with higher concentration.
Dosage & appli: Adult & Child: ***Eye drops:*** **2 to 4 drops 2-6 hourly.** ***Eye ointment:*** **Apply 2.5% or 6% inside eye lid at night; 10% on eyelid 2 to 4 times daily.**

❖ **ICID Eye Drop Nipa**
Sulphacetamide sodium 10% & 20% drop.
10% x 10ml: 19.22 MRP
20% x 10ml: 27.00 MRP

❖ **OPTACID Eye Drop Reman**
Sulphacetamide sodium 20% eye drop.
20% x 10ml: 28.03 MRP

TETRACYCLINE / OXYTETRACYCLINE[21,33]

TETRACYCLINE: Eye Prepns.
Available as 1% eye solution & ointment.
Ind: Local treatment of infections including trachoma (tetracycline sensitive).
Dosage & appli: Adult & Child: ***Eye ointment:*** **Apply 2 hourly (in acute infection).** ***Eye drops:*** **I or 2 drops 2 to 4 times daily.**

❖ **ACLOCIN Eye Oint. Alco Pharma**
Tetracycline hydrochloride 1% eye ointment.
5gm tube: 10.50 MRP

❖ **A-TETRA Eye Oint. Acme**
Tetracycline hydrochloride 1% eye ointment.
5gm tube: 11.50 MRP

❖ **G-TETRACYCLINE Eye Oint. Gonoshas.**
Tetracycline hydrochloride 1% eye ointment.
5gm tube: 8.00 MRP

❖ **RENAMYCIN E/E Oint. Renata**
Oxytetracycline 1 % eye/ear ointment.
3.5gm tube: 17.42 MRP

❖ **TARACYCLINE Eye Oint. Gaco**
Tetracycline hydrochloride 1% eye ointment.
5gm tube: 10.93 MRP

❖ **TETRACIN Eye Oint. Opso Saline**
Tetracycline hydrochloride 1% eye ointment.
3gm tube: 8.50 MRP

TOBRAMYCIN[21,101]

TOBRAMYCIN: Eye Drop/Ointment
Ind: External infections of the eye and its adnexa caused by susceptible bacteria like staphylococci, pseudomoas, neisseria and other susceptible bacteria.
C/I: Known hypersensitivity to any of its components.
S/E: Localized ocular toxicity & hypersensitivity icluding lid itching, swelling and conjunctival erythema.
Precautions: Prolonged use may result in overgrowth of nonsusceptible organisms including fungi.
Pregnancy & lactation: Reproduction studies on tobramycin have been performed in rats & rabbits with doses up to 100mg/kg/day parenterally and have revealed no evidence of impaired fertility or harm to the fetus. There are no adequate and well controlled studies in pregnant women.
Dosage & Admin: ***Eye drop:*** **In mild to moderate infections instill 1 or 2 drops into the affected eye (s) every 4 hours; in severe infection, 2 drops into the eye (s) hourly until improvement, following which treatment should be reduced prior to discontinuation.** ***Eye ointment:*** **In mild to moderate infections apply 2 or 3 times daily into the affected eye(s); in severe infection, apply every 3 to 4 hours until improvement, following which treatment should be reduced prior to discontinuation.**

❖ **INTOBAC Eye Drop Incepta**
Tobramycin USP 0.3%: eye drop.
5ml drop: 80.00 MRP

❖ **T-DROP E/E Drop Reman**
Tobramycin USP 0.3%: eye/ear drop.
5ml drop: 80.00 MRP

❖ **TOBI Eye Drop Asiatic**
Tobramycin 0.3%: eye drop.
5ml drop: 80.00 MRP

❖ **TOBIRAX Eye Drop Gaco**
Tobramycin USP 0.3%: eye drop.
5ml drop: 80.00 MRP

❖ **TOBIRAX Eye Oint. Gaco**
Tobramycin 0.3%: eye ointment.
3.5gm tube: 35.01 MRP

❖ **TOBRA Eye Oint. Alco Pharma**
Tobramycin 0.3%: eye ointment.
3gm tube: 30.00 MRP

❖ **TOBRABAC Eye Drop Popular**
Tobramycin USP 0.3%: eye drop.
5ml drop: 85.00 MRP

❖ **TOBRACIN Eye Drop Opso Saline**
Tobramycin USP 0.3%: eye drop.

5ml drop: 75.00 MRP

❖ **TOBRACIN Eye Oint. Opso Saline**
Tobramycin USP 0.3%: eye drop.
3gm tube: 30.00 MRP

❖ **TOBRAMIN Eye Drop Nipa**
Tobramycin 0.3%: eye drop.
5ml drop: 80.00 MRP

❖ **T-MYCIN Eye Drop Aristopharma**
Tobramycin 0.3%: eye drop.
5ml drop: 80.00 MRP

❖ **T-MYCIN Eye Oint. Aristopharma**
Tobramycin 0.3%: eye ointment.
3gm tube: 40.00 MRP

❖ **T-OINTMENT Eye Oint. Reman**
Tobramycin 0.3%: eye ointment.
3gm tube: 50.00 MRP

❖ **TOMYCIN Eye Drop Ibn Sina**
Tobramycin 0.3%: eye drop.
5ml drop: 80.00 MRP

NEOMYCIN + BACITRACIN

NEOMYCIN + BACITRACIN: Eye drop/ ointment
This combined ophthalmic preparation is available as drop and ointment.
Comp: See below under individual preparation.
Ind: Ocular bacterial infection, such as infected corneal ulcer. blepharitis, conjunctivitis etc.
Adult & Child: Apply at 3 to 4 hours interval or as directed by the physician.

❖ **NEOBAC Eye Oint. Opsosalaine**
Neomycin sulphate 5mg & bacitracin zinc 400 i.u/1gm: eye ointment.
3gm tube: 12.80 MRP

NEOMYCIN + POLYMYXIN-B + BACITRACIN/GRAMICIDIN

NEOMYCIN + POLYMYXIN-B + BACITRACIN/GRAMICIDIN: Eye Drop/Ointment
Neomycin sulphate + polymyxin-B sulphate + bacitracin zinc/gramicidin preparation: eye drop/ointment.
Ind: Ocular bacterial infections; prophylactic use before and after surgery or removal of foreign bodies.
Dosage & appli: Adult & child: ***Eye drop:*** **1 or 2 drops 3 to 4 times daily or more frequently if requird.** ***Eye ointment:*** **Apply 2 or more times daily.**

❖ **BOXITROL Eye Drop Gaco**
Neomycin sulphate + bacitracin zinc + polymyxin-B sulphate preparation: eye drop.
5ml drop: 30.00 MRP

❖ **BOXITROL Eye Oint. Gaco**
Neomycin sulphate + bacitracin zinc + polymyxin-B sulphate preparation: eye ointment.
5gm tube: 20.62 MRP

❖ **POLYMIX Eye Oint. Opso Saline**
Polymyxin B sulphate 10,000 units, bacitracin zinc 500 units/1gm: ointment.
3gm tube: 35.00 MRP

❖ **POLYMIX-G Eye Drop Opso Saline**
Polymyxin B sulphate 5000 units, neomycin sulphate 1700 units & gramicidin 25 units/ 1ml: eye drop.
5ml drop: 30.00 MRP

❖ **POLYMYCIN Eye Drop Nipa**
Polymyxin B sulphate 5000 units, neomycin sulphate 1700 units & gramicidin 25 units/1ml: eye drop.
5ml drop: 30.35 MRP

❖ **POLYTRACIN Eye Oint. Ibn Sina**
Polymyxin-B sulphate 10000 units & bacitracin zinc 500 units/gm: ointment.
5gm tube: 60.72 IP

POVIDONE-IODINE[39]

POVIDONE-IODINE: Eye drop
Povidone-iodine eye drop is an ophthalmic solution of povidone-iodine which is a complex of iodine and organic polymer, povidone. It is available as povidone-iodine BP 0.5% & povidone-iodine 1.25% eye drop.
Mode of action: Povidone-iodine gradually releases iodine which gives a rapid microbicidal activity against gram-positive bacteria, gram-negative bacteria, viruses, protozoa, fungi, yeasts, spores and cysts. It is the only microbicide with this broad spectrum of activity. Medications with povidone-iodine eye drops turns eye brown for a few minutes proving that it has been applied.
Ind: Povidone-iodine eye drop is used as ophthalmic antiseptic. It is used after ocular surgery to reduce colony forming units. Povidone-iodine eye drop is used to treat bacterial and chlamydial conjunctivitis. Povidone-iodine eye drop is used widely to reduce the incidence of blindness in children and adults throughout the world. Povidone-iodine eye drop is the antiseptic of choice for ophthalmia neonatorum (neonatal conjuctivitis) prophylaxis. It must be administered as soon as possible after birth, at the latest by the first hour after delivery. Povidone-iodine eye drop effectively sterilizes conjuctiva and can be used to prevent measles associated microbial keratitis.
C/I: It is contraindicated for the patients with known or suspected iodine hypersensitivity.
S/E: It may produce local reactions, but it is considered to be less irritant than iodine.
Precautions: May cause hypersensitivity. If occurs. stop the medication immediately and consult physician. It is for external use only.
Pregnancy & lactation: Povidone- iodine preparations are generally avoided in pregnant or lactating women. However, for potential benefits povidone-iodine eye drops may be used only if advised by the physician.
Dosage & admin: Apply 1-2 drops in the affected eye(s) 3-4 times daily or as asvised by the physician.
Drug inter: There is no notable drug interaction occurred from povidone-iodine eye preparation.

❖ **POVISEP Eye Drop Jayson**
Povidone-iodine BP 1.25%: eye drop
5ml drop: 48.00 MRP

❖ **SOLOTEAR Eye Drop Asiatic**
Povidone-iodine BP 0.5%: eye drop
10ml drop: 70.00 MRP

OTHER PRODUCTS[21,33]

❖ **FUCITHALMIC Eye Drop Leo Pharma/ Kapricorn**
Fucidic acid 1%, preserved with benzalkonium chloride: eye drop
Ind: Bacterial eye infections caused by susceptible organisms in conjunctivitis, blepharitis, sty, keratitis, dacryocystitis. Also prophylaxis in ophthalmic surgery every 12 hourly 1-2 days befor operation.
Doses: 1 drop 2 times for the period up to 2 days after the eye appears to be normal.
5gm tube x 1's pack: 194.88 MRP

Antifungal Prepns.

CLOTRIMAZOLE[21,33]

❖ **FUNGIZOL Eye Drop Reman**
Clotrimazole 10mg/1ml: eye drop.
Ind: Fungal infections of the eye due to candida species and aspergillus fumigatus.
C/I: History of hypersensitivity to clotrimazole.
S/E: Local reactions including irritation and burning immediately after applying the eye drops.
Dose & Admin: 1 to 2 drops to be instilled every 4 hours in the conjunctival sac or as advised by the physician.
10ml drop: 50.57 MRP

❖ **FUNGIZOL Eye Oint. Reman**
Clotrimazole 10mg/1gm: eye ointment.
Use & Admin: It should be applied thinly and evenly to the conjunctival sac every 4 hours daily or as advised by the physician.
4gm tube: 30.34 MRP

FLUCONAZOLE[103]

FLUCONAZOLE: Eye drop
Fluconazole BP 0.3% (or 3mg/ml): eye drop
Mode of action: Fluconazole is a fungistatic antifungal drug. It may act by inhibiting cytochrome p 450, 14-alpha demethylase in susceptible fungi, which leads to alteration of cellular membrane permeability, leakage of essential elements and impaired uptake of precursor molecules to DNA.
Ind: Fluconazole eye drop is indicated for the treatment of superficial ocular fungal infections; treatment of fungal corneal ulcers/keratitis.
C/I: Hypersensitivity to any ingredient of the fluconazole preparation.
S/E: The drug is generally well tolerated. Eosinophilia has been reported with some patients rarely.
Dosage & admin: 1-2 drops to be instiled into the affected eyes 5 times daily.
Drug inter: Fluconazole can alter pharmacokinetics of certain other drops undergoing hepatic metabolism.

❖ **NAZ Eye Drop Reman**
Fluconazole BP 0.3% (or 3mg/ml): eye drop
5ml drop: 70.00 MRP

Antiviral Products

ACYCLOVIR[21,33]

ACYCLOVIR: Eye Ointment
Ind: Herpes simplex keratitis.
Dosage & appli: Adult & Child: Insert 1 cm ointment into lower conjunctival sac, 5 times daily at 4 hourly intervals. Continue use for minimum 3 days after healing.

❖ **ACICLON Eye Oint. Reman**
Acyclovir 3% eye ointment.
3gm tube: 45.00 MRP
❖ **ACYVIR Eye Oint. Aristopharma**
Acyclovir 3% eye ointment.
5gm tube: 70.00 MRP
❖ **CLOVIR Eye Oint. Ibn Sina**
Acyclovir 3% eye ointment.
5gm tube: 70.00 IP
❖ **CYCLOVEX Eye Oint. Opso Saline**
Acyclovir 3% eye ointment.
3gm tube: 45.00 MRP
❖ **Eye Oint. Gaco**
Acyclovir 3% eye ointment.
5gm tube: 60.00 MRP
❖ **VIRINE Eye Oint. Nipa**
Acyclovir 3% eye ointment.
3gm tube: 40.00 MRP

IDOXURIDINE[101]

❖ **HERPLEX Eye Drop Opso Saline**
Idoxuridine 1% Eye drop.
Ind: Herpes simplex keratitis, particularly acute dendritic ulcers.
Cautions: Pregnancy; concurrent admin. of steroids.
Adult & Child: 1 drop hourly during the day & 2 hourly at night until the lesion does not stain, then 2 hourly by day & 4 hourly at night for an additional 3-5 days; max. treatment period 21 days.
10ml drop: 42.00 MRP

ANTI-INFLAMMATORY, ANTI- ALLERGIC & ANTIBIOTIC COMBINED PREPNS.

Steroid & Steroid- antibiotic combined prepns [21,33,102]

STEROID PREPNS: Drop/Ointment.
Ind: Inflammatory conditions of the eye.
C/I: Known hypersensitivity to any ingredient of the product. Herpes simplex and other viral conditions, mycosis, glaucoma, newborn babies, fungal diseases of ocular or auricular structures. The use of steroid is always contraindicated after uncomplicated removal of a corneal foreign body.
S/E: Most frequent side-effect is ocular burning or discomfort. Other reported reactions include stinging, redness, itching, periocular/facial edema, foreign body sensation, photophobia, blurred vision, tearing, dryness, and eye pain. Rare reports of dizziness have been received. The reactions due to steroid component are- elevation of intraocular pressure (IOP) with possible development of glaucoma, and infrequent optic nerve damage, posterior subcapsular cataract formation, and delayed wound healing.
Precautions: Prolonged use of steroids may result in glaucoma, with damage to the optic nerve, defects in visual acuity and fields of vision, and posterior subcapsular cataract formation. Intraocular pressure should be routinely monitored even though it may be difficult in children and uncooperative patients. Prolonged use may suppress the host response and thus increase the hazard of secondary ocular infections. In those diseases causing thinning of the cornea or sclera, perforations have been known to occur with the use of topical steroids.
Pregnancy & lactation: Corticosteroids have been found to be teratogenic in animal studies. There are no adequate and well controlled studies in pregnant women. So, steroid ophthalmic preparations should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.
It is not known whether the steroid preparations are excreted in human milk or not. So, a decision should be considered to discontinue nursing temporarily while using steroid ophthalmic preparations.
Uses & appli: See under individual preparations.
***Pediatric use*: Safety and effectiveness in children have not been established.**
Paediatric use only by physicians experienced in ophthalmology.

BETAMETHASONE

BETAMETHASONE PREPNS: Eye Drop
Betamethasone only steroid ophthalmic preparation is available as betamethasone sodium phosphate 0.1% w/v: eye drop.
Ind: Non-infected inflammatory ocular conditions.
C/I; S/E; Cautions: See at the beginning.
Adult & Child: 1-2 drops 1 or 2 hourly.

❖ **BETRICIN E/E Drop Nipa**
Betamethasone sodium phosphate 0.1%: eye/ear drop.
5ml drop: 29.33 MRP
❖ **EYEBET Eye Drop Incepta**
Betamethasone sodium phosphate 0.1%: eye drop.
5ml drop: 30.00 MRP
❖ **CELUDEX E/E Drop Drug Inter.**
Betamethasone sodium phosphate 0.1%: eye/ear drop.
10ml drop: 55.00 MRP
❖ **METHASOL Eye/Ear Drop Gaco**
Betamethasone sodium phosphate 0.1%: eye/ear drop.
5ml drop: 31.80 MRP

BETAMETHASONE + NEOMYCIN

BETAMETHASONE + NEOMYCIN PREPNS: Eye Drop/Ointment
Betamethasone and neomycin combined ophthalmic preparation is available as betamethasone sodium phosphate 0.1% w/v & neomycin sulphate 0.5% w/v: eye drop/ointment.
Ind: Infected ocular inflammation.
C/I; S/E; Cautions: See at the beginning.
Adult & Child: Drops: 1-2 drops 3 or 4 times daily.
Ointment: Apply 3-6 times daily.

❖ **ARISTOBET-N Eye Drop Aristovision**
Betamethasone sodium phosphate 0.1% w/v & Neomycin sulphate 0.5% w/v: eye drop
5ml drop: 32.20 MRP
❖ **ARISTOBET-N Eye Oint. Aristovision**
Betamethasone sodium phosphate 0.1% w/w & neomycin sulphate 0.5% w/w: eye ointment.
5gm tube: 10.77 MRP
❖ **BETACIN-N Eye Drop Ibn Sina**
Betamethasone sodium phosphate 0.1% & neomycin sulphate 0.5%: eye drop.
5ml drop: 30.34 MRP
❖ **BETASON-N Eye Drop Reman**
Betamethasone sodium phosphate 0.1% & neomycin sulphate 0.5%: eye drop.
5ml drop: 32.20 MRP
❖ **BETASON-N Eye Oint. Reman**
Betamethasone 0.1% & neomycin sulphate 0.5%: eye ointment.
3gm tube: 10.82 MRP
❖ **BETRICIN-N E/E Drop Nipa**
Betamethasone sodium phosphate 0.1% & neomycin sulphate 0.5%: eye/ear drop.
5ml drop: 30.36 MRP
❖ **BETRICIN-N Eye Oint. Nipa**
Betamethasone 0.1% & neomycin sulphate 0.5%: eye ointment.
3gm tube: 10.77 MRP
❖ **BN Eye Drop Asiatic**
Betamethasone 0.1% & neomycin sulphate 0.5%: eye drop
5ml drop: 28.45 MRP
❖ **METHASOL-N Eye/Ear Drop Gaco**
Betamethasone 0.1% & neomycin sulphate 0.5%: eye/ear drop
5ml bot: 32.20 MRP
❖ **METHASOL-N Eye Oint. Gaco**
Betamethasone 0.1% & neomycin sulphate 0.5%: eye ointment.
5gm tube: 12.67 MRP
❖ **NEOBET-E Eye Oint. Acme**
Betamethasone 1mg + neomycin sulph. 5mg/gm: eye ointment.
2.5gm tube: 12.39 MRP
5gm tube: 18.17 MRP
❖ **OPTISON-N E/E Drop Opso Saline**
Betamethasone sodium 0.1% + neomycin sulph. 0.5%: eye/ear drop.
5ml vial: 30.30 MRP
❖ **OPTISON-N Eye Oint. Opso Saline**
Betamethasone 1mg + neomycin sulph. 5mg/gm: eye ointment.
3gm tube: 10.50 MRP

DEXAMETHASONE

DEXAMETHASONE PREPNS: Eye drop
Dexamethasone only steroid ophthalmic preparation is available as dexamethasone sodium phosphate 0.1% w/v: eye drop.
Ind: Non-infected inflammatory ocular

conditions.
C/I; S/E; Cautions: See at the beginning.
Paediatric use only by physicians experienced in ophthalmology.
Adult & Child: 1-2 drops every 1 to 4 hours.

❖ **ACICOT E/E Drop ACI**
Dexamethasone sodium phosphate 0.1%: eye drop
5ml bot: 60.00 IP
❖ **DEXADRON E/E Drop Reman**
Dexamethasone sodium phosphate 0.1%: eye drop
4ml pack: 60.00 MRP
❖ **DEXACORT E/E Drop Opso Saline**
Dexamethasone sodium phosphate 0.1%: eye drop
5ml bot: 40.00 MRP
❖ **DEXAMIN E/E Drop Jayson**
Dexamethasone sodium phosphate 0.1%: eye drop
5ml pack: 50.00 IP
❖ **DEXAN Eye Drop Chemist**
Dexamethasone sodium phosphate 0.1%: eye drop
4ml drop: 28.60 MRP
❖ **DEXON Eye Drop Ibn Sina**
Dexamethasone sodium phosphate 0.1%: eye drop
5ml drop: 60.00 IP
❖ **D-ONE Eye Drop Nipa**
Dexamethasone sodium phosphate 0.1%: eye drop
5ml drop: 60.00 MRP
❖ **MERADEXON Eye/Ear Drop Gaco**
Dexamethasone sodium phosphate 0.1%: eye drop
5ml drop: 50.00 MRP
❖ **METADAXAN Eye Drop Incepta**
Dexamethasone sodium phosphate 0.1%: eye drop
5ml drop: 60.00 MRP
❖ **ORBIDEX Eye Drop Popular**
Dexamethasone sodium phosphate 0.1%: eye drop
5ml drop: 60.00 MRP
❖ **SONEXA Eye Drop Aristopharma**
Dexamethasone sodium phosphate 0.1%: eye drop
5ml bot: 60.00 MRP
❖ **SONEXA Eye Oint. Aristopharma**
Dexamethasone 0.05% eye ointment.
3gm tube: 50.00 MRP

DEXAMETHASONE + ANTIBIOTICS

DEXAMETHASONE + ANTIBIOTIC PREPNS: Eye Drop/Ointment
Dexamethasone and antibiotic combined ophthalmic preparations are available in various combinations, such as:
i. Dexamethasone sodium phosphate 0.1% w/v + chloramphenicol 0.5% w/v: Eye drop/ointment.
ii. Dexamethasone sodium phosphate 0.1% w/v + ciprofloxacin 0.3% w/v: Eye drop/ointment.
iii. Dexamethasone sodium phosphate 0.1% w/v + gatifloxacin 0.3% w/v: Eye drop/ointment.
iv. Dexamethasone sodium phosphate 0.1% w/v + neomycin 0.35% or 0.5% w/v: Eye drop/ointment.
v. Dexamethasone sodium phosphate 0.1% w/v + tobramycin 0.3% or 0.5% w/v: Eye drop/ointment.
vi. Dexamethasone sodium phosphate 0.1% w/v + neomycin 0.5% w/v + polymyxin B sulphate 6000 i.u/gm or ml: Eye drop/ointment.

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DEXAMETHASONE + CHLORAMPHENICOL: Eye drop.
Dexamethasone sodium phosphate 0.1% & chloramphenicol 0.5%: eye drop.
Ind: Steroid responsive inflammatory ocular conditions where bacterial infections or risk of bacterial infections co-exist.
C/I; S/E; Cautions: See at the beginning.
Paediatric use only by physicians experienced in ophthalmology.
Adult & child: 1-2 drops 3 or 4 times daily.

❖ **CHLORODEX Eye Drop Nipa**
Dexamethasone sodium phosphate 0.1% & chloramphenicol 0.5%: eye drop.
5ml pack: 60.00 MRP
❖ **CLORAM-D Eye Drop Ibn Sina**
Dexamethasone sodium phosphate 0.1% & chloramphenicol 0.5%: eye drop.
5ml pack: 60.00 MRP
❖ **DECALOR Eye Drop Jayson**
Dexamethasone sodium phosphate 0.1% & chloramphenicol 0.5%: eye drop.
5ml pack: 50.00 IP
❖ **DENICOL Eye Drop ACI**
Dexamethasone sodium phosphate 0.1% & chloramphenicol 0.5%: eye drop.
5ml pack: 65.00 IP
❖ **DEXACOL Eye Drop Opso Saline**
Dexamethasone sodium phosphate 0.1% & chloramphenicol 0.5%: eye drop.
5ml pack: 45.00 MRP
❖ **DEXAGURD Eye Drop Incepta**
Dexamethasone sodium phosphate 0.1% & chloramphenicol 0.5%: eye drop.
5ml pack: 60.00 MRP
❖ **DEXCHLOR Eye Drop Gaco**
Dexamethasone sodium phosphate 0.1% & chloramphenicol 0.5%: eye drop.
5ml pack: 60.00 MRP
❖ **OPTADEX Eye Drop Reman**
Dexamethasone sodium phosphate 0.1% & chloramphenicol 0.5%: eye drop.
5ml drop: 70.00 MRP
❖ **OPTICOL-D Eye Drop Asiatic**
Dexamethasone sodium phosphate 0.1% & chloramphenicol 0.5%: eye drop.
5ml drop: 50.00 MRP
❖ **ORBIDEX C Eye Drop Popular**
Dexamethasone sodium phosphate 0.1% & chloramphenicol 0.5%: eye drop.
5ml drop: 60.00 MRP
❖ **SONEXA-C Eye Drop Aristopharma**
Dexamethasone sodium phosphate 0.1% & chloramphenicol 0.5%: eye drop.
5ml drop: 60.00 MRP
❖ **STENICOL Eye Drop Drug Inter.**
Dexamethasone sodium phosphate 0.1% & chloramphenicol 0.5%: eye drop.
5ml drop: 50.00 MRP

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DEXAMETHASONE + CIPROFLOXACIN: Eye drop/ointment.[01]
Dexamethasone sodium phosphate 0.1% & ciprofloxacin 0.3%: eye/ear drop.
Ind: Steroid responsive inflammatory ocular conditions where bacterial infections or risk of bacterial infections co-exist.
C/I: This combined eye product is contraindicated in fungal diseases of ocular structures, viral conjunctivitis and hypersensitivity to any of the components of the formulation.
S/E: Frequently reported reactions related to this combination product are transient ocular burning or discomfort. Other reported reactions include chemosis, redness, dry eye, pain, itching, swelling of the eyelid & reduced visual acuity. The reactions due to steroid component are elevation of intraocular pressure (IOP) with possible development of glaucoma, infrequent optic nerve damage, delayed wound healing and posterior subcapsular cataract formation. Secondary infection may develop after use of combination containing steroid & antibacterial. Fungal or viral infections of the cornea are particularly prone to develop coincidently with long term use of steroids.
Pregnancy & lactation: This combined eye product should be used during pregnancy only if the potential benefit justifies the potential risk to the foetus. Caution should be exercised when the combination is administered to a nursing woman.
Precautions & warning: If the product is used for 10 days or more, intraocular pressure should be monitored routinely. Prolonged use of steroid may result in glaucoma, elevated intraocular pressure or other ocular damages. It may exacerbate severity of viral infections. Use cautiously in patients with history of herpes simplex.
Paediatric use only when adviced by the physicians experienced in ophthalmology.
Use & appli: Adult & Child: 1-2 drops every 4 to 6 hours. During initial 1 to 2 days the dosage may be increased to 1 to 2 drops every 2 hours. Frequency should be decreased gradually or warranted in clinical signs. Care should be taking not to discontinue therapy prematurely.

❖ **APRODEX E/E Drop Aristopharma**
Dexamethasone sodium phosphate 0.1% & ciprofloxacin 0.3%: eye/ear drop.
5ml drop: 75.00 MRP
❖ **BACTIN-D Eye Drop Ibn Sina**
Dexamethasone sodium phosphate 0.1% & ciprofloxacin 0.3%: eye/ear drop.
5ml drop: 75.00 MRP
❖ **BEUFLOX-D Eye Drop Incepta**
Dexamethasone sodium phosphate 0.1% & ciprofloxacin 0.3%: eye/ear drop.
6ml drop: 75.00 MRP
❖ **CERODEX Eye Drop Gaco**
Dexamethasone sodium phosphate 0.1% & ciprofloxacin 0.3%: eye/ear drop.
5ml drop: 65.00 MRP
❖ **CIP-D Eye Drop Asiatic**
Dexamethasone sodium phosphate 0.1% & ciprofloxacin 0.3%: eye/ear drop.
5ml drop: 75.00 MRP
❖ **CIPROZID-DX Eye Drop Drug Inter.**
Dexamethasone sodium phosphate 0.1% & ciprofloxacin 0.3%: eye drop.
10ml drop: 60.00 MRP
❖ **CIVODEX E/E Drop Popular**
Dexamethasone sodium phosphate 0.1% & ciprofloxacin 0.3%: eye/ear drop.
5ml drop: 75.00 MRP
❖ **OPDEX E/E Drop Nipa**
Dexamethasone sodium phosphate 0.1% & ciprofloxacin 0.3%: eye/ear drop.

5ml drop: 75.00 MRP

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DEXAMETHASONE + GATIFLOXACIN: Eye drop.[101]
Dexamethasone sodium phosphate BP 0.1% & gatifloxacin 0.3% as gatifloxacin sesquihydrate INN: eye drop.
Ind: Steroid responsive inflammatory ocular conditions where bacterial infections or risk of bacterial infections co-exist.
C/I; S/E; Cautions: See above under the dexamethasone & ciprofloxacin eye preparation.
Use & appli: 1-2 dropsinto the conjunctival sac 3 to 4 times a day.
Pediatric use: The safety in pediatric patients has not been established.

❖ GATIDEX Eye Drop Opsosaline
Dexamethasone sodium phosphate BP 0.1% & gatifloxacin 0.3% as gatifloxacin sesquihydrate INN: eye drop.
5ml drop: 60.00 MRP

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DEXAMETHASONE + NEOMYCIN + POLYMYXIN B: Eye drop/ointment.
Dexamethasone 0.1% , neomycin sulph. 0.35%, polymyxin B sulph. 6000 i.u./ml; eye drop.
Ind: Infected ocular infalmmation.
Cautions: Paediatric use only by physicians experienced in ophthalmology.
Adult & Child: 1-2 drops 3 to 4 times daily or more frequently if reqd.

❖ FLAMITROL Eye Drop Gaco
Dexamethasone 0.1% , neomycin sulph. 0.35%, polymyxin B sulph.6000 i.u./ml; eye drop.
5ml drop: 60.00 MRP
❖ MAXITROL Eye Drop Alcon/Globex
Dexamethasone 0.1%, neomycin sulph. 0.35% & polymyxin B sulph 6000 i.u/ml: eye drop.
5ml drop: 155.00 TP
❖ NEO-DP Eye Drop Drug Inter.
Dexamethasone 0.1%, neomycin sulph. 0.35% & polymyxin B sulph.6000 i.u/ml: eye drop.
5ml drop: 90.00 MRP
❖ POLYDEX-N Eye Drop Aristopharma
Dexamethasone 0.1%, neomycin sulph. 0.5% & polymyxin B sulph.6000 i.u/ml: eye drop.
5ml drop: 60.00 MRP
❖ POLYDEX-N Eye Oint. Aristopharma
Dexamethasone 0.1%, neomycin sulph. 0.5% & polymyxin B sulph.6000 i.u/gm: eye ointment.
3gm tube: 25.00 MRP

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DEXAMETHASONE + TOBRAMYCIN: Eye drop/ointment.
Dexamethasone 0.1% and tobramycin 0.3%: Eye drop & ointment.
Ind: Steroid responsive inflammatory ocular conditions where bacterial infections or risk of bacterial infections co-exist.
C/I; S/E; Cautions: See above under the text of tobramycin & dexamethasone eye products.
Dosage & admin: ***Eye drop:*** **1 or 2 drops instilled into the conjunctival sac(s) every 4 to 6 hours. During the initial 24 to 48 hurs, the dosage may be increased to 1-2 drops every two hours. Frequency should be decreased gradually as warranted by improvement in clinical signs. Care should be taken not to discontinue therapy prematurely.**
Ointment: **apply a small amount into the conjunctival sac(s) up to 3 or 4 times daily. After applying ointment, look downward before closing the eye. Ointment may be used at bedtime in conjunction with suspension used during the day.**

❖ DEXTROBAC Eye Drop Incepta
Dexamethasone 0.1% and tobramycin 0.3%: eye drop.
5ml drop: 125.00 MRP
❖ EYTEX Eye Drop/Oint. Nipa
Dexamethasone 0.1% and tobramycin 0.3%: eye drop & ointment.
5ml drop: 125.00 MRP
3gm oint: 90.00 MRP
❖ ORBIDEX T Eye Drop Popular
Dexamethasone 0.1% and tobramycin 0.3%: eye drop.
5ml drop: 130.00 MRP
❖ T-DEX Eye Drop/Oint. Reman
Dexamethasone 0.1% and tobramycin 0.3%: eye drop & ointment.
5ml drop: 125.00 MRP
4gm oint: 65.00 MRP
❖ T-MYCIN Plus Eye Drop/Oint. Aristopharma
Dexamethasone 0.1% and tobramycin 0.3%: eye drop & ointment.
5ml drop: 130.00 MRP
3.5gm oint: 90.00 MRP
❖ TOBIDEX Eye Drop/Oint. Gaco
Dexamethasone 0.1% and tobramycin 0.3%: eye drop & ointment.
5ml drop: 125.00 MRP
3.5gm oint: 89.99 MRP
❖ TOMYCIN-D Eye Drop Ibn Sina
Dexamethasone 0.1% and tobramycin 0.3%: eye drop & ointment.
5ml drop: 125.00 MRP

FLUOROMETHOLONE PREPNS[54]

FLUOROMETHOLONE: Eye Drop
Fluorometholone 0.1% (1mg/ml): eye drop
Ind: Chronic inflammation of the eye, angular allergic conjunctivitis, blepharitis, acute allergic non-infectious conjunctivitis and keratitis with severe swelling and hyperaemia; non-infectious inflammation of the anterior segment of the eye (including anterior uveitis, episcleritis and scleritis); post-operative conditions following squint, cataract and glaucoma operations along with supplementary antimicrobial therapy.
C/I: See above under steroid preparations; hypersensitivity to fluorometholone, & other ingredients; dry eyes, specially keratoconjunctivitis sicca (Sjogren's syndrome); children under 2 years.
S/E: See above under steroid preparations; prolonged use may give rise to reactive hyperaemia (rebound effect).
Precautions: The preparation should only be administered after a careful risk/benefit evaluation in each individual patient in case of-severe blood circulation diseases (e.g coronary heart condition, hypertonia, phaeochromocytoma); metabolic disturbances (e.g hyperthyroidism, diabetes); patients under treatment with MAOIs & other potentially hypertensive drugs; history of cataract, herpes simplex infection or rhinitis sicca.
Uses & appli: Adults: 1 drop 2-3 times daily into the conjunctival sac; in the first 24-48 hours, the dose may be increased to 1 drop hourly for adults; caution should be exercised in the case of reactive hyperaemia.
Children: (above 2 years)- as, no specific studies have been performed & due to possible systemic adverse effects, efemoline should be used with caution in children.

❖ AFM Eye Drop Aristopharma
Fluorometholone 0.1% (1mg/ml): eye drop
5ml drop: 85.00 MRP
❖ EYLON Eye Drop Ibn Sina
Fluorometholone 0.1% (1mg/ml): eye drop
5ml drop: 96.00 MRP
❖ FLAREX Eye Drop Alcon/Globex
Fluorometholone 0.1% (1mg/ml): eye drop
5ml drop: 163.50 TP
❖ FLUCORT Eye Drop Gaco
Fluorometholone 0.1% (1mg/ml): eye drop
5ml drop: 82.00 MRP
❖ FLUMETH Eye Drop Nipa
Fluorometholone 0.1% (1mg/ml): eye drop
5ml drop: 82.00 MRP
❖ FLUROMET Eye Drop Popular
Fluorometholone 0.1% (1mg/ml): eye drop
5ml drop: 85.00 MRP
❖ NGS Eye Drop Opso Saline
Fluorometholone 0.1% (1mg/ml): eye drop
5ml drop: 85.00 MRP
❖ REFEMOLINE Eye Drop Reman
Fluorometholone 1mg & tetrahydrozoline hydrochloride 0.25mg/ml: eye drop.
5ml drop: 95.00 MRP

FLUOROMETHOLONE + GENTAMICIN[54]

FLUOROMETHOLONE + GENTAMICIN: Eye Drop/Ointment
Fluorometholone 1mg & gentamicin sulphate 3mg/1ml: eye drop
Ind: Infected ocular inflammation of the anterior segment of the eye due to bacteria susceptible to gentamicin (e.g bacterial conjunctivitis).
Adult & Child: Eye drop: 1-2 drops 5 times daily in the affected eye(s); in severe cases may be given 1 drop per hour for 1 to 2 days. In ocular post-operative treatment- 1 drop 4 times daily for 1 week, then reduced application frequency for the remaining part of the treatment.

Eye ointment: Apply 3-4 times daily into the affected eye(s). Ocular post-operative treatment- to support the therapy with eye drop during the night apply the ointment before going to bed.

❖ **AFM-Plus Eye Drop Aristopharma**
Fluorometholone 1mg & gentamicin sulphate 3mg/1ml: eye drop
5ml drop: 110.00 MRP
❖ **AFM-Plus Eye Oint. Aristopharma**
Fluorometholone 1mg & gentamicin sulphate 3mg/1gm: eye ointment.
3gm tube: 100.00 MRP
❖ **FLUMELONE-N Eye Drop Reman**
Fluorometholone 1mg & gentamicin sulphate 3mg/1ml: eye drop
5ml drop: 90.00 MRP

HYDROCORTISONE PREPNS[103]

❖ **NPH Eye Drop Reman**
Hydrocortisone acetate 10mg/ml (1%), neomycin sulph. 3400 units/ml (0.34%), polymyxin-B sulph. 10,000 units/ml; eye drop
Ind: Inflammatory ocular conditions for which a corticosteroid is indicated and where superficial bacterial ocular infection or a risk of infection exists.
C/I: Viral infections.
S/E: See above under the text of steroid.
Cautions: Paediatric use only by physicians experienced in ophthalmology.
Adult & Child: 1-2 drops 3 to 4 times daily or more frequently if required.
5ml vial: 45.00 MRP

PREDNISOLONE PREPNS[36]

PREDNISOLONE ACETATE: Eye Drop
Prednisolone acetate USP 1% w/v: eye drop
Mode of action: Prednisolone, a corticosteroid, is thought to act by the induction of phospholipase A2 proteins, which control the biosynthesis of potent mediators of inflammation such as prostaglandins and leukotrienes by inhibiting the release of their common precursor arachidonic acid.
Ind: Allergic conjunctivitis, acne rosacea, superficial keratitis, herpes zoster keratitis, iritis, cyclitis, & selected infective conjunctivitis in addition to antibiotic therapy.
C/I: Prednisolone is contraindicated in most viral diseases of the cornea and conjunctiva.
S/E: Elevation of intraocular pressure (IOP) with possible development of glaucoma and infrequent optic nerve damage, & posterior subcapsular cataract formation.
Precautions & warnings: If this medication is used for 10 days or longer, intraocular pressure should be monitored. Prolonged use of corticosteroids may result in glaucoma with damage to the optic nerve, defects in visual acuity and fields of vision, and in posterior subcapsular cataract formation.
Pregnancy & lactation: Prednisolone acetate ophthalmic suspension should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. Due to serious adverse reactions in nursing infants from prednisolone acetate, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.
Dosage & admin: Two drops in the eye (s) four times daily. In cases of bacterial infections, concomitant use of anti-infective agents is mandatory.
Children: Safety and effectiveness in pediatric patients have not been established.

❖ **CORTISOL Eye Drop Aristopharma**
Prednisolone acetate USP 1% w/v: eye drop
5ml drop: 90.00 MRP
❖ **OCUSOL Eye Drop Popular**
Prednisolone acetate USP 1% w/v: eye drop
5ml drop: 90.00 MRP
❖ **PEDNISOL Eye Drop Drug Inter.**
Prednisolone acetate USP 1% w/v: eye drop
5ml drop: 80.00 MRP
❖ **PREDNOL Eye Drop Reman**
Prednisolone acetate USP 1% w/v: eye drop
5ml drop: 90.00 MRP

PREDNISOLONE + ANTIBIOTICS[62,102]

❖ **DELTASONE-N E/E Drop Renata**
Prednisolone acetate 5mg & neomycin sulphate 5mg/1ml: eye/ear drop.
Ind: Infected ocular & ear inflammation.
Adult & Child: 1-2 drops 3 to 4 times daily or more frequently if requred.
5ml drop: 39.98 MRP

Non-Steroid drugs

BROMFENAC[133]

BROMFENAC: Eye Drop
Bromfenac is a nonsteroidal anti-inflammatory drug, available as ophthalmic solution for topical administration in the eyes.
Comp: Each ml of eye drop contains- bromfenac sodium INN equivalent to bromfenac 0.9mg & benzalkonium chloride 0.05mg as preservative.
Mode of action: The mechanism of anti-inflammatory activity is thought to be due to its ability to block prostaglandin synthesis by inhibiting cyclooxygenase 1 & 2. Prostaglandins have been shown in many animal models to be mediators of certain kinds of intraocular inflammation. In studies performed in animal eyes, prostaglandins have been shown to produce disruption of the blood-aqueous humor barrier, vasodilation, increased vascular permeability, leukocytosis and increased intraocular pressure.
Ind: Bromfenac ophthalmic solution is indicated for the treatment of postoperative inflammation and reduction of ocular pain in patients who have undergone ocular surgery (cataract extraction, IOL implantation etc).
C/I: Known hypersensitivity to bromfenac, benzalkonium chloride or any other ingredients in this product.
S/E: The most commonly reported adverse reactions following use of bromfenac after cataract surgery include- abnormal sensation in the eye(s), conjunctival hyperemia, eye irritation (including burning/stinging), eye pain, eye pruritus, eye redness, headache and iritis. These events were reported in 2-7% of patients.
Precautions: All topical nonsteroidal anti-inflammatory drugs (NSAIDs) may slow or delay healing. Use of topical NSAIDs may result in keratitis. In some susceptible patients, continued use of topical NSAIDs may result in epithelial breakdown, corneal thinning, corneal erosion, corneal ulceration or perforation.
Postmarketing experience with topical NSAIDs suggests that patients with complicated ocular surgeries, corneal denervation, corneal epithelial defects, diabetes mellitus, ocular surface diseases (e.g. dry eye syndrome), rheumatoid arthritis, or repeated ocular surgeries within a short period of time may be at increased risk for corneal adverse events which may become sight threatening. Topical NSAIDs should be used with caution in these patients.
Pregnancy & lactation: There are no adequate and well-controlled studies in pregnant women. So, this drug should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. Caution also should be exercised when bromfenac ophthalmic solution is administered to a nursing woman.
Dosage & admin: For the treatment of postoperative inflammation, 1 drop of bromfenac 0.09% ophthalmic solution should be applied to the affected eye(s) 2 times daily beginning 24 hours after ocular surgery and continuing through the first 2 weeks of the postoperative period.
Children: Safety and efficacy in pediatric patients below the age of 18 have not been established.
Drug inter: Topical corticosteroids are known to slow or delay healing. Therefore, concomitant use of topical NSAIDs and topical steroids may increase the potential for healing problems.

❖ **BFENAC Eye Drop Popular**
Each ml of eye drop contains- bromfenac sodium INN equivalent to bromfenac 0.9mg & benzalkonium chloride 0.05mg as preservative: eye drop.
5ml drop: 95.00 MRP
❖ **BROMOFEN Eye Drop Ibn Sina**
Each ml of eye drop contains- bromfenac sodium INN equivalent to bromfenac 0.9mg (i.e 0.09%) & benzalkonium chloride 0.05mg as preservative: eye drop.
5ml drop: 95.00 MRP
❖ **XIROM Eye Drop Aristopharma**
Each ml of eye drop contains- bromfenac sodium INN equivalent to bromfenac 0.9mg (i.e 0.09%) & benzalkonium chloride 0.05mg as preservative: eye drop.
5ml drop: 95.00 MRP

DICLOFENAC SODIUM[21,33]

DICLOFENAC SODIUM: Eye Drop.
Diclofenac sodium, a nonsteroidal substance with anti-inflammatory & analgesic effects: eye drop.
Ind: Ch. non-infectious conjunctivitis, penetrating wound; inhibition of miosis during

cataract surgery; post operative & pre-operative prevention of cystoid macular oedema associated with lens extraction & intraocular lens implantation.
Use: 1 drop 3-5 times daily.

❖ **ANFENAC Eye Drop Nipa**
Diclofenac sodium 0.1%: eye drop.
5ml drop: 80.00 MRP
❖ **ANODYNE Eye Drop Ibn Sina**
Diclofenac sodium 0.1%: eye drop.
5ml drop: 75.00 IP
❖ **C-FENAC Eye Drop Chemist**
Diclofenac sodium 0.1%: eye drop.
5ml drop: 65.00 MRP
❖ **CLOFENAC Eye Drop Square**
Diclofenac sodium 0.1%: eye drop.
5ml drop: 75.00 MRP
❖ **DICLOFEN Eye Drop Opso Saline**
Diclofenac sodium 0.1%: eye drop.
5ml drop: 60.00 MRP
❖ **DICLON Eye Drop Reman**
Diclofenac sodium 0.1%: eye drop.
5ml drop: 78.00 MRP
❖ **ERDON Eye Drop Aristovision**
Diclofenac sodium 0.1%: eye drop.
5ml drop: 80.00 MRP
❖ **INTAFENAC Eye Drop Incepta**
Diclofenac sodium 0.1%: eye drop.
5ml drop: 75.00 MRP
❖ **LOCOPAIN Eye Drop Asiatic**
Diclofenac sodium 0.1%: eye drop.
5ml drop: 80.00 MRP
❖ **MOBIFEN Eye Drop ACI**
Diclofenac sodium 0.1%: eye drop.
5ml drop: 75.00 MRP
❖ **NOPAIN Eye Drop Drug Inter.**
Diclofenac sodium 0.1%: eye drop.
5ml drop: 70.00 MRP
❖ **PROFENAC Eye Drop Popular**
Diclofenac sodium 0.1%: eye drop.
5ml drop: 75.00 MRP
❖ **REUTREN Eye Drop Gaco**
Diclofenac sodium 0.1%: eye drop.
5ml drop: 70.00 MRP

KETOROLAC[39]

KETOROLAC TROMETHAMINE: Eye Drop
Ketorolac tromethamine is a nonsteroidal anti-inflammatory drug, available for ophthalmic use as 0.5% (5mg/ml) sterile isotonic aqueous solution or eye drop.
Mode of action: Its action is thought to be due, in part, to its ability to inhibit prostaglandin biosynthesis. Ocular administration of ketorolac tromethamine reduces prostaglandin E2 levels in aqueous humor. It has no significant effect upon intraocular pressure.
Ind: Indicated for- i. the relief of ocular itching due to seasonal allergic conjunctivitis, ii. prophylaxis and reduction of inflammation and associated symptoms following ocular surgery.
C/I: Patients wearing soft contact lenses and patients having hypersensitivity reaction to ketorolac tromethamine. Benzalkonium chloride and disodium edetate.
S/E: Transient stinging and burning on instillation, ocular irritation, allergic reactions, superficial ocular infections & superficial keratitis.
Precautions: It should be used with caution in patients with known bleeding tendencies or who are receiving other medications which may prolong bleeding time. There is the potential for cross-sensitivity to acetyls-alicylic acid, phenylacetic acid derivatives, & other nonsteroidal anti-inflammatory agents. Therefore one should be careful when treating individuals who have previously exhibited sensitivities to these drugs. With some nonsteroidal anti-inflammatory drugs, there are potential for increased bleeding time due to interference with thrombocyte aggregation. There have been reports that ocularly applied nonsteroidal anti-inflammatory drugs may cause increased bleeding of ocular tissues (including hyphemas) in conjunction with ocular surgery.
Pregnancy & lactation: There are no adequate and well-controlled studies in pregnant women. Ketorolac tromethamine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. Caution should be exercised when it is administered to a nursing woman.
Dosage & admin: Adult- 1 drop 4 times a day or as advised by the physician. Children- not recommended as safety and efficacy in pediatric patients have not been established.
Drug inter: Methotrexate, diuretics. lithium, warfarin, digoxin and other NSAIDs.

❖ **EMODOL Eye Drop Jayson**
Ketorolac tromethamine 0.5% sterile isotonic aqueous solution for ophthalmic use: eye drop.
5ml drop: 60.68 IP
❖ **ETOLAC Eye Drop Ibn Sina**
Ketorolac tromethamine 0.5% sterile isotonic aqueous solution for ophthalmic use: eye drop.
5ml drop: 80.00 MRP
❖ **ETORAC Eye Drop Incepta**
Ketorolac tromethamine 0.5% sterile isotonic aqueous solution for ophthalmic use: eye drop
5ml drop: 60.68 IP
❖ **KEROLAC Eye Drop Gaco**
Ketorolac tromethamine 0.5% sterile isotonic aqueous solution for ophthalmic use: eye drop
5ml drop: 60.00 MRP
❖ **LOPADOL Eye Drop Popular**
Ketorolac tromethamine 0.5% sterile isotonic aqueous solution for ophthalmic use: eye drop.
5ml drop: 80.00 MRP
❖ **ORADOL Eye Drop Aristopharma**
Ketorolac tromethamine 0.5% sterile isotonic aqueous solution for ophthalmic use: eye drop.
5ml drop: 80.00 MRP
❖ **RECULAR Eye Drop Reman**
Ketorolac tromethamine 0.5% sterile isotonic aqueous solution for ophthalmic use: eye drop.
5ml drop: 80.00 MRP

KETOTIFEN[52]

KETOTIFEN: Eye drop
Ketotifen fumarate BP 0.025% eye drops.
Mode of action: Ketotifen fumarate is a non-bronchodilator antiasthmatic drug with marked anti-anaphylactic property. In addition, ketotifen exerts a powerful and sustained H1 receptor blocking activity which can be clearly dissociated from its anti-anaphylactic property.
Ind: Ketotifen is indicated for the treatment of allergic conjunctivitis.
C/I: Ketotifen is contraindicated in patients with hypersensitivity to any of its ingredients.
S/E: Drowsiness and in isolated cases dry mouth and slight dizziess may occur at the beginning of the treatment, but usually disappear spontaneously after a few days.
Precautions: As with all ophthalmic preparations containing benzalkonium chloride, patients are advised not to instill ketotifen fumarate ophthalmic solution while wearing soft (hydrophilic) contact lenses. Wearers of soft contact lenses should be instructed to remove lenses prior to installation of drops and to wait at least ten minutes after instilling ketotifen before they insert their contact lenses.
Do not use longer than one month after opening.
Pregnancy & lactation: Ketotifen should not be used during pregnancy, except if the benefit justifies the potential risk to the fetus.
Dosage & admin: Adults and children over 3 years of age: The recommended dose is one drop in the affected eye(s) 8 to 12 hourly or as directed by the physician. If dose misses, apply as soon as possible; not apply if almost time for the next dose.
Children below 3 years of age: Not recommended.

❖ **ALARID Eye Drop Square**
Ketotifen fumarate BP 0.025%: eye drop
5ml drop: 95.00 MRP
❖ **FENAT Eye Drop Drug Inter.**
Ketotifen fumarate BP 0.025%: eye drop
5ml drop: 75.00 MRP
❖ **KETOF Eye Drop Ibn Sina**
Ketotifen fumarate BP 0.025%: eye drop
5ml drop: 95.00 MRP
❖ **KETOMAR Eye Drop Incepta**
Ketotifen fumarate BP 0.03%: eye drop
5ml drop: 95.00 MRP
❖ **PROSMA Eye Drop ACI**
Ketotifen fumarate BP 0.025%: eye drop
5ml drop: 80.00 MRP
❖ **STAFEN Eye Drop Aristopharma**
Ketotifen fumarate BP 0.03%: eye drop
5ml drop: 95.00 MRP
❖ **ZADIT Eye Drop Popular**
Ketotifen fumarate BP 0.025%: eye drop
5ml drop: 95.00 MRP

LODOXAMIDE[102]

❖ **ALOMIDE Eye Drop Alcon/Globex**
Lodoxamide tromethamine 0.17% equivalent to 0.1% lodoxamide + benzalkonium chloride 0.007% as preservative: Eye drop.
Mode of action: Lodoxamide tromethamine has antiallergic properties. It stabilizes mast cells and prevent the antigen specific induced release of histamine. Lodoxamide prevents the release of other mast cell inflammatory mediators such as the slow reacting substances of anaphylaxis (or SRS-A). It inhibits histamine release by preventing the movement of calcium into the mast cell after stimulation.
Ind: Allergic/atopic conjunctivitis, vernal conjuctivitis and giant papillary conjuctivitis.
C/I: Hypersensitivity to lodoxamide or any

component of the preparation.
S/E: Mild & transient discomfort upon instillation expressed as burning, stinging, itching or tearing.
Warnings & precautions: As with all ophthalmic preparations containing benzalkonium chloride, users of soft (hydrophilic) contact lenses should refrain from wearing lenses while under treatment with lodoxamide. The recommended frequency of administrations should not be exceeded.
Pregnancy & lactation: There is no study of lodoxamide use during pregnancy or concerning excretion in human milk.
Dosage & admin: Adult & older children- 1 or 2 drops in each eye 4 times a day at regular intervals. Once symptomatic improvement has been established, therapy should be continued for as long as needed to sustain improvement.
If required, corticosteroids may be used concomitantly with lodoxamide.
Clinical studies on use in children below the age of four years have not been performed.
Overdose: In the event of topical overdose, flush from the eye with running water.
Storage: Store at room temperature and use within one month after opening the drop.
5ml drop: 257.20 TP

OLOPATADINE[42]

OLOPATADINE: Eye Drop
Olopatadine hydrochloride INN 1mg/ml (0.1%): Eye drop
Mode of action: Olopatadine inhibits release of histamine from the mast cell and a relatively selective histamine H1-antagonist. It inhibits the in vivo and in vitro type 1 immediate hypersensitivity reaction including inhibition of histamine induced effects on human conjunctival epithelial cells.
Ind: Olopatadine 0.1% eye drop is indicated for the treatment of the signs and symptoms of allergic conjunctivitis.
C/I: Olopatadine preparation is contraindicated in persons with known hypersensitivity to olopatadine hydrochloride.
S/E: Headaches have been reported in 7% cases. Other side effects are experienced in less than 5% of patients, such as- asthenia, blurred vision, burning or stinging, cold syndrome, dry eye, foreign body sensation, hyperemia, hypersensitivity, keratitis, lid edema, nausea, pharyngitis, pruritus, rhinitis, sinusitis and taste change.
Precautions: Olopatadine ophthalmic solution should not be used to treat contact lens related irritation. Patients who wear soft contact lenses should be instructed to wait at least ten minutes after instilling olopatadine eye drop before they insert their contact lenses.
Pregnancy & lactation: There are no adequate and well controlled studies in pregnant women. So, this drug should be used in pregnant women only if the potential benefit to the mother justifies the potential risk to the fetus. Caution should be exercised when olopatadine ophthalmic solution is administered to a nursing mother.
Dosage & admin: One drop in each affected eye 2 times/day at an interval of 6 to 8 hours.

❖ **ALACOT Eye Drop Square**
Olopatadine hydrochloride INN 1mg/ml (0.1%): Eye drop
5ml drop: 100.00 MRP

❖ **LOPADINE Eye Drop Incepta**
Olopatadine hydrochloride INN 1mg/ml (0.1%): Eye drop
5ml drop: 100.00 MRP

❖ **OLODIN Eye Drop Reman**
Olopatadine hydrochloride INN 1mg/ml (0.1%): Eye drop
5ml drop: 100.00 IP

❖ **OLPADIN Eye Drop Aristopharma**
Olopatadine hydrochloride INN 1mg/ml (0.1%): Eye drop
5ml drop: 100.00 MRP

❖ **PATADIN Eye Drop Popular**
Olopatadine hydrochloride INN 1mg/ml (0.1%): Eye drop
5ml drop: 100.00 MRP

❖ **PATALON Eye Drop Ibn Sina**
Olopatadine hydrochloride INN 1mg/ml (0.1%): Eye drop
5ml drop: 100.00 MRP

❖ **PATANOL Eye Drop Alcon/Globex**
Olopatadine hydrochloride INN 1mg/ml (0.1%): Eye drop
5ml drop: 460.00 TP

PEMIROLAST[26]

PEMIROLAST: Eye drop
Pemirolast potassium is a mast cell stabilizer. It is available as pemirolast potassium INN 0.1% (i.e 1mg/ml) topical ophthalmic solution.
Mode of action: As pemirolast potassium is a mast cell stabilizer, it inhibits the invivo type-1 immediate hypersensitivity reaction. The drug has been observed to block antigen-stimulated calcium ion influx into mast cells. Invitro and invivo studies have demonstrated that pemirolast inhibits the antigen-induced release of inflammatory mediators (e.g histamine, leukotriene C4, D4, E4) from human mast cells. Pemirolast also inhibits the chemotaxis of eosinophils into ocular tissue and prevents inflammatory mediator release from human eosinophils.
Ind: Pemirolast eye drop is indicated for the prevention of itching of the eye due to allergic conjunctivitis.
C/I: Known hypersensitivity to any of the ingredients of the product.
S/E: Burning of eye, dry eye, ocular discomfort, non ocular allergy, sinusitis, headache and sneezing or nasal congestion.
Precautions: Patients should be advised not to wear contact lens if their eye(s) are red. Pemirolast should not be used to treat contact lens related irritation. Patients should wait 10 minutes after applying pemirolast before they insert contact lenses.
Pregnancy & lactation: There are no adequate and well-controlled studies in pregnant women. Pemirolast eye drop should be used during pregnancy only if the benefit outweighs the risk. It is not known whether pemirolast is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when pemirolast eye drop is administered to a nursing woman.
Dosage & admin: 1 to 2 drops in each affected eye 4 times daily.
Pediatric use: Safety & effectiveness in pediatric patients below the age of 3 years have not been established.
Drug inter: No specific information is available.

❖ **MIROLAST Eye drop Incepta**
Pemirolast potassium INN 0.1% (i.e 1mg/ml): eye drop.
10ml drop: 75.00 MRP

❖ **PEMAST Eye drop Opso Saline**
Pemirolast potassium INN 0.1% (i.e 1mg/ml): eye drop.
10ml drop: 75.00 MRP

SODIUM CROMOGLYCATE[21,33]

SODIUM CROMOGLYCATE: Eye Drop
Sodium cromoglycate 2% & 4%: eye (& nasal) drop.
Ind: Allergic conjuctivitis; a mast cell stabiliser.
C/I: Soft contact lenses.
S/E: Transient stinging.
Dosage & admin: Adult & child: 1 or 2 drops in each eye, 4 times daily.

❖ **ARISTOCROM Eye Drop Aristovision**
Sodium cromoglycate 2%: eye (& nasal) drop.
10ml drop: 65.00 MRP

❖ **CROMOLIN Eye Drop Ibn Sina**
Sodium cromoglycate 4%: eye (& nasal) drop.
10ml drop: 75.00 MRP

❖ **ICROM Eye Drop ACI**
Sodium cromoglycate 2%: eye (& nasal) drop.
10ml drop: 65.00 MRP

❖ **ITCHIN Eye Drop Gaco**
Sodium cromoglycate 2%: eye (& nasal) drop.
10ml drop: 60.00 MRP

❖ **ITCHIN DS Eye Drop Gaco**
Sodium cromoglycate 4%: eye (& nasal) drop.
10ml drop: 75.00 MRP

❖ **MASTGUARD Eye Drop Incepta**
Sodium cromoglycate 2%: eye (& nasal) drop.
10ml drop: 60.00 MRP

❖ **NACROMIN Eye Drop Square**
Sodium cromoglycate 2%: eye (& nasal) drop.
10ml drop: 61.00 MRP

❖ **NASOCHROM Eye Drop Drug Inter.**
Sodium cromoglycate 2%: eye (& nasal) drop.
10ml drop: 60.00 MRP

❖ **OPSOCROM Eye Drop Opso Saline**
Sodium cromoglycate 2%: eye (& nasal) drop.
10ml pack: 55.00 MRP

❖ **OPTACROM Eye Drop Reman**
Sodium cromoglycate 2%: eye (& nasal) drop.
10ml drop: 60.00 MRP

❖ **OPTIPAN Eye Drop Jayson**
Sodium cromoglycate 2%: eye (& nasal) drop.
10ml drop: 50.57 MRP

❖ **SODICROM Eye Drop Popular**
Sodium cromoglycate 2%: eye (& nasal) drop.
10ml drop: 50.00 MRP

❖ **SODICROM DS Eye Drop Popular**
Sodium cromoglycate 4%: eye (& nasal) drop.
10ml drop: 75.00 MRP

Non-Steroid Combined Prepns.

ANTAZOLINE + TETRYZOLINE[54]

❖ **SPERSALLERG Eye drop Novartis**
Antazoline hydrochloride 0.5mg & tetryzoline hydrochloride 0.4mg/ml: eye drop.
Ind: Non- infectious allergic conjunctivitis, hay fever, conjunctivitis vernalis.
C/I: Hypersensitivity to any part of spersallerg; narrow angle glaucoma; 'dry eye' syndrome; small children under age 2 years.
S/E: Transient burning sensation, occasional mydriasis, haedache, drowsiness & tachycardia.
Cautions: Pregnency & lactation; use carefully with children; the preparation is not intended for long-term medication, if treatment longer than 2-3 days is foreseen it should be prescribed & monitored by a physician .
Dosage & appli: Apply 1 drop every 3 hours during the acute phase; maintenance, 1 drop 2-3 times daily.
Children: 1-2 drops per day are sufficient for children.
10ml drop: 113.78 MRP

NAPHAZOLINE + PHENIRAMINE[102]

❖ **NAPHCON-A Eye Drop Alcon/Globex**
Each 1ml contains active naphazoline hydrochloride 0.025% & pheniramine maleate 0.3% + benzalkonium chloride 0.01% as preservative: Eye drop.
Mode of action: The combined preparation plays a combined role, such as- naphazoline hydrochloride as a decongestant & pheniramine maleate as an antihistamine.
Ind: Ocular irritation and/or congestion; allergic or inflammatory ocular conditions.
C/I: Hypersensitivity to one or more of the components of the preparation.
A/R: The following adverse reactions may occur- pupillary dilation, increase in intraocular pressure, systemic effects due to absorption (i.e hypertension, cardiac irregularities, hyperglycemia).
Precautions: Use with caution in elderly patients with severe cardiovascular disease including cardiac arrhythmias, patients with poorly controlled hypertension, patients with diabetes, specially those with a tendency toward diabetic ketoacidosis.
Warnings: Do not use in the presence of narrow angle glaucoma or in patients predisposed to narrow angle glaucoma. Patients under MAO inhibitors may experience a severe hypertensive crisis if given a sympathomimetic drug such as naphazoline hydrochloride. Use in infants and children may result in CNS depression leading to coma and marked reduction in body temprature.
Dosage & admin: 1 or 2 drops instilled in each eye every 3 to 4 hours or less frequently, as required to relieve symptoms, or as advised by the physician. To prevent contamination of the dropper tip and solution, care should be taken not to touch the eyelids or surrounding area with the dropper tip of the bottle.
15ml drop: 102.52 TP

NAPHAZOLINE + ZINC SULPHATE[54]

NAPHAZOLINE + ZINC SULPHATE: Eye drop
Naphazoline nitrate BP 0.005% (0.05mg/ml) & zinc sulphate BP 0.02% (0.02mg/l ml): Eye drop.
Ind: Acute & chronic non-infectious conjunctivitis; non-specific conjunctival irritation (also after successful treatment of bacterial and viral conjunctivitis); irrigation of the tear ducts.
C/I: Hypersensitivity to zinc sulphate, naphazoline and other ingredients; dry eyes, specially in keratoconjunctivits sicca (Sjogren's syndrome).
S/E: Mydriasis; slight burning sensation may occur for a short time after use of the drops, but this does not affect the success of the treatment.
Precautions: Narrow angle glaucoma; the use of oculosan in pregnancy and during lactation has not been studied; patients wearing soft contact lenses may use oculosan eye drop if medication is given while the lenses are not worn.
Dosage: 1 drop in the conjunctival sac 3-4 times a day.

❖ **NAPHALON Eye drop Reman**
Naphazoline nitrate BP 0.005% (0.05mg/ml) & zinc sulphate BP 0.02% (0.02mg/1ml): Eye drop.
10ml drop: 50.00 IP

❖ **NAZIN Eye drop Aristopharma.**
Naphazoline nitrate BP 0.005% (0.05mg/ml) & zinc sulphate BP 0.02% (0.02mg/l ml): Eye drop.
10ml drop: 50.00 MRP

ZINC SULPHATE + BORIC ACID

❖ **Z-B EYE Drop Reman**
Zinc sulphate 0.50gm, acid boric 4gm and benzalkonium chloride/1000 c.c: eye drop
Ind: Chronic inflammation of the eye, angular allergic conjunctivitis, blepharitis.
Dosage: 1-2 drops 2 to 3 times daily.
10ml vial: 17.11 MRP

MYDRIATICS & CYCLOPLEGICS

ATROPINE[21,33]

ATROPINE: Eye Drop
Atropine Sulph. 1% eye drop.
Ind: Mydriatic & cycloplegic for pre & post. operative use. Treatment of keratitis, iritis, cyclitis & refractive works in children
C/I: Narrow angle glaucoma.
S/E & Cautions: It is less suitable because of its long duration of action; may precipitate glaucoma; contact dermatitis is not uncommon: a toxic systemic reaction to atropine may occur in the very young and the very old; in infants maintain pressure over lachrimal sac for 1 min.
Dosage: Adult & Child: 1 drop as required.

❖ **HEMOMIN Eye Drop Nipa**
Homatropine hydrobromide 2%: eye drop.
10ml drop: 37.64 MRP

❖ **HOMATROPINE-OSL Eye Drop Opso Saline**
Homatropine hydrobromide 2%: single dose eye drop.
10ml drop: 29.00 MRP

❖ **HOMATROPINE Eye Drop Reman**
Homatropine hydrobromide 2%: single dose eye drop.
10ml drop: 37.00 MRP

OXYPHENONIUM[21,101]

❖ **ANTRENEX Eye Drop Opso Saline**
Oxyphenonium bromide 1% eye drop.
Ind: In cycloplegic refraction; treatment of uveitis; treatment and prophylaxis of posterior synachiae; preoperative and postoperative mydriasis; treatment of malignant glaucoma.
C/I; S/E; Cautions: Same as atropine eye drop.
Dosage: Adult & Child- 1 drop as required.
10ml drop: 41.50 MRP

TROPICAMIDE[21,33]

TROPICAMIDE: Eye Drop
Tropicamide 0.5% & 1% eye drop.
Ind: Mydriatic & cycloplegic (with a rapid recovery of accommodation) for refraction.
C/I: Narrow agnle glaucoma.
Cautions: Use with care when intraocular pressure not known, In infants maintain pressure over lachrymal sac for 1 minute.
Adult & Child: 1-2 drops at 1-5 min. intervals. If patient not examined within 30 min. an additional drop should be used.

❖ **DILATE Eye Drop Incepta**
Tropicamide 0.5% & 1.0%: eye drop.
0.5% x 5ml drop: 60.00 MRP
1.0% x 5ml drop: 76.00 MRP

❖ **MYDRIMIDE Eye Drop Reman**
Tropicamide 0.5% & 1.0%: eye drop.
0.5% x 5ml drop: 70.00 MRP
1.0% x 5ml drop: 85.00 MRP

❖ **TROPICAM Eye Drop Aristopharma**
Tropicamide 0.5% & 1.0% eye drop.
0.5% x 5ml drop: 60.00 MRP
1.0% x 5ml drop: 85.00 MRP

❖ **TROPICAMIDE-OSL Eye Drop Opso Saline**
Tropicamide 0.5% & 1.0% eye drop.
0.5% x 5ml drop: 55.00 MRP
0.5% x 10ml drop: 75.00 MRP
1.0% x 5ml drop: 75.00 MRP

❖ **TROPICAMIN Eye Drop Nipa**
Tropicamide 0.5% & 1.0% eye drop.
0.5% x 5ml drop: 55.55 MRP
1.0% x 5ml drop: 75.00 MRP

❖ **TROPIDIL Eye Drop Popular**
Tropicamide 1.0% eye drop.
1.0% x 5ml drop: 85.00 MRP

❖ **TRUSIL Eye Drop Gaco**
Tropicamide 0.5% & 1.0% eye drop.
0.5% x 5ml drop: 55.62 MRP
0.5% x 10ml drop: 75.86 MRP
1.0% x 5ml drop: 75.86 MRP

TROPICAMIDE + PHENYLEPHRINE[36,103]

TROPICAMIDE + PHENYLEPHRINE: Eye drop
Combination product of tropicamide 0.8% (8mg/ml) and phenylephrine hydrochloride 5% (50mg/ml): Eye drop
Mode of action: This is a mydriatic combination. In this, tropicamide is an anticholinergic (antimuscarinic) agent, which is a competitive inhibitor of the action of acetylcholine having a rapid but shorter duration of effects, this causes paralysis of the sphincter muscle of the iris resulting in pupillary dilatation. The ciliary muscle is also paralyzed leading to loss of accommodation. Phenylephrine is a selective alpha1-agonist, which causes mydriasis without cycloplegia. It tends to reduce intraocular lesion by vasoconstrictor action.
Ind: As a mydriatic combination this product is indicated in some pre- and post-operative states and for several ophthalmologic examinations like ophthalmoscopy, slit-lump examination, retinal photography, laser treatment, adjunct in the treatment of anterior uveitis. It also may be used in temporary lowering of intraocular pressure in glaucoma.
C/I: Known hypersensitivity to any ingredient of the preparation; narrow angle glaucoma.
S/E: Ocular side effects include transient stinging and raised intra-ocular pressure; on prolonged administration local irritation, hyperemia, edema and conjunctivitis may occur. Systemic effects include arrhythmias, hypertension, and coronary artery spasm.
Precaution: Children and elderly; cardiovascular diseases, tachycardia, hypertension, diabetes.
Dosage & admin: Instil 1-2 drops in the eye(s) 15-20 minutes before examination. If examination is not conducted within 20-30 minutes, an additional drop may be placed in the eye(s) to prolong the effect.
Drug inter: Phenylephrine may interact with systemically administered monoamino oxidase inhibitors (MAOIs).

❖ **MYDRIMIDE Plus Eye Drop Reman**
Combination product of tropicamide 0.8% (8mg/ml) and phenylephrine hydrochloride 5% (50mg/ml): eye drop
5ml drop: 80.00 MRP
❖ **TROCANE Eye Drop Drug Inter.**
Combination product of tropicamide 0.8% (8mg/ml) and phenylephrine hydrochloride 5% (50mg/ml): eye drop
5ml drop: 65.00 MRP
❖ **TROPHEN Eye Drop Aristopharma**
Combination product of tropicamide 0.8% (8mg/ml) and phenylephrine hydrochloride 5% (50mg/ml): eye drop
5ml drop: 80.00 MRP
❖ **TROPICAMIDE Plus Eye Drop Opso Saline**
Combination product of tropicamide 0.8% (8mg/ml) and phenylephrine hydrochloride 5% (50mg/ml): eye drop
5ml drop: 75.00 MRP
❖ **TROPIDIL Plus Eye Drop Popular**
Combination product of tropicamide 0.8% (8mg/ml) and phenylephrine hydrochloride 5% (50mg/ml): eye drop
5ml drop: 80.00 MRP
❖ **TRUSIL-Plus Eye Drop Gaco**
Combination product of tropicamide 0.8% (8mg/ml) and phenylephrine hydrochloride 5% (50mg/ml): eye drop
5ml drop: 80.00 MRP

MYOTICS & GLAUCOMA DRUGS

BETAXOLOL[133]

BETAXOLOL: Eye Drop.
Betaxolol, a selective beta-adrenergic receptor blocking agent for topical administration into the eyes. It is available as betaxolol hydrochloride BP equivalent to betaxolol 2.5mg/ml (i.e 0.25% w/v) & betaxolol 5mg/ml (i.e 0.5% w/v) sterile ophthalmic solution or drop. Benzalkonium chloride is present 0.1mg/ml as preservative.
Mode of action: Betaxolol is a selective beta-adrenergic receptor blocking agent for topical administration into the eyes.
Ind: Betaxolol 0.5% eye drop is indicated in the treatment of ocular hypertension and chronic open-angle glaucoma. May be used alone or in combination with other intraocular pressure lowering medication.
C/I: Hypersensitivity to any component of this product. Betaxolol should not be used in patients with sinus bradycardia, atrioventricular block greater than first degree, cardiogenic shock, or patients with a history of overt cardiac failure.
S/E: Ocular: Discomfort of short duration, occasional tearing has been reported. Rare instances of decreased corneal sensitivity, erythema, itching sensation, corneal punctuate staining, keratitis, edema and photophobia have been reported. Systemic: Systemic reactions following administration of betaxolol hydrochloride ophthalmic solution 0.5% have been rarely reported. These include: Cardiovascular- bradycardia, heart block, congestive heart failure. Respiratory- bronchospasm, respiratory failure.
Precauitons: In patients with angle-closure glaucoma, the immediate treatment objective is to re-open the angle by constriction of the pupil with miotic agent. Betaxolol has no effect on the pupil; therefore, betaxolol 0.5% should be used with a miotic to reduce elevated intraocular pressure in angle-closure glaucoma. Beta-adrenergic blocking agents shoud be administered with caution in patients subjected to spontaneous hypoglycemia or to diabetic patients as these agents may mask the signs and symptoms of acute hypoglycemia.
Pregnancy & lactation: There are no adequate & well controlled studies in pregnant women. Betaxolol ophthalmic solution should be used during pregnancy only if the potential benefit justifies the potential risk. It is not known whether betaxolol is excreted in human milk. The risk of hypoglycemia & bradycardia in nursing infant has not been evaluated.
Dosage & admin: The usual dose is 1 drop of betaxolol 0.25% or 0.5% eye drops in the affected eye(s) twice daily.
Drug inter: Betaxolol is an adrenergic blocking agent; therefore, caution should be exercised in patients using concomitant adrenergic psychotropic drug. In patients with angle-closure glaucoma, betaxolol ophthalmic solution should be used with a miotic and not alone.

❖ **BETAXOL Eye Drop Aristopharma**
Betaxolol hydrochloride BP equivalent to betaxolol 2.5mg/ml (i.e 0.25% w/v) sterile ophthalmic solution: eye drop.
5ml drop: 150.00 MRP
❖ **BETOPTIC-S Eye Drop Alcon/Globex**
Betaxolol hydrochloride BP equivalent to betaxolol 2.5mg/ml (i.e 0.25% w/v) sterile ophthalmic solution: eye drop.
5ml drop: 279.12 TP
❖ **OPTALOC Eye Drop Popular**
Betaxolol hydrochloride BP equivalent to betaxolol 5mg/ml (i.e 0.5% w/v) sterile ophthalmic solution: eye drop.
5ml drop: 200.00 MRP

BRIMONIDINE[42]

BRIMONIDINE: Eye drop
Brimonidine tartrate is an alpha adrenergic receptor agonist. It is available as brimonidine tartrate 0.2% eye drop, each ml of which contains brimonidine tartrate 2mg equivalent to brimonidine INN 1.32mg.
Mode of action: Brimonidine tartrate has a peak ocular hypotensive effect occurring at two hours post-dosing. Fluorophotometric studies in animals and humans suggest that brimonidine tartrate has a dual mechanism of action by reducing aqueous humor production and increasing uveoscleral outflow.
Ind: Brimonidine eye drop is indicated for lowering intraocular pressure in patients with open-angle glaucoma or ocular hypertension.
C/I: Brimonidine eye drop is contraindicated in patients with hypersensitivity to brimonidine tartrate. It is also contraindicated in patients receiving monoamine oxidase (MAO) inhibitor therapy.
S/E: Adverse events occurring in approximately 10-30% of the subjects, in descending order of incidence, included oral dryness, ocular hyperemia, burning and stinging, headache, blurring, foreign body sensation, fatigue/drowsiness, conjunctival follicles, ocular allergic reactions, and ocular pruritus. Events occurring in approximately 3-9% of the subjects, in descending order included corneal staining/erosion, photophobia, eyelid erythema, ocular pain, ocular dryness, tearing, upper respiratory symptoms, eyelid edema, conjunctival edema, dizziness, blepharitis, ocular irritation, gastrointestinal symptoms, asthenia, conjunctival blanching, abnormal vision and muscular pain. The following adverse reactions were reported in less than 3% of the patients: lid crusting, conjunctival hemorrhage, abnormal taste, insomnia, conjunctival discharge, depression, hypertension, anxiety, palpitations/arrhythmias, nasal dryness and syncope.
Precautions: Although brimonidine tartrate ophthalmic solution (0.2%) had minimal effect on blood pressure of patients in clinical studies,

caution should be exercised in treating patients with severe cardiovascular disease. Brimonidine should be used with caution in patients with depression, cerebral or coronary insufficiency, Raynaud's phenomenon, orthostatic hypotension or thromboangitis obliterans.

Pregnancy & lactation: There are no adequate and well-controlled studies in pregnant women. In animal studies, brimonidine crossed the placenta and entered into the fetal circulation to a limited extent. Brimonidine tartrate ophthalmic solution should be used during pregnancy only if the potential benefit to the mother justifies the potential risk to the fetus. It is not known whether this drug is excreted in human milk; in animal studies brimonidine tartrate was excreted in breast milk. A decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.

Dosage & admin: The recommended dose is one drop of brimonidine tartrate ophthalmic solution (0.2%) in the affected eye(s) three times daily, approximately 8 hours apart. Brimonidine tartrate ophthalmic solution may be used concomitantly with other topical ophthalmic drug products to lower intraocular pressure. If more than one topical ophthalmic product is being used, the products should be administered at least 5 minutes apart.

Drug inter: Although specific drug interaction studies have not been conducted with brimonidine ophthalmic solution, the possibility of an additive or potentiating effect with CNS depressants (alcohol, barbiturates, opiates, sedatives, or anesthetics) should be considered. Alpha-agonists, as a class, may reduce pulse and blood pressure. Caution in using concomitant drugs such as beta-blockers (ophthalmic and systemic), antihypertensives and/or cardiac glycosides is advised. Tricyclic antidepressants have been reported to blunt the hypotensive effect of systemic clonidine. It is not known whether the concurrent use of these agents with brimonidine tartrate ophthalmic solution in humans can lead to resulting interference with the IOP lowering effect.

❖ **BRIMO Eye Drop Popular**
Brimonidine tartrate 0.2% solution, each ml of which contains brimonidine tartrate 2mg equivalent to brimonidine INN 1.32mg: eye drop
5ml drop: 50.00 MRP

❖ **BRIMONIDINE Eye Drop Alcon/Globex**
Brimonidine tartrate 0.2% solution, each ml of which contains brimonidine tartrate 2mg equivalent to brimonidine INN 1.32mg: eye drop
5ml drop: 335.00 TP

❖ **LOCULAR Eye Drop Square**
Brimonidine tartrate 0.2% solution, each ml of which contains brimonidine tartrate 2mg equivalent to brimonidine INN 1.32mg: eye drop
5ml drop: 80.00 MRP

PILOCARPINE[21.33]

PILOCARPINE: Eye Drop
Pilocarpine, available as 0.5%, 1%, 2%, 3% & 4% solutions.

Ind: Chronic non-congestive glaucoma and to reverse mydriasis.

C/I: Where pupilary constriction is undesirable; acute iritis

Adult & Child: 1 drop 4 to 6 times daily. For Miosis: 1 drop of 1% soln.

❖ **ASIPINE Eye Drop Asiatic**
Pilocarpine hydrochloride 2% eye drop.
2% x 10ml drop: 80.00 MRP

❖ **OPTACARPINE Eye Drop Popular**
Pilocarpine hydrochloride 2% eye drop.
2% x 10ml drop: 130.00 MRP

❖ **PILOCARPINE-OSL Eye Drop Opso Saline**
Pilocarpine hydrochloride 1%, 2% & 4% drop.
1% x 10ml drop: 47.50 MRP
2% x 10ml drop: 74.00 MRP
4% x10ml drop: 128.00 MRP

❖ **PILO DROP Eye Drop Reman**
Pilocarpine hydrochloride 1%, 2% & 4% eye drop.
1% x 10ml drop: 50.92 MRP
2% x 10ml drop: 80.56 MRP
4% x 10ml drop: 139.76 MRP

❖ **PILOMIN Eye Drop Nipa**
Pilocarpine hydrochloride 2% & 4% eye drop.
2% x 10ml drop: 130.00 MRP
4% x 10ml drop: 175.00 MRP

TIMOLOL[21.33.54]

TIMOLOL: Eye Drop
Timolol maleate 0.25% & 0.50% eye drop.

Ind: Ocular hypertension; chronic open angle glaucoma; including aphakia; secondary glaucoma.

C/I: Bronchial asthma, bronchospasm, history of brochial asthma or severe chronic obstructive pulmonary disease, uncontrolled congestive cardiac insufficiency, cardiogenic shock, severe atrio-ventricular block, Raynaud's phenomena, severe bradycardia (pulse rate < 45-50/min), hypersensitivity to any component of the formulation.

S/E: Timolol ophthalmic solution is generally well-tolerated. In clinical studies of timolol maleate, the adverse reactions reported were mainly:
Ocular- symptoms of ocular irritation, including conjuctivitis, blepharitis, keratitis and corneal hypoesthesia;
Cardiovascular- bradycardia, arrhythmia, hypotension, syncope, heart block, cerebrovascular accident, cerebral ischemia, congestive heart failure, palpitation, cardiac arrest;
Respiratory- bronchospasm (predominantly in patients with pre-existing bronchospastic disease), respiratory failure, dyspnea;
Systemic- headache, asthenia, nausea, dizziness, depression, fatigue;
Body as a whole- hypersensitivity reactions, including localized and generalized rash and urticaria.

Precautions: Bronchospastic disease; congestive cardiac failure. Withdraw drug gradually if systemic beta-blocker side effects e.g skin rash, dry eyes occur.

Pregnancy & lactation: Timolol has not been studied in human pregnancy or lactation. Therefore, administration during pregnancy or lactation in not recommended except for compelling reasons.

Dosage & appli: Adult: Initially one drop of 0.25% solution twice daily changing to 0.5% solution twice daily if requird.
Child: Not recommended.

Drug inter: Calcium channel blockers, catecholamine-depleting drugs and beta-blocking agents may lead to hypotension and/or severe bradycardia.

❖ **ARISTOMOL Eye Drop Aristopharma**
Timolol maleate 0.50% eye drop.
0.50% x 5ml: 70.00 MRP

❖ **ASINOL Eye Drop Asiatic**
Timolol maleate 0.5% eye drop.
0.50% x 5ml: 67.00 MRP

❖ **LOTENSIN Eye Drop ACI**
Timolol maleate 0.5% eye drop.
5ml drop: 67.00 IP

❖ **NYOLOL Eye Gel Novartis**
Timolol maleate as ophthalmic gel preparation: eye gel drop.
Dosage & admin: Apply one drop once daily.
5gm gel drop: 199.40 MRP

❖ **OCUPRES Eye Drop Popular**
Timolol maleate 0.50% eye drop.
0.50% x 5ml: 60.00 MRP

❖ **TEMLO Eye Drop Square**
Timolol maleate 0.50% eye drop.
0.50% x 5ml: 70.00 MRP

❖ **TIMODROP Eye Drop Reman**
Timolol maleat 0.25% & 0.50% Eye drop.
0.25% x 5ml: 46.86 MRP
0.5% x 5ml: 67.48 MRP

❖ **TIMOLAT Eye Drop Ibn Sina**
Timolol maleate 0.25% & 0.50% eye drop.
0.25% x 5ml: 45.00 MRP
0.50% x 5ml: 70.00 MRP

❖ **TIMOLOL OSL Eye Drop Opso Saline**
Timolol maleat 0.25% & 0.50% Eye drop.
0.25% x 5ml: 43.00 MRP
0.5% x 5ml: 62.75 MRP

❖ **TIMOMIN Eye Drop Nipa**
Timolol maleate 0.5% eye drop.
5ml drop: 63.72 MRP

❖ **TIMOPRESS Eye Drop Incepta**
Timolol maleat 0.25% & 0.50% Eye drop.
0.25% x 5ml: 55.00 MRP
0.50% x 5ml: 70.00 MRP

BRIMONIDINE + TIMOLOL[133]

BRIMONIDINE + TIMOLOL: Eye drop
In this combined ophthalmic preparation brimonidine is an alpha-adrenergic receptor agonist & timolol is a beta-adrenergic receptor inhibitor. This combined preparation is available as sterile eye drop, each ml of which contains-brimonidine tartrate INN 2mg and timolol maleate BP equivalent to timolol 5mg as active ingredients and benzalkonium chloride 0.1mg as preservative.

Ind: This combined ophthalmic preparation is indicated for the reduction of elevated intraocular pressure (IOP) in patients with glaucoma or ocular hypertension who are insufficiently responsive to topical beta-blockers.

C/I: Hypersensitivity to any component of this medication. Patients receiving monoamine

oxidase (MAO) inhibitor therapy. Bronchospasm, bronchial asthma or severe chronic obstructive pulmonary disease. Sinus bradycardia, second or third degree atrioventricular block, cardiac failure or cardiogenic shock.
S/E: Most commonly reported adverse reactions are conjunctival hyperaemia and burning sensation, pruritus, allergic conjunctivitis, conjunctival folliculosis, visual disturbance, blepharitis, epiphora, corneal erosion, superficial punctate keratitis, eye dryness, eye discharge, eye pain, eye irritation, foreign body sensation.
Precautions: Like other topically applied ophthalmic agents, these may be absorbed systemically. No enhancement of the systemic absorption of the individual active substances has been observed. Due to the beta-adrenergic component timolol, the same types of cardiovascular and pulmonary adverse reactions as seen with systemic beta-blockers may occur. Caution should be exercised in treating patients with severe or unstable and uncontrolled cardiovascular disease.
Pregnancy & lactation: There is no adequate data on the use of this preparation in pregnant women. Timolol is excreted in human milk and there is potential for serious adverse reactions from timolol in breast-fed infants. Therefore, a decision should be made whether to discontinue breast-feeding or to discontinue this eye drops, taking into account the importance of this eye drops to the mother.
Dosage & admin: The recommended dose is one drop to the affected eye(s) twice daily.
Drug inter: Specific drug interaction studies on this ophthalmic preparation have not been established.

❖ **BRIMOPRES Eye Drop Popular**
Each ml eye drop contains brimonidine tartrate INN 2mg and timolol maleate BP equivalent to timolol 5mg as active ingredients and benzalkonium chloride 0.1mg as preservative.
5ml drop: 110.00 MRP

LATANOPROST[21.60.102]

LATANOPROST: Eye drop
Latanoprost is a new and developed molecule for reduction of elevated intraocular pressure (IOP) and associated pain. It is a prostaglandin analogue, which increases uveoscleral outflow. It is available as an ophthalmic solution in a concentration of 0.005% w/v (i.e 50mcg or 0.05mg/ml): eye drop.
Ind: Reduction of elevated intraocular pressure (IOP) in patients with open-angle glaucoma (OAG) and ocular hypertension.
C/I: Known hypersensitivity to any component. Use of all contact lenses.
S/E: Iris pigmentation and a slight foreign body sensation. Also mild conjunctival and moderate hyperaemia; transient punctate epithelial erosions, mostly without symptoms. Rarely, a skin rash of unknown aetiology and macular oedema.
Precautions: Latanoprost may increase brown pigment within the iris leading to a gradual change in eye colour. This has predominantly been seen in patients with red coloured iris and may be permanent. Patients should be examined regularly and treatment to be discontinued if appropriate. Unilateral treatment can result in permanent heterochromia. Exercise caution in patients with severe or brittle asthma, inflammatory ocular conditions and other types of glaucoma, including OAG of pseudophakic patients.
Pregnancy & lactation: Don't use in pregnancy. In lactation don't use or stop breast feeding.
Dosage & admin: Adults including the elderly- 1 drop into the affected eye(s) once daily in the evening.
Children- Not recommended.
Drug inter: Definitive data are not available.

❖ **REMAPROST Eye Drop Reman**
Each 1ml contains latanoprost INN 50mcg (i.e 0.005% w/v) and benzalkonium chloride 0.20mg: eye drop.
2.5ml drop: 495.00 MRP

❖ **XALATAN Eye Drop Pharmacia-Pfizer/ Janata**
Each 1ml contains latanoprost 50mcg (i.e 0.005% w/v) and benzalkonium chloride 0.20mg: eye drop.
2.5ml drop: 1078.24 MRP

TRAVOPROST[21.60.102]

TRAVOPROST: Eye drop
Travoprost is a prostaglandin analogue, which increases uveoscleral outflow. It is available as an ophthalmic solution in a concentration of 0.004% w/v (i.e 40mcg or 0.04mg/ml): eye drop.
Ind: Reduction of elevated intraocular pressure (IOP) in patients with open-angle glaucoma (OAG) and ocular hypertension.
C/I: Known hypersensitivity to any component. Use of all contact lenses.
S/E: See under latanoprost; also headache, ocular pruritus, photophobia, & keratitis reported; rarely, hypotension, bradycardia. conjunctivitis, browache.
Cautions: See under latanoprost.
Dose: Apply 1 drop into the affected eye(s) once daily, preferably in the evening.
Child & adolescent under 18 years, not recommended.

❖ **AVATAN Eye Drop Aristopharma**
Travoprost 40mcg/ml (i.e 0.004% w/v) and benzalkonium chloride as excipient: eye drop.
3ml drop: 470.00 MRP

❖ **TRAVAST Eye Drop Incepta**
Travoprost 40mcg/ml (i.e 0.004% w/v) and benzalkonium chloride as excipient: eye drop.
3ml drop: 470.00 MRP

❖ **TRAVATAN Eye Drop Alcon/Globex**
Travoprost 40mcg/ml (i.e 0.004% w/v) and benzalkonium chloride as excipient: eye drop.
2.5ml drop: 946.00 TP

DRUGS IN DRY EYES

HYPROMELLOSE[21.33]

HYPROMELLOSE: Eye Drop
Hypromellose 0.3% eye drop.
Ind: Tear deficiency (dry eyes).
Use & appli: Adult & child, 2 drops 3 times daily.

❖ **ATIER Eye drop ACI**
Hypromellose 0.3% eye drop.
10ml drop: 65.00 IP

❖ **EYEFRESH Eye drop Opso Saline**
Hypromellose 0.3% eye drop.
10ml drop: 40.00 MRP

❖ **GLAMOR Eye drop Ibn Sina**
Hypromellose 0.3% in dextran 70: eye drop.
10ml drop: 80.00 IP

❖ **HYPRO Eye drop Nipa**
Hypromellose 0.3% in dextran 70: eye drop.
5ml drop: 60.00 MRP

❖ **LUBRIC Eye drop Incepta**
Hypromellose 0.3% eye drop.
10ml drop: 65.00 MRP

❖ **OCUTEAR Eye drop Asiatic**
Hypromellose 0.3% eye drop.
10ml drop: 60.00 MRP

❖ **TEARSOL Eye drop Reman**
Hypromellose 0.3% eye drop.
10ml drop: 70.00 MRP

❖ **TEAR Eye drop Gaco**
Hypromellose 0.5% eye drop.
10ml drop: 60.00 MRP

POLYETHYLENE GLYCOL + PROPYLENE GLYCOL[36]

POLYETHYLENE GLYCOL + PROPYLENE GLYCOL: Eye Drop
This combined preparation of polyethylene glycol & propylene glycol protects eyes from discomfort associated with dry eye so that the eyes feel moist and refreshed for a long period of time. This is available as eye drop, each ml of which contains polyethylene glycol 400 USP 4mg & propylene glycol USP 3mg.
Mode of action: The mechanism of action of polyethylene glycol & propylene glycol preparation is thought to be due to its unique gelling and lubricating system formulated to adjust to each user's individual tear pH. When the ingredients of this preparation combine with natural tears, a soft gel forms a network of protection over the eye surface. Since it promotes a healthy environment in eye surface, damaged surface cells of eye can repair more easily.
Ind: This combined eye drop is indicated for the temporary relief of burning and irritation due to dryness of the eye.
C/I: It is contraindicated in patients with known sensitivity to any ingredient of this preparation.
S/E: Generally well tolerated. This drop should not be used if allergic condition occurs to any ingredients of the product
Precautions: Never touch tip of container with any surface to avoid contamination & replace cap after each use.
Dosage & admin: Instill 1 drop 4 times daily in the affected eye(s) or as needed.

❖ **SYSTANE Eye drop Alcon/Globex**
Each ml of preparation contains- polyethylene glycol 400 USP 4mg & propylene glycol USP 3mg: eye drop.
5ml drop: 374.00 TP

❖ **SYSTEAR Eye drop Aristopharma**
Each ml of preparation contains- polyethylene glycol 400 USP 4mg & propylene glycol USP 3mg: eye drop.
10ml drop: 150.00 MRP

ELECTROLYTES + POVIDONE PREPNS.[36,54]

POVIDONE 5%: Eye Drop
Povidone, a synthetic polymer consisting essentially of linear 1-vinyl-2-pyrolidinone groups, is included in the artificial tears preparation & used effectively in the management of dry eyes.
Comp: Each 1ml of preparation contains- povidone (polyvidone) BP 50mg (5% w/v), boric acid 2.0mg, sodium chloride 5.4mg, sodium lactate 0.2mg, potassium chloride 1.5mg, calcium chloride 0.15mg, magnesium chloride 0.2mg, water for solution qs to1ml. Preservative- benzalkonium chloride 0.05mg.
Ind: Povidone eye drop preparation is used for the symptomatic treatment of dry eye conditions including keratoconjunctivitis sicca. It is also given as a substitute of tear fluid in case of unstable tear film or insufficient moistening of the eye surface.
C/I: In patients with known hypersensitivity to any ingredient of the product.
S/E: Occasionally mild, transient burning or sticky sensation and very rarely irritation or hypersensitivity reactions reported. Blurred vision after application may occur.
Precautions & warnings: Patients who experience blurred vision after application of the product should not drive or use machinery until their vision has cleared.
Contact lenses should not be worn during instillation of the drops. After instillation there should be an interval of at least 30 minutes before reinsertion of contact lenses.
Pregnancy & lactation: There is no experience regarding the safety of the povidone eye drops in human pregnancy or lactation. Administration during pregnancy and lactation is therefore not recommended, except for compelling reasons.
Dosage & admin: 1 drop 4 times daily or as required, depending upon the severity of the disease to be instilled into the conjunctival sac. Close the bottle immediately after use. Do not use for longer than one month after first opening.
Drug inter: In case of any additional local ocular treatment e.g glaucoma therapy there should be an application interval of at least 5 minutes between the two medications. Povidone always should be the last medication instilled.
Incompatibilities: High concentration of sodium sulphate in cold and of sodium chloride in warm conditions can result in precipitation of povidone. Depending on the ionic strength of the solution, methylparaben & propylparaben easily form complexes with povidone.

❖ **ARTEAR Eye drop Popular**
Each 1ml of preparation contains- povidone BP 50mg (5% w/v), including benzalkonium chloride 0.05mg & other preservatives
10ml drop: 80.00 MRP

❖ **HYPOTEARS Plus Eye drop Novartis**
Each 1ml of preparation contains- povidone BP 50mg (5% w/v), including benzalkonium chloride 0.05mg & other preservatives
10ml drop: 136.24 MRP

❖ **PROTEAR Eye drop Aristopharma**
Each 1ml of preparation contains- povidone BP 50mg (5% w/v), including benzalkonium chloride 0.05mg & other preservatives
10ml drop: 80.00 MRP

VITAMIN A PALMITATE + CARBOMER[54,103]

VITAMIN A PALMITATE + CARBOMER: Eye gel
This is a combined ophthalmic preparation of vitamin A palmitate 10mg/gm (1000 IU) & carbomer 980 (carbopol/polyacrylic acid) 3.5mg/gm: ophthalmic gel preparation.
Mode of actions: This combined ophthalmic gel preparation is a new generation artificial tears. In this preparation, gel is a viscous aqueous solution based on carbomer 980. After topical application, gel spreads rapidly over the conjunctiva and cornea forming a lubricating and protective film with a prolonged corneal ontact time. Tear film stability is maintained for up to 6 hours.
Ind: Substitute of tear fluid for management of dry eye conditions including keratoconjunctivitis sicca and for unstable tear film or insufficient moistening of the cornea.
C/I: Known hypersensitivity to any component of the gel.
S/E: Occasionally a transient burning sensation or sticky lids and/or blurred vision shortly after instillation. Very rarely hypersensitivity reactions.
Precautions & warnings: Contact lenses should be removed before instillation and reinserted no sooner than 30 minutes after application. Patients experiencing blurred vision after application of hypotears gel should not drive or use machinery until their vision has cleared.
Pregnancy & lactation: There are no controlled studies regarding the safety of this gel preparation in human pregnancy and lactation. Therefore, this is only indicated if the therapeutic benefit outweighs the potential risk to the fetus.
Dosage & admin: Adults and children: 3-4 times per day 1 drop or as required, depending on the severity of the case. Hold the tube vertically & apply 1 drop into the conjuctival sac.
Close the tube immediately after use. Do not use for longer than one month after opening.
Drug inter: None known to date. If additional ophthalmic medication is used there should be an application interval of at least 5 minutes between two medications. This combined gel preparation should always be the last medication instilled.

❖ **HYPOTEARS Eye gel Novartis**
This is a combined ophthalmic preparation of vitamin A palmitate 10mg/gm (1000 IU) & carbomer 980 (carbopol/polyacrylic acid) 3.5mg/gm: ophthalmic gel preparation.
10gm gel pack: 158.74 MRP

❖ **TEARGEL Ophthalmic Gel Reman**
This is a combined ophthalmic preparation of vitamin A palmitate 10mg/gm (1000 IU) & carbomer 980 (carbopol/polyacrylic acid) 3.5mg/gm: ophthalmic gel preparation.
5gm gel pack: 100.00 MRP

OTHER PREPNS.[36,102]

❖ **CYPORIN Eye drop Aristopharma**[36]
Cyclosporine USP 0.05% w/v: Eye drop
Cyclosporine is a topical immunomodulator with anti-inflammatory effects.
Mode of action: Cyclosporine is an immunosuppressive agent when administered systemically. In patients whose tear production is presumed to be suppressed due to ocular inflammation associated with keratoconjunctivitis sica, topical cyclosporine is thought to act as a partial immunomodulator.
Ind: Cyclosporine eye drop is indicated to increase tear production in patients whose tear production is presumed to be suppressed due to ocular inflammation associated with dry eye syndrome (keratoconjunctivitis sicca).
C/I: Cyclosporine eye drop is contraindicated in patients with active ocular infections and in patitnts with known or suspected hypersensitivity to any of the ingredients in the formulation.
S/E: The most common adverse effect was ocular burning. Other effects reported included conjunctival hyperemia, discharge, epiphora, eye pain, foreign body sensation, pruritus, stinging, and visual disturbances (most often blurring).
Precautions: Cyclosporine drop should not be administered while wearing contact lenses. Patients with decreased tear production typically should not wear contact lenses. If contact lenses are worn, they should be removed prior to the administration of this formulation. Lenses may be reinserted 15 minutes following administration of cyclosporine eye drop.
Pregnancy & lactation: There are no adequate and well-controlled studies of cyclosporine ophthalmic emulsion in pregnant women. It should be administered to pregnant women if clearly needed.
Cyclosporine is known to be excreted in human milk following systemic administration, but excretion in human milk after topical treatment has not been investigated. Although blood concentrations are undetectable after topical administration of cyclosporine, caution should be exercised when cyclosporine is administered to a nursing woman.
Dosage & admin: One drop to be instilled twice a day in each eye approximately 12 hours apart. Cyclosporine drop can be used concomitantly with artificial tears, allowing a 15-minute interval between products.
Paediatric use: The safety and efficacy of cyclosporine eye drop have not been established in paediatric patients below the age of 16. But clinical study shows that cyclosporine eye drop is safe for children above 1 year of age.
5ml drop: 200.00 MRP

❖ **TEARS NATURALE Eye Drop Alcon/Globex**[102]
Description & mode of action: Tears naturale is

a sterile, soothing solution for use as an artificial tear and lubricant in relief of symptoms due to dry eye syndromes. This ophthalmic solution contains 'Duasorb', a water soluble polymeric system which combines with the existing tears of the eye to promote corneal wetting. This also provides extended retention time in the eye even though it is not a highly viscous solution. It mimics the action of conjunctival mucus.

Ind: Indicated for use as an artificial tear and lubricant in relief of symptoms due to dry eye syndromes.

Caution: To avoid contamination, do not touch dropper tip to any surface. If irritation persists, discontinue use and consult physician.

Dosage & admin: Instill 1 or 2 drops as frequently as required to relieve eye irritation symptoms or as directed by the physician.

15ml drop: 115.00 TP

ANTIOXIDANT VITAMINS & MINERALS FOR EYE HEALTH[26,42,133]

ANTIOXIDANT VITAMINS + MINERALS

ANTIOXIDANT VITAMINS + MINERALS: Capsule

This is a special preparation of ocular antioxidant vitamins with lutein and minerals, available as capsule.

Comp: Each capsule contains: Vitamin C USP 60mg, Vitamin E USP 30mg, Lutein 6mg, Copper (as cupric oxide) 2mg & Zinc (as zinc oxide) 15mg.

Mode of action: Vitamin C is highly concentrated in the lens compared to blood. A long-term vitamin C supplementation (10 years +) has been associated with reduced risk of cataract It has important role in harmful free radicals scavenging activity.

High concentrations of serum vitamin E have been associated with reduced risk of cataract (exact mechanism of action is not still established). As an antioxidant vitamin, it also plays an important role in harmful free radicals scavenging activity.

Lutein is a carotenoid specially concentrated in macula. This carotenoid could protect the macula from oxidative or light damage. Although exact mechanism of action is not clear but it has found that high levels of dietary lutein is associated with relatively lower risk of AMD (age-related macular degeneration: a condition where fine visual acuity is lost).

Zinc is an essential trace element involved in many enzyme systems. Symptoins of less severe deficiency include distorted or absent perception of taste, smell and poor wound healing. Severe deficiency causes skin lesion, alopecia, diarrhoea, increased susceptibility to infection and failure to thrive in children.

Copper plays important role in growth, skeletal integrity, and development of nervous system. As a part of various enzymes, it takes part in numerous metabolic conversions.

Ind: This ocular antioxidant formulation is indicated for age-related eye diseases and also provides nutritional support for the eyes. Besides, this formulation also supplements essential antioxidant vitamins, minerals, and lutein in the human body mechanisms.

C/I: Known hypersensitivity to any of the ingredients.

S/E: Generally well tolerated. However, a few allergic reactions may be seen. Diarrhoea and other gastrointestinal disturbances may occur.

Precautions: Vitamin C should be given with care to patients with hyperoxaluria. In patients taking oral anticoagulants or oestrogens, vitamin E should be given carefully because it has been found to antagonize the effects of vitamin K leading to an increase in blood clotting time in these patients.

Pregnancy & lactation: Recommended.

Dosage & admin: One capsule daily; in more severe cases, 2 capsules a day may be given or as advised by the physician.

Drug inter: No such drug interactions have been reported.

❖ **AZECOL Cap. Incepta**

This is a special preparation of ocular antioxidant vitamins with lutein and minerals, available as capsule (soft gelatin).

Each capsule contains- vitamin C 60mg, vitamin E 30mg, lutein 6mg, copper 2mg and zinc 15mg.

28's pack: 224.00 MRP

❖ **EYEVI Cap. Square**

This is a special preparation of ocular antioxidant vitamins with lutein and minerals, available as capsule (soft gelatin).

Each capsule contains- vitamin C 60mg, vitamin E 30mg, lutein 6mg, copper 2mg and zinc 15mg.

30's pack: 240.00 MRP

❖ **I-GOLD Cap. Aristopharma**

This is a special preparation of ocular antioxidant vitamins with lutein and minerals, available as capsule (soft gelatin).

Each capsule contains- vitamin C 60mg, vitamin E 30mg, lutein 6mg, copper 2mg & zinc 15mg.

30's pack: 240.00 MRP

❖ **OCUVIT Cap. Asiatic**

This is a special preparation of ocular antioxidant vitamins with lutein and minerals, available as capsule (soft gelatin).

Each capsule contains- vitamin C 60mg, vitamin E 30mg, lutein 6mg, copper 2mg & zinc 15mg.

24's pack: 192.00 MRP

❖ **OPTAVIT Cap. Popular**

This is a special preparation of ocular antioxidant vitamins with lutein and minerals, available as capsule (soft gelatin).

Each capsule contains- vitamin C 60mg, vitamin E 30mg, lutein 6mg, copper 2mg & zinc 15mg.

28's pack: 224.00 MRP

❖ **TIOXIL Cap. ACI**

This is a special preparation of ocular antioxidant vitamins with lutein and minerals, available as capsule (soft gelatin).

Each capsule contains- vitamin C 60mg, vitamin E 30mg, lutein 6mg, copper 2mg and zinc 15mg.

30's pack: 240.00 MRP

❖ **VIVIS Cap. Beximco**

This is a special preparation of ocular antioxidant vitamins with lutein and minerals, available as capsule (soft gelatin).

Each capsule contains- vitamin C 60mg, vitamin E 30mg, lutein 6mg, copper 2mg and zinc 15mg.

20's pack: 160.00 IP

DRUGS FOR LENS OPACIFICATION

ANTIOXIDANTS + CO-ENZYMES[103,133]

ANTIOXIDANTS + CO-ENZYMES PREPNS: Eye Drop

This is a specialised combined ophthalmic preparation containing antioxidants & co-enzymes, viz: adenosine, cytochrome C, sodium succinate, and nicotinamide for topical administration to the eyes.

Comp: Each ml eye drop contains- adenosine BP 2mg, cytochrome C 0.5mg, sodium succinate 0.6mg and nicotinamide BP 10mg/20mg. Thiomersal 0.05mg/ml is added as preservative.

Mode of action: Biological energy is necessary to maintain the transparency & viability of the lens. Primarily it is regulated by energy-dependent mechanisms. ATP & pyridine nucleotides have a central role in energy-dependent metabolic reactions of the lens. But, during the aging process of any individual, synthesis of ATP, nucleic acids, & NADPH/NAD+ are decreased, resulting in reduced energy-generating metabolism of the lens. Medical treatment with the above product seems well able to provide back up to the aging lens & improve lens functional energy producing state.

Adenosine, itself a precursor of ATP. Cytochrome C, an ideal antioxidant & involved in oxidative phosphorylation for producing ATP from ADP. Sodium succinate promotes production of ATP. Nicotinamide involved in the process of creating ATP. Thus, all these play role in backing up the aging lens & improving lens functional energy producing state.

Ind: This eye drop is used for the treatment of lens opacification.

C/I: Patients with known hypersensitivity to any ingredient of the product.

S/E: Like any active ingredient, this drug may cause more or less discomfort in some patients. If you feel any discomfort, inform your consultant.

Precautions: In case of concomitant treatment with another ophthalmic solution, wait 15 minutes between each instillation.

Pregnancy & lactation: As a general rule, it is recommended to ask the consultant for advice before using this medicine for a pregnant or nursing mother.

Dosage & admin: 1 drop twice daily.

Drug inter: In order to avoid any interaction between different medical products, should inform the consultant of any other ongoing treatment in particular with other eye drops.

❖ **CATRIX Eye Drop Incepta**

Mediphakol is a sterile combined ophthalmic solution containing antioxidants & co-enzymes.

Comp: Each ml drop contains- adenosine BP 2mg, cytochrome C 0.5mg, sodium succinate 0.6mg and nicotinamide BP 20mg.

5ml drop: 120.00 MRP

❖ **MEDIPHAKOL Eye Drop Reman**
Mediphakol is a sterile combined ophthalmic solution containing antioxidants & co-enzymes.
Comp: Each ml drop contains- adenosine BP 2mg, cytochrome C 0.5mg, sodium succinate 0.6mg and nicotinamide BP 20mg.
5ml drop: 120.00 MRP

❖ **PHACOVIT Eye Drop Aristopharma**
Mediphakol is a sterile combined ophthalmic solution containing antioxidants & co-enzymes.
Comp: Each ml drop contains- adenosine BP 2mg, cytochrome C 0.5mg, sodium succinate 0.6mg and nicotinamide BP 20mg.
5ml drop: 120.00 MRP

❖ **VITAFOL Eye Drop Popular**
Vitafol is a sterile combined ophthalmic solution containing antioxidants & co-enzymes.
Comp: Each ml drop contains- adenosine BP 2mg, cytochrome C 0.5mg, sodium succinate 0.6mg and nicotinamide BP 10mg. Thiomersal 0.05mg/ml is added as preservative.
5ml drop: 120.00 MRP

TREATMENT FOR AGE-RELETED MACULAR DEGENERATION (AMD)

RANIBIZUMAB[54]

❖ **LUCENTIS Inj. Novartis**
Each vial contains 3.0mg of ranibizumab in 0.3ml solution: injection.
Ind: Treatment of neovascular (wet) age-related macular degeneration (AMD).
Dosage & admin: The recommended dose is 0.5mg (0.05ml). Treatment initiated with a loading phase of one injection per month for 3 consecutive months followed by a maintenance phase in which patients should be monitored for visual acuity on a monthly basis. The interval between two doses should not be shorter than 1 month. Lucentis must be administered by a qualified ophthalmologist using aseptic techniques. Broad-spectrum topical microbicide and anaesthetic should be administered prior to the injection. The patient should be instructed to self-administer antimicrobial drops four times daily for 3 days before and after each injection. Not recommended in children and adolescents.
C/I: Hypersensitivity to ranibizumab or to any of the excipients, patients with active or suspected ocular or periocular infections, patients with active intraocular inflammation.
Precautions & warnings: Intravitreous injections have been associated with endophthalmitis, intraocular inflammation, rhegmatogenous retinal detachment, retinal tear and iatrogenic traumatic cataract. Therefore, proper aseptic injection techniques must be used. Patients should be monitored during the week following the injection to permit early treatment if an infection occurs. Intraocular pressure and the perfusion of the optic nerve head must be monitored and managed appropriately. As with all therapeutic proteins, there is a potential for immunogenicity with Lucentis. Following treatment patients may develop transient visual disturbances that may interfere with their ability to drive or use machines. Patients should not drive or use machines as long as these symptoms persist.
Pregnancy & lactation: Should not be used during pregnancy unless clearly necessary; use of effective contraception recommended for women of childbearing potential; breast-feeding not recommended.
Drug inter: No formal interaction studies have been performed.
A/R: Very common adverse reactions are- conjunctival haemorrhage, eye pain, vitreous floaters, retinal haemorrhage, intraocular pressure increased, vitreous detachment, intraocular inflammation, eye irritation, cataract, foreign body sensation in eyes, visual disturbance, blepharitis, subretinal fibrosis, ocular hyperaemia, visual acuity blurred/decreased, dry eye, vitritis. Common adverse reactions are- ocular discomfort, conjunctival hyperaemia, posterior capsule opacification, retinal exudates, injection site reactions, lacrimation increased, eye pruritis, conjunctivitis, maculopathy, detachment of the retinal pigment epithelium; headache. Uncommon adverse reactions are- retinal degeneration, iritis, iridocyclitis, punctate keratitis, keratopathy, dellen, corneal striae, retinal disorder, vitreous disorder, photophobia, cataract nuclear, anterior chamber flare, corneal abrasion, angle closure glaucoma, vitreous haemorrhage, uveitis, endophthalmitis, retinal detachment, retinal tear, eye haemorrhage, eyelid oedema, eyelid irritation, blindness, corneal oedema, hypopyon. Rare but serious adverse reactions related to intravitreal injections included endophthalmitis, rhegmatogenous retinal detachment, retinal tear and iatrogenic traumatic cataract.
Note: Before prescribing, please read full prescribing information.
0.3ml (3.0mg) vial x 1's pack: 90033.65 MRP

VERTEPORFIN[54]

❖ **VISUDYNE Inj. Novartis**
Verteporfin 15mg/vial: i.v injection.
Verteporfin (visudyne) injection is supplied in a single-use glass vial with a gray bromobutyl stopper and aluminium flip-off cap. It contains a lyophilized dark green cake with 15mg verteporfin. The product is intended for i.v injection only. Verteporfin is a 1:1 mixture of two regioisomers. the molecular formula is $C_{41}H_{42}N_4O_8$.
Mode of action: Verteporfin is a light-activated drug used in photodynamic therapy. This verteporfin photodynamic therapy is a two-stage process requiring- administration of verteporfin for injection & administration of nonthermal red light. Verteporfin is transported in the plasma primarily by lipoproteins. Once verteporfin is activated by light in the presence of oxygen, highly reactive, short-lived singlet oxygen & reactive oxygen radicals are generated. Light activation of verteporfin results in local damage to neovascular endothelium, resulting in vessel occlusion. Damaged endothelium is known to release procoagulant & vasoactive factors through the lipo-oxygenase (leukotriene) & cyclo-oxygenase (eicosanoids such as thromboxane) pathways, resulting in platelet aggregation, fibrin clot formation and vasoconstriction. Verteporfin appears to somewhat preferentially accumulate in neovasculature, including choroidal neovasculature. However, animal models indicate that the drug is also present in the retina. Therefore, there may be collateral damage to retinal structures following photoactivation including the retinal pigmented epithelium and outer nuclear layer of the retina. The temporary occlusion of choroidal neovascularization (CNV) following verteporfin therapy has been confirmed in humans by fluorescein angiography.
Ind: Verteporfin therapy is indicated for the treatment of patients with predominantly classic subfoveal choroidal neovascularization due to age related macular degeneration (AMD), pathologic myopia, or presumed ocular histoplasmosis.
There is insufficient evidence to indicate verteporfin for the treatment of predominantly occult subfoveal choroidal neovascularization.
C/I: Verteporfin injection is contraindicated for patients with porphyria or a known hypersensitivity to any component of this preparation.
A/R: Severe chest pain, vasovagal & hypersensitivity reactions have been reported. Vasovagal & hypersensitivity reactions on rare occasions can be severe. These may include syncope, sweating, dizziness, rash, dyspnea, flushing & changes in blood pressure & heart rate. General symptoms can include headache, malaise, urticaria & pruritus.
The most frequently reported adverse events to verteporfin are injection site reactions (including pain, edema, inflammation, extravasation, rashes, hemorrhage & discoloration) & visual disturbances (including blurred vision, flashes of light, decreased visual acuity & visual field defects, including scotoma). These events occurred in approximately 10%-30% of patients. For more information, see manufacturer's package insert.
Precautions & warnings: *General:* Following injection with verteporfin (visudyne), care should be taken to avoid exposure of skin or eyes to direct sunlight or bright indoor light for 5 days. If emergency surgery is necessary within 48 hours after treatment, as much of the internal tissue as possible should be protected from intense light. Standard precautions should be taken durng infusion of verteporfin injection to avoid extravasation. Examples of standard precautions include, (but are not limited to):
1. A free-flowing I.V line should be established before starting verteporfin infusion & the line should be carefully monitored. 2. Due to the possible fragility of vein walls of some elderly patients, it is strongly recommended that the largest arm vein possible, preferably antecubital, be used for injection. 3. Small veins in the back of the hand should be avoided.
Extravasation of verteporfin, specially if the affected area is exposed to light, can cause severe pain, inflammation, swelling or discoloration at the injection site.
If extravasation occurs, the infusion should be stopped immediately. The extravasation area

must be thoroughly protected from direct light until swelling and discoloration have faded in order to prevent the occurrence of a local burn, which could be severe. Cold compresses should be applied to the injection site. Oral medications for pain relief may be administered.
Verteporfin therapy should be considered carefully in patients with moderate to severe hepatic impairment or biliary obstruction since there is no clinical experience with verteporfin in such patients.
Patients who experience severe decrease of vision of =4 lines within 1 week after treatment shoulld not be retreated, at least until their vision completely recovers to pretreatment levels & the potential benefits and risks of subsequent treatment are carefully considered by the treating physician.
Use of incompatible lasers that do not provide the required characteristics of light for the photoactiva tion of verteporfin could result in incomplete treatment due to partial photoactivation of verteporfin, overtreatment due to overactivation of verteporfin, or damage to surrounding normal tissue.

Pregnancy & lactation: There are no adequate & well-controlled studies in pregnant woman. So, verteporfin should be used during pregnancy only if the benefit justifies the potential risk to the fetus.
Because of the potential for serious adverse reactions in nursing infants from verteporfin, a decision should be made whether to discontinue nursing or postpone treatment, taking into account the importance of the drug to the mother.

Dosage & admin: A course of 'verteporfin for injection' therapy consists of two-step process requiring administration of both drug & light. The first step is the i.v infusion of verteporfin. The second step is the activation of verteporfin with light from a nonthermal diode laser.
The physician should reevaluate the patients every 3 months & if choroidal neovascular leakage is detected on fluorescein angiography, therapy should be repeated.
Lesion size determination: **The greatest linear dimension (GLD) of the lesion is estimated by fluorescein angiography and color fundus photography. All classic & occult CNV, blood and/or blocked fluorescence, & any serous detachments of the retinal pigment epithelium should be included for this measurement. Fundus cameras with magnification within the ange of 2.4-2.6 x are recommended. The GLD of the lesion on the fluorescein angiogram must be corrected for the magnification of the fundus camera to obtain the GLD of the lesion on the retina.**
Spot size determination: **The size of the spot to be treated should be 1000 microns larger than the GLD of the lesion on the retina to allow a 500 micron border, ensuring full coverage of the lesion. The maximum spot size used in the clinical trials was 6400 microns.**
The nasal edge of the treatment spot must be positioned at least 200 microns from the temporal edge of the optic disc, even if this will result in lack of photoactivation of CNV within 200 microns of the optic nerve.
Verteporfin administration: **Reconstitute each vial of verteporfin with 7ml of sterile water for injection to provide 7.5ml, containing 2mg/ml. Reconstituted verteporfin must be protected from light & used within 4 hours. It is recommended that reconstituted verteporfin be inspected visually for particulate matter & discoloration prior to administration. Reconstituted verteporfin is an opaque dark green solution. Verteporfin may precipitate in saline solutions. Do not use normal saline or other parenteral solutions. Do not mix verteporfin in the same solution with other drugs.**
The volume of reconstituted verteporfin required to achieve the desired dose of 6mg/m² body surface area is withdrawn from the vial and diluted with 5% dextrose for injection to a total infusion volume of 30ml. After dilution, protect from light & use within a maximum of 4 hours. The full infusion volume is administered i.v over 10 minutes at a rate of 3ml (45 drops)/minute, using an appropriate syringe pump & in-line filter. The clinical studies were conducted using a standard infusion line filter of 1.2 microns.
Precautions should be taken to prevent extravasation at the injection site. If extravasation occurs, protect the site from light.
Light administration: **Initiate 689nm wavelength laser light delivery to the patient 15 minutes after the start of the 10-minute infusion with verteporfin.**
Photoactivation of verteporfin is controlled by the total light dose delivered. In the treatment of choroidal neovascularization, the recommended light dose is 50 J/cm² of neovascular lesion administered at an intensity of 600mW/cm². This dose is administered over 83 seconds. Light dose, light intensity, ophthalmic lens magnification factor & zoom lens setting are important parameters for the appropriate delivery of light to the predetermined treatment spot. Follow the laser system manuals for procedure setup & operation.
Drug inter: See manufacturer's package insert.
Note: For further information, please consult manufacturer's literature.
15mg (in single-use glass) vial: 1,21,780.49 MRP

OCULAR PERI-OPERATIVE DRUGS

HYDROXYPROPYL METHYLCELLULOSE[133]

HYDROXYPROPYL METHYLCELLULOSE: Gel Preparation
Hydroxypropyl methylcellulose is an isotonic, non-inflammatory viscoelastic solution. It is available as a highly purified, clear and sterile ophthalmic gel, each ml of which contains hydroxypropyl methylcellulose USP 20mg.
Mode of action: Hydroxypropyl methylcellulose maintains a deep anterior chamber during anterior segment surgery and thereby allows for more efficient manipulation with less trauma to the corneal endothelium and other ocular tissues. The viscoelasticity of hydroxypropyl methylcellulose helps the vitreous face to be pushed back, thus preventing formation of a postoperative flat chamber.
Ind: Hydroxypropyl methylcellulose is indicated for use as an ophthalmic surgical aid during surgical procedures involving the anterior chamber of the eye, including extraction of cataract and insertion of intraocular lenses.
C/I: Patients hypersensitive to any component of this product.
S/E: Hydroxypropyl methylcellulose is extremely well tolerated after injection into the human eye. A transient rise in intraocular pressure post-operatively may occur. Rarely, post-operative inflammatory reactions (iritis, hypopyon) as well as incidece of corneal edema and corneal decompensation may occur.
Precautions: Precautions are limited to those normally associated with the ophthalmic surgical procedure being performed. There may be transient increased intraocular pressure following surgery because of pre-existing glaucoma or due to the surgery itself. For these reasons, the following precautions should be considered:
- Hydroxypropyl methylcellulose should be removed from the anterior chamber at the end of surgery.
- If the post-operative intraocular pressure increases above expected values, appropriate therapy should be administered.

Dosage & admin: Cataract surgery and IOL implantation.
For cataract surgery and intraocular lens implantation, hydroxypropyl methylcellulose ophthalmic solution should be carefully injected into the anterior chamber prior to capsulotomy using standard aseptic techniques. Hydroxypropyl methylcellulose may be injected into the chamber prior to or following removal of the crystalline lens. Instillation of hydroxypropyl methylcellulose prior to lens removal will provide protection to the corneal endothelium from possible damage due to surgical instrumentation during cataract surgery.
Hydroxypropyl methylcellulose may also be used to coat an intraocular lens prior to implantation as well as the tips of surgical instruments. Additional hydroxypropyl methylcellulose may be injected during anterior segment surgery to fully maintain the chamber or replace any volume lost during the surgical procedure. At the end of the surgical procedure it is recommended that hydroxypropyl methylcellulose be removed from the eye as completely as possible by irrigation and/or aspiration.
Storage: Store in a cool and dry place. Protect from light and freezing.

❖ **OCUGEL Eye Soln. Aristopharma**
Each ml of ocugel ophthalmic solution contains hydroxypropyl methylcellulose USP 20mg (i.e 2%): eye drop.
3ml eye drop: 120.00 MRP

❖ **OPTAGEL Oph. Soln. Popular**
Each ml of optagel ophthalmic solution contains hydroxypropyl methylcellulose USP 20mg (i.e 2%): eye drop.
3ml in syringe: 120.00 MRP
5ml in glass vial: 120.00 MRP

SALINE IRRIGATION SOLUTION[33]

❖ **NORSOL Eye Lotion Opso Saline**[21,101]
Sodium chloride 0.9% solution (normal saline)
Ind: Irrigation, including first-aid removal of harmful substances; intra-ocular or topical irrigation during surgical proce-dures.
Use: As required.
25ml ampoule: 12.50 MRP

❖ **OPSO-RINSE Irrigating Soln. Opso Saline**[101]
Opso-rinse is a sterile, balanced salt solution for peri-operative ophthalmic irrigation.
Comp: Each 100ml of solution contains sodium chloride BP 0.490gm, potassium chloride BP 0.075gm, calcium chloride BP 0.048gm, magnesium chloride BP 0.030gm, sodium acetate BP 0.390gm, and sodium citrate BP 0.170gm.
Ind: Peri-operative ophthalmic irrigation; first-aid removal of harmful substances from the eye.
C/I: Damage of tissue could result if other drugs are added to the product.
Precautions & warning: Even invisible damage to the bottle caused during storage or transit may result contamination. Do not use if leak found on squeezing, or contents not clear.
Not for intravenous use.
Dosage: As directed by the surgeon or physician.
Note: For further information, please consult manufacturer's literature.
100ml bot: 35.00 MRP

DIAGNOSTICS & PREPNS. FOR OPHTHALMIC EXAM[21,33]

❖ **FLUROCINE Eye Drop Reman**
Fluorescein sodium 2% eye drop
Ind: Diagnostic stain for ophthalmic procedure; detection of corneal lesions & foreign bodies.
Adult & child: 1 or more drops as required.
4ml drop: 33.50 MRP
10ml drop: 78.89 MRP

❖ **NOVOCAINE Eye Drop Opsosaline**
Oxybuprocaline hydrochloride 0.4% eye drop.
Ind: Surface anaesthesia of cornea & conjunctiva for ophthalmic procedures.
C/I: Proven sensitivity to the active ingredient oxybuprocaine.
S/E: Occasionally transient hyperaemia observed.
Adult & child: 1 or more drops as required.
10ml drop: 42.00 MRP

❖ **OXYCAINE Eye Drop Reman**
Oxybuprocaine hydrochloride 0.4% eye drop.
Ind: Surface anaesthesia of cornea & conjunctiva for ophthalmic procedures.
C/I: Proven sensitivity to the active ingredient oxybuprocaine.
S/E: Occasionally transient hyperaemia observed.
Adult & child: 1 or more drops as required
10ml drop: 42.54 MRP

Chapter-21
DRUGS ACTING ON EAR, NOSE & OROPHARYNX

DRUGS ACTING ON EAR, NOSE & OROPHARYNX

Drugs discussed in this chapter include:

1. **Aural Preparations**
   - **a) Anti-infective preparations**
   - **b) Steroid & steroid/antibotic combined preparations.**
2. **Nasal Preparations**
   - **a) Antihistamine preparations**
   - **b) Anti-cholinergic preparations**
   - **c) Mast cell stabilizer**
   - **d) Conbind nasal preparations**
   - **e) Nasal steroid preparations**

AURAL PREPARATIONS

Anti-bacterial preparations

Owing to the potential risk of ototoxicity, antibiotic containing preparations should be used with caution in the presence of perforation of the tympanic membrane.

CHLORAMPHENICOL[21,33]

CHLORAMPHENICOL: Ear drop.
Ind: Otitis externa; chronic otorrhoea, suppurative otitis media; infection of fenestration and mastoid operation cavities.
S/E: High incidence of sensitivity reactions; ototoxicity.
Precaution: Perforated ear drum; avoid prolonged use.
Adult& child: 2 to 4 drops 2 or 3 times daily.

❖ **CHLORAMEX E/E Drop Renata**
Chloramphenicol 0.5% eye/ear drop.
10ml bot: 25.29 MRP

❖ **CHLORPHEN Ear Drop Nipa**
Chloramphenicol 5% with lidocaine1%: ear drop.
10ml drop: 20.23 MRP

❖ **ICOL E/E Drop ACI**
Chloramphenicol 0.5% eye/ear drop.
10ml bot: 25.51 MRP

❖ **OPSOPHENICOL Ear Drop Opsosaline**
Chloramphenicol 5% ear drop.
10ml bot: 25.00 MRP

❖ **OTOPHENICOL Ear Drop Reman**
Chloramphenicol 5% & 10% ear drop.
5% x 5ml drop: 12.00 MRP
5% x 10ml drop: 20.23 MRP
10% x 10ml drop: 19.21 MRP

❖ **OTO-Plus Ear Drop Edruc**
Chloramphenicol 5% with lidocaine1%: ear drop.
Ind: Ear infection with earache.
10ml drop: 20.00 MRP

❖ **SQ-MYCETIN Ear Drop Square**
Chloramphenicol 0.5% eye/ear drop.
10ml bot: 25.81 MRP

❖ **SUPRAPHEN Ear Drop Gaco**
Chloramphenicol 5% & 10% ear drop.
5% x 10ml bot: 16.05 MRP
10% x 10ml bot: 17.19 MRP

❖ **SUPRAPHEN Plus Ear Drop Gaco**
Chloramphenicol 5% with lidocaine1%: ear drop.
Ind: Ear infection with earache.
10ml drop: 18.71 MRP

CIPROFLOXACIN[21,101]

CIPROFLOXACIN: Ear Drop
Ciprofloxacin hydrochloride monohydrate USP equivalent to ciprofloxacin base 0.3% w/v.
Ind: Otitis externa, acute otitis media, chronic suppurative otitis media, and prophylaxis during otic surgeries such as mastoid surgery.
C/I: Known hypersensitivity to ciprofloxacin.
Precaution: Prolonged use may result in overgrowth of nonsusceptible organisms including fungi. The drug should be discontinued if the sign of hypersensitivity reaction.
Dose & Admin: Initially 2 to 3 drops every 2 to 3 hours; reducing the frequency of instillation gradually as infection is controlled.

❖ **CIFLOX Ear Drop Reman**
Ciprofloxacin 0.3% ear drop.
5ml drop: 24.50 MRP
10ml drop: 40.00 MRP

❖ **CIPROX Ear Drop Opsosaline**
Ciprofloxacin 0.3% ear drop.
10ml drop: 30.00 MRP

❖ **SPECTRA Ear Drop Jayson**
Ciprofloxacin 0.3% ear drop.
5ml drop: 15.00 IP

GENTAMICIN[21,33]

GENTAMICIN: Ear Drop
Ind: Bacterial infection in otitis externa
S/E: Local sensitivity, ototoxicity.
Caution: Perforated ear drum; avoid prolonged use.
Adult & Child: 2-4 drops 3 or 4 times daily and at night.

❖ **GENACYN E/E Drop Square**
Gentamicin sulphate 0.3% (or 3000 i.u/ml): ear/eye drop.
10ml bot: 31.91 MRP

❖ **GENTA Ear/Eye Drop Renata**
Gentamicin sulphate 0.3% (or 3000 i.u/ml): ear/eye drop
10ml bot: 31.93 MRP

❖ **GENTABAC Ear Drop Popular**
Gentamicin sulphate 0.3% (or 3000 i.u/ml): ear drop

10ml bot: 31.91 MRP

❖ **GENTIN E/E Drop Opsosaline**
Gentamicin sulphate 0.3% (or 3000 i.u/ml): ear/eye drop
10ml bot: 31.25 MRP

❖ **GENTO E/E Drop Gaco**
Gentamicin sulphate 0.3% (or 3000 i.u/ml): ear/eye drop
10ml bot: 31.50 MRP

❖ **G-GENTAMICIN E/E Drop Gonoshasthaya**
Gentamicin sulph. 0.3% eye/ear drop.
10ml bot: 25.00 MRP

❖ **GISIN E/E Drop Nipa**
Gentamicin sulphate 0.3% (or 3000 i.u/ml): eye/ear drop
10ml bot: 30.36 MRP

❖ **RECIN E/E Drop Reman**
Gentamicin sulphate 0.3% (or 3000 i.u/ml): ear/eye drop
10ml bot: 31.91 MRP

LOMEFLOXACIN

LOMEFLOXACIN: Ear/Eye Drop
Lomefloxacin is a synthetic quinolone broad-spectrum antimicrobial agent; available as ear and eye drop.
Ind: Otitis externa, acute otitis media, chronic suppurative otitis media, and prophylaxis during otic surgeries such as mastoid surgery.
C/I; S/E; Cautions: See under the text of lomefloxacin in the eye chapter.
Dose & Admin: Initially 2 to 3 drops every 2 to 3 hours; reducing the frequency of instillation gradually as infection is controlled.

❖ **LOMECIN Ear/Eye Drop Reman**
Lomefloxacin hydrochloride 0.3% w/v: eye drop
5ml drop: 60.00 MRP

❖ **LUMEX Ear/Eye Drop Gaco**
Lomefloxacin hydrochloride INN 0.3% or 3mg/ml: eye drop
5ml drop: 50.00 IP

❖ **LYFLOX Ear/Eye Drop Ibn Sina**
Lomefloxacin hydrochloride INN 0.3% or 3mg/ml: eye drop
5ml drop: 60.00 MRP

OFLOXACIN[36]

❖ **VISTA Ear/Eye Drop Aristopharma**
Ofloxacin USP 0.3%: ear/eye drop
Mode of action: Ofloxacin is a bacterial DNA gyrase inhibitor, the enzyme responsible for duplication, transcription and repair of bacterial DNA.
Ind: It is indicated for the treatment of external ear infections (otitis externa) and certain middle ear infections (otitis media)
C/I: Known hypersensitivity to ofloxacin or any other component of this preparation.
S/E: Mild irritation or mild discomfort in the ear may occur. Symptoms of an allergic reaction include rash, itching, swelling or trouble breathing.
Precautions: Prolonged use of ear drops may result in overgrowth of non-susceptible organisms and secondary infection respectively.
Pregnancy & lactation: There are no adequate and well-controlled studies in pregnant women. This drug should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.
It is not known whether ofloxacin is excreted in human milk. Cautions should be taken when ofloxacin eye & ear drop is administered during lactation.
Dosage & admin: ***Otitis externa:*** **Instill 5 drops in the affected ear(s) twice daily for 10 days.** ***Chronic suppurative otitis media:*** **Instill 10 drops in the affected ear(s) twice daily for 14 days.**
5ml drop: 85.00 MRP

OXYTETRACYCLINE[62]

OXYTETRACYCLINE: Drop/ Ointment.
Ind: Bacterial infection in otitis externa .
S/E: Local sensitivity.
Caution: Perforated ear drums, avoid prolonged use.
Use & Admin:
Ointment- pour a small amount of ointment in the external auditory meatus 2 to 4 times daily.
Drop- first reconstituted solution, then 3-5 drops are instilled to the infected ear at an interval of 2 to 3 hours; after each instillation maintain the ear turned upward for few minutes to provide max. contact of the drug with the affected area.

❖ **RENAMYCIN E/E Oint. Renata**
Oxytetracycline hydrochlor. 5mg and Polymyxin- B sulph. 1mg (10,000 units)/gm of ear/eye ointment.
3.5gm tube: 17.42 MRP

❖ **RENAMYCIN Otic Soln. Renata**
Oxytetracycline 25mg, Polymyxin-B sulph. 50,000 units and Benzocaine 250mg/5ml drop.
Ind: Bacterial infection in otitis externa (with severe pain).
5ml vial: 24.18 MRP

Antifungal preparations

CLOTRIMAZOLE[21,33]

❖ **KANIS Ear Drop Gaco**
Clotrimazole 10mg/1ml: ear drop.
Ind: Fungal infections of the ear due to candida species and aspergillus fumigatus.
C/I: History of hypersensitivity to clotrimazole.
S/E: Local reactions immediately after applying the ear drops.
Dose & Admin: 1 to 2 drops to be instilled every 5-6 hours in the ear canal or as advised by the physician.
10ml drop: 60.00 MRP

Steroid & Steroid/Antibiotic combined prepns.[21,33]

BETAMETHASONE

BETAMETHASONE: Ear drop
Betamethasone sodium phosphate 0.1% w/v & benzalkonium chloride 0.02 %w/v: ear drop.
Ind: Non-infected inflammtory ear conditions (e.g eczematous inflammation in otitis externa).
C/I: Untreated infection.
Caution: Avoid prolonged use.
Dosage & admin: Adult & Child: 2 to 3 drops 2 or 3 hourly; reduce frequency of application when relief is obtained.

❖ **BETRICIN Ear Drop Nipa**
Betamethasone sodium phosphate 0.1%: ear drop.
5ml drop: 29.33 MRP

❖ **CELUDEX E/E Drop Drug Inter.**
Betamethasone sodium phosphate 0.1%: ear drop.
10ml drop: 55.00 MRP

❖ **EYEBET Ear Drop Incepta**
Betamethasone sodium phosphate 0.1%: ear drop.
5ml drop: 30.00 MRP

❖ **METHASOL Ear/Eye Drop Gaco**
Betamethasone sodium phosphate 0.1%: ear drop.
5ml drop: 31.80 MRP

BETAMETHASONE + NEOMYCIN

BETAMETHASONE + NEOMYCIN: Ear drop
Betamethasone sodium phosphate 0.1% & neomycin sulphate 0.5%: ear/eye drop.
Ind: Otitis externa and other infective and inflammatory ear conditions.
C/I: Perforated ear drum.
Caution: Pregnancy.
Dosage & admin: Adult & Child: 2 to 3 drops 2 or 3 bourly.

❖ **ARISTOBET-N Ear Drop Aristopharma**
Betamethasone sodium phosphate 0.1% & neomycin sulphate 0.5%: Ear drop.
5ml vial: 32.20 MRP

❖ **BETACIN-N Ear Drop Ibn Sina**
Betamethasone sodium phosphate 0.1% & neomycin sulphate 0.5%: Ear drop.
5ml vial: 30.34 MRP

❖ **BETASON-N Ear Drop Reman**
Betamethasone sodium phosphate 0.1% & neomycin sulphate 0.5%: Ear drop.
5ml vial: 32.20 MRP

❖ **BETRICIN-N Ear Drop Nipa**
Betamethasone sodium phosphate 0.1% & neomycin sulphate 0.5%: Ear drop
5ml drop: 30.36 MRP

❖ **BN Ear Drop Asiatic**
Betamethasone sodium phosphate 0.1% & neomycin sulphate 0.5%: Ear drop
5ml drop: 28.45 MRP

❖ **METHASOL-N Ear Drop Gaco**
Betamethasone sodium phosphate 0.1% & neomycin sulphate 0.5%: Ear drop
5ml drop: 32.20 MRP

❖ **OPTISON-N Ear Drop OpsoSaline**
Betamethasone sodium phosphate 0.1% & neomycin sulphate 0.5%: Ear drop
5ml drop: 30.30 MRP

DEXAMETHASONE

DEXAMETHASONE: Ear/Eye drop
Dexamethasone sodium phosphate 0.1% ear/eye drop.
Ind: Non-infected inflammatory ear conditions (including eczema).
C/I: Untreated infection.
Caution: Avoid prolonged use.
Adult & Child: 1 to 2 drops every 1-4 hours.

❖ **ACICOT E/E Drop ACI**
Dexamethasone 0.1% ear/eye drop.
5ml drop: 36.00 MRP
❖ **DEXACORT E/E Drop Opsosaline**
Dexamethasone 0.1% ear/eye drop.
5ml drop: 40.00 MRP
❖ **DEXADRON E/E Drop Reman**
Dexamethasone 0.1% ear/eye drop.
4ml drop: 60.00 MRP
❖ **DEXAMIN E/E Drop Jayson**
Dexamethasone 0.1% eye/ear drop.
5ml drop: 50.00 IP
❖ **D-ONE E/E Drop Nipa**
Dexamethasone 0.1%: eye/ear drop.
5ml drop: 50.00 MRP
❖ **MERADEXON Eye/Ear Drop Gaco**
Dexamethasone 0.1% eye/ear drop.
5ml drop: 50.00 MRP
❖ **METADAXAN E/E Drop Incepta**
Dexamethasone 0.1% ear/eye drop.
5ml drop: 60.00 MRP
❖ **OCUDEX Eye Drop Asiatic**
Dexamethasone 0.1% eye drop.
5ml drop: 50.00 MRP

DEXAMETHASONE + CIPROFLOXACIN

DEXAMETHASONE + CIPROFLOXACIN: Ear/Eye drop
Dexamethasone sodium phosphate 0.1% & ciprofloxacin 0.3%: eye/ear drop.

Ind: Otitis externa and other infective and inflammatory ear conditions.

C/I: Perforated ear drum. Known hypersensitivity to any ingredient of the product. Herpes simplex and other viral conditions of the ear, mycosis, newborn babies, fungal diseases of auricular structures.

S/E: The most common adverse effects are discomfort and ear pain. Other reported reactions are irritability, dizziness, erythema etc.

Precautions: This product should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.
It is not known whether topical steroids would result in sufficient systemic absorption to produce detectable quantities in human milk. It is also not known whether ciprofloxacin is excreted in human milk following auricular use, so, caution should be exercised when the product is advised to a nursing mother, i.e whether to discontinue nursing or to discontinue the drug.

Dosage & appli: Adult & Child: Instil 2-4 drops 2-4 times daily. Care should be taken not to discontinue therapy prematurely.

❖ **APRODEX E/E Drop Aristopharma**
Dexamethasone sodium phosphate 0.1% & ciprofloxacin 0.3%: eye/ear drop.
5ml drop: 65.00 MRP
❖ **BACTIN-D E/E Drop Ibn Sina**
Dexamethasone sodium phosphate 0.1% & ciprofloxacin 0.3%: ear/eye drop.
5ml drop: 75.00 MRP
❖ **BEUFLOX-D E/E Drop Incepta**
Dexamethasone sodium phosphate 0.1% & ciprofloxacin 0.3%: ear/eye drop.
6ml drop: 75.00 MRP
❖ **CERODEX E/E Drop Gaco**
Dexamethasone sodium phosphate 0.1% & ciprofloxacin 0.3%: eye/ear drop.
5ml drop: 75.00 MRP
❖ **CIP-D E/E Drop Asiatic**
Dexamethasone sodium phosphate 0.1% & ciprofloxacin 0.3%: eye/ear drop.
5ml drop: 75.00 MRP
❖ **CIVODEX E/E Drop Popular**
Dexamethasone sodium phosphate 0.1% & ciprofloxacin 0.3%: eye/ear drop.
5ml drop: 75.00 MRP
❖ **OPDEX E/E Drop Nipa**
Dexamethasone sodium phosphate 0.1% & ciprofloxacin 0.3%: eye/ear drop.
5ml drop: 65.00 MRP

HYDROCORTISONE + CIPROFLOXACIN[36]

HYDROCORTISONE + CIPROFLOXACIN: Ear drop
Hydrocortisone acetate 1% & ciprofloxacin 0.3%: ear drop
Ind: Otitis externa and other infective and inflammatory ear conditions.
C/I; S/E; Precautions: See above under the text of 'dexamethasone + ciprofloxacin' preparations.
Dosage & appli: Adult & Child: Instil 2-4 drops 2-4 times daily. Care should be taken not to discontinue therapy prematurely.

❖ **CERO-HC Otic Drop Gaco**
Hydrocortisone acetate 1% & ciprofloxacin 0.3%: ear drop
10ml drop: 55.00 MRP
❖ **CIPROCORT Otic Drop Drug Inter.**
Hydrocortisone acetate 1% & ciprofloxacin 0.3%: ear drop
10ml drop: 54.00 MRP

HYDROCORTISONE + GENTAMICIN

HYDROCORTISONE+GENTAMICIN: Ear drop
Hydrocortisone acetate 1% & gentamicin sulphate 0.3%: ear drop
Ind: Otitis externa; chronic suppurative otitis.
Caution: Avoid prolonged use; perforated ear drum.
Dosage & appli: Adult & Child: 2 to 4 drops 3 or 4 times daily and at bedtime.

❖ **GENTABAC HC Ear Drop Popular**
Hydrocortisone acetate 1% & gentamicin sulphate 0.3%: ear drop
10ml drop: 50.85 MRP

❖ **GENTIN HC Ear Drop Opso saline**
Hydrocortisone acetate 1% & gentamicin sulphate 0.3%: ear drop
5ml drop: 40.00 MRP
❖ **GENTO-HC Ear Drop Gaco**
Hydrocortisone acetate 1% & gentamicin sulphate 0.3%: ear drop
10ml drop: 50.85 MRP
❖ **GISIN-H Ear Drop Nipa**
Hydrocortisone acetate 1% & gentamicin sulphate 0.3%: ear drop
5ml drop: 40.90 MRP

HYDROCORTISONE + NEOMYCIN + POLYMYXIN-B[47,103]

HYDROCORTISONE + NEOMYCIN + POLYMYXIN-B: Ear drop
This combination product of hydrocortisone acetate, neomycin sulphate and polymyxin-B sulphate is available as ear drop.
Comp: See below under individual preparation.

Ind: Bacterial infections and inflammation of external ear & auditory canal.

C/I: Viral & tuberculous infections.

Cautions: Pregnancy; limit use to 10 days if ear drum is perforated; Avoid long term use in infants.

Dosage & appli: Adult & Child: Install 3 drops 3 or 4 times daily or isert soaked wick, keeping it saturated.

❖ **NPH Ear Drop Reman**
Hydrocortisone acetate 10mg/ml (1%), neomycin sulphate 3400 units/ml (0.34%), polymyxin-B sulphate 10,000 units/ml: ear drop
5ml vial: 45.00 MRP

❖ **OTOSPORIN Ear Drop GlaxoSmithKline**
Hydrocortisone acetate 1% , neomycin sulph. 0.5%, polymyxin-B sulph. 10,000 units/ ml; ear drop
5ml vial: 45.51 MRP

❖ **POLYCORT Ear Drop Gaco**
Hydrocortisone acetate 1%, neomycin sulph. 0.5%, polymyxin-B sulph. 10,000 units/ml: ear drop
5ml vial: 45.00 IP

❖ **POLYMIX-H Ear Drop Opsosaline**
Polymyxin B sulph. 10,000 units, neomycin sulph. 3000 units & hydrocortisone BP 10mg/1ml: ear drop.
5ml drop: 40.00 MRP

PREDNISOLONE + NEOMYCIN

PREDNISOLONE + NEOMYCIN: Ear/Eye drop
Prednisolone acetate 5mg & neomycin sulphate 5mg/1ml: ear/eye drop.
Ind: Infected ear & ocular inflammation.
Adult & Child: 1-2 drops 3 to 4 times daily or more frequently if reqd.

❖ **DELTASONE-N E/E Drop Renata**
Prednisolone acetate 5mg & neomycin sulphate 5mg/1ml: ear/eye drop.
5ml drop: 39.98 MRP

NASAL PREPNS.

Nasal preparations discussed herein below include:

1. **Anti-histamine preparations**
2. **Anti-cholinergic preparations**
3. **Mast cell stabiliser**
4. **Combined nasal preparations**
5. **Nasal steroid preparations**

Anti-histamine preparations

AZELASTINE[42]

AZELASTINE: Nasal spray (MDI)

Azelastine hydrochloride nasal spray is an antihistamine formulated as a metered dose spray solution for intranasal administration. It is a metered dose manual pump spray which delivers azelastine hydrochloride BP 137mcg/actuation.

Mode of action: Azelastine is an antihistamine, a phthalazinone derivative, exhibits histamine H_1 receptor antagonist activity in isolated tissues, animal models, & humans. It is administered as a recemic mixture with no difference in pharmacologic activity noted between the enantiomers in in-vitro studies. The major metabolite, desmethylazelastine also possesses H_1-receptor antagonist activity.

Ind: Azelastine nasal spray is indicated for the treatment of the symptoms of seasonal allergic rhinitis, such as rhinorrhea, sneezing, and nasal pruritus in adults & children of 5 years & older, & for the treatment of the symptoms of vasomotor rhinitis, such as rhinorrhea, nasal congestion & postnasal drip in adults & children of 12 years & older.

C/I: Patients with known hypersensitivity to azelastine hydrochloride or any of its components.

S/E: Common side effects may include bitter taste, drowsiness, headache, loss of sensation, nasal burning, & sore throat. Less common side effects may include abdominal pain, abnormal thinking, allergic reaction, anxiety, back pain, constipation, coughing, depression, dizziness, dry mouth, eye problems, fatigue, frequent urination, increased appetite, loss of menstruation, mouth & tongue sores, nasal inflaminations & nausea.

Precautios & warnings: In clinical trials, the occurrence of somnolence has been reported in some patients taking azelastine nasal spray; due caution should therefore be exercised when driving a car or operating potentially dangerous machinery. Concurrent use of it with alcohol or machinery. Concurrent use of it with alcohol or other CNS depressants should be avoided because additional reduction in alertness & additional impairment of CNS performance may occur. Do not spray in the eyes.

Pregnancy & lactation: The effects of azelastine hydrochloride during pregnancy have not been adequately studied. Azelastine should be administered during pregnancy, if the potential benefit justifies the potential risks to fetus.

It is not known whether azelastine hydrochloride is excreted in human milk. However, caution should be exercised when azelastine hydrochloride is administered to a nursing mother.

Dosage & admin: ***Adults & children 12 years & older:*** **2 sprays in each nostril twice daily.** ***Children 5-11 years of age:*** **1 spray in each nostril twice daily.**

Initial pump priming requires severe sprays of the pump. If used regularly as recommended, not further priming is required. If not used more than 24 hours, the pump will require 2 sprays, or if not used for more than seven days, the pump will require 7 sprays.

The safety & effectiveness of azelastine hydrochloride nasal spray in patients below 5 years of age have not been established.

Drug inter: If azelastine hydrochloride is taken with certain other drugs, the effects of either could be altered. It is specially important to check before combining azelastine with the followng: alcohol, drugs that slow the nervous system, including codeine, phenobarbital & restoril, cimetidine & ketoconazole.

Storage: Store in a cool & dry place, protected from light. Do not freeze.

❖ **AZELAST Nasal Spray (MDI) Incepta**
Azelastine hydrochloride BP 137mcg/actuation (spry): metered dose nasal spray solution for intranasal administration. 120 doses unit.
120 doses (spray) unit: 180.00 MRP

❖ **SNIZEX Nasal Spray (MDI) Square**
Azelastine hydrochloride BP 137mcg/actuation (spry): metered dose nasal spray solution for intranasal administration. 120 doses unit.
120 doses (spray) unit: 180.00 MRP

EPHEDRINE HCl[21,103]

❖ **REMADRIN Nasal Drop Reman**
Ephedrine hydrochloride 0.5% nasal drop.
Ind: Nasal congestion.
S/E: local irritation; after excessive use tolerence with diminished effect, rebound congestion.
Caution: Avoid excessive use; caution in infants under 3 months (no good evidence of value- if irritation occurs might narrow nasal passage).
Use: Instil 1-2 drops into each nostril upto 3 or 4 tims daily when required.
10ml drop: 45.52 MRP

PSEUDOEPHEDRINE[26,47]

PSEUDOEPHEDRINE: Tablet

Pseudoephedrine is a stereoisomer of ephedrine with similar but less potent pharmacological activity. It has nasal and bronchial decongestant activity.

Ind: Pseudoephedrine is a decongestant of the mucous membrane of the upper respiratory tract, specially the nasal mucosa, sinuses and eustachian tube. It is indicated for the symptomatic relief of allergic rhinitis (hay fever), vasomotor rhinitis, common cold, influenza (flu) and ear congestion caused by ear inflammation or infection. Pseudoephedrine can also be used as a bronchodilator.

C/I: Hypersensitivity of individuals to this drug, severe hypertension and coronary artery disease, concurrent use of monoamine oxidase (MAO) inhibitor drugs.

S/E: Serious adverse effects are extremely rare. Occasionally CNS symptoms such as, excitation, sleep disturbance & rarely hallucinations. Skin rash & urinary retention has been reported occasionally.

Precautions: Although pseudoephedrine has virtually no pressor effect in normotensive patients, as with other sympathomimetic agents, it should be used with caution in patients with hypertension, heart disease, diabetes, hyperthyroidism, elevated intraocular pressure and prostatic enlargement. Caution should also be exercised when using in the patients with severe hepatic impairment or moderate to severe renal impairment.

Pregnancy & lactation: As there are no specific data on the use of pseudoephedrine during pregnancy, it should only be used if the potential benefit of treatment to the mother is more than any possible hazards to the growing foetus. Pseudoephedrine is excreted in breast milk in small amounts but the effect of this on breast-fed infant is unknown.

Dosage & Admin: As a decongestant and symptomatic treatment for upper respiratory tract infections: Adults- 60mg every 4-6 hours, up to maximum of 240mg in 24 hours. Children- 6-12 years of ege, 30mg every 4-6 hours daily; 2-5 years of age, 15mg every 4-6 hours daily; for children less than 2 years of age, the drug is not advised unless specifically recommended by a physician.

Overdosage: As with other sympathomimetic agents, symptoms of overdosage include- irritability, restlessness, tremor, convulsions, palpitations, hypertension and difficulty in micturition. Necessary measures should be taken to maintain and support respiration and control convulsions. Gastric lavage should be performed if indicated. If desired, the elimination of pseudoephedrine can be accelerated by acid diuresis or by dialysis.

Drug inter: Concurrent administration of other sympathomimetics may lead to additive CNS or CVS effects. Increased absorption has been reported with the concurrent administration of aluminium hydroxide antacid.

❖ **SUDAFED Tab. GlaxoSmithKline**
Pseudoephedrine hydrochloride 60mg/tablet.
100's pack: 201.00 MRP

❖ **SUDORIN Tab. Incepta**
Pseudoephedrine hydrochloride 60mg/tablet.
100's pack: 200.00 MRP

❖ **SUDOTAB Tab. Opsonin**
Pseudoephedrine hydrochloride 60mg/tablet.
100's pack: 200.00 MRP

XYLOMETAZOLINE HCl[33,42]

XYLOMETAZOLINE: Nasal Drop/Spray

Xylometazoline hydrochloride is an effective nasal decongestant. It is a sympathomimetic amine of the imidazole class. Available as nasal drop & spray.

Mode of action: Xylometazoline hydrochloride is a sympathomimetic agent with alpha-adrenergic activity. It is a direct agonist of 2

adreno-receptors.
It constricts the nasal blood vessels, thereby, decongesting the mucosa of the nose and neighbouring regions of the pharynx. This enables patients suffering from common colds to breathe more easily through the nose. The action begins within a few minutes of administration and persists for several hours.
Ind: Nasal congestion associated with perennial and seasonal rhinitis, sinusitis.
C/I: Patients having hypersensitivity to xylometazoline.
S/E: Side effects with xylometazoline nasal spray are infrequent and mild. There may be in rare instances, local stinging, sneezing, dryness of nose, drowsiness, headache and palpitation. It may occasionally cause systemic sympathomimetic effects such as hypertension, nervousness, nausea, dizziness, insomnia, tachycardia and arrhythmia.
Precaution: Should not be used for prolonged period, as it is a sympathomimetic amine; use of which may lead to rebound symptoms on withdrawal of treatment; use with extreme caution in persons receiving MAOI,s concurrently
Pregnancy & lactation: The safety of use in pregnancy has not been fully established and administration of xylometazoline during this period should be avoided unless absolutely essential. No adverse effects have been reported in the baby as a result of breast feeding mother taking the drug.
Dosage & admin: Nasal drop: Adult: 2 to 3 drops of 0.1% soln. in each nostril 2 or 3 times daily.
Child: 1 to 2 drops of 0.05% soln. in each nostril once or twice daily.
Nasal spray- dosage & administration see below under the Antazol nasal spray.
Drug inter: No information regarding drug interaction is available.

❖ **ANTAZOL Nasal Drop Square**
Xylometazoline hydrochloride 0.05% & 0.1%: nasal drop
0.05% x 15ml drop: 6.97 MRP
0.1% x 15ml drop: 7.61 MRP
❖ **NOVIN Drop Gaco**
Xylometazoline hydrochloride 0.05% & 0.1%: nasal drop
0.05% x 10ml drop: 5.95 MRP
0.1% x 10ml drop: 6.72 MRP
❖ **RIIINOZOL Drop Acme**
Xylometazoline hydrochloride 0.05% & 0.1%: nasal drop
0.05% x 15ml drop: 6.97 MRP
0.1% x 15ml drop: 7.61 MRP
❖ **XYLOVIN Drop Opsosaline**
Xylometazoline hydrochloride 0.05% & 0.1%: nasal drop
0.05% x 10ml drop: 7.25 MRP
0.1% x 10ml drop: 7.25 MRP

OXYMETAZOLINE HCl[21,33]

OXYMETAZOLINE: Nasal Drop/ Spray
Ind: Nasal congestion
Caution: Same as xylometazoline (above).
Dosage & admin: Adult & Children: Over 6 years, instill 2-3 drops of 0.05% solution & under 6 years, 2-3 drops of 0.025% solution into each nostril, 2 to 3 times daily. Duration of treatment 3-5 days; maximum duration 2 weeks.
Nasal spray- Instill 2-3 sprays into each nostril 2 times daily.

❖ **AFRIN Drop Aristopharma**
Oxymetazoline hydrochloride 0.05% nasal drop.
0.05% drop x 10ml: 35.00 MRP
❖ **AFRIN Paediatric Drop Aristopharma**
Oxymetazoline hydrochloride 0.025% nasal drop for paediatric use.
10ml vial: 30.00 MRP
❖ **NAZOLIN Nasal Spray Beximco**
Oxymetazoline hydrochloride 0.05% nasal spray; 25mcg/actuation or spray: 200 metered sprays.
1 spray unit of 200 doses: 80.00 IP
❖ **NOCON Drop Square**
Oxymetazoline hydrochloride 0.05% nasal drop.
0.05% drop x 10ml: 35.00 MRP
❖ **NOCON Paediatric Drop Square**
Oxymetazoline hydrochloride 0.025% nasal drop for paediatric use.
10ml vial: 30.00 MRP
❖ **RYNEX Nasal Drop Incepta**
Oxymetazoline hydrochloride 0.05% nasal drop.
10ml drop: 35.00 MRP
❖ **RYNEX Nasal Spray Incepta**
Oxymetazoline hydrochloride 0.05% nasal spray; 25mcg/actuation or spray: 200 metered sprays.
1 spray unit of 200 doses: 80.00 MRP

Anticholinergic (Anti-muscarinic) Preparations

IPRATROPIUM[42]

❖ **RYNASPRAY Nasal spray (MDI) Square**
Ipratropium bromide BP 21mcg/spray (metered dose nasal spray).
Mode of action: Ipratropium bromide is a synthetic quaternary anti-cholinergic parasympatholytic ammonium compound, chemically related to atropine, that inhibits vagally-mediated reflexes by antagonizing the action of acetylcholine at the cholinergic receptors. It is a competitive antagonist at the muscarinic acetylcholine receptors. In humans, ipratropium bromide has antisecretory properties and when applied locally, inhibits secretions from the serous and seromucous glands lining the nasal mucosa. Ipratropium bromide is a quaternary amine that minimally crosses the nasal and gastrointestinal membrane and the blood-brain barrier, resulting in a reduction of the systemic anticholinergic effects (e.g neuroleptic, ophthalmic, cardiovascular, and gastrointestinal effects) that are seen with tertiary anticholinergic amines.
Ind: Treatment and management of perennial rhinitis, allergic rhinitis & vasomotor rhinitis when characterized by watery rhinorrhoea; symptomatic relief of rhinorrhoea associated with the common cold. It does not relieve nasal congestion, sneezing, or postnasal drip associated with allergic or non-allergic perennial rhinitis.
C/I: Known hypersensitivity to atropine or its derivatives, or to any of the ingredients of the product. Rarely, immediate hypersensitivity reactions may occur after administration of ipratropium bromide, (as demonstrated by urticaria, angioedema, rash, bronchospasm, and oropharyngeal edema).
S/E: The most frequent local undesirable effects are nasal reactions including epistaxis, dryness of the nose and nasal irritation. Headache, nausea and local irritation (e.g burning sensation) may occur as non-specific reactions in association with use of ipratropium bromide nasal spray. Potential systemic anticholinergic effects are dry mouth and dry throat. Ocular side effects, increase of heart rate and palpitations, urinary retention and gastrointestinal motility disturbances have been reproted in isolated patietns in association with use of ipratropium bromide either intranasally or after oral inhalation. Allergic-type reactions such as skin rash, angio-oedema of tongue, lips and face, urticaria, laryngospasm and anaphylactic reactions may occur.
Precautions: Ipratropium bromide nasal spray should be used with caution in patients with narrow-angle glaucoma, or with prostatic hyperplasia or bladder neck obstruction. Patients with cystic fibrosis may be more prone to gastro-intestinal motility disturbances. Do not spray in the eyes.
Pregnancy & lactation: The safety of ipratropium bromide nasal spray during pregnancy has not been established, although preclinical studies showed no embryotoxic or teratogenic effects following inhalation at doses considerably higher than those recommended in man. However, the benefits of using this spray during a confirmed or suspected pregnancy must be weighed against possible hazards to the unborn child.
It is not known whether ipratropium bromide is excreted in human milk. Because, many drugs are excreted into human milk, caution should be exercised when ipratropium bromide nasal spray is administered to a nursing mother.
Dosage & admin: Perennial rhinitis, allergic rhinitis & vasomotor rhinitis when characterized by watery rhinorrhea: Adults & children age 5 years & older- 2 sprays into each nostril 2-4 times daily.
Symptomatic relief of rhinorrhea associated with the common cold: Adults & children age 5 years & older- 2 sprays into each nostril 2-4 times daily.
The safety and effectiveness of ipratropium bromide nasal spray beyond 3 weeks in patients with allergic rhinitis and 4 days in patients with the common cold have not been established.
Initial pump priming requires seven sprays of

the pump. If used regularly as recommended, no further priming is required. If not used more than 24 hours, the pump will require 2 sprays, or if not used for more than seven days the pump will require 7 sprays.

Drug inter: No controlled clinical trials were conducted to investigate drug interactions. Ipratropium bromide nasal spray in minimally absorbed into the systemic circulation; nonetheless, there is some potential for additive interaction with other concomitantly administered anti-cholinergic medications, including ipratropium bromide containing aerosols for oral inhalation.

120 sprays unit: 148.00 MRP

Mast Cell Stabiliser

SODIUM CROMOGLYCATE[21,33]

SODIUM CROMOGLYCATE: Nasal (& eye) Drop

Sodium cromoglicate is a mast cell stabiliser. It is available as 2% & 4% nasal (& eye) drop.

Mode of action: Sodium cromoglicate usually acts through a local effect on the nasal mucosa. It prevents release of the mediators of type-I allergic reactions, including histamine and slow reacting subatance of anaphylaxis (SRS-A) from sensitized mast cells after the antigen-antibody union has taken place. The drug dose not inhibit the binding of IgE and the specific antigen; instead it suppresses the release of substances (e.g histamine, SRS-A) in response to this reaction. The drug also inhibits type-III (late allergic, Arthers) reactions lesser extent.

Ind: Prophylaxis of allergic rhinitis.

S/E: Transient nasal irritation; rarely wheezing (bronchospasm) and tightness of the chest has been reported.

Dosage & appli: Adult & Child: 1 drop to each nostril 4 to 6 times daily. Therapy should be continous.

❖ **ARISTOCROM Nasal Drop Aristopharma**
Sodium cromoglycate 2%; nasal (& eye) drop.
10ml drop: 65.00 MRP

❖ **CROMOLIN Nasal Drop Ibn Sina**
Sodium cromoglycate 4%; nasal (& eye) drop.
10ml drop: 75.00 MRP

❖ **NACROMIN Nasal Drop Square**
Sodium cromoglycate 2%; nasal (& eye) drop.
15ml drop: 66.00 MRP

❖ **NASOCHROM Nasal Drop Drug Inter.**
Sodium cromoglycate 2%; nasal (& eye) drop.
10ml drop: 60.00 MRP

❖ **OPSOCROM Nasal Drop Opsosaline**
Sodium cromoglycate 2%; nasal (& eye) drop.
10ml drop: 55.00 MRP

❖ **OPTACROM Nasal Drop Reman**
Sodium cromoglycate 2%; nasal (& eye) drop.
10ml drop: 60.00 MRP

Combined Nasal Preparations

XYLOMETAZOLINE HCl + SODIUM CROMOGLICATE[42]

XYLOMETAZOLINE HCl+ SODIUM CROMOGLICATE: Nasal Spray

This is a combined preparation of xylometazoline hydrochloride and sodium cromoglicate, available as metered dose nasal spray. Each metered dose spray delivers xylometazoline hydrochloride BP 0.0325mg and sodium cromoglicate BP 2.6mg.

Mode of action: See above under the text of 'xylometazoline' and 'sodium cromoglicate' separately.

Ind: It is indicated for the prophylaxis and treatment of allergic rhinitis (such as hay fever and perennial rhinitis) where this is accompanied by nasal congestion.

C/I: Known sensitivity to any ingredients of the preparation.

S/E; Precautions: See above under the text of 'xylometazoline' and 'sodium cromoglicate' separately.

Pregnancy & lactation: As with all medicines, caution should be exercised during pregnancy specially during the first trimester.

Dosage & admin: Adults (including the elderly) and children: one spray to each nostril 4 times daily.

❖ **ANTAZOL Plus Nasal Spray Square**
Each metered dose spray delivers 2.6mg of sodium cromoglicate and 0.0325mg of xylometazoline hydrochloride: Metered dose nasal spray
120 sprays unit: 110.00 MRP

Nasal Steroid Prepns.[42,47]

NASAL CORTICOSTEROID PREPNS: Metered dose nasal spray or inhalation

Ind: Prophylaxis and treatment of seasonal & perennial allergic rhinitis, including hayfever & non-allergic (vasomotor) rhinitis.
Prevention of recurrence of nasal polyps following surgical removal.

C/I: Patients with a hypersensitivity to any of the steroid preparation.

S/E: As with other nasal sprays, dryness and irritation of the nose and throat, unpleasant taste and smell and epistaxis have been reported. Hypersensitivity reactions including skin rash, oedema of the face or tongue and anaphylactic reactions have been reported.There have also been rare reports of bronchospasm. Extremely rare cases of nasal septal perforation have been reported following the use of intranasal corticosteroids.

Precautions: Nasal steroid preparations should not be used in the presence of untreated localized infections of the nasal passage and paranasal sinuses & should be used with caution, if at all, in patients with active or quiescent tuberculous infections of the respiratory tract, or in untreated fungal, bacterial, systemic viral infections or ocular herpes simplex.
In case of recent nasal surgery or trauma, any nasal corticosteroid should not use until healing is complete.
In the cases of long-term treatment with steroid nasal spray over several months or longer, patients should be examined periodically for possible changes in the nasal mucosa. If localized fungal infection of the nose or pharynx develops, discontinue the nasal spray therapy or appropriate treatment may be required. Persistence of nasopharyngeal irritation may be an indication for discontinuing therapy.
There is no evidence of hypothalamic pituitary adrenal (HPA) axis suppression following prolonged treatment with steroid nasal spray. However, patients who are transferred from long-term administration of systemically active corticosteroids to any steroid nasal spray require careful attention. Systemic corticosteroid withdrawal in such patients may result in adrenal insufficiency for a number of months until recovery of HPA axis function. If these patients exhibit signs and symptoms of adrenal insufficiency, systemic corticosteroid administration should be resumed and other modes of therapy and appropriate measures instituted.
Patients receiving corticosteroids who are potentially immunosuppressed should be warned of the risk of exposure to certain infections (e.g chicken pox, measles) and of the importance of obtaining medical advice if such exposure occurs.

Pregnancy & lactation: There are no adequate or well controlled studies in the cases of pregnancy & nursing women. Therefore, steroid nasal spray should be used in pregnancy, nursing mothers or women of childbearing age only if the potential benefit justifies the potential risk to the mother, fetus or infant. Infants born of mothers who received corticosteroids during pregnancy should be observed carefully for hypoadrenalism.

Dosage & admin: See below under individual steroid preparation.

BECLOMETHASONE[42,47]

BECLOMETHASONE DIPROPIONATE: Nasal Spray

Beclomethasone dipropionate aqueous suspension for nasal spray. Each spray or actuation of available preparations delivers beclomethasone dipropionate 50mcg.

Ind: Prophylaxis and treatment of seasonal & perennial allergic rhinitis, including hayfever & non-allergic (vasomotor) rhinitis.
Prevention of recurrence of nasal polyps following surgical removal.

C/I; S/E; Precaution: See above under the text of nasal corticosteroid preparations.

Pregnancy & lactation: See above under the text of nasal corticosteroid preparations.

Dosage & admin: Adult- 2 applications in each nostril twice daily. Therapy should be continuous.
Child- under 6 years, not recommended; 6-12 yrs, same as adult.

❖ **BECONASE Aq. Nasal Spray**
GlaxoSmithKline
Beclomethasone dipropionate 50mcg/metered dose (spary): aqueous suspension for nasal spray.
200 dose (spray) unit: 234.66 MRP

❖ **BECOSPRAY Nasal Spray Square**
Beclomethasone dipropionate 50mcg/metered dose (spary): aqueous suspension for nasal spray. 200 dose (spray) unit: 125.00 MRP

❖ **DECOMIT Nasal Spray Beximco**
Beclomethasone dipropionate 50mcg/metered dose (spary): aqueous suspension for nasal spray. 200 dose (spray) unit: 146.00 IP

BETAMETHASONE & BETAMETHASONE + NEOMYCIN PREPNS[21,33,47]

BETAMETHASONE + NEOMYCIN: Nasal drop
Betamethasone sodium phosphate 0.1% & neomycin sulphate 0.5%: nasal drop.
Ind: Allergic rhinitis and other inflammatory conditions with bacterial infection.
C/I; S/E; Precaution: See above under the text of nasal corticosteroid preparations.
Pregnancy & lactation: See above under the text of nasal corticosteroid preparations.
Dosage & appli: Adult & child: 2 to 3 drops in each nostril 3 or 4 times daily.

❖ **ARISTOBET-N Drop Aristopharma**
Betamethasone sodium phosphate 0.1% & neomycin sulphate 0.5%: nasal drop.
5ml vial: 32.20 MRP

❖ **BETASON-N Drop Reman**
Betamethasone sodium phos. 0.1% & neomycin sulphate 0.5%: nasal drop.
5ml vial: 32.20 MRP

BUDESONIDE[26]

BUDESONIDE: Nasal Spray
Budesonide is a synthetic corticosteroid available as aqueous suspension for metered dose nasal spray or inhalation. Each spray or actuation of available preparations delivers budesonide BP 100mcg.
Ind: Prophylaxis and treatment of seasonal and perennial allergic rhinitis; prophylaxis and treatment of vasomotor rhinitis; symptomatic relief of nasal polyposis; prevention against nasal polyps after polypectomy.
C/I; S/E; Precaution: See above under the text of nasal corticosteroid preparations.
Pregnancy & lactation: See above under the text of nasal corticosteroid preparations.
Dosage & admin: Adults & children 6 yrs of age & older: 100mcg/day administered as one spray in each nostril once daily.
The maximum recommended dose for adults (12 yrs of age & older) is 400mcg/day administered as 4 sprays in each nostril once daily.

❖ **BUDICORT Nasal Spray Incepta**
Budesonide BP 100mcg/actuation or inhalation: aqueous suspension for metered dose nasal spray or inhalation.
120 metered dose (spray) unit: 230.00 MRP

FLUTICASONE[42,47]

FLUTICASONE PROPIONATE: Nasal Spray
Fluticasone propionate is an aqueous solution for nasal spray. Each spray or actuation of available preparations delivers fluticasone propionate 50mcg.
Ind: Prophylaxis and treatment of seasonal allergic rhinitis including hay fever, and perennial rhinitis.
C/I; S/E; Precaution: See above under the text of nasal corticosteroid preparations.
Pregnancy & lactation: See above under the text of nasal corticosteroid preparations.
Dosage & Admin: ***Adults & children over 12 years of age:*** **2 sprays into each nostril once a day, preferably in the morning; in some cases two sprays into each nostril twice daily may be required; the maximum daily dose should not exceed four sprays into each nostril.**
Elderly- the normal adult dosage is applicable.
Children under 12 years of age (4 to 11years): **1 spray into each nostril once a day, preferably in the morning; in some cases one spray into each nostril twice daily may be required; the maximum daily dose should not exceed two sprays into each nostril.**
For full therapeutic benefit regular usage is essential. The absence of an immediate effect should be explained to the patient as maximum relief may not be obtained until after 3 to 4 days of treatment.

❖ **FLIXONASE Aq. Nasal Spray GlaxoSmithKline**
Fluticasone propionate BP 50mcg/actuation or puff: an aqueous suspension for metered dose nasal spray or inhalation.
120 doses (sprays) unit (20ml): 350.00 MRP

❖ **FLONASPRAY Nasal Spray Square**
Fluticasone propionate BP 50mcg/actuation or puff: an aqueous suspension for metered dose nasal spray or inhalation.
120 doses (sprays) unit: 250.00 MRP

❖ **LUTISONE Nasal Spray Incepta**
Fluticasone propionate BP 50mcg/actuation or puff: an aqueous suspension for metered dose nasal spray or inhalation.
120 doses (sprays) unit: 250.00 MRP

❖ **PERINASE Nasal Spray Beximco**
Fluticasone propionate BP 50mcg/actuation or puff: an aqueous suspension for metered dose nasal spray or inhalation.
120 doses (sprays) unit: 250.00 IP

MOMETASONE[71]

MOMETASONE: Nasal Spray
Mometasone furoate 50mcg/ actuation or inhalation: aqueous suspension for metered dose nasal spray or inhalation.
Ind: Prophylaxis & treatment of seasonal or perennial allergic rhinitis.
C/I; S/E; Precaution: See above under the text of nasal corticosteroid preparations.
Pregnancy & lactation: See above under the text of nasal corticosteroid preparations.
Dosage & Admin: ***Adults & Children 12 years of age & older:*** **The usual recommended dose for prophylaxis and treatment is two sprays (50mcg/spray) in each nostril once daily (total dose 200mcg). Once symptoms are controlled, dose reduction to one spray in each nostril (total dose 100mcg) may be effective for matintenance.**
If symptoms are inadequately controlled, the dose may be increased to a maximum daily dose of four sprays in each nostril once daily (total dose 400mcg). Dose reduction is recommended following control of symptoms. Clinically significant onset of action occurs as early as 12 hours after the first dose.
Children between the ages of 3 & 11 years: **The usual recommended dose is one spray (50mcg/spray) in each nostril once daily (total dose 100mcg).**
In patients who have a story of moderate to severe symptoms of seasonal allergic rhinitis, prophylactic treatment with mometasone is recommended two to four weeks prior to the anticipated start of the pollen season.
Shake container well before each use.
Note: For further information please consult manufacturer's literature.

❖ **MOMESON Nasal Spray Incepta**
Mometasone furoate 50mcg/ actuation or inhalation: aqueous suspension for metered dose nasal spray or inhalation.
120 metered dose (spray) unit: 250.00 MRP

TRIAMCINOLONE[21,35]

TRIAMCINOLONE ACETONIDE: Nasal Inhaler
Triamcinolone acetonide USP 0.7% w/w; each actuation or spray releases approximately 55mcg triamcinolone acetonide: nasal inhaler.
Ind: Allergic rhinitis, including hayfever, vasomotor rhinitis.
C/I; S/E; Precaution: See above under the text of nasal corticosteroid preparations.
Pregnancy & lactation: See above under the text of nasal corticosteroid preparations.
Dosage & admin: 4 actuations (220mcg) once a day & the effect be assessed in 4 to 7 days. If greater effect is desired an increase of dose to 440mcg (8 actuations) once a day can be tried. Although the preparations may be used at 220mcg/day or 440mcg/day divided into 2 or 4 times a day, the degree of relief does not seen to be significantly different compared to once-a-day dosing.

❖ **CENOLON Nasal spray Incepta**
Triamcinolone acetonide USP 0.7% w/w; each actuation or spray releases approximately 55mcg triamcinolone acetonide: metered dose nasal inhaler.
120 sprays unit: 200.00 MRP

❖ **TRISPRAY Nasal spray Square**
Triamcinolone acetonide USP 0.7% w/w; each actuation or spray releases approximately 55mcg triamcinolone acetonide: metered dose nasal inhaler.
120 sprays unit: 200.00 MRP

CHAPTER FOR MISSING & LATE RECEIVED DRUGS

(Continuation from page-46)

Anti-hypertensive: Diuretics

❖ **DIHERT SR Tab. Novartis**
Indapamide 1.5mg/tablet (sustained release).
28's pack: 224.00 MRP

(Continuation from page-90)

Cough suppressants

BUTAMIRATE CITRATE

❖ **SINECOD Tab. Sandoz/Novartis**
Butamirate citrate BP 50mg/tablet (sustained release).
Butamirate citrate is a non sedative cough suppressant preparation.
Mode of action: Butamirate citrate is a centrally acting cough suppressant which is neither chemically nor pharmacologically related to opium alkaloids. In addition to its antitussive effect, butamirate also decreases the airway resistance and thereby facilitates respiration of asthma patient.
Ind: Butamirate citrate is indicated in acute dry cough, pre- and post-operative cough sedation for surgical procedures & bronchoscopy. Butamirate is also widely prescribed in productive cough along with antibiotic or chemotherapeutic agent for faster cough suppression.
Pregnancy & lactation: Butamirate citrate only can be given in pregnancy if the benefits overweigh the potential risks.
Dosage & admin: Children of 5-10 years, 1-2 tablets daily; Children over 10 years & adults, 2-3 tablets daily irrespective of food intake. Usual duration 5-7 days. However, butamirate citrate can be prescribed up to 2 months in chronic diseases.
Butamirate citrate is safe in extremes of ages.
Note: For further information, please consult manufacturer's literature.
50's pack: 300.00 MRP

(Continuation from page-122)

Anti-epileptic drugs

LEVETIRACETAM

❖ **ERATA Tab. Novartis**
Levetiracetam INN 250mg & 500mg/tablet (film coated).
Levetiracetam is an antiepileptic drug chemically unrelated to existing antiepileptic drugs (AEDs).
Ind: Levetiracetam is indicated- 1. as adjunctive therapy in the treatment of partial onset seizures in adults and children 4 years of age and older with epilepsy; 2. as adjunctive therapy in the treatment of myoclonic seizures in adults and adolescents 12 years of age and older with juvenile myoclonic epilepsy; 3. as adjunctive therapy in the treatment of primary generalized tonic-clonic seizures in adults and children 6 years of age & older with idiopathic generalized epilepsy.
C/I: Hypersensitivity to levetiracetam or any of the inactive ingredients in levetiracetam tablets.
S/E: Nausea, vomiting, dyspepsia, diarrhoea, abdominal pain, anorexia, weight changes; couh; drowsiness, asthenia, amnesia, ataxia, seizures, dizziness, headache, tremor, hyperkinesia, depression, emotional lability, insomnia, anxiety, impaired attention, aggerssion, irritability; thrombocytopenia; myalgia; visual disturbances; pruritus, rash; also reported pancreatitis, hepatic dysfunction, confusion, psychosis, hallucinations, suicidal ideation, paraesthesia, leucopenia, pancytopenia, and alopecia.
Precautions: Patients should be advised that levetiracetam may cause dizziness and somnolence. Accordingly, patients should be advised not to drive or operate machinery or engage in other hazardous activities until they have gained sufficient experience on levetiracetam to gauge whether it adversely affects their performance of these activities. Patients should be advised that levetiracetam may cause changes in behavior (e.g aggression, agitation, anger, anxiety, apathy, depression, hostility, and irritability) and in rare cases patients may experience psychotic symptoms and/or suicidal ideation.
Pregnancy & lactation: There are no adequate data from the use of levetiracetam in pregnant women. Levetiracetam should not be used during pregnancy unless clearly necessary. Discontinuation of antiepileptic treatments may result in exacerbation of the disease which could be harmful to the mother and the foetus. Levetiraetam is excreted in human breast milk. Therefore, breast-feeding is not recommended.
Dosage & admin: ***Monotherapy:***
Adults & adolescents from 16 years of age: **The recommended starting dose is 250mg twice daily which should be increased to an initial therapeutic dose of 500mg twice daily after two weeks. The dose can be further increased by 250mg twice daily every two weeks depending upon the clinical response. The maximum dose is 1500mg twice daily.**
Adults & adolescentrs (12-17 years) weighing 50kg or more: **The initial therapeutic doses is 500mg twice daily. This dose can be started on the first day of treatment. Depending upon the clinical response & tolerability, the daily dose can be increased up to 1,500mg twice daily. Dose changes can be made in 500mg twice daly increases or decreases every 2 to 4 weeks.**
Elderly (65 years and older): **Adjustment of the dose is recommended in elderly patients with compromised renal function.**
Children aged 4 to 11 years & adolescents (12 to 17 years) weighing less than 50kg: **The initial therapeutic dose is 10mg/kg twice daily. Depending upon the clinical response and tolerability, the dose can be increased up to 30mg/kg twice daily. Dose changes should not exceed increases or decreases of 10mg/kg twice daily every two weeks. Dosage in children 50kg or greater is the same as in adults.**
Infants & children less than 4 years: **Levetiracetam is not recommeded for use in children below 4 years of age due to insufficient data on safety and efficacy.**
Patients with renal & hepatic impairment: **The daily dose must be individualised according to renal function. No dose adjustment is needed in patients with mild to moderate hepatic impairment. In patients with severe hepatic impairment, the creatinine clearance may underestimate the renal insufficiency. Therefore a 50% reduction of the daily maintenance dose is recommended when the creatinine clearance is < 70ml/min.**
Over dosage: The highest known dose of levetiracetam received in the clinical development program was 6000mg/day. Other than drowsiness, there were no adverse events in the few known cases of overdose in clinical trials. Cases of somnolence, agitation, aggression, depressed level of consciousness, respiratory depression and coma were observed with levetiracetam overdoses in postmarketing use. If indicated, elimination of unabsorbed drug should be attempted by emesis or gastric lavage; usual precautions should be observed to maintain airway.
Drug inter: *Phenytoin:* Levetiracetam (3000mg daily) had no effect on the pharmacokinetic disposition of phenytoin in patients with refractory epilepsy. Pharmacokinetics of levetiracetam were also not affected by phenytoin.
Valproate: Levetiracetam (1500mg twice daily) did not alter the pharmacokinetics of valproate in healthy volunteers. Valproate 500mg twice daily did not modify the rate or extent of levetiracetam absorption or its plasma clearance or urinary excretion.
Potential drug interactions between levetiracetam and other AEDs (carbamazepine, gabapentin, lamotrigine, phenobarbital, phenytoin, primidone and valproate) were also assessed by evaluating the serum concentrations of levetiracetam and these AEDs during placebo-controlled clinical studies. These data indicate that levetiracetam does not influence the plasma concentration of other AEDs and that these AEDs do not influence the pharmacokinetics of levetiracetam.
Note: For further information, please consult manufacturer's literature.
250mg x 30's pack: 480.00 MRP
500mg x 30's pack: 900.00 MRP

(Continuation from page-177)

CEFUROXIME

❖ **CEFORE Tab. Chemico**
Cefuroxime axetil 250mg & 500mg/tablet (f.c).
250mg x 16's pack: 400.00 MRP
500mg x 8's pack: 360.00 MRP

(Continuation from page-248)

ACECLOFENAC

❖ **ACN Tab. Modern Pharma**
Aceclofenac BP 100mg/tablet (f.c).
100's pack: 300.00 MRP

FLURBIPROFEN[34]

❖ **URBIFEN Tab. General**
Flurbiprofen BP 50mg/tablet (film-coated).
Flurbiprofen is a potent non-steroidal anti-inflammatory drug with antipyretic and analgesic activity.
Mode of action: Flurbiprofen is a cyclooxygenase inhibitor. It inhibits prostaglandin and thromboxane biosynthesis. It inhibits vasodilatation and also prevents the sensitization of pain fibers by prostaglandins.
Ind: Pain and inflammation in rheumatic disease and other musculoskeletal disorders such as rheumatoid arthritis, osteoarthritis, ankylosing spondylitis, frozen shoulder, low back pain, sprains & strains; mild to moderate pain including dysmenorrhoea; migraine; post-operative analgesia, dental pain; relief of sore throat.
C/I: Active peptic ulceration or recent gastrointestinal hemorrhage, ulcerative colitis. Bronchospasm and other hypersensitivity-type reactions with aspirin and other non-steroidal agents. Relative contraindications are anticoagulant therapy, diuretic therapy and patients with history of heart failure/hypertension and non-allergic asthma. Patients with a prior hypersensitivity to flurbiprofen or any other ingredient in the formulation.
S/E: The most important side effects are peptic ulceration, hemorrhage and perforation. Gastrointestinal adverse effects include-dyspepsia, nausea, vomiting, constipation and diarrhea. There may be peripheral edema due to salt and water retention. Some neurological reactions such as dizziness, tinnitus, deafness and blurred vision have been reported which have disappeared on withdrawal of the drug.

Precautions: Flurbiprofen has not been extensively studied in children. If is not recommended for children under 12 years of age.

Pregnancy & lactation: The safety of flurbiprofen during pregnancy has not been established. Breast feeding is not contraindication but safety is not declared.

Dosage: 150-200mg daily in divided doses, increased in acute conditions to 300mg daily. In dysmenorrhoea, initially 100mg, then 50-100mg every 4-6 hours; maximum 300mg daily.
Missed dose: **Take the missed dose as soon as remembered. However, if it is almost time for the next dose, skip the missed dose and continue regular dosing schedule. Do not take a double dose to make up for a missed one.**
Drug inter: Care should be taken in patients treated with any of the following drugs as interactions have been reported in some patients-antihypertensives, diuretics, cardiac glycosides, lithium, methotrexate etc.
30's pack: 150.00 MRP

(Continuation from page-303)

❖ **LISTER COOL MINT Mouthwash General**
Lister cool mint is a preparation for antiseptic mouthwash. It is available as solution in 120ml & 250ml bottle.
Comp: Lister cool mint antiseptic mouthwash is composed of- methyl salicylate 0.060%, eucalyptol 0.092%, menthol 0.42% & thymol 0.64%.
Ind. & use: Lister cool antiseptic mouthwash prevents & reduces plaques & gingivitis; fights against bad breath; kills germs between teeth, controls tartar that can discolour teeth, keep teeth cleaner & brighter.
Precautions: It should not be allowed to use below 12 years of age. Keep outside the reach of children.

Use & admin: Gargle 20ml (4 tsf) of full strength solution for 30 seconds, then remove it, and must not be swallowed. Use two times everyday in the morning & night.
120ml bot: 75.00 MRP
250ml bot: 140.00 MRP

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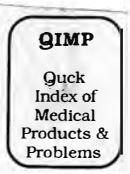

QIMP-15
INDIGENOUS MEDICINES

Section - 2

INDIGENOUS ANTACID, ANTI-DYSPEPTIC & CARMINATIVE PREPARATIONS

❖ **ACMINA Syp. Acme**[46]
Acmina is a combination of some effective herbs that has carminative, stomachic and antioxidant properties. It strengthens immune-system and promotes secretion of saliva, gastric juices and bile. It is available as 200ml syrup in glass bottle.
Comp: Each 5ml contains extracts of- Cyperus rotundus 2.63gm, Woodfordia fruticosa 0.22gm, Zingiber officinale 27.38mg, Piper nigrum 27.38mg, Syzygium aromaticum 27.38mg, Trigonella foenum-graecum 27.38mg, Plumbago zeylanica 27.38mg and Cuminum cyminum 27.38mg.
Ind: It is used for anorexia, dyspepsia, flatulence, dysentery and other gastrointestinal problems. It is safe and effective medicine for all ages of both male & female patients.
C/I: Not yet known.
S/E: There is no known significant side effect.
Pregnancy & lactation: No restriction known.
Dosage & admin: Adult: 2-4 tsf 1-2 times daily after meal, or as advised by the physician. Children under 12 years: 1-2 tsf. 1-2 times daily after meal.
200ml bot: 40.00 MRP

❖ **ALPRO Syp. Deep-Laid**[142]
Alpro is a natural enzyme & digestant syrup.
Comp: Each 5ml contains: Ptychotis ajowan, Alpinia glanga, Flacortia calaphracta, Curcuma zedoaria.
Ind: Anorexia, indigestion, flatulence, stomach & intestinal weakness.
C/I: No contraindication has been reported.
Dosage: 3 tsf 2-3 times daily.
100ml bot: 25.00 MRP
450ml bot: 65.00 MRP

❖ **CARMINA Tab. Hamdard**[38]
Each tablet contains- piper nigrum 60mg, trachyspermum ammi 40mg, citrus aurantifolia 40mg, cinnamomum zeylanicum 20mg, emblica officinalis 20mg, terminalia bellerica 15mg, terminalia chebula 15mg, zingiber officinale 4mg; sea salt 16mg.
Ind: Digestive disorder due to impairment of live function, dyspepsia, flatulence, diarrhoea, constipation etc.
C/I: Should not use in dysentery & ulcer
Dosage: Adult - 2 tabs. 2-3 time daily after meals.
Child- 1 tab. twice daily after meals.
60 tabs. pack: 40.00 MRP

❖ **CARMINA Syp. Hamdard**[38]
Each 5ml syrup contains- piper nigrum 150mg, trachyspermum ammi 100mg, citrus aurantifolia 100mg, cinnamomum zeylanicum 50mg, emblica officinalis 50mg, terminalia bellerica 38mg, terminalia chebula 38mg, zingiber officinale 10mg; sea salt 8mg.
Ind & C/I: See under Carmina tablet preparation.
Dosage: Adult - 2 tsf 2-3 time daily after meals.
Child- 1 tsf twice daily after meals.
100ml bot: 24.00 MRP
225ml bot: 45.00 MRP
450ml bot: 80.00 MRP

❖ **CARMOLIN Syp. A.H Janakalyan**[38,64]
Each 5ml syrup contains- piper nigrum 150mg, trachyspermum ammi 100mg, citrus aurantifolia 100mg, cinnamomum zeylanicum 50mg, emblica officinalis 50mg, terminalia bellerica 38mg, terminalia chebula 38mg, zingiber officinale 10mg; sea salt 8mg.
Ind: Digestive disorder due to impairment of live function, dyspepsia, flatulence, diarrhoea, constipation etc.
C/I: Should not use in dysentery & ulcer
Dosage: Adult - 2 tsf 2-3 time daily after meals.
Child- 1 tsf twice daily after meals.
100ml bot: 25.00 MRP
250ml bot: 50.00 MRP
450ml bot: 90.00 MRP

❖ **DIGAC Syp. Acme**[46]
Digac syrup is a herbal digestant preparation. It's generic name is jamani arka.
Comp: Each 5ml contains- Trachyspermum ammi 0.93gm.
Ind: Indigestion, dyspepsia, flatulence, colic and constipation.
C/I: There is no absolute contraindication.
A/R: Not yet known.
Dosage & admin: Adult: 2-4 tsf with equal quantity of water to be taken 2-3 times daily after meal.
Children: 1-2 tsf with equal quantity of water to be taken 2-3 times daily after meal.
100ml bot: 20.00 MRP

❖ **ELZYNE Syp. Jayson Natural**[55]
It is a herbal antidyspeptic, antidysenteric & antidiarrhoeal preparation.
Comp: Each 5ml contains- cyperus rotundus - 3.84gm, zingiber - 0.04gm, piper nigrum - 0.04gm, syzygium aromaticum - 0.04gm, trigonella foenum gracum - 0.04gm, plumbago zeylanica - 0.04gm, cuminum cynimum - 0.04gm.
Ind: Dyspepsia, anorexia, gastro-intestinal troubles.
Caution: Peptic ulcer, avoid intake in an empty stomach.
Dosage: Adult, 2-3 tsf thrice daily. Children, 6-12 yrs 1-2 tsf thrice daily. Duration of use- 1 to 3 weeks.
100ml bot: 20.00 MRP
200ml bot: 32.00 MRP
450ml bot: 60.00 MRP

❖ **ENDEMALI Sachet Hamdard**[38]
A very effective preparation of gum mastic (Roomi mastagi), Psyllium (Isphaghul) and other herbal ingredients for peptic ulcer & hyperacidity.
Comp: Each sachet contains: Plantago ovata (Husk) 0.87gm, Ocimum sanctum 0.58gm, Pistacia lentiscus 0.58gm, Vateria indica 0.15gm, other ingredients q.s.
Ind: Hyperacidity, gastritis and peptic ulcer, flatulence, dysentery, constipation.
C/I: There is no known contraindication.
S/E: No significant side effect has been observed in proper dosage.
Dosage: Each sachet twice daily before meal with water, atleast 1 month or as prescribed by the physician. For peptic ulcer and hyperacidity, 1 sachet twice a day before meal with half glass of water. In dysentery, 1 sachet 4 times a day and for constipation 1 sachet at bedtime with plenty of water.
20 sachets pack: 200.00 MRP

❖ **GASTO-4 Syp. Jayson Natural**[55]
A herbal antacid preparation with anti-dyspeptic action.
Com: Each 5ml contains- emblica efficinalis 125mg, terminalia belarica 125mg, terminalia chebula 125mg, adhatoda vasica 125mg, tinospora cordifolia 125mg, margosa indica 125mg, swertia chirata 125mg, oldenlandia corymbasa 125mg.
Ind: Hyperacidity, heartburn, dyspepsia and flatulence.
C/I: There is no known contraindication.
S/E: This preparation has yet not been reported to cause any side-effect.

Caution: This syrup should be used with caution in the first trimester of pregnancy.
Dosage: Adult- 3 to 4 tsf thrice daily, half an hour after food.
Children: 1-2 teaspoonful thrice daily half an hour after food.
This syrup to be used for 2-4 weeks. It can be taken as it is, or slightly diluted with a little water.
Drug inter: No drug interactions have been known.
200ml bot: 36.00 MRP

❖ **HD-ZAINARQ Syp. Jayson Natural**[55]
It is a herbal digestant preparation.
Com: Each 5ml contains-
Ptychotis ajowan 1.25mg.
Ref: Jamai ark B.N.A.F.
Ind: Indigestion, fermentative dyspepsia, loss of appetite and constipation
C/I: Zainarq should not be given to patients with diarrhoeal conditions.
S/E: No side-effects has been experienced yet.
Dosage: Adult- 2 to 3 tsf thrice daily, after meals.
Children: 1 tsf thrice daily after meals.
Dosage may be adjusted in case of acute dyspepsia up to a maximum 3 to 4 tsf thrice daily before meals and after meals.
The duration is 7 to 14 days.
Pharmaceutical precaution: Sediment is the part of the medicine. Store in a cool dry place. Shake well before use.
100ml bot: 22.00 MRP
200ml bot: 40.00 MRP
450ml bot: 75.00 MRP

INDIGENOUS BABY CARMINATIVE PREPARATIONS

❖ **ANISOL Syp. Jayson Natural**[55]
A herbal baby carminative preparation.
Com: This carminative preparation is composed of- pimpinella anisum, anethum sowa seeds, elettaria cardamomum, mentha piperita, anise oil, hordcum vulgare.
Ind: Indigestion, flatulence, gastrointestinal troubles of the infants and babies during teething.
C/I: No contraindications are reported.
S/E: No side effect yet reported or experienced in recommended doses.
Dosage: 0-6 month: 1/2 tsf 3 to 4 times daily.
6-12 month: 1 tsf 3 to 4 times daily.
1-2 years: 1 to 2 tsf 3 to 4 times daily. Or as directed by the physician.
Pharmaceutical precaution: Medicinal herbs and plants extract used in Anisol. So may be sediment on prolonged store. Shake well before use and store in a cool dry place.
100ml bot: 23.00 MRP

❖ **BABICA Syp. A.H Janakalyan**[38,64]
A herbal baby carminative; an effective homely remedy for infants and children with digestive disorders, teething problems and as a prophylactic against these common maladies.
Ind: Digestive disorders in infants and children, such as indigestion, diarrhoea, griping, flatulence; teething troubles; convulsions.
Dosage: Up to 6 months, 1/2 tsf; 6 month-1 year, 1 tsf; 1-2 years, 2 tsf; all are thrice or four times a day.
100ml bot: 30.00 MRP

❖ **DEFLIN Syp. Deep-Laid**[142]
Deflin is a baby carminative syrup. This natural formulation is completely safe for children.
Comp: (Not availed).
Ind: Flatulence, indigestion, abdominal pain, diarrhoea & symptoms during teething.
C/I: No contraindication has been reported.
Dosage: Child up to 4 months: 10-20 drops 3-4 times daily. Above 4 months: $^1/_2$ tsp to 3 tsp thrice daily.
100ml bot: 30.00 MRP

❖ **NAUNEHAL Syp. Hamdard**[38]
A herbal baby carminative; an effective homely remedy for infants and children with digestive disorders, teething problems and as a prophylactic against these common maladies.
Ind: Digestive disorders in infants and children, such as indigestion, diarrhoea, griping, flatulence; teething troubles; convulsions.
Dosage: Up to 6 months, 1/2 tsf; 6 month-1 year, 1 tsf; 1-2 years, 2 tsf; all are thrice or four times a day.
100ml bot: 28.00 MRP

ANTI-DIARRHOEAL & ANTI-DYSENTERIC PREPARATIONS

❖ **ADAD Syp. Deep-Laid**[142]
Anti-diarrhoeal and anti-dysenteric syrup. It is produced from raw aegle marmelos and other anti-dysenteric natural ingredients. Adad controls diarrhoea fast by its anti-spasmodic activity.
Comp: Each 5ml contains: Aegle marmelos, Holarrhena antidysenterica and other ingredients.
Ind: Diarrhoea, amoebic dysentery, intestinal spasm.
C/I: No contraindication has been reported.
Dosage: 10ml 2-3 times daily.
60ml bot: 25.00 MRP

❖ **DYROMA Syp. Jayson Natural**[55]
It is a herbal anti-dysenteric & anti-diarrhoeal preparation.
Ind: Amoebic & bacillary dysentery, chronic dysentery and diarrhoea.
C/I: No contraindications.
S/E: No side-effect.
Dosage: Adult: 4 tsf 3 times daily with water.
Children: 1-2 tsf 3 times daily 7-14 days.
Pharmaceutical precaution: Store in a cool dry place.
100ml bot: 25.00 MRP
450ml bot: 90.00 MRP

❖ **DYROTAB Tab. Jayson Natural**[55]
Each tablet contains- punica granatum 75.00mg, bolus armenia rubra 75.00mg, gum acacia arabica 75.00mg, rosa damascena 56.25mg, acacia arabica 56.25mg, cochlospermum religiosum 37.50mg.
Ref: Qurs Gulnar, B.N.U.F.
Ind: Diarrhoea, dysentery, chronic dysentery haemorrhagia.
C/I: No contraindications.
S/E: No side-effect.
Dosage: Adult: 2-4 tablets 2-3 times daily.
Children: 1-2 tablets 2-3 times daily.
Pharmaceutical precaution: Store in a cool dry place.
100's pack: 140.00 MRP

❖ **LOMOSIS Syp. A.H Janakalyan**[55]
It is a herbal anti-dysenteric & anti-diarrhoeal preparation.
Ind: Amoebic & bacillary dysentery, chronic dysentery and diarrhoea.
C/I: No contraindications.
S/E: No side-effect.
Dosage: Adult: 4 tsf 3 times daily with water.
Children: 1-2 tsf 3 times daily 7-14 days.
Pharmaceutical precaution: Store in a cool dry place.
100ml bot: 35.00 MRP

❖ **MARBELUS Syp. Hamdard**[38]
Marbelus is a unique combination of aegle marmelos (bel) & holarrhena antidysenterica (kurchi) which is highly effective in diarrhoea, amoebiasis, bacillary dysentery (shigellosis), giardiasis & helminthiasis.
Comp: Each 5ml syrup contains (as aq. extracts): Aegle marmelos (dry unripe bel fruit) 1.0mg.
Ref: B.N.U.F.
Ind: Diarrhoea, amoebiasis, bacillary dysentery, giardiasis, helminthiasis, irritable bowel syndrome (IBS), gastroenteritis, dyspepsia, indigstion & flatulence, peptic ulcer & hyperacidic complication.
C/I: There is no known contraindication.
S/E: Marbelus is well tolerated & safe for both children & adults. No significant side effects has been observed in proper dosage.
Dosage & admin: Adults: 2 tsf (10ml) 3-4 times daily.
Children: 1 tsf (5ml) 3-4 times daily or as prescribed by the physician.
100ml bot: 33.00 MRP
225ml bot: 50.00 MRP

❖ **PAICHISH Tab. Hamdard**[38]
It is a herbal antidysenteric, antidiarrhoeal & antispasmodic preparation.
Ind: Dysentery, blood dysentery, diarrhoea & gastrointestinal colic.
Dosage: Adults, 2 tablets twice or thrice a day.
Children (6-12 years), 1 tablet twice or thrice a day.
100's pack: 180.00 MRP

❖ **SAFFODIN Tab. A.H Janakalyan**[38,64]
It is a herbal antidysenteric, antidiarrhoeal & antispasmodic preparation.
Ind: Dysentery, blood dysentery, diarrhoea & gastrointestinal colic.
Dosage: Adults, 2 tablets twice or thrice a day.
Children (6-12 years), 1 tablet twice or thrice a day.
12's pack: 48.00 MRP
50's pack: 200.00 MRP

HERBAL LAXATIVE PREPARATIONS

❖ **ISPAGHOL (HUSK) Sachet Hamdard**[38]
Pure and clean, well preserved in laboratories psyllium (Ispaghol) is a mild laxative, diuretic and demulcent and soothing for the gastric and intestinal mucosa and hence effective in gastric irritation and ulceration. Very useful in chronic amoebic dysentery, chronic constipation and piles. Due to its inherent anaesthetic properties, it relieves gastric or peptic ulcer pain and chronic diarrhoea.
Comp: Each sachet contains: Plantago ovata (Husk) 3.50gm.
Ind: A natural herbal treatment for gastric irritation and ulceration, chronic dysentery, chronic costipation and piles.
Dosage: One sachet before breakfast or before bed time with one glass plain water.
C/I: There is no known contra indication.
S/E: No significant side effect has been observed.
Precaution: Drink plenty of water during taking ispaghol.
25 sachets pack: 135.00 MRP

HERBAL ANTI-HAEMORRHOIDAL PREPARATIONS

❖ **DEMORHOID Cap. Deep-Laid**[142]
Demorhoid is a herbal preventive & curative for piles. It is an oral therapy for piles & fistula.
Comp: Each capsule contains: Terminalia chebula, Berberis aristata, and other ingredients.
Ind: Piles, Fistula, Constipation.
C/I: No contraindication has been reported.
Dosage: 1-2 capsules twice daily.
50's pack: 200.00 MRP

❖ **REC Oint. Deep-Laid**[142]
Rec is a herbal ointment for piles & fistula. It decreases the lump of piles & removes swelling and pain of anus.
Comp: Each 5gm contains: Azadirachta indica "Oil", Boric acid BP, Galic acid BP and other ingredients.
Ind: Local use for piles & fistula, swelling & pain of anus.
C/I: No contraindication has been reported.
Dosage: Apply slight ointment to external or inner site of anus with applicator.
20gm tube: 65.00 MRP

HERBAL PREPARATIONS FOR LIVER DISORDERS

❖ **DAWA-UL-MISK Syp. Hamdard**[38]
It is a herbal preparation for hepatic dysfunctions and cardiac strength.
Comp: A well-known herbal preparation in sucrose and honey. Main ingredients are berberis aristata, bambusa arundinacea, coriandrum sativum, onosma bracteatum, emblica officinalis, coral roots, silver leaves, rosa damascena, cinnamomum zeylanicum, salvia haematodes, elettaria cardamomum, ambergris etc.
Ind: Hepatic dysfunctions, sluggish liver & anaemia; also useful in general debility. It is a good cardiac tonic too, if used with jawahar mohra (powdered pearls and precious stones).
Dosage: For cardiac weakness, 1 tsf once daily. For gastric and liver weakness, 1 tsf given with 4 tsf arq. moullaham.
Children: 4-6 years, 1/4- 1/2 tsf once daily for 1-2 months or as advised by the physician. If needed for longer use, give 1 week interval after every 2-3 weeks medication.
50gm pack: 300.00 MRP

❖ **DINAR Syp. Hamdard**[38]
It is a herbal preparation for liver disorders and protection of liver functions.
Comp: Cichorium endivia, cuscuta reflexa, rheum emodi etc.
Ind: Hepatitis, obstructive jaundice, ascites, constipation; pleurisy & alveolitis.
Dosage: Adults, 2-3 tsf & children, 1/2 -1 tsf twice daily after meal.
100ml bot: 25.00 MRP
450ml bot: 80.00 MRP

❖ **HEPA-10 Syp. Jayson Natural**[55]
It is a herbal preparation for liver disorders and associated clinical manifestations.
Comp: Each 5ml syrup contains- andrographis paniculate 100mg, apium graveolens 300mg, artemisia absinthium 100mg, asteracantha longifolia 100mg, cassia fistula 150mg, cichorium endivia 150mg, foeniculum vulgare 150mg, leonurus cardiaca 100mg, teminalia chebula 100mg, trianthema portulacastrum 100mg.
Ind: Hepatitis, jaundice, congestion of the liver & biliary tract; severe oedema & acne vulgaris due to liver disturbances; habitual constipation, chronic & drug induced g.i troubles. It promotes bile production & secretion of milk in lactating mothers.
Caution: Fat containing diets should be avoided during treatment. Liver & kidney damage; pregnancy, neonates.
Dosage: Adult, 2-4 tsf twice daily; children 6-12 yrs 1-2 tsf twice daily, 2-5 yrs 1/2-1 tsf twice daily, 0-2 yrs 1/4-1/2 tsf twice daily. To be given for 3-5 weeks.
100ml bot: 21.00 MRP
200ml bot: 39.00 MRP
450ml bot: 72.00 MRP

❖ **HEPAMILK Cap. Acme**[46]
Silymarin, a flavonoid complex of milk. Thistle is the biologically active component. It provides hepatocellular protection through toxin blockade at the membrane level, enhanced protein synthesis, antioxidant activity, antifibriotic activity, and possible anti-inflammatory or immunomodulating effects.
Comp: Each capsule contains milk thistle 87.5mg equivalent to 70mg silymarin.
Ind: Adjunctive treatment in chronic inflammatory liver disease (i.e viral or alcoholic hepatitis), hepatic cirrhosis, toxic liver damage etc.
C/I: No significant contraindication is observed.
S/E: A mild laxative effect has been observed in occasional instances.
Pregnancy & lactation: No restriction known.
Dosage & admin: 2-4 capsules divided in 2 to 3 doses, or as directed by the physician.
Drug inter: The concomitant use of silymarin and butyrophenones or phenothiazines results in a reduction of lipild peroxidation.
20's pack: 100.00 MRP

❖ **HEPATOLIN Syp. Acme**[46]
Hepatolin is a hepatoprotective herbal medicine. It has also digestive and anti-oxidant activity. It is also known as rohitakarista. It is available as syrup in 200ml bottle.
Comp: Each 5ml syrup contains extracts of the following herbal ingredients:
Aphanamixis polystachya 1.52gm, woodfordia fructicosa 0.24gm, emblica officinalis 15.24mg, terminalia chebula 15.24mg, terminalia belerica 15.24mg, zingiber officinale 15.24mg, piper longum (root) 15.24mg, piper longum (fruit) 15.24mg, elettaria cardamomum 15.24mg, cinnamomum tamala 15.24mg, cinnamomum zeylanicum 15.24.
Ref: Rohitakarista, BNAF.
Ind: Jaundice, hepatitis, toxic liver injury; chronic indigestion, anorexia.
C/I: There is no absolute contraindication.
S/E: Not yet known.
Dosage & admin: Adult: 2-4 tsf 2-3 times daily after meal.
Children: 1-2 tsf 2-3 times daily after meal. Or, as directed by the physician.
200ml bot: 35.00 MRP

❖ **HEPAZIN Syp. A.H Janakalyan**[38,64]
It is a herbal preparation for liver disorders and protection of liver function.
Comp: It is a herbal preparation. It's main ingredients are- Cichorium endivia, Rosa damascena, Borago officinalis, Cuscuta reflexa etc.
Ind: Hepatitis, obstructive jaundice, ascites, pleurisy, constipation.
Dosage: Adults, 2-3 tsf thrice daily. Children, 1/2-1 tsf thrice daily.
250ml bot: 60.00 MRP
450ml bot: 100.00 MRP

❖ **HETRO Syp. Deep-Laid**[142]
Hetro is a unique herbal formulation for promoting hepato-biliary system. It develops bile promoting hepato-biliary system. It enhences bile production, improves metabolism.
Comp: Each 5ml contains: Cichorium intibus (Root), Cichorium intibus (seed), Rosa damasecena, Nymphaya lotus, Borago officinalis, Cuscuta reflexa, Rheum emodi.
Ind: Jaundice, hepatitis, liver function dsorder, anorexia, constipation.
C/I: No contraindication has been reported.
Dosage: Adults, 2-3 tsf & Children, $^1/_2$- 1 tsf twice daily.
100ml bot: 25.00 MRP
450ml bot: 70.00 MRP

❖ **ICTEREN Tab. Hamdard**[38]
Icterene is effective in the treatment of hepatic and biliary disorders, specially jaundice.
The inorganic chemical compound which has been obtained from tamarix dioica is found to be very much effective in the hepatic disorder specially iaundice, haemolysis as well as infection. Extensive clinical trials have established icterene as the only known effective

drug for the hepatic and biliary disorders. Icterene improves the hepatic functions, acts as a diaphoretic and diuretic too.
Comp: Each tablet contains: Salt of tamarix dioica 530mg, and other ingredients q.s.
Ind: Icterene is indicated in jaundice, haemolysis and infection. It is also indicated in jaundice neonatorum. It has also been successfully employed in oliguria and wherever diuresis is required. In mild infective febrile states, icterene acts as a diaphoretic and lowers the body temperature.
C/I: There is no known contraindication.
S/E: No significant side effect has been observed in proper dosage.
Precaution: Plenty of drinks, glucose water, fruit juices should be taken during the course of treatment. Meat and fats to be avoided totally during the treatment.
Dosage & admin: Adults: Usually 2 tablets 3 times daily for 3 days are enough to bring about a therapeutic cure, but in severe cases 8 tablets in 24 hours can be given in divided doses without any harm. In children, the dosage may be reduced according to the age. In case where satisfactory response has not been obtained, further course for 3 days may be given to the patient with the usual dosage schedule. If the effective results are not yet obtained, investigations should be immediately initiated for obstructive jaundice.
30 tabs pack: 400.00 MRP

❖ **ICTURN Syp. Hamdard**[38]
Ictum is an effective herbal preparation for liver disorders containing Borago officinalis (Gaozaban), Cichorium endivia, Cuscuta reflexa, Rheum emodi etc. Gaozaban contains gama linolic acid which is highly effective in all types of inflammation including hepatitis. Kashni is very effective in jaundice. It is available as syrup in 100ml & 450ml glass bottle.
Comp: Each 5ml contains: Cichorium intybus (root) 400mg, Cichorium intybus (seed) 200mg, Rosa damascena 200mg, Borago officinalis 100mg, Cuscuta reflexa 150mg, Nymphaea nouchali 100mg, Rheum emodi 125mg.
(Ref: Sharbat Deenar)
Ind: Hepatitis, jaundice, ascites, pleurisy, alveolitis, uterine inflammation & constipation.
C/I: There is no known contraindication.
S/E: No significant side effect has been observed in proper dosage.
Dosage: Adults: 2-3 tsf twice daily.
Children: 1/2-1 tsf twice daily or as directed by the physician.
100ml bot: 28.00 MRP
450ml bot: 90.00 MRP

❖ **JIGARINE Strip. Hamdard**[38]
Jigarine is a combination of aqueous extracts of yarrow (Achillea millefolium) & wormwood (Artemisia absinthium), effective in the treatment for hepatic disorders like hepatitis, hepatalgia, enlarged and sluggish liver. This may be taken as a whole with hot water or dissolved in hot water.
Comp: Each strip contains: Dry extract of Achillea millefolium 1.56gm & dry extract of Artemisia absinthium 1.56gm.
Ind: Hepatic congestion and hepatitis, sluggish liver, enlarged liver, heptalgia, liver cirrhosis.
C/I: There is no known contraindication.
S/E: No significant side effect has been observed in proper dosage.
Precautions: Jigarine should be preserved from dampness and direct sunlight. In liver diseases light food should be taken. Plenty of liquid, lemon juice and the use of juicy fruits are suggested.
Dosage & admin: Hepatic congestion & hepatitis: 2 strips of jigarine, 1 in the morning and 1 in the evening should be taken. If the liver is harden due to gross inflammation, 1 tablet of icterene should he taken along with jigarine.
Sluggish liver: In sluggish liver which creates many digestive troubles when appetite disappears, fresh blood is not formed and the face becomes pale, only one dose in the morning or evening is enough. Two doses with lunch and dinner quickly restores the normal blood formation. In some such cases dawaul misk, motadil jawahirdar should be taken alongwith jigarine.
Enlarged liver and heptalgia: Only one strip is enough in the morning or at bedtime.
Liver cirrhosis: In some hepatic cases when due to excessive use of alcohol, there appear cirrhotic symptoms, the continuous use of jigarine is very helpful. It retards the process of cirrhosis (hardening of liver).
25 strips pack: 460.00 MRP

HERBAL APPETITE STIMULANTS

HAJMO-A Tab. Acme[46]
Hajmo-A tablet is a herbal appetizer preparation. It's generic name is vaskor laban.
Comp: Each tablet contains- Piper longum (seed), Coriandrum sativum, Nigella sativa, Cinnamomum tamala, Flacaurtia jangomas, Mesua ferrea, Piper nigrum, Cuminum cyminum, Zingiber officinale, Cinnamomum zeylanicum, Amomum sublulatum, Punica granatum, Remex vesicarius, Sodi chloridum, Bit salt, Sachal salt and Sodium chloride.
Ind: Loss of appetite, flatulance.
C/I: There is no absolute contraindication.
A/R: Not yet known.
Dosage & admin: Adults: 2 tablets daily.
Children: 1 tablet daily.
25 tabs pack: 10.00 MRP

❖ **HAZMOTAB Tab. Jayson Natural**[55]
Each tablet contains- piper nigrum 24.02mg, zingiber officinale 24.02mg, syzygium aromaticum 8.00mg, lake salt 59.95mg, other ingredients Q.S.
Ind: Indigestion, dyspepsia, anorexia, hiccup, acidity, constipation & vomiting tendency.
C/I: Hazmotab tablet should not be given to patient with peptic & duodenal ulceration and empty stomach.
S/E: No significant side-effects.
Dosage: Adult: 1-2 tablets 2-3 times daily chewable or with water before/after meal.
Children: 1/2-1 tablet daily chewable or with water before/after meal.
100's pack: 50.00 MRP

BLOOD LIPID LEVEL & BLOOD PRESSURE LOWERING PREPNS.

GARLIC PREPN[38,55]

GARLIC PREPN: Tablet/Capsule/Syrup
Garlic, a herbal preparation for lowering blood lipid level & high blood pressure, thus helping in maintaining good health. It is available as capsule, tablet & syrup form.
Comp: Tablet: Each garlic tablet contains- allium sativum 350mg, allium cepa 25mg, & zingiber officinale 41.66mg. The ingredients which are essential for sound health, like vitamin B and C, mineral salts, sulphur and volatile oil, all found in garlic tablets and well preserved.
Capsule: Please see the manufacturer's literature.
Syrup: Each 5ml contains- allium sativum 300mg, allium cepa 100mg, anacyclus pyrenthrun 100mg, syzygium cumini 100mg, piper nigram 0.75mg, ruta graveolens 0.75mg.
Ind: High blood pressure, hypercholesterolemia, hyperlipidemia, rheumatism, nervous & general debility for stamina, cold and cough, bronchitis and abdominal disorders.
C/I: Children and high temperament patient.
S/E: No toxicity was observed.
Dosage: Tablet/capsule- 1 tablet or capsule after meals 2 to 3 times daily. 2 tablets or capsules twice a day after meals are effective in cold and chest congestion. For gastro-intestinal ailments one garlic tablet or capsule, one hour before meals.
Syrup- 3 to 4 tsf 3 times daily with a cup of water before or after meals.

❖ **GARLIC Tab. Hamdard**
A herbal garlic preparation: tablet
Comp: See above under the text.
60's pack: 46.00 MRP

❖ **GARLICON Syp. Jayson Natural**
A herbal garlic preparation: syrup.
Comp: See above under the text.
200ml bot: 36.00 MRP

❖ **JANAKALYAN GARLIC Tab. A.H Janakalyan**
A herbal garlic preparation: tablet
Comp: See above under the text.
12's pack: 36.00 MRP
50's pack: 150.00 MRP

❖ **LOPID Cap. Acme**
A herbal garlic preparation: capsule
Comp: See above under the text.
30's pack: 150.00 MRP

RAUWOLFIA PREPN[38]

❖ **NORMATENSIN Tab. Hamdard**[38]
Normatensin is an effective herbal medicine to normalize hypertension and anxiety. The main ingredient of normatensin is Rauwolfia serpentina contains reserpine & rescinnamine are ideal tranqullizer and anti-psychotic. It is very effective in insomnia, hysteria, epilepsy, violent mania, schizophrenia, severe persistent headache,

tension and irritative conditions of the CNS. Normatensin prevents the action of catecholamine (epinephrine and nor-epinephrine), which release from the sympathetic nerve endings due to its sympatholytic effects.
Comp: Each tablet contains: Rauwolfia serpentina root (Sarpagandha) 151.52mg, Potassium bromide B.P 75.76mg, Magnesium carbonate B.P 18.94mg, Silicate of alumina with magnesia 3.78mg.
Ind: Hypertension, insomnia, anxiety, tension, persistent headache, epilepsy, hysteria, insanity.
C/I: Normatensin is contraindicated in depression, ulcerations, pregnancy & lactation.
S/E: There are no known side effects in proper dosages. Side effects may occur occasionally-nasal congestion, drowsiness, vomiting.
Dosage: 1-2 tablets twice daily or as directed by the physician.
20 tabs pack: 28.00 MRP

INDIGENOUS COUGH PREPARATIONS

❖ ACME'S BASOK Syp. Acme[38]
Acme's basok syrup is a combination of herbs that is used to treat cough and some other respiratory tract disorders. All of the herbs in this combination are clinically effective in case of cough and cold. It is well tolerated, safe and nonsedating with expectorant and antihistaminic properties. It is available as syrup in 100ml bottle.
Comp: Each 5ml syrup contains- extracts of Adhatoda vasica 0.68gm, Piper longum 0.14gm, Vitis vinifera 0.14gm, Terminalia chebula 73.24mg, Woodfordia fruticosa 1.14gm, Glycyrhiza glabra 6.78mg, Ficas infectoria 6.78mg, Acorus calamus 6.78mg, Trikatu (Piper longum, Piper nigrum, Zingiber officinale) 20.34mg, Syzygium aromaticum 6.78mg, Trizatak (Cinnamomum zeylanicum, Cinnamomum tamala, Elettaria cardamomum) 20.34mg, Rhus succedanea 6.78mg, Myrica nagi 6.78mg. Tulsi extract has been added to this syrup.
Ind: Basok syrup relieves allergic and dry irritable cough. It liquefies phlegm. It is very effective in asthma, smoker's cough and throat hoarseness. It also gives relief from common cold and bronchitis.
C/I: There is no specific contraindication, but it may happen is patients who are hypersensitive to any of its ingredients.
S/E: It is safe & well tolerated. In the recommended doses, side effects are rare.
Use in pregnancy: The safety of basok syrup in pregnancy has not been established. Therefore, it should be used with caution during pregnancy considering benefits to the mother greater than the risks to the fetus.
Dosage & admin: Children under 12 years: 1-2 tsf (5-10ml) 3 times a day.
Adults: 3 tsf (15ml) 2-3 times a day.
In acute cough, warm water can be added for better result. Or, as directed by the physician.
Drug inter: No clinically significant drug interactions have been reported.
100ml bot: 35.00 MRP

❖ ALVASIN Syp. Hamdard[38]
Alvasin syrup is an effective herbal expectorant & antitussive preparation.
Alvasin is a unique combination of valuable herbs for all types of cough & cold. It is an excellent bronchodilator with anti-allergic properties for both adults and children. It is well tolerated, safe and non-sedative in action.
Ind: Dry cough, bronchitis, whooping cough, hoarseness of voice, common cold, congestion of lungs, hacking cough, bronchial asthma, allergic cough, influenza, smokers cough, tonsillitis, tubercular cough and sore throat.
C/I: There is no known contraindcation.
S/E: No significant side-effect has been observed.
Dosage: ***Adults:*** **2-5 tsf (10-25ml) twice daily or as directed by the physician.**
Children under 12 years: **1-2 tsf (5-10ml) twice daily or as directed by the physician.**
100ml bot: 40.00 MRP
225ml bot: 78.00 MRP

❖ ANTICO Syp. Deep-Laid[142]
Antico is a herbal cough expectorant syrup.
Comp: Each 5ml contains: Adhatoda vasica, cordia latifolia, Glycyrrhiza glabra, Althaea officinale, Malva sylvestris, Nymphaea lotus, Centella asiatica, Cydonia oblonga and other ingredients.
Ind: Dry cough, chronic cough, cough due to smoking, allergic cough, hoarseness of voice.
C/I: No contraindication has been reported.
Dosage: 3 tsf 2-3 times daily.
100ml bot: 32.00 MRP

❖ COFLEX Syp. A.H Janakalyan[38,64]
A non-sedative expectorant and decongestant with bronchodilatation.
Comp: It is prepared from the extracts of known herbal decongestive ingredients like Adhatoda vasica, Cordia dichotama, Malva sylvestris, Centella asiatica etc.
Ind: Chronic and acute bronchitis, cold, catarrh, asthma, tubercular cough, whooping cough, flu and post-influenzal cough.
Dosage: Adult- 2 tsf thrice daily; in severe cases 2 tsf 6 hourly.
Chidren- 1/4 to 1/2 tsf as per direction of the physicians.
100ml bot: 40.00 MRP

❖ JOSHINA Sachet Hamdard[38]
Joshina contains glycyrrhiza glabra (Jashtimodhu), Cordia dichotama (Sapistan), Malva sylvestris (Khobbazi), Althaea officinalis (Khatmi), Viola odorata (Gulebanafsha), Borago officinalis (Gaozaban) and Zizyphus vulgaris (Unnab) which have been recognized as the most efficacious herbal cure for cold, bronchitis and inflamnatory diseases of the respiratory tract.
Comp: Each sachet contains: Glycyrrhiza glabra 1.34gm, Cordia dichotoma 1.34gm, Malva sylvestris 0.71gm, Althaea officinalis 0.54gm, Viola odorata 0.45gm, Borago officinalis 0.36gm, Zizyphus vulgaris 0.27gm.
Ind: Cold & cough, bronchitis, tonsillitis, catarrh, catarrhal fever, catarrhal pain, headache & sorethroat.
C/I: There is no known contraindication.
S/E: No significant side effect has been observed in proper dosage.
Dosage: I sachet joshina be dissolved in a cup of hot water and to be taken 2-3 times daily or as directed by the physician. If sweetened with 2 or 3 crushed sualin tablets, it enhances its effects.
25 sachets pack: 165.00 MRP

❖ PECTORAL Syp. Jayson Natural[155]
It is an expectorant cough preparation of herbal origin.
Comp: The important ingredients of this preparation are the extracts of the following herbal plants- Centella asiatica, Adhatoda vasica, Cordia dichotama, Plantago ovata, Onosma bracteatum, Althaea officinalis, Glycerrhiza globra, Rosa damascena, Zizyphus sativa.
Ind: Tenaceous cough, chronic cough, day cough, irritative cough, cold, cold-fever, headace due to cold.
C/I: No contraindication are reported in recommended dosages.
Dosage: Adults- 2 to 3 tsf 2 to 3 times daily; Children- 1 to 2 tsf 2 to 3 times daily. To be used 7 days.
100ml bot: 30.00 MRP
200ml bot: 52.00 MRP

❖ SADURI Syp. Hamdard[38]
A non sedative expectorant and decongestant with bronchodilatation.
Comp: It is made from the extracts of known herbal decongestive ingredients, like adhatoda vasica, ocimum sanctum, zizyphus vulgaris and sisymbrium irio.
Ind: Chronic and acute bronchitis, cold, catarrh, asthma, tubercular cough, whooping cough, flu and post-influenzal cough.
Dosage: Adult, 2 tsf at morning and evening; in severe cases take one dose more at bedtime. If severity persists, 1 tsf can be repeated every four hours, but total intake must not exceed 6 tsf in a day. Children, 1/4 to 1/2 tsf as per directions.
100ml bot: 30.00 MRP

❖ SUALIN Tab. Hamdard[38]
A preparation for cough, cold and bronchitis.
Comp: It is made from chosen ingredients and herbs for cough, cold and bronchitis, like glycyrrhiza glabra, adhatoda vasica, ocimum sanctum, zizyphus, cinnamon and anisi.
Ind: It is a proven remedy for influenza, bronchitis tonsillitis, sore throat, cold and cough, congestion of sinuses and lungs; hoarseness of voice.
Dosage: 2 tablets be chewed three times a day or more as directed by the physician. It is very effective when taken dissolved in boiled water. It may be taken along with Joshanda.
100's pack: 120.00 MRP

NEUROTONIC PREPARATIONS & ANTIDEPRESSANTS

❖ ARECONA Syp. Jayson Natural[55]
Arecona is a nootropic & neurotonic herbal preparation.
Comp: Each 5ml contains Areca catechu 2gm.
Ind: Post stroke complications, cerebral

insufficiency, unconsciousness, paralysis, urinary retention due to cerebrovascular diseases and nervousness.
C/I: Arecona is contra-indicated in patients suffering from obstructive airway diseases, asthma, chronic diarrhoea, pregnancy epilepsy, gangrene, myocardial infarction, glaucoma.
S/E: Large doses may cause diarrhoea, bronchospasm, precipitation of asthma and palpitation.
Dosage: Adult- 1 tsf 4 times daily. Children- as directed by the physician.
100ml bot: 33.00 MRP

❖ **GINGO Tab. Acme**[46]
Ginkgo leaf is commonly used in the treatment of early-stage Alzheimer's disease, vascular dementia, peripheral claudication, and tinnitus of vascular origin. Multiple trials investigating the efficacy of ginkgo biloba for treating cerebrovascular disease and dementia have been performed.
Comp: Each tablet contains ginkgo leaf 40mg (standardized extract).
Ind: Symptomatic relief of organic brain dysfunction (memory deficits, disturbances in concentration), Intermittent claudication, vertigo, tinnitus.
C/I: Ginkgo leaf may lower seizure threshold. It should not be used in any patient known to be allergic to it or any of its constituents.
S/E: Very seldom cases of stomach or intestinal upset, headache, or allergic skin reaction.
Precautions: Consider discontinuing ginkgo leaf prior to elective surgery as it may increase the risk of postoperative bleeding.
Pregnancy & lactation: No restrictions known.
Dosage & admin: Symptomatic relief of organic brain dysfunctions: 3-6 tablets daily in 2-3 divided doses. Length of treatment should be judged according to the severity of symptoms and should extend at least 8 weeks in the case of chronic illness. Continuation of treatment for more than 3 months should be reviewed for its justification. Intermittent claudications, vertigo & tinnitus: 2-4 tablets daily in 2-3 divided doses. Improvement of ambulatory range requires administration for not less than 6 weeks. In case of vertigo & tinnitus, administration for more than 6-8 weeks has no therapeutic benefit.
Drug inter: Anticoagulants, antiplatelet agents, low molecular weight heparin and thrombolytic agents may increase the risk of bleeding complications. Anticonvulsants may precipitate seizures in epileptic patients.
50's pack: 250.00 MRP

❖ **PERKUP Cap. Acme**[46]
Hypericum perforatum (St. John's Wort) standardized extract has been used medicinally for over 200 years. The main active principles of the herb are the flavone & flavonol derivatives, xanthones and naphthodianthrone (hypericins). It has antidepressant and anxiolytic action. Numerous studies reported that hypericum perforatum standardized extract is more effective than placebo and equally effective as tricyclic antidepressant drugs in the short-term treatment of mild to moderate major depression.
Comp: Each capsule contains hypericum perforatum (St. John's Wort) standardized extract 300mg.
Ind: Depressive moods, anxiety & nervous unrest.
C/I: History of photosensitivity or a hypersensitivity to hypericum perforatum standardized extract.
S/E: Photosensitization is possible, specially in fair-skinned individuals.
Pregnancy & lactation: It is contraindicated during pregnancy but not contraindicated during lactation.
Dosage & admin: 1 capsule 3 times daily, or as directed by the physician.
Drug inter: It interacts with selective serotonin reuptake inhibitors (SSRIs), tricyclic antidepressants, amphetamine, monoamine oxidase inhibitors (MAOIs), dopamine agonist such as bromocriptine, warfarin etc.
20's pack: 60.00 MRP

❖ **SEJIN Syp. Deep-Laid**[142]
Sejin is a nerve stimulant and energy enhancer herbal syrup.
Comp: Each 5ml contains: Cinnamomum cassia, Embelica officinale, Smilax china, Psidium guyava, Hyosyamus niger, Syzygium aromaticum, Myristica fragrans, Centauria behen, Salvia haematodes, Curcoligo orchioides, Withania somnifera and other ingredients.
Ind: Nervous weakness, General weakness, Exhaustion.
C/I: No contraindication has been reported.
Dosage: 3 tsf (15ml) twice or thrice daily.
100ml bot: 40.00 MRP
450ml bot: 160.00 MRP

PREPARATIONS WITH HORMONE-LIKE ACTIVITY & SEX STIMULANT

❖ **APHRODIN Cap. Jayson Natural**[55]
Aphrodin is a potent aphrodisiac preparation, safe remedy for sexual and psychogenic impotence in male. Active herbal constituents of aphrodin demonstrate hormone-like activity and maintain hormonal equilibrium. Aphrodin is equally effective, safe & reliable in female frigidity & lack of orgasm, physical exhaustion and nervous debility.
Comp: Each capsule contains ingredients of- Alpinia galanga, Myristica fragrans, Sizygium aromaticum, Crocus sativus, Strychnos nux-vomica, Treated cantharides, Testicular extract, Musk xylol, Ambra grasea, Argentum oxidacum, Treated asphaltum, Hen's egg yolk.
Ind: Sexual weakness, premature ejaculation, nervous debility, general weakness.
C/I: Aphrodin is contraindicated in advanced arteriosclerosis and chronic renal diseases.
Precaution: Use with caution in hypertension.
Dosage & admin: Usually one capsule in the morning and one capsule at bed time or two capsules before bed time, preferably be taken with milk, or honey daily. Aphrodin should be continued at least 3-4 weeks for optimum result. For better result, patients are advised following mode of administration: daily 2+0+2 capsules for 5 days, then daily 2+0+1 capsules for 10 days, followed by 1+0+1 capsule as maintenance dose.
Continuous use of aphrodin may serve as a good general restorative tonic. For complete functional impotence it is necessary to increase the above dosage of aphrodin to 2 capsules t.i.d. This should be given under constant supervision.
10's pack: 300.00 MRP

❖ **CASTORIN Cap. A.H Janakalyan**[38,64]
A tonic for youthful vigour.
Comp: A preparation of Saffron, Lacerta agilis, Calcined tin and other herbs etc.
Ind: It is a tonic which increases libido, helps retentive power and maintains youthful vigour.
Dosage: 2 capsules to be taken with milk two hours before coitus. Dinner should be taken 2-3 hours earlier and very light too.
2's pack: 100.00 MRP
12's pack: 600.00 MRP

❖ **DUREX Cap. A.H. Janakalyan**[38,64]
Durex is a herbal stimulant & aphrodisiac prepn.
Comp: Each 250mg capsule contains: Strychnos nux- vomica 120mg, piper nigrum 60mg, piper longum 60mg, ambra grasea 10mg, & piper betle.
Ind: Durex is a aphrodisiac preparation, which enhances viscosity of semen, increases retentive power, strengthens nervous system & prevents premature ejaculation.
Dosage: 2 capsules to be taken 1-2 times daily.
4's pack: 100.00 MRP
30's pack: 750.00 MRP

❖ **ENDUREX Cap. Hamdard**[38]
Endurex is a herbal aphrodisiac preparation.
Comp: Each capsule contains ingredients of- Ambra grasea (ambor) 11.90mg; Piper nigrum (gol morich) 59.52mg; Piper longum (peepal) 59.52mg; Piper betle (paan) & other ingredients Q.S.
Ind: It is a sexual tonic which increases libido, prevents premature ejaculation & enhances retentive power. It is also an effective preparation in the treat- ment of Bell's palsy, numbness, pain & rheumatism.
C/I: There is no known contraindication.
S/E: No significant side effect has been observed.
Dosage: 2 capsules 1-2 times daily.
20's pack: 760.00 MRP

❖ **FRODEX Tab. Hamdard**[38]
A masculine tonic for the vital organs.
Comp: This formula contains Ambergis, Momyaie. Agar, Salvia haematodes, Myristica fragrans and Mineral Bezoar (Zehar Mohra), Cinnamomum, Bambusa arundinacea, Silver foil, Paeonia emodi and other ingredients.
Ind: It restores the depleted sexual power. It relieves limpness and weakness after coitus. It also enhances retentive power. Its continuous use serves as a good general tonic.
Dosage: 1 tablet to be taken with milk in the morning & 1 at bedtime.
20's pack: 460.00 MRP

❖ **LIBIDEX Cap. Hamdard**[38]
Libidex is a natural aphrodisiac preparation.
Comp: This formula contains- Myristica fragrans

(arillus), Lacerta agilis, Argyreia speciosa, Myristica fragrans (fruit), Calcined silver, Crocus sativus,
Mineral bezoar, Castorium & other ingredients.
Ind: It is a natural aphrodisiac preparation, which increases libido, prevents premature ejaculation, maintains optimum duration, ensures pleasant orgasm & post coitus freshness, enhances retentive power.
C/I: There is no known contra-indication.
S/E: No significant side effect has been observed.
Dosage: 1-2 capsule daily.
20's pack: 400.00 MRP

❖ LEBONEX Tab. Deep-Laid[142]
Libonex is a safe & powerful sex stimulant.
Comp: Each tablet contains: Myristica fragrans, Lecerta agilis, Argyreia speciosa, Myristica fragrans Fruit, Calcined silver, Crocus sativus, Mineral bezoar, Castorium, Piper betle.
Ind: Sexual impotency, Loss of retentive power, Premature ejaculation, Nervous weakness, Frigidity, Spermatorrhoea.
C/I: Hyper tension.
Dosage: 1 tab. at morning & 1 tab. at night after meal with milk or water.
20's pack: 250.00 MRP

❖ NISHAT Tab. Hamdard[38]
A tonic for youthful vigour.
Comp: A preparation of Saffron, Lacerta agilis, Calcined tin and other herbs etc.
Ind: It is a tonic which increases libido, helps retentive power and maintains youthful vigour.
Dosage: 2 tablets to be taken with milk two hours before coitus. Dinner should be taken 2-3 hours earlier and very light too.
100's pack: 700.00 MRP

❖ TILA-E-JADEED Rub A.H Janakalyan[38]
Tila-e-Jadeed is highly effective in sluggishness, feebleness, curvature, shortness and obliquity of male organ. For excessive indulgence in sexual acts or other causes nerves, blood vessels and tissues lost their elasticity and blood cannot store long time in the blood vessels which reduces the erecting time and makes the male organ weak. Tila-e-Jadeed strengthens the tissue, stimulates the nerves and muscles as well as the flow of blood in the male organ, thus providing it stiffness and full erection. It also increases the elasticity of male organ.
Comp: Each 5ml contains: Calotropis gigantea 0.20mg, Myristica fragrans (aril) 0.23mg, Myristica fragrans (nut) 0.23mg, Eugenia caryophyllus 0.23mg, Anacyclus pyrethrum 0.23mg, Crocus sativus 0.07mg, Cochineal insect 0.23mg, Castoreum 0.07mg.
Ind: Sluggishness, feebleness, curvature, shortness and obliquity of male organ.
Dosage: Rub gently 5-6 drops of Tila-e-Jadeed all around on the penis once a day. For full recovery use it for 3-4 weeks or as directed by the physician.
C/I: There is no known contraindication.
S/E: No significant side effect has been observed in proper dosage.
15ml bot: 150.00 MRP

❖ TILA JADEED Rub Hamdard[38]
Tila Jadeed is highly effective in sluggishness, feebleness, curvature, shortness and obliquity of male organ. For excessive indulgence in sexual acts or other causes nerves, blood vessels and tissues lost their elasticity and blood cannot store long time in the blood vessels which reduces the erecting time and makes the male organ weak. Tila Jadeed strengthens the tissue, stimulates the nerves and muscles as well as the flow of blood in the male organ, thus providing it stiffness and full erection. It also increases the elasticity of male organ.
Comp: Each 5ml contains: Calotropis gigantea 0.20mg, Myristica fragrans (aril) 0.23mg, Myristica fragrans (nut) 0.23mg, Eugenia caryophyllus 0.23mg, Anacyclus pyrethrum 0.23mg, Crocus sativus 0.07mg, Cochineal insect 0.23mg, Castoreum 0.07mg.
Ind: Sluggishness, feebleness, curvature, shortness and obliquity of male organ.
Dosage: Rub gently 5-6 drops of Tila Jadeed all around on the penis once a day. For full recovery use it for 3-4 weeks or as directed by the physician.
C/I: There is no known contraindication.
S/E: No significant side effect has been observed in proper dosage.
15ml bot: 110.00 MRP

❖ TRIGONE Tab. Hamdard[38]
Trigone is a natural aphrodisiac with the judicious combination of synergistically acting precious natural ingredients like amber, castorium, rumi mostogi etc. It is available as tablets in plastic container.
Comp: Each tablet contains: Seriparium 57.69mg, Ambra grasea 38.46mg, Orchis latifolia 38.46mg, Alpinia galanga 38.46mg, Castorium 38.46mg, Pistacia lentiscus 19.23mg, Eugenia caryophyllus 19.23mg.
(Ref: Habb-e ambari)
Ind: Sexual debility, nervous debility, mental weakness & weakness of heart, brain, liver and kidney, poor immune function, biochemical imbalance, physiological dysfunction.
C/I: There is no known contraindication.
S/E: No significant side effect has been observed in proper dosage.
Dosage & admin: I tablet in the morning and 1 tablet in the evening or 2 tablets be taken before going to bed or as directed by the physician. Dinner should be taken 2-3 hours earlier and very light too for optimum bioavailability and desired result. Trigone tablet may be used along with a glass of milk or 15ml honey. If milk or honey is not available, Trigone tablet may be used with 30ml cinkara syrup or 20ml jinsant syrup or a glass of water.
10 tabs pack: 500.00 MRP

❖ VIGO-FORT Cap. Acme[46]
Jouban satadal 250mg/capsule.
Vigo-fort is a herbal aphrodisiac capsule.
Comp: Each vigo-fort capsule contains following main herbal ingredients:
Withania somnifera 14.29mg, mucuna prurita 14.29mg, anacyclus pyrethrum 14.29mg, myristica fragrans 14.29mg, swama sindur 14.29mg, aurum 7.14mg, pearl 7.14mg, stannum 7.14mg, crocus sativus 14.29mg, syzygium aromaticum 14.29mg, zingiber officinale 14.29mg, piper longum 14.29mg, pterocarpus santalinus 14.29mg.
Ind: Increases the secretion of testosterone & production of the sperm, enhances viscosity of semen, increases retentive power, strengthens nervous system, prevents premature ejaculation, prolongs the duration of coitus & ensures post coitus freshness. It is safe & effective sex tonic.
C/I: There is no absolute contraindication.
S/E: Not yet known.
Dosage & admin: 1-2 capsules before bed time.
30's pack: 360.00 MRP

❖ VIMEX Tab. Deep-Laid[142]
Vimex is a herbal aphrodisiac & anti-oxidant prepn.
Comp: Each tablet contains:- Ambra grasea, Asphaltum, Mytilus margaritiferus, Pistacia vera, Syzygium aromaticum, Myristica fragrans, Pastinaca secacul, Delphinium denudatum , Castorium, and other active ingredients.
Ind: Vimex is indicated for adult male in sexual debility, impotency & general weakness. It enhances the secretion of hormone through natural way & increases desire. It develops penile erection, provides energy in brain to keep it active.
C/I: It should not be prescribed to child & adolescent. Without doctor concern hypertensive patient should not take vimex.
S/E: Some patients may report of vertigo, nausea & anorexia.
Dosage: For rapid sexual performance: 2 tablet once after an hour of meal. For general weakness: 1 tab. at morning & 1 tab. at night.
20's pack: 350.00 MRP

❖ VITOLEX Cap. A.H Janakalyan[38,64]
Vitolex is a natural aphrodisiac capsule.
Comp: This formula contains- Myristica fragrans (arillus), Lacerta agilis, Argyreia speciosa, Myristica fragrans (fruit), Calcined silver, Crocus sativus,
Mineral bezoar, Castorium & other ingredients.
Ind: It is a natural aphrodisiac preparation, which increases libido, prevents premature ejaculation, maintains optimum duration, ensures pleasant orgasm & post coitus freshness, enhances retentive power. It maintains youthful vigour and relieves physical & mental exhaustion.
C/I: There is no known contraindication.
S/E: No significant side effect has been observed.
Dosage: 1-2 capsule daily.
2's pack: 100.00 MRP
10's pack: 500.00 MRP

ANALGESIC, ANTIPYRETIC & DIURETIC PREPNS.

❖ ALKULI (Buzuri) Syp. Hamdard[38]
Antipyretic & Diuretic
Comp: A herbal preparation of cichorium endivia, cucumis melo, foeniculum valgare, tribulus terestris.
Ind: Pyrexia, anuria, oliguria, hepatitis, obstructive jaundice. It is also very effective to clear the morbid substances from the kidney & urinary bladder.
Use: Adults, 2 to 4 tsf twice to four times daily. Childrens, 1 to 2 tsf as per direction.
100ml bot: 24.00 MRP

450ml bot: 82.00 MRP

❖ **FEBRINE Tab. Deep-Laid**[142]
Febrine is a herbal antipyretic & analgesic. It is effective in fever and pain. It also increases immunity power.
Comp: Each tablet contains: Ocimum album, Caesalpinia bonducella, Tinospora cordifolia, Piper nigrum.
Ind: Fever, pain, all febrile condition, bacterial fever, viral fever, tooth ache, headache.
Dosage: Child (3-7 yrs): 1 tablet 2-3 times daily. Adult: 1-2 tablets, 2-3 times daily.
50's pack: 75.00 MRP

❖ **FEVNIL Syp. Hamdard**[38]
Fevnil is a unique combination of valuable natural ingredients. The main ingredient of fevnil "Bonsarisha" contains sinigrin which is antipyretic, antibacterial (specially effective against salmonella typhi, salmonella paratyphi) and antiviral. Fevnil is very effective in typhoid, paratyphoid, measles & chicken pox. Fevnil is immunostimulant, demulcent, alterative, analgesic & hepatoprotective. It is available as syrup in 100ml glass bottle.
Comp: Each 5ml syrup contains (as aq. extract), Sisymbrium irio (Bon sarisha/khaksi) 0.25gm, Zizyphus jujuba (Boria/Unnab) 0.25gm, Foeniculum vulgare (Mouri) 0.25mg, Borago officinalis (Gaozaban) 0.15gm.
(Ref: Sharbat khaksi).
Ind: Fever, influenza, typhoid, paratyphoid, measles, chickenpox.
C/I: There is no known contraindication.
S/E: No significant side effect has been observed in proper dosage.
Dosage: Adults: 2-4 tsf 2-3 times daily. Children: 1/2-1 tsf 2-3 times daily or as directed by the physician.
100ml bot: 36.00 MRP

❖ **RENATON (Buzuri) Syp. A.H Janakalyan**[38,64]
Renaton is a herbal antipyretic & diuretic prepn.
Comp: A combined preparation of cichorium endivia, cucumis melo, foeniculum valgare, tribulus terestris.
Ind: Pyrexia, anuria, oliguria, hepatitis, obstructive jaundice. It is also very effective to clear the morbid substances from the kidney & urinary bladder.
Use: Adults, 2 to 4 tsf twice to four times daily. Childrens, 1 to 2 tsf as per direction.
100ml bot: 25.00 MRP
250ml bot: 50.00 MRP
450ml bot: 90.00 MRP

DRUGS FOR RHEUMATIC DISORDERS

❖ **REUMAC Cap. Jayson Natural**[55]
Reumac capsule is a herbal preparation for rheumatic and inflammatory disorders.

Comp: Each capsule contains ingredients of the following herbal components: Operculina turpethum, Calchicum luteum, Aloe barbadensis, Pimpinalla anisum, Indigofera tinctonia, Balsam odendron mukul, Pistacia lentiseus.
Ind: Rheumatism, rheumatoid arthritis, gout, lumbago, inflammatory & painful conditions.
S/E: Over dosage may cause abdominal discomfort.
Precaution: Reumac capsule should be used with caution in case of severe peptic & duodenal ulceration.
Pregnancy & lactation: The drug should not be used in the first and last trimesters of pregnancy unless absolutely needed. Safe for use in lactation.
Dosage & admin: Adult- 2 to 4 capsules 2 times daily after meal. Children over 6 years- 1 to 2 capsules 2 times daily after meal.
50's pack: 90.00 MRP

❖ **RHEMEX Cap. Deep-Laid**[142]
Rhemex is a natural remedy for rheumatism & gout pain and does not cause any hyperacidity.
Comp: Each capsule contains: Operculina Turpethum, Colchicum Luteum, Aloe Barbadensis, Pimpinella Anisum, Indigofera Tinctoria, Balsam Odendron Mukul, Pistacia Lentiscus.
Ind: Rheumatoid arthritis, gout, Lumbago, joint inflammation and body ache.
C/I: Pregnant mother and child below 6 years.
S/E: Over dose may cause abdominal discomfort.
Dosage: 1-2 capsule twice daily after meal. To get better result, patient should take rhemex for 2-3 weaks.
50's pack: 200.00 MRP

❖ **RHEUFEN Oint. Deep-Laid**
Rheufen is a herbal formula for rheumatism.
Comp: Each 5gm contains: Rubia Cordifolia, Cinnamomum Cassia, Myrica Sapida, Usnea Longisima, Cyperous Rotundus, Acorus Calamus, Syzygium Aromaticum, Curcuma Zedoria, Cesumum Indicum, Brasica Camprestris.
Ind: External use for rheumatism, pain, swelling, muscle and joint pain, gout pain.
Dosage: Locally apply the liniment to affected site.
20gm tube: 55.00 MRP

❖ **RHEUMACON Tab. A.H Janakalyan**[38,64]
Comp: It is a herbal preparation of the extract of aloe barbadensis, colchicum luteum, terminalia chebula. Each herb has an specific action.
Ind: This combined preparation is highly effective in all kinds of rheumatism, such as chronic rheumatoid arthritis, osteoarthritis, sciatica lumbago, gout etc.
S/E: It does not cause any irritation or pain in the gastrointestinal tract.
Use: One to two tablets twice a day after meal.
12's pack: 48.00 MRP
50's pack: 200.00 MRP

❖ **SURANJAN Tab. Hamdard**[38]
Comp: It is a unique herbal preparation of the extract of aloe barbadensis, colchicum luteum, terminalia chebula. Each herb has an specific action.

Ind: This combined preparation is highly effective in all kinds of rheumatism, such as chronic rheumatoid arthritis, osteoarthritis, sciatica lumbago, gout etc.
S/E: It does not cause any irritation or pain in the gastrointestinal tract.

Use: One to two tablets twice a day after meal.
100's pack: 220.00 MRP

PREPARATIONS FOR SOFT-TISSUE INFLAMMATION & PAIN

❖ **HAMDARD BALM Oint. Hamdard**[38]
A preparation of menthol, thymol, eucalyptus oil & camphor, useful as counter-irritant & rubefacient.
Ind: It is a quick-acting penetrating balm for external use for coughs, colds, bronchitis, sore throat, nasal and chest congestion, muscular pains, sprains and insects bite etc.
Use: It should be rubbed well on the chest, forehead, throat, and on the affected and painful parts of the body.
7gm pack: 10.00 MRP

❖ **JANAKALYAN BALM Oint. A.H Janakalyan**[38]
A preparation of menthol, thymol, eucalyptus oil & camphor, useful as counter-irritant & rubefacient.
Ind: It is a quick-acting penetrating balm for external use for coughs, colds, bronchitis, sore throat, nasal and chest congestion, muscular pains, sprains and insects bite etc.
Use: It should be rubbed well on the chest, forehead, throat, and on the affected and painful parts of the body.
8gm pack: 15.00 MRP

❖ **KULZAM Soln. A.H Janakalyan**[38]
A preparation of thymol, camphor, eucalyptus oil and other herbal ingredients which have useful properties to give relief from pain.
Ind: An effective first aid in all wounds and ulcers, cuts and bruises, sores and swellings. If taken internally, it gives ready relief in cholera, diarrhoea, dysentery, chronic pain and stomach upsets is a soothing application in insect bites, burns and scalds.
Use: To be applied wherever it is required.
15ml pack: 60.00 MRP

❖ **KULZAM Soln. Hamdard**[38]
A preparation of thymol, camphor, eucalyptus oil and other herbal ingredients which have useful properties to give relief from pain.
Ind: An effective first aid in all wounds and ulcers, cuts and bruises, sores and swellings. If taken internally, it gives ready relief in cholera, diarrhoea, dysentery, chronic pain and stomach upsets is a soothing application in insect bites, burns and scalds.
Use: To be applied wherever it is required.
15ml pack: 37.00 MRP

❖ **MEDIX Herbal Balm Jayson Natural**[55]
Each 5gm contains- camphor 769mg, menthol 385mg, thymol 385mg, oil turpentine 385mg.
Ind: Inflammation, pain, bruise, cuts, abrasion, insect bites, fish stringing, neuralgic pain, headache.
Caution: Should not apply in irritable area.
Use & admin: Apply to the affected part 3-4 times a day.
10gm tube: 15.00 MRP

❖ **RUBA Oint. Deep-Laid**[142]
Ruba is a fast pain reliever ointment.
Comp: Each 5 gm contains: Thymol B.P, Menthol B.P, Camphor B.P

Ind: Headache, Sprain, minor cut, minor burn pain, pain due to insect bite.
Dosage: Apply slight ointment to the site of pain.
10gm tube: 20.00 MRP

PREPARATIONS FOR SKIN DISEASES

❖ **FUNCI Oint. Deep-Laid**[142]
Anti scabies and anti fungal ointment.
Comp: Each 5 gm contains: Monoxide of Lead, Camphor, Zinc oxide BP, Sulphur sublimath BP, Acacia laucophloea 125 mg and other ingradients
Ind: Scabies, fungal infection & topical sepsis.
Dosage: Cleaning the afected area, apply the ointment twice or thrice daily.
10gm tube: 30.00 MRP

❖ **HEMODISE Syp. Deep-Laid**[142]
Hemodise is a natural blood purifier syrup.
Comp: Each 5 ml contains: Cassia angustifolia, Rheum emodi, Cassia occidentalis, Ocimum basilicum, Operculina turpethum, Rosa damascena, Sphaeranthus indicus, Gentiana Kurroo, Fumaria parviflora , Clitoria ternatea, Artemisia bsenthium, Nymphaea lotus, Dalbergia sisso, Pterocarpus santalinus, Tinospora cordifolia, Terminalia chebula, Curcuma Zedoaria, Swertia chirata, Andrographis paniculata, Bauhinia racemosa, Azadirachta indica, Curcuma longa.
Ind: All types skin diseases, Acne, Pimples, dermatitis, itching, Abscess, Boil, Carbuncle etc.
C/I: Not advised during pregnancy.
Dosage: 10 ml 2-3 times daily.
100 ml bottle: 28.00 MRP
450 ml bottle:80.00 MRP

❖ **PURIN Syp. A.H Janakalyan**[38,64]
Purin is a herbal preparation for many skin diseases. It is a natural blood purifier.
Ind: Skin diseases, Boil, Pimples, Rashes, Acne vulgaris, Dermatitis. It also relieves constipation, improves complexion & helps to stay slim & smart.
C/I: Purin is contraindicated in diarrhoea.
S/E: Vomiting, and feeling of biter taste.
Precaution: Should be avoid allergic or rich food during treatment with safex.
Dosage: 2 tsf in the evening with plain water or a cup of milk. For children doses vary according to age 1/3 to 1/2 tsf.
250ml bot: 60.00 MRP
450ml bot: 100.00 MRP

❖ **SAFEX Syp. Jayson Natural**[55]
Safex is a herbal preparation for many skin diseases. It is a natural blood purifier.
Comp: Safex is composed of different herbal ingredients, such as-Cassia angustifolia, Rheum emodi, Cassia sophera, Ocimum albam, Operculina turpethum, Rosa damascena, Sphaeranthus indicus, Gentiana kurro, Fumaria parvilora, Clitoria ternatea, Artemisia absinthimum, Nymphaea alba, Dalbergia sissoo, Pterocarpus santalinus, Tinospora cordifolia, Terminalia chebula, Zingiber zerumbet, Swertia chirafa, Andrographis paniculata, Bauhinia racemosa, Azadirchta indica, Curcuma longa.
Ind: Skin diseases, Boil, Pimples, Rashes, Blemisles, Acne vulgaris, Dermatitis, Constipation and Inflammation.
C/I: Safex is contraindicated in diarrhoea.
S/E: Vomiting, and feeling of biter taste.
Precaution: Should be avoid allergic or rich food during treatment with safex.
Dosage: Adults- 2 to 4 tsf thrice daily. Children- 1 to 2 tsf 1 or 2 times daily. Safex should be continued at least 4-6 wks. for optimum result.
100ml bot: 30.00 MRP
200ml bot: 48.00 MRP
450ml bot: 92.00 MRP

❖ **SAFI Syp. Hamdard**[38]
Safi is a herbal preparation for many skin diseases. It is a natural blood purifier.
Ind: It prevents and cures boils, pimples, skin eruptions and epistaxis. It also relieves constipation, general depression, improves complexion and helps to stay slim and smart.
Dosage: 2 tsf in the evening with plain water or a cup of milk. For children doses vary according to age 1/3 to 1/2 tsf.
100ml bot: 32.00 MRP
450ml bot: 90.00 MRP

❖ **SAFKIN Syp. Acme**[46]
Saribadyarista 200ml syrup
Safkin is a combination of effective herbs that has hepatoprotective, antiallergic, antifungal, anthelmintic, antibacterial, anti-inflammatory, wound healing and antioxidant properties. Safkin is effective in skin diseases e.g scabies, itching, boil, pimple & dermatitis. It also improves complexion. Safkin stimulates the natural process of blood purification. It helps the liver in detoxification processes and thus helps in the treatment of skin diseases. It is also known as saribadyarista. It is available as syrup in 200ml bottle.
Comp: Safkin contains extracts of about 69 herbs in different concentration.
Ind: Blood purification; skin diseases e.g scabies, itching, boil & pimple, dermatitis; complexion enhancer.
C/I: There is no absolute contraindication.
S/E: Not yet known.
Dosage & admin: Adult: 2-4 tsf 1-2 times daily after meal.
Children under 12 years: 1-2 tsf 1-2 times daily after meal. Or as directed by the physician.
200ml bot: 60.00 MRP

INDIGENOUS HAEMATINIC PREPARATIONS

❖ **DEGLOBIN Syp. Deep-Laid**[142]
Deglobin is a herbal haematinic syrup.
Comp: Each 5 ml contains: Aqua' Foeniculum vulgare, Aqua' Rosa damascena, ferrous sulphate and other ingredients
Ind: Anemia due to iron deficiency & others.
Dosage: 10ml 2-3 times daily.
100 ml bottle: 25.00 MRP
450 ml bottle: 65.00 MRP

❖ **FEROMA Syp Jayson Natural**[55]
Feroma is an iron prepn. with herbal formulation.
Comp: Each 5ml contains- Ferrous sulphate 200mg with Kuchila extract and Piper longum.
Ind: Iron deficiency anemia (hypochromic anemia) and general weakness.
Precaution: Use cautiously in patietns with iron storage or iron absorption diseases, haemoglobinopathies.
Pregnancy & lactation: Safe for use in pregnancy & lactation.
Dosage: Adult: 2-3 tsf 3 times daily after meal. Children: 1-2 tsf 3 times daily after meal. The duration is 3-6 weeks. Shake well before use.
100ml pack: 30.00 MRP
450ml pack: 100.00 MRP

INDIGENOUS TONICS, VITAMINS & NUTRITIONAL PREPNS.

❖ **ACME'S SPIRULINA Cap. Acme**[46]
Spirulina is a natural nutritional supplement that is enriched with proteins, vitamins, minerals, essential amino acids and essential fatty acids like gamma linolenic acid. It is called a wonderful gift of the earth. Spirulina belongs to genus phylum cyanobacteria. Cyanobacteria are classified as either blue-green algae or as blue-green bacteria. Spirulina is a popular nutritional supplement in japan and USA.
Comp: Each capsule contains 450mg spirulina which consists of- Protein 55-70%; Carbohydrates 15-25%; Fats (lipids) 6-8%; Fiber 8-10%; Vitamins: Beta carotene, B1, B2, B3, B6, B12, C, D, E, K, Folic acid, Pantothenic acid, Inositol & Biotin; Minerals: Calcium, Phosphorus, Magnesium, Iron, Sodium, Potassium, Zine, Copper, Manganese, Boron, Chrominum & Selenium and Amino acids.
Ind: Spirulina is indicated for the treatment and prevention of malnutrition, anemia, night blindness and to enhance immunity.

C/I: Spirulina is contraindicated in those who are hypersensitive to any component of this product.

S/E: Spirulina is generally well tolerated. Occasional gastrointestinal symptoms, such as nausea have been reported. Also there are few reports of allergic reactions to spirulina containing supplements.

Precautions: Spirulina can accumulate heavy metals, such as mercury, from contaminated waters in which it is cultivated. Those who use spirulina supplements should select reputable products that are free of any heavy metal contamination.

Pregnancy & lactation: Should be avoided.

Dosage & admin: 2 to 6 capsules daily or as directed by the physician.
Children: The use & safety of spirulina for children under 18 has not yet been established.

Drug inter: There are no reports suggesting that spirulina interacts with any conventional medication.
30's pack: 120.00 MRP

❖ **ACVIT Syp. Deep-Laid**[142]
Natural vitamin enriched tonic.
Comp: Each 5 ml contains: Psidium guyava, Vitis vinifera, Carthamus tinctorius, Elettaria cardamomum, Rubia cordifolia, Cassia tamala, Cinnamomum officinalis, Syzygium aromaticum and other ingredients

Ind: Malnutrition, General weakness, Anorexia, Vitamin B-complex deficiency.

Dosage: Adult: 10-20ml, Child: 5-10ml twice or thrice daily.
100 ml bottle: 30.00 MRP
200 ml bottle: 46.00 MRP
450 ml bottle: 100.00 MRP

❖ **AMLAC Syp. Jayson Natural**[55]
Amlac is a herbal vitamin-C supplement prepn.
Comp: Amlac is composed of different herbal ingredients, such as- Phyllanthus emblica, Piper nigram, Rhus succedanea, Chlorophyfum arundinaceum, Mesua ferrea, Glycerrhiza glabra, Withania somnefera, Cyperus rotundus, Elettaria cardamomum, Syzygium aromaticum, Cinnamomum zeylanicum, Osimum album, Potassium carbonate, Adhatoda vasica, Lycium barbarum, Vitax nigunndu, Piper cubeba, Piper longum, Alpinia galanga, Solanum xanthocarpum, Aegle marmelos, Tributus terrestris, Zingiber officinale & other ingredients.
Ind: Vitamin-C deficiency diseases, cough, cold, general weakness, nervous debility, mental fatigue, weakness of memory, indigestion, malnutrition and leanness.

Dosage: Adult: 2-4 tsf 3 times daily. Children: 1-2 tsf 3 times daily. Duration: 15-30 days. Shake well before use; (floating substances are the part of medicine).
100ml bot: 24.00 MRP

❖ **CAROTONE Plus Syp. Jayson Natural**[55]
Carotone plus is a preparation of vitamin A & C supplement.
Comp: Carotone plus is composed of extracts of different herbal components, such as- Daucus carota, Phyllanthus emblica, Aquilaria agallocha, Amomum subulatum, Coriandrum sativum, Cyperus rotundus, Elettaria cardamomum, Syzygium aromaticum, Valeriana jatamansi, Cucuma zedoaria, Cinnamomum zylanicum, Rosa damascena, Santalum album, Ocimum album, Usnea longissima.

Ind: Nervous debility, general weakness, mental fatigue, anaemia, loss of appetite and in vitamin A & C deficiencies.

Dosage: Adult: 2-3 tsf 2-3 times daily. Child: 1-2 tsf 2-3 times daily after meal. Duration: 2-3 weeks or as directed by the doctor.
100ml bot: 30.00 MRP
200ml bot: 50.00 MRP
450ml bot: 95.00 MRP

❖ **CINKARA Syp. Hamdard**[38]
A non alcoholic vitaminised herbal tonic of proven bioavailability in mental performance, anaemia of pregnancy, lactating mothers, liver protection etc.

Ind: General debility, fatigue and during convalescence; in vitamin deficiencies & lack of appetite; in anaemia of pregnancy & lactating mothers; to improve resistance to infections & mental performance; in mild malnutrition & loss of weight; to increase stamina; to protect liver function; in excessive metabolism, vitamin deficiency due to antibiotics, stress and acute illness. May be given as a dietary supplement to all in the family.
Dosage: Adults, 6 tsf twice daily; children, 2 tsf twice daily, or as prescribed by the physician.
100ml bot: 33.00 MRP
225ml bot: 65.00 MRP
450ml bot: 95.00 MRP

❖ **JANAKALYAN JINSENG Syp. Janakalyan**[38]
Jinseng syrup is a unique combination of natural ingredients, which acts as a general tonic, stimulant and aphrodisiac.
Comp: Each 5ml syrup contains (as aq. extract)- Withania somnifera 18.75mg, Nigella sativa 18.75mg, Allium cepa 37.50mg, Psidium guyava 75.00mg, Smilax china 75.00mg, Santalum album 75.00mg, Phyllanthus emblica 75.00mg, Salvia haematodes 75.00mg, Zingiber officinale 37.50mg, Myristica fragrans (Nut) 75.00mg & other ingredient.
Ind: General debility, fatigue, sexual debility.
Dosage & admin: Adults: 2-4 tsf twice daily. Children: 1-2 tsf twice daily.
250ml bot: 220.00 MRP

❖ **JINSANT Syp. Hamdard**[38]
Jinsant syrup is a unique combination of natural ingredients, which acts as a general tonic, stimulant and aphrodisiac.
Comp: Each 5ml syrup contains (as aq. extract)- Withania somnifera 18.75mg, Nigella sativa 18.75mg, Allium cepa 37.50mg, Psidium guyava 75.00mg, Smilax china 75.00mg, Santalum album 75.00mg, Phyllanthus emblica 75.00mg, Salvia haematodes 75.00mg, Zingiber officinale 37.50mg, Myristica fragrans (Nut) 75.00mg and other ingredients q.s.
Ind: General debility, fatigue, sexual debility.
Dosage: Adults: 2-4 tsf (10-20ml) twice daily. Children: 1-2 tsf (5-10ml) twice daily.
100ml bot: 55.00 MRP
225ml bot: 110.00 MRP
450ml bot: 190.00 MRP

❖ **KHAMIRA GAOZABAN AMBERI A.H Janakalyan**[38]
A semi-solid brain tonic preparation.
Comp: Its principal ingredients are Bombyx mori, Lavandula stoechas, Nepeta hindostana, Santalum album, Salvia haematodes, Ambar grasea and other herbal precious ingredients like onosma bracteatum, Crocus sativus & Silver leaves etc.
Ind: It tones up the brain cells and is successfully prescribed for preserving memory. It preserves eyesight and is a very useful tonic for those engaged in mental work.
Dosage: Adults over 12 years, 1 tsf in empty stomach in the morning or evening. Children between 6-12 years, half tsf.
100gm pack: 300.00 MRP

❖ **KHAMIRA GAOZABAN AMBERI Hamdard**[38]
A semi-solid brain tonic preparation.
Comp: Its principal ingredients are Bombyx mori, Lavandula stoechas, Nepeta hindostana, Santalum album, Salvia haematodes, Ambar grasea and other herbal precious ingredients like onosma bracteatum, Crocus sativus & Silver leaves etc.
Ind: It tones up the brain cells and is successfully prescribed for preserving memory. It preserves eyesight and is a very useful tonic for those engaged in mental work.
Dosage: Adults over 12 years, 1 tsf in empty stomach in the morning or evening. Children between 6-12 years, half tsf.
80gm pack: 290.00 MRP

❖ **MAULLAHAM Syp. Hamdard**[38]
A general herbal tonic.
Comp: Maullaham is based on externally effective concentrated extracts of fine palatable & nutritious food ingredients which help the body organs, muscles & tissues acquire renewed strength.
Ind: The well known tonic of the unani system for heart, brain and nerves. Improves liver and intestinal functions.
Dosage: 4 tsf to be taken with milk in the morning and evening.
225ml bot: 55.00 MRP

❖ **REOVIT Syp. Jayson Natural**[55]
Each 5ml contains- sida cordifolia 2gm, withania somnifera 2gm, lilium polyphyllum 42mg, vanda roxburgii 21mg, elettaria cardamomum 21mg, ricinus communis 21mg, paederia foetida 21mg, syzygium aromaticum 21mg, vetiveria zizanioides 21mg, tribulus terrestris 21mg.
Ind: General weakness, malnutrition, nervous debility and rheumatism.
Precaution: Use with caution in diabetic patients.
Dosage: Adult: 2-3 tsf thrice daily. Children: 1-2 tsf thrice daily.
100ml bot: 25.00 MRP
200ml bot: 45.00 MRP
450ml bot: 90.00 MRP

ROOH AFZA Syp. Hamdard[38]
Syrup Rooh afza is a cold drink. It is a blend of pure crystalline invert sugar, distillate flowers, distilled extract of fruits, vegetables and cooling herbal ingredients. Rooh afza's cooling effect is long lasting for not only instantly quenches the thirst but also replaces the loss of body fluids and provides extra energy for vital organs like brain, heart and liver. Rooh afza protects heat exhaustion, sun stroke & dehydration. It maintains nutritional status and electrolyte balance of the body. It is effective in nausea, loss of appetite, indigestion, insomnia & fever due to heat exposure. It keeps the body fresh & energetic when the heat begins to get one down. Rooh afza increases the blood calcium and iron level. It strengthens bones and muscles.
Pure natural vitaminised rooh afza is also a better healthier refresher than other alcoholic or carbonated drinks.

Comp: Each 50ml contains: Distillate of pandanus tectorius (Keora) 1.75ml, distillate of citrus medica (Lebu) 0.40ml, distillate of rosa damascena (Golap) 0.30ml.
Distilled extract of - Coriandrum sativum (Dhania) 2.25ml, Daucus carota (Gajor) 2.25ml, Portulaca oleracea (Nune shak) 2.25ml, Citrullus vulgaris (Water melon) 2.25ml, Spinacea oleracea

(Palong shak) 2.25ml, Mentha arvensis (Pudina) 2.25ml, Luffa cylindrica (Dhundul/Hara ghia) 2.25ml, Cichorium intybus (Kasni) 2.25ml, Vitis vinifera (Grape) 2.25ml, Vetiveria zizanioides (Khas khas) 2.25ml, Nymphaea nauchali (Shapla) 2.25ml, Borago officinalis (Gaozaban) 2.25ml, Santalum album (Sada chandan) 2.25ml, Parmelia perlata (Charila) 2.25ml, Orange juice 0.10ml, Pineapple Juice 0.35ml, Invert sugar q.s.
Ind: Dehydration, heat exhaustion, heat stroke, fever due to heat esxposure, vomiting, diarrhoea, cholera, stomachache, mental exhaustion, fatigue, giddiness, anaemia, nutritional deficiency, cardiac complication.
C/I: There is no known contra indication.
S/E: No significant side effect has been observed in proper dosage.
Direction of use: 50ml Rooh afza mixed with 200ml ice cold water and take it as and when required. Mix lemon juce to make it more palatable. It can also be used for making Rooh afza lassi, Rooh afza ice cream, Rooh afza custard, Rooh afza faluda, rooh afza jelly, Rooh faza phirni, Rooh afza lemon, Rooh afza samudi, Rooh afza milkshake, Rooh afza thandai, Rooh afza pineapple etc.
300ml bot: 70.00 MRP
750ml bot: 130.00 MRP

❖ **VITOLIN Syp. A.H Janakalyan**[38,64]
A non alcoholic vitaminised herbal tonic of proven bioavailability in mental performance, anaemia of pregnancy, lactating mothers, liver protection etc.
Ind: Same as Cinkara.
Dosage: Adults, 6 tsf twice daily; children, 2 tsf twice daily, or as prescribed by the physician. 100ml bot: 30.00 MRP
100ml bot: 30.00 MRP
250ml bot: 70.00 MRP
450ml bot: 100.00 MRP

NATURAL HONEY PREPARATION

❖ **HAMDARD HONEY Liquid Hamdard**[38]
Honey, nature's original sweetenr, is being rediscovered as a natural source of energy that also offers a unique combination of nutritional benefits. Honey contains vitamins, such as thiamine, riboflavin, vitamin B6 and pantothenic acid. Essential minerals, such as calcium, copper, iron, magnesium, manganese, phosphorus, potassium, sodium and zinc are also found in honey. In addition, several different amino acids, have been identified in honey. Honey also contains several compounds that function as antioxidants, one of which is pinocembrin.
Source: A natural bees honey (from wild).
Action & uses: Antibiotic, antioxidant, immunostimulant, quick source of energy, nutritive, expectorant, tonic.
C/I: There is no known contraindication.
S/E: No significant side effects has been observed in proper dosage.
Direction: 1-2 teaspooful twice daily or as directed by the physician.
40ml bot: 35.00 MRP
80ml bot: 65.00 MRP

INDIGENOUS IMMUNOACTIVATOR

❖ **HAMDARD CHYABANPRASH Tonic Hamdard**[38]
Chyabanprash is an ideal ayurvedic tonic, containing valuable natural ingredients, fortified with honey, prepared with the ancient wisdom and modern research & technology.
Chyabanprash keeps a man physically fit and mentally alert. It restores lost energy.
Chyabanprash is the supplements of vitamins & minerals. It strengthens respiratory system, fortifies immunity & prevents infectious disease.
Comp: Each 5gm contains: Phyllanthus emblica 5.35gm, Withania somnifera 71.33mg, Vitis vinifera 71.33mg, Adhatoda vasica 71.33mg, Phyllanthus niruri 71.33mg, Asparagus racemosus 71.33mg, Terminalia chebula 71.33mg, Aquilaria agallocha 71.33mg, Solanum nigrum 71.33mg, Solanum xanthocarpum 71.33mg, Saussurea lappa 71.33mg, Gmelina arborea 71.33mg, Rhus succedanea 71.33mg, Stereospermum suaveolens 71.33mg, Cinnamomum zeylanicum 21.40mg, and other ingredients q.s.
Ind: Chyabanprash is indicated for-strengthening the vital organs, improving the immunity. It is a powerful antioxidant, effective in cough, bronchitis, asthma and tuberculosis. It is also effective in malnutrition and degenerative diseases, and improves memory.
C/I: There is no known contraindication.

S/E: No significant side effect has been observed in proper dosage.

Dosage: Adults: 1-2 tsf twice daily. Children: 1/2 teaspoon twice daily or as directed by the physician.

100gm pack: 50.00 MRP
250gm pack: 100.00 MRP
500gm pack: 165.00 MRP

❖ **HD-CHYABANPRASH Syp. Jayson Natural**
Hd-Chyabanprash is a herbal immunoactivator preparation.

Comp: Chyabanprash is composed of different herbal ingredients, such as: Phyllanthus emblica, Adhatoda vasica, Piper longum, Solanum xanthocarpum, Aegle marmelos, Desmodium gangeticum, Solanum torvum, Sida cardifolia, Saussurea lappa, Aquilaria agallocha, Tinospora cordifolia, Asparagus racemosus, Pterocarpus santalinus, Vitis venifera, & other 44 ingredients.

Ind: Immunodeficiency, malnutrition, cough, cold, bronchial infections, cough associated with tuberculosos, asthma and allergic manifestations.

Cautions: Use with caution in diabetic patients.

Dosage: Adult: 4 tsf thrice daily. Children: 2 tsf thrice daily. Treatment may need to be given for 1-2 month. Shake well before use.

100ml bot: 25.00 MRP
200ml bot: 48.00 MRP
450ml bot: 80.00 MRP

DIABETES & URINARY PROBLEMS

❖ **DOLABI Tab. Hamdard**[38]
Herbal remedy for diabetis & kidney functions.
Comp: A preparation containing Bambusa bambos, Rumex vesicarious, Gymnema sylvester and other precious ingredients.
Ind: An effective remedy for diabetis, strengthens the functions of kidneys and the bladder.
Dosage: 2 tablets once or twice daily.
50's pack: 80.00 MRP

❖ **HD-SANTARA Syp. Jayson Natural**[55]
HD-santara is a herbal preparation for diuretic function and other urinary problems.
Comp: Each 5ml contains- Tribulus terrestris 200mg, Foeniculum vulgare 150mg, Nymphaea alba 150mg, Citrus reticulata 250mg and Citrus aurantifolia 75mg.
Ind: Diruetic, urethritis, painful micturition, urinary tract infections and febrile conditions.
C/I: Contraindicated in case of renal failure.
Precaution: Use with caution in case of diabetic patients, children, and during pregnancy.
Dosage: Adult: 2 to 4 tsf 2 or 3 times daily after food with water. Chidren: According to the advice of the physician. HD-santara should be continued at least 3-4 weeks for optimum result.
100ml bot: 19.00 MRP
200ml bot: 37.00 MRP
450ml bot: 75.00 MRP

HERBAL REMEDY FOR NOCTURNAL EMISSION

❖ **JERNIDE Syp. Hamdard**[38]
Herbal remedy for nocturnal emission
Comp: A preparation of glycyrrhiza glabra, Cascara sagrada and Atropa belladona.
Ind: Reduces the abnormal sensitiveness and irritability of the male organ and thus checks seminal discharge. Relieves burning in urination and also prevent nocturnal emission.
Dosage: 1 tsf twice or thrice daily after meals.
100ml bot: 50.00 MRP

UTEROTONIC & PREGNANCY PROTECTIVE PREPARATION

❖ **FEMOLIN Syp. Jayson Natural**[55]
Femolin is a herbal uterotonic preparation.
Comp: Each 5ml syrup contains: Saraca indica- 250mg; Withania somnifera (extract)- 125mg; Smilax china- 62.5mg; Abroma augusta- 62.5mg; Rauwolfia serpentina- 50mg; Ferrum- 10mg.
Ind: Dysmenorrhoea, amenorrhoea, leucorrhoea, weakness and inflammation in the uterus and

irregular menstruation.
C/I: Should not use during pregnancy & menstruation.
Caution: Femolin only for female patients.
Dosage: Adult: 2-4 tsf daily after meals. In irregular menstruation, dysmenorrhoea and amenorrhoea, from the last day of the period till the first day of the next menstruation, 2-4 tsf every night. In leucorrhoea, 2-3 tsf to be taken at night. For weakness & inflammation in the uterus, 2 tsf mixed with lukewarm water to be taken at night. To be used for a period.
100ml bot: 28.00 MRP
200ml bot: 47.00 MRP
450ml bot: 85.00 MRP

❖ **LEUCOMIN Syp. A.H Janakalyan**[38,64]
A preparation for genito-urinary disorders and uterotonic action.
Comp: Prepared from herbal ingredients like Asoka, Withania somnifera, Abroma augusta, Berberis aristata, Rauwolfia serpentina and iron acting solely on female reproductive system.
Ind: Specific treatment for female disorders, such as menstrual irregularity, dys-menorrhoea, leucorrhoea, metritis & uterine inflammation.
Dosage: After menstruation till the starting of next period, 2 tsf to be taken at night for menstrual irregularity and dysmenorrhoea. 2 tsf to be taken at night for leucorrhoea; 2 tsf mixed with lukewarm water be taken at night for metritis. In chronic cases one dose of 2 tsf to be taken in the morning as well.
250ml bot: 60.00 MRP
450ml bot: 100.00 MRP

❖ **MASTURIN Syp. Hamdard**[38]
A preparation for genito-urinary disorders and uterotonic action.
Comp: Prepared from herbal ingredients like Asoka, Withania somnifera, Abroma augusta, Berberis aristata, Rauwolfia serpentina and iron acting solely on female reproductive system.
Ind: Specific treatment for female disord-ers, such as menstrual irregularity, dysme-norrhoea, leucorrhoea, metritis and uteri-ne inflammation. It is also a uterine tonic.
Dosage: After menstruation till the starting of next period, 2 tsf to be taken at night for menstrual irregularity and dysmenorrhoea. 2 tsf to be taken at night for leucorrhoea; 2 tsf mixed with lukewarm water be taken at night for metritis. In chronic cases one dose of 2 tsf to be taken in the morning as well.
100ml bot: 33.00 MRP
450ml bot: 90.00 MRP

❖ **FEMOLAID Syp. Deep-Laid**[142]
Mele is a herbal uterotonic syrup; a natural formulation for female reproductive health.
Comp: Each 5ml contains: Juniperus communis, Saraca indica, Withania somnifera, Plambago zeylanica, Abroma augusta, Smilux china, Nardostachys jatamansi, Vitis vinifera and other ingredients.
Ind: Dysmenorrhoea, Metrorhagia, Menorrhagia, Metritis.
C/I: Not advised during pregnancy.
Dosage: 10-20ml twice or thrice daily.
100ml bottle: 28.00 MRP
450ml bottle: 80.00 MRP

❖ **MENOTOX Syp. Acme**[46]
Menotox is a poly-herbal combined formulation, having proven efficacy as uterine tonic. It has a stimulatory effect on the ovarian tissue that helps regularizing endogenous hormonal secretion, enhances the repair of the endometrium and thus controls abnormal uterine bleeding. Its anti-inflammatory action has a healing effect on the uterus and its antispasmodic action alleviates pain. It also known as ashokarista. It is available as 200ml syrup in glass bottle.
Comp: Each 5ml menotox contains extracts of-Saraca indica 1.52gm, Terminalia chebula 15.15mg, Woodfordia fruticosa 0.24gm, Terminalia belerica 15.15mg, Nigella sative 15.15mg, Phyllanthus emblica 15.15mg, Cyperus rotundus 15.15mg, Mangifera indica 15.15mg. Zingiber officinale 15.15mg, Adhatoda vasica 15.15mg, Berberis aristata 15.15mg, Pterocarpus santalinus 15.15mg, Nymphaea lotus 15.15mg.
Ind: Premenstrual syndrome, Menstrual irregularities, Dysmenorrhoea, Dysfunctional uterine bleeding.
C/I: During pregnancy.
S/E: Not yet known.
Dosage & admin: Adult: 1-2 tsf 1-2 times daily after meal, or as advised by the physician. Children: Not applicable.
200ml bot: 50.00 MRP

❖ **RECAL Cap. Deep-Laid**[142]
Recal restores natural rhythm of uterus; a herbal formulation for female reproductive health.
Comp: Each capsule contains: Areca catechu, Asphaltum, Butea monosperma , "Calcined" Ironoxide, "Calcined" Pinctada margaritifera , "Calcined" Hens egg , "Gum" Acacia arabica.
Ind: Trichomoniasis, Candidiasis, calcium & iron deficiency, Uterine prolapse (1st degree)
C/I: 1st trimester of pregnancy.
S/E: Excessive dosage can cause constipation.
Dosage: 1-2 capsule once or twice daily.
50's pack: 200.00 MRP

❖ **SUPARIPAK Powder A.H Janakalyan**[38]
An ideal preparation to preserve pregnancy. It is an age-old and well-trusted remedy for many female uterine disorders. It strengthens the uterus and serves as one of the best uterine preparation.Its main ingredient is betel nut.
Ind: In repeated and threatened abortions due to the weakness of the uterus. Suparipak is an ideal preparation to preserve pregnancy. It is specific for leucorrhoea, the common cause for female general ill-health and weakness. It also increases the appetite and strengthens the kidneys. Males can also use suparipak for spermatorrhoea, excessive nocturnal emissions and for retentive power.
Dosage: 1-2 tsf of suparipak powder with a little milk in the morning or 1 tsf with a little milk twice a day- morning and before retiring.
50gm powder pack: 80.00 MRP

❖ **SUPARIPAK Powder Hamdard**[38]
An ideal preparation to preserve pregnancy. It is an age-old and well-trusted remedy for many female uterine disorders. It strengthens the uterus and serves as one of the best uterine preparation.Its main ingredient is betel nut.
Ind: In repeated and threatened abortions due to the weakness of the uterus. Suparipak is an ideal preparation to preserve pregnancy. It is specific for leucorrhoea, the common cause for female general ill-health and weakness. It also increases the appetite and strengthens the kidneys. Males can also use suparipak for spermatorrhoea, excessive nocturnal emissions and for retentive power.
Dosage: 1-2 tsf of suparipak powder with a little milk in the morning or 1 tsf with a little milk twice a day- morning and before retiring.
50gm powder pack: 40.00 MRP

PREPARATIONS FOR MENOPAUSAL SYMPTOMS

❖ **MENOCARE Cap. Acme**[46]
Black cohosh (cimicifuga racemosa) is popular as an alternative to hormonal therapy in the treatment of menopausal (climacteric) symptoms, such as- hot flashes, mood disturbances, diaphoresis, palpitations and vaginal dryness.
Comp: Each capsule contains black cohosh 40mg (dried rhizome).
Ind: Menopausal complaints, premenstrual discomfort.
C/I: No significant contraindication is observed.
S/E: Occasionally gastric discomfort is observed.
Pregnancy & lactation: In pregnancy not recommended due to an increased risk of spontaneous abortion. In lactation, not also recommended.
Dosage & admin: 1 capsule daily. Or as directed by the physician. Duration of treatment should not be longer than 6 months.
Drug inter: Black cohosh (Cimicifuga recemosa) can potentiate the effect of antihypertensive medications. The tannin content of cimicifuga racemosa may complex with concomitantly administered iron, resulting in nonabsorbable insoluble complex. Patients who need iron supplementation should be advised to maintain an interval of about 2 hours in administration of these two compounds.
30's pack: 150.00 MRP

HERBAL HAIR OIL

❖ **HAMDARD AMLA Hair Oil Hamdard**[38]
Hamdard amla hair oil is a tonic for hair. It strengthens hair roots and prevents falling of hair, maintains the natural color and makes them shiny. It also imparts a cooling effect of head, promotes the hair growth and makes the hair silky, soft, dark and lustrous.
Comp: Each 5ml contains: (as extract), Phyllanthus emblica 1.66ml, Sesamum indicum 3.33ml, other ingredients q.s.
Ind: Tyroma, greying of hair, dandruff and insomnia. It also increases the growth of hair and makes them black and shiny.
C/I: There is no known contraindication.
S/E: No significant side effect has been observed in proper usage.
Use & appli: Apply externally on scalp & hair.
130ml bot: 80.00 MRP

RESEARCH & DEVELOPMENTS IN MEDICINE & PHARMACEUTICS SECTION-3

RESEARCH & DEVELOPMENTS IN MEDICINE & PHARMACEUTICS: QIMP-15

This is a new section opened for presenting the latest research & development documents in medicine & pharmaceutics, available globally & in Bangladesh. This is to update the information and knowledge bank of our worthy readers with the latest achievement in the relevant fields. In this issue, we could provide our readers 'Bangladesh National Health System Profile' as the main article. We would be very much grateful to our local research & development authorities & pharmaceutical manufacturers, if we get a feedback from them directly or through internet to enrich this section. With thanks.

Editor

BANGLADESH : NATIONAL HEALTH SYSTEM PROFILE

(Courtesy: www.searo.who.int)
Source: Internet

('Bangladesh national health system profile' is very important to go through the whole length of its contents. Every medical personnel who are involved in contributing services in this field should know and learn our national health policy as much as possible. But, it's a big volume of about 44 pages which cannot be accommodated in this section of research & development. Some important aspects of this profile are given here in this section.)

1. TRENDS IN POLICY DEVELOPMENT

The constitutional commitment of the Government of Bangladesh is to provide basic health and medical requirements to all people in the society. The Constitution of the People's Republic of Bangladesh ensured that "Health is the basic right of every citizen of the Republic," as health is fundamental to human development. Since independence, the government has been pursuing a policy of health development that ensures provision of basic services to the entire population, particularly to the under-served population in rural areas. The successive health plans of the country emphasize Primary Health Care (PHC) as the key approach for improving health status of the people. The goal 'Health for All by the year 2000' has been accepted by the government as a national goal. The past plans in the health sector had endeavored to provide essential healthcare to the general masses. To attain this goal, many development programmes have been undertaken in the health sector during the past years.

2. TRENDS IN SOCIOECONOMIC DEVELOPMENT

2.1 Economic Trends:

There has been a slow but steady increase in GDP per capita from US $ 217 in 1991 to US $445 in 2005. The annual growth rate of the GNP at constant market prices increased from 3.56 percent in 1991 to 5.5 percent in 2002. With the increase in population, the overall public financing for health remains the same (National Accounts Statistics, July 2004). About one-half of the total population is poor, with the same picture seen in both urban and rural areas. Income generating schemes are being financed by the Government to make the poor more self-reliant. The human development in Bangladesh is slow and steady as value of Human Development Index (HDI) has increased from 0.417 in 1990 to 0.530 in 2004, ranking the country at 137 among 177 countries. However, in terms of gender development, Bangladesh ranks at 102 among 177 countries, with Gender-related Development Index (GDI) value of 0.524 (Human Development Report, 2006).
In Bangladesh, 36 percent population is living with a per capita income below US $ 1 a day.

2.2 Demographic Trends:

The total population of Bangladesh is about 140 million. The annual population growth rate has declined from 2.33 percent in 1981 to 2.15 percent in 1991 and further declined to 1.50 percent in 2002 (SVRS/2002). Similar declining trends are seen over the period of 1981 to 2002 for the crude birth rate (34.4 to 20.9), crude death rate (11.5 to 5.9) and total fertility. (BDHS 2004)
In Bangladesh, 38 percent of population was under 15 years, 55 percent in the age group of 1559 years and 7 percent in the age group of 60 years and above (BDHS 2004).

Life expectancy at birth:

The average life expectancy in Bangladesh has improved from 55 years in 1981 to 65 years in 2002, with 55 years for male and 54 years for female in 1981 to 64 years and 65 years for male and female, respectively, in 2002 (SVRS 2002).

Infant Mortality Rate (IMR):

In Bangladesh, Infant Mortality has declined during the period of 1981-2002. In 1981, 111 infants died per 1,000 live births, which has declined to 87 in 1991 and 53 in 2003 (Source: BBSSVRS 2003)

Maternal Mortality Rate (MMR) :

In Bangladesh,Maternal mortality has declined during the period of 19920-2002. In 1992 it was 4.7 and in 2002 it was 3.8 per thousand live birth. (SVRS/2002)

2.3 Social Trends:

The adult literacy rate in the population over 15 years of age has shown a gradual increase from 1981 (males 39.7% and females 18.0%) to 2002 (males 55.5% and females 43.4%) (BBS, SVRS 2002). Whether this increase has resulted in better utilization of health services is difficult to ascertain.

In Bangladesh, Gross Enrollment Ratio (GNR) in primary education for both sexes is not much different. In the case of males, GNR was 94 percent in 2002-03, and for females it was 98 percent during the same period.

In case of secondary education, GNR for both the sexes has increased from 42 percent in 1998 to 47 percent in 2002-03. The GNR in secondary education for female has increased from 41 percent in 1998 to 50 percent in 2002-03, higher than males for whom the increase is from 43 percent in 1998 to 45 percent in 2002-03 (UNESCO).

2.4 Food supply & nutritional status:

The prevalence of low birth weight (weight <2500 grams) has decreased from about 50 percent in 1993-95 to 40 percent in 2005. The percentage of underweight (weight-for-age) in children below 5 years was: severe -12.8 percent, moderate -47.5 percent, and that of height-for-age was: severe -16.9 percent, moderate -43.0 percent (Bangladesh Demographic and Health Survey 2004).
About 69 percent of the population suffers from Iodine Deficiency Disorders (IDDs), as estimated by the urinary excretion of iodine. Among the population, the total goiter rate is 47.1 percent, of which 8.8 percent have visible Goiter. The presence of cretinism is 0.5 percent (1993). The IDD control programme now targets hyper endemic areas with lipiodol injections as a short term measure, and universal iodization of salt as the long term intervention.

Anaemia in pregnant women:
The prevalence of anaemia among adult women was estimated at 74 percent and that of children less than five years at 73 percent (1982-83). Studies conducted in 1990 and 1995 found the situation unchanged.

2.5 Lifestyle & Risk Factors:

The percentage of the male population aged 15 years and above who are regular smokers has steadily increased over the last five years. Data for 1995 show that the proportions of adult males and females, who are regular smokers are 41 percent and 4.6 percent, respectively. The Government and NGOs are making efforts to

counter this trend by creating more awareness of the adverse effects of smoking, through warning messages on cigarette packets, antismoking schemes among doctors, banning advertisements on radio, creation of smoke free zones, etc. There is a need also to address issues relating to substance abuse, drug trafficking and juvenile delinquency.

3. HEALTH & ENVIRONMENT

3.1 General protection of the environment:

There are many legislative enactments pertaining to the environment that need to be modified and updated. In 1989, a new Ministry of Environment and Forests was created. In May 1992, a national environmental policy was approved and a national environmental action plan developed. In 1995, the Bangladesh Environment Protection Ordinance was introduced. Environmental objectives were included in the government's Fourth Five Year Plan (199095), and these also find place in the Perspective Plan (1996-2010). Monitoring and regulatory mechanisms for air pollutants mainly caused by vehicular emissions are operational only in four major cities. A standard for per capita water availability has yet to be set. A national monitoring system to deal with contamination of drinking water has not yet been established. The regular collection of solid waste is only in municipal towns but handling and disposal is questionable. Bangladesh has no national food safety policy. A plan of action for food safety and an inter-ministerial committee for coordinating and monitoring food safety are operational. The incidence of food-borne diseases is high. With regard to housing, the key issues identified are unplanned and unregulated urban growth, high population density, often with poor provision for sanitation causing a high incidence of disease, and inadequate facilities for disposal of waste, and sewage treatment and management. In 1993, the government adopted a National Housing Policy with provision to address the above issues. In 1991, for the first time, protection of the environment and environmental pollution were included in the industrial policy. The main constraints include delay in the approval of national policy and work plans, lack of a monitoring system for environmental health concerns, insufficient budget, and insufficient trained manpower.

3.2 Water supply & sanitation:

The availability of safe drinking water in urban areas has increased from 44.9 percent in 1991 to 99.7 percent in 2001, and in the rural sector from 88 percent to 96.8 percent during the same period. Over 96 percent of the rural population use tubewell water (safe water) for drinking purposes, but only about 16 percent use it for other domestic purposes, due to the distance from the water source.

The proportion of the population with adequate excreta disposal facilities has increased, from38 percent (1991) to 98 percent (2001) in the urban sector and from 10 percent (1991) to 92 percent (2001) in the rural sector (BBS, Report of SVRS, June 2003).

The main constraints are the shortage of trained manpower, limited funds, poor community awareness, and a weak information system.

4. HEALTH RESOURCES

4.1 Human resources for health :

Significant changes in human resources for health have taken place in recent years leading to overall improvement in the coverage of health services. These include production and deployment of more health and health-related personnel, refresher training for health personnel in service, and greater use of health volunteers. In 1997, the distribution of physician per 10,000 populations was 2.03, which has increased to 3.0 in 2005, whereas nurses available per 10,000 populations were only 1.4 in 2004 [Management Information System (MIS), Directorate General of Health Services (DGHS), Bangladesh]. Actions are being taken, which include the ablishment of a permanent health institute, formulation of a human resource development plan, and enhancing the quality of medical education.

4.2 Financial resources for health:

In 1993-94, the national health expenditure by both public and private sectors amounted to 3.04 percent of the GNP. It has increased to 3.4 percent in 2003. Public expenditure on health as percentage of total expenditure on health was 36.5 percent in 1998, which has declined to 25.2 percent in 2002. Government health expenditure as percentage of the total government expenditure was 6.9 percent in 1998 but it has also declined to 4.4 percent in 2002 (World Health Report 2005). In 1998, the total government health expenditure per capita was US $ 4, which has increased to US $ 11 in 2002. Constraints of mobilizing financial resources for health and their efficient use are the inability of communities to finance health services due to poverty, unwillingness of donors to support infrastructure development, and lack of coordination in financial mobilization. The government now gives priority to cost sharing, decentralization of authority, decision making and programme implementation at the peripheral level, promotion of community participation, delivery of a package of essential services to the poor, and obilization of financial resources by negotiating with donors such as the World Bank.

4.3 Physical infrastructure for health:

Since the mid 1980s the government has sought to improve its health services and teaching institutions. The explicit goal was to build one Union Sub centre (USC) or Health and Family Welfare Centre (HFWC) in every union (4415); one health complex in every thana (397); and one general hospital or tertiary facility in every district (59). As of 1996, there were 4200 USCs/IFWCs, 379 health complexes and 59 district hospitals. By 1999, there were 460 Thana health complexes, 1362 Union Sub-Centers and 3315 Community Clinics; there were also 15 government medical colleges and 7 postgraduate/specialized hospitals. There are another 33 private medical and dental colleges. The total number of hospital beds was 43,293 (1999), which has increased to 51, 684 in 2005. In 2005, 3.43 beds per 10,000 populations were available (MIS, DGHS, Bangladesh). To overcome many of the local constraints in the construction and maintenance of health facilities, the government is considering introduction of a more need-based health planning process that will involve all stakeholders and the community.

4.4 Essential drugs & other supplies:

As early as the 1980s, Bangladesh had a national essential drugs policy and a list of essential drugs to be procured and used in health services. These have been maintained to date. Most of the essential drugs were known by their generic name and were less costly than brand name drugs. Production and distribution facilities, both in the private sector and public limited companies, are adequate. Despite these advantages, government run health facilities did not have sufficient essential drugs to meet their actual needs, since the budgetary allocation for the procurement of drugs was not enough. In 1997, a sample of health facilities in remote areas revealed that only eight percent of essential drugs needed at those levels were available. Over the period 1990-95, however, the investment (public and private) in essential drugs, vaccines and ORS increased from 4.31 million to 75.29 million taka.

The government also launched an education programme for providers and users on the rational use of drugs. The government is considering implementation of a new cost sharing scheme based on a sliding scale, which would benefit the poor.

4.5 International partnership for health:

Bangladesh willingly shares experiences and expertise with other countries, particularly in training, research and disease surveillance. WHO has played a major role in gradually building up the national capacity through regional collaboration. SAARC is another forum used to address regional issues including health. Partnership arrangements for health have been established with bilateral agencies, with funds usually channeled through nongovernmental organizations. An NGO bureau regulates and monitors the funding. There is a need to further strengthen coordination between NGOs and government activities/programmes.

5. DEVELOPMENT OF THE HEALTH SYSTEM

5.1 Health policies & strategies:

The cornerstone of national health policy is the Health and Population Sector Strategy introduced in 1998. Priority is given to ensuring universal accessibility to and equity in healthcare, with particular attention to the rural population. MCH receives priority in the public sector, and reproductive health has recently become a priority concern. There has been improvement in the government financial allocation for health.

Efforts are being made to develop a package of essential services based on the priority needs of clients, to be delivered from a static service point, rather than providing door to door visits by community health workers. This is a major shift in strategy and will require complete organization of the existing service structure. This is expected to reduce costs and increase efficiency as well as meet "peoples' demand". Privatization of medical care at the tertiary level, on a selective basis, is also being considered.

5.2 Inter-sectoral cooperation:

Inter-sectoral committees at the different levels from the national level to the periphery are formed, whenever the need for cooperation exists. At national level, for example, nutrition and population councils are chaired by the prime minister. At the district and thana levels, intersectoral coordination committees also exist, while at the lowest administrative level (union), similar committees are formed, e.g., for water and sanitation projects.

5.3 Organization of the health system :

Committees have been formed, including an inter-ministerial committee, to integrate/merge the health and the family planning departments. Functionally, health and family planning personnel work closely at Thana, union and outreach levels, but a dichotomy exists at the district and national levels. More decentralization of management is also being considered.

5.4 Managerial process :

The government decided to formulate a national health policy during 1997, for which a health policy committee and five subcommittees were formed. There was a change from a top-down planning process for health to a participatory approach involving the stakeholders in the health sector. The first product that was formulated utilizing this approach was the health sector perspective plan. The health and population sector strategy document was also prepared following the same process.
A new approach to program implementation, which is product oriented and emphasizes on outputs rather than inputs is being tried out with WHO assistance. Decentralization of the management process is also being considered.

5.5 Health information system:

A weekly epidemiological surveillance and outbreak control reporting system for selected communicable diseases have been initiated throughout the country. The routine HMIS is functioning with some limitation, though activities have been undertaken to strengthen it. Information support is not yet adequate. Use of data remains limited. Strengthening of the HMIS through training, use of data collection tools already designed, and the establishment of information networks with computer support have been planned.

5.6 Community action:

The roles of the individual, family and community are emphasized in the intensified action programme for PHC implementation, which involves decentralized planning at thana and union level. A total of 12 districts (86 thanas) are now in the intensified PHC programme. Through intersectoral collaboration and community participation, a joint action plan has been implemented involving 60,000 village health volunteers (one each for 50 households). The participation of teachers and religious leaders is encouraged. The information department and mass media inputs are also utilized to support IEC activities.

5.7 Emergency preparedness :

Currently, there is no legislation in the country that underpins the management of natural disasters at national and sub-national levels. In the absence of any legislation, the Ministry of Disaster Management and Relief in 1997 issued revised "standing orders for disasters." These provide guidelines and instructions to various line departments and ministries. There are separate standing orders for different hierarchical levels of the health sector, which include coordination committees; contingency plans for manpower deployment, essential medical relief supplies and maintaining a database; training in emergency preparedness and response; a communication network; and budgetary allocation for emergency management. A draft "Disaster Management Act" is currently under review.

5.8 Health research & Technology:

Three organizations [the Bangladesh Medical Research Council (BMRC), the Institute for Cholera and Diarrhoeal Disease Research, Bangladesh (ICDDRB), and Essentia l National Health Research (ENHR)] spearhead biomedical and operational research. They undertake training and provide research grants. Many of the research findings are helpful in making policy decisions. Research units have also been opened by BMRC in medical colleges. Field study stations have been established by BMRC and ICDDRB. BMRC has reorganized itself internally to cope with the growing demands of young researchers. Literature search systems in BMRC and ICDDRB have been modernized. Health systems research (HSR) is not handled as a separate, independent entity. Individual faculty members and other relevant people have been trained in HSR, but there is no coordination among researchers. Health training institutions have yet to include HSR in their curricula. The research culture is developing in Bangladesh, and there is no effective critical mass of researchers to form a strong advocacy group. Coordination and networking among researchers and funding agencies are yet to be developed.

6. HEALTH SERVICES

6.1 Health Education & Promotion:

Educational support to national health programmes has been provided by the Health Education Bureau (HEB). Emphasis has been given in recent years to school health education, hospital health education and coordination with NGOs. Constraints include the lack of a national IEC strategy, the low priority given to health education by the health services, underutilization of health education officers, and lack of opportunities for professional advancement of those working in health education. Some issues under consideration are the inclusion of a health education component in the new national health policy and strengthening of coordination among the HEB, ongoing government health programmes and NGOs.

6.2 Maternal & Child health/family planning/ adolescent health:

During 2004, the proportion of women attended by trained personnel during pregnancy was 27.2 percent; that of deliveries attended by trained personnel was 13.4 percent; and the ratio of women of childbearing age currently using family planning was 58.1 percent (Bangladesh Demographic and Health Survey 2004). In maternal health, there is slow progress as MMR reported for 1991 was 4.7 per 1000 live births, which has declined to only 3.8 per 1000 live births in 2002. The TFR declined from 3.67 in 1991 to 3 in 2004, but is still high. Based on the causes of maternal deaths, several project activities have been initiated to reduce maternal mortality (Sample and Vital Registration System, 2002). These include providing comprehensive reproductive health, family planning and essential obstetric care (EOC) supported by UNFPA. UNICEF assistance to EOC is implemented through the Obstetric and Gynecology Society of Bangladesh. The WHO-assisted programme on maternal and neonatal care including EOC is managed by the government and the ICDDRB. Training and logistic supply management for MCH/FP is also being strengthened. Some of the main constraints are lack of skilled manpower, weak management capabilities and limited resources. In the future, priority will be given to more training and utilization of midwives at the peripheral level.

6.3 Immunization:

The proportion of infants (0-11 months) who have been fully immunized according to the national EPI schedule in 1999 was 52.8 percent. By individual vaccines, the proportions in 2005 were: DPT3 -83 percent, OPV3 -90 percent, measles vaccine -77 percent, and BCG 99 percent. The percentage of pregnant women immunized with tetanus toxoid (at least one) was 85 percent (BDHS 2004).
Immunization services have been extended up to village level, & community support is readily available. Three NIDs for polio have also been successfully implemented during the last three years. The morbidity and mortality rates of EPI-target diseases have been considerably reduced. A good opportunity is now available to utilize the already established and well known EPI outreach centers for delivery of other components of PHC as well.

6.4 Prevention and control of locally endemic diseases:

Dengue

Dengue was an unfamiliar disease in Bangladesh

till the outbreak in 2000. It occurs in epidemic form in most countries of Asia, East and West Africa and some Pacific Islands. Epidemic outbreaks of Dengue have become frequent in recent years in the neighboring countries including India, Myanmar and Thailand. Almost all ages and both sexes are susceptible to Dengue. The infection can lead to fatal Dengue Shock Syndrome (DSS). It is a vector borne disease transmitted by certain species of Aedes mosquito. Aedes aegypti (and Aedes albopictus) is a peri-domestic mosquito, which lay eggs in small collections of clean water such as flower vases and pots, which act as breeding places. Usually Dengue transmission occurs during the rainy season of the year. In Bangladesh, Dengue was never looked for seriously, except scattered studies which indicated sporadic cases over the last few years though not confirmed by definitive laboratory investigations.

Since July 2000, there had been an outbreak of Dengue and Dengue Haemorrhagic Fever (DHF) in the Dhaka City and cases had also been reported from other big cities of different parts of the country. As on 10/8/04, a total of 16,388 Dengue cases were reported of which 210 were deaths.

The Case Fatality Rate (CFR) found was 1.28 percent.

The Directorate General of Health Services has taken initiatives to develop national guidelines by adapting the WHO guidelines according to the local needs. The objective of the guideline is to control transmission of Dengue Fever and DHF and reduce morbidity and prevent deaths. This will help to establish Early Diagnosis and Prompt Treatment (EDPT) of Dengue Fever and DHF.

Tuberculosis

Tuberculosis (TB) is major public health problem, which ranks Bangladesh fifth among the high- TB burden countries in the world. The national tuberculosis control and prevention programme was started in 1965. The services were mainly curative and were provided through 44 TB clinics (presently Chest clinics), eight segregation hospitals and four TB hospitals. TB services expanded to 124 Upazila Health Complexes (UHC) during 1980-86 through the project, "Strengthening TB and Leprosy Control Services," and became integrated with leprosy during 1986-91 under the "Mycobacterial Disease Control Programme." However, it was reported that treatment completion was less than 50 percent and case detection less than 20 percent of the estimated cases.

The present revised NTP was launched under the project "Further Development of TB & Leprosy Control Services" and adopts the DOTS strategy. Its field implementation started in November 1993 in four thanas, expanding progressively to the 460 upazilas by June 1998. NTP will also be implemented in the metropolitan cities.

The present estimates of TB are based on two surveys performed in 1964-66 and 1987-88.

Annual report of Tuberculosis of 2005 shows tuberculosis incidence is 221/100,000 population. Tuberculosis death is 7% of total death in the country.

The present revised NTP, adopting the DOTS strategy, dates from end of 1993. It was expanded to all rural upzilas in less than five years under the Fourth Population and Health Project (FPHP), with the technical assistance of the WHO and partnership of NGOs. Since July 1998, NTP is administered under the HPSP, and integrated into the CDC area of the ESP. At the end of 2000, NTP reached 95 percent geographical coverage of the country including the main cities of Chittagong, Khulna and Rajshahi.

NTP reported 654,068 TB cases till December 2003, of them 44,447 were new pulmonary cases, smear-positive. Of the reported cases, 55.5 percent of the total pulmonary cases are smear-positive and 44.5 percent are smear-negative. The ratio of pulmonary new smear-positive cases to pulmonary smear-negative and extra-pulmonary is 1:1.

In 2000, the NTP notification rate was 28.6/100,000 new sputum-positive cases (corresponding to 29 percent detection rate). The male-female ratio among the NTP new smear-positive patients was 1:0.4. This ratio increased to 1:0.8 in the metropolitan areas.

The NTP overall treatment success in the new smear-positive patients is excellent, with steady annual improvement till the 81.3 percent treatment success in the last patient cohort of 1999.

Leprosy

Leprosy has been a major health problem in Bangladesh for a long time. Bangladesh was considered a high endemic country and was listed among ten countries with high case load one (1992). Leprosy situation dramatically changed globally after 1981 after the introduction of MDT by WHO. After the success of MDT in many counties, WHO visualize the possibility of eliminating leprosy globally as a public health problem and fixed an achievable goal by 2000. Elimination was defined as low level of prevalence, determined a <1 case/10,000 population.

Bangladesh is signatory to the 1991 WHO resolution calling for elimination of leprosy by the year 2000, i.e., to achieve prevalence to <1/10,000 population. The government followed up this resolution by making substantial allocations to the national leprosy elimination programme under the Fourth Population Health Project: 1991-98 and continuing it in the HPSP since July 1998.

The national leprosy programme was first launched in 1965 with the introduction of Dapsone through Government and NGO hospitals. The Multi Drug Therapy (MDT) introduced by WHO is recognized as a major technological tool for leprosy control. The MDT programme was introduced in Bangladesh in 1985 and extended phase-wise to about 120 upazilas either by the government or through NGO collaboration. Intensive MDT implementation started in late 1993 with the following objectives:

1. To introduce MDT services with upazila (country wide) as the peripheral unit.
2. To detect >85 percent of the estimated cases within 5 years of programme implementation.
3. To provide fixed duration MDT free of cost to all registered cases.
4. To achieve >85 percent treatment completion cure rate.
5. To reduce deformity grade-2 among newly detected cases to <5 percent within 5 years of programme implementation.

Since 1996, 625 MDT units were established in the country. In 1993, Bangladesh was estimated to have a leprosy prevalence rate of 13 per 10,000 populations, i.e., 136,000 cases, which made Bangladesh the country with the third highest leprosy case-load in the world. The estimated number of leprosy cases was revised to 80,000 in 1996 and by the end of 1997; the estimated prevalence of leprosy was 3.5 per 10,000 populations with a registered prevalence of 1.17 per 10,000 populations. Since 1994, all registered cases are provided with MDT. Thus, the MDT coverage of registered cases is 100 percent in Bangladesh.

Bangladesh has made considerable progress in achieving the goal of elimination of leprosy at national level. The WHO goal of elimination of leprosy as a public health problem by the year 2000 is defined as to achieve leprosy prevalence (registered) to less than 1/10,000, population. Bangladesh achieved elimination of leprosy at national level at the end of 1998 with prevalence of 0.86/10,000, before two years ahead of target date. The present leprosy work is going on for sub-national elimination by the year 2005.

Malaria

The control strategy for malaria was revised and approved in 1995. The new strategy is being gradually implemented, and it emphasizes disease control aspects and endorses four technical elements (early diagnosis, prompt treatment, recognition of treatment failures and management of severe and complicated cases in hospitals). Emphasis is also placed on malaria surveillance, preparedness for control of malaria outbreaks/epidemics, and the introduction of insecticide impregnated bed nets. The main constraint is the reduced capacity of the core technical unit for control of vector-borne diseases to take on activities countrywide.

Other diseases

In Bangladesh, kala-azar is a re-emerging disease since the cessation of DDT spraying operations. At least 20 million people in more than 27 districts are at risk. The estimated cumulative disease specific burden is 35,000 cases. Under the project for integrated control of vector-borne diseases, an emergency plan for the control of kala-azar was initiated in 1994-95 in 22 thanas of 11 districts (population five million). This has been successful and further expansion is now planned. At least 8,000 kala-azar patients have been successfully treated to date. The major constraint is similar to that faced in the control of malaria.

Eighteen (18) million people in 12 districts are considered to be at risk of filariasis. A revised strategy for the elimination of filariasis is being pilot tested in one district. This strategy involves

administering a single dose of ivermectin with albendazole yearly for a period of three years to the total population in the district.
Dengue has yet to become a public health problem; but in view of the high potential that exists, surveillance and preparedness capability have been strengthened.
To date 17 AIDS cases have been reported, but 13,000 cases of HIV infection are estimated. Current data available categorizes Bangladesh as a low prevalence country at present.

6.5 Prevention, control & management of common diseases & injuries :

Acute respiratory infection accounts for about 145,000 deaths annually among children under five years. The under-five mortality rate due to ARI was reported to be 33 percent (ICDDRB 1994). Forty to sixty percent of outdoor visits and 30-40 percent of indoor admissions are attributed to ARI. The programme for the control of ARI continues to be implemented on a phased basis according to the recommended WHO strategies. Diarrhoeal diseases continue to be responsible for much morbidity and mortality, but current strategies have considerably reduced mortality. Multi-sectoral partners were involved in mobilizing the community regarding correct home-based care and timely referral. The availability of ORS has increased through the formation of ORS depot holders in the community. Constraints include inappropriate use of anthelmintics and anti-diarrhoeals, specially in the private sector, and the underutilization of health facilities including ORT corners.
The incidence of measles has dramatically declined since the introduction of measles vaccine into the immunization programme. Malnutrition still remains a problem both in urban and rural areas, with the latter being more affected. Of the non-communicable diseases, cancer and cardiovascular diseases are the leading causes of morbidity and mortality. The incidence of cancer is estimated at 200,000 per year.

7. TRENDS IN HEALTH STATUS

7.1 Life expectancy:

The life expectancy at birth for both sexes increased from 56.1 in 1991 to 64.9 in 2002; male life expectancy has increased from 56.5 years in 1991 to 64.5 years in 2002 and female life expectancy increased from 55.7 years to 65.4 years during the same period. The gap between male and female life expectancies has narrowed from 0.8 years in 1991 to 0.4 years in 2002 (SVRS 2002). The gap between urban and rural life expectancy is also narrowing. The main reason for the rise in life expectancy is the decline in infant and child mortality due to the successful implementation of the immunization programme as well as disease control programmes such as those for ARI & diarrhoeal disease.
In Bangladesh, Healthy life expectancy at birth was 54.3 years in 2002 with 55.3 years for male and 53.3 years for female (The World Health Report 2004).

7.2 Mortality:

Between 1991 and 2003, the infant mortality rate (IMR) has declined from 87 to 53 per 1,000 live births (BBSSVRS 2003). Under-five mortality rate is 76 per 1,000 live births in 2002 (BDHS 2004)) and the maternal mortality ratio (MMR) declined from 470 in 1991 to 380 per 100,000 live births in 2002 (BBSSVRS 2003). Though mortality rates have declined, infant and maternal mortality are still high.

Main causes of Mortality in Bangladesh are given below:

Pneumonia -	13.53%
Diarrhoea -	6.26%
Respiratory failure -	7.49%
Hypertension disease -	4.05%
Accidental Poisoning by others -	3.77%
Pregnancy -	3.74%
Malaria -	3.69%
Intra-cerebral & other health problems	3.00%
Acute myocardial infarction -	2.54%
Anaemia -	NA

Cancer Control Programme

The cancer control programme was started in 1982 as a low-scale non-communicable disease programme. The National Institute of Cancer Research and Hospital currently carries out institutional services and research activities. The hospital is capable of providing operative, pathological and endoscopical examination facilities to cancer patients. The present bed capacity of the Cancer Institute Hospital is limited, but there is plan for gradual expansion and introduction of other relevant facilities.

7.3 Morbidity :

Ten most common causes of morbidity in hospitals in Bangladesh during 1997 :

Diarrhoea -	15.90%
Intestinal worm -	7.38%
Skin diseases -	9.30%
Anaemia -	9.92%
Acute Respiratory Infections -	6.10%
Deficiency diseases -	6.63%
Eye diseases -	4.36%
Injuries -	4.35%
Ear diseases -	3.28%
Asthma -	2.31%

There has been an overall decline in morbidity during the period of reporting. Morbidity is mainly due to infectious, parasitic and vector-borne diseases. Some information on morbidity is available from a sample survey conducted by the Bangladesh Bureau of Statistics (BBS). However, routine reporting of disease incidence is non-existent or patchy at best, and disease surveillance has not been fully established.

8. OUTLOOK FOR THE FUTURE

8.1 Overall assessment & Strategic issues:

Since independence more than 30 years ago, the Government of Bangladesh has invested substantially in the institutionalization and strengthening of health and family planning services, with special attention to rural areas, and the government is committed to HFA with PHC as the key approach. For the last 30 years, there has been a substantial improvement in the health status of the people. Life expectancy at birth has increased to 64.9 (2002), CDR has declined to 5.9 (2003), and TFR reduced from 6.34 (1975) to 3.0 (2004) (Sample and Vital Registration System, and Bangladesh Demographic and Health Survey 2004). The IMR was around 53 (2002) (Bangladesh Demographic and Health Survey 2004). Despite these improvements, much remains still to be done. Mortalities rates, especially infant and maternal mortality, continue to be unacceptably high. The quality of life of the general population is still very low. Low calorie intake continues to result in malnutrition, particularly in women and children. Diarrhoeal disease continues to be a major killer. Communicable and poverty-related diseases that are preventable still dominate the top ten causes of morbidity.
The government is aware of this situation and the major shortcomings that need to be addressed, i.e., the development of an efficient project management mechanism across the health system; improvement in the logistics of drug supplies and equipment to health facilities at district and lower levels; improvement in the production and quality of human resources for health; a system to ensure regular maintenance and upkeep of existing health facilities; and the development of a comprehensive plan to improve and assure the quality of health services provided.

8.2 Futures Vision:

The government has formulated a perspective plan keeping in view the needs of the health sector for the future. The formulation of a national health policy would provide strategy directives on major health issues. The future vision for the health sector would include universal access to basic healthcare and services of acceptable quality; improvement in medical education; improvement in nutritional status, particularly of mothers and children; prevention and control of major communicable and non-communicable diseases; strengthening planning and management capabilities; improvement in logistics of production/procurement, supply and distribution of essential drugs, vaccines and other diagnostics and therapeutic equipment; increase in overall life expectancy of the population; survival and healthy development of children; the health and well being of women; protection and preservation of the environment; disability reduction; and the adoption and maintenance of healthy lifestyles.

8.3 Proposed Strategies :

The Health and Population Sector Strategy (HPSS) introduced in 1998, which forms the basis for the future national health policy, is based on several key principles: greater orientation to client needs, especially those of women; improved quality, efficiency and equity of government health services; provision of a

package of essential health services; expanded private sector role in providing health and population services; one-stop shopping via colocation of services; and expanded cost recovery and improved efficiency of resources by the public sector.

Some of the main objectives are:

1. To allocate more resources to support services for poor, & vulnerable groups (women & children).
2. Unifying the existing bifurcated health and family planning service delivery system.
3. To achieve an appropriate balance between the public and private sectors in financing and provision of services.
4. Decentralization of management through devolution of authority. The following activities have been identified to achieve the above objectives:
5. Deliver an Essential Services Package to the whole population with the aim of maximizing health benefits, relative to per capita expenditures. This is expected to meet the felt needs of the clients, strengthen service delivery, and improve system management.
6. Service delivery mechanism should be unified, restructured and decentralized, both at the thana and hospitals.
7. Other services, particularly hospital-level, are proposed to be provided through partnerships with or commissioning of services to NGOs and private not-for-profit hospitals. The public sector hospital services delivery will be improved through installing greater autonomy of management, local level accountability, cost-recovery, fee retention and utilization, and a drug revolving fund.
8. Integrated support systems should be strengthened.
9. Introducing a sector wide approach to manage the health sector, rather than having a series of projects with their own funding, management, implementation and reporting arrangements.
10. In view of the potential resource gap between the sectoral resource envelope and projected sectoral expenditures, increased reliance on cost recovery for public sector services will be considered.
11. Health insurance coverage in urban Bangladesh is proposed to be increased through development of a health insurance scheme for government employees and for employees of state-owned enterprises.
12. At the centre, health will be more integrated and decentralization taken to lower levels.
13. Hospital level services be focused & improved.
14. Policy and regulatory framework be strengthened. Existing policies will be reviewed and revised for improving accessibility, affordability and quality of services and for further improvements in affordability, quality and safety of drugs and rational use of drugs. New policies on public and private sectoral mix and financing of services will be developed.

8.4 Basic Health Indicators including the U.N. Millennium Development Goals

ANNEX-1

Country reported Data for Basic Health Indicators including health related MDG

POPULATION & VITAL STATISTICS

Total population (in million) 140/2005[11]

Population density (persons/sq km) 948/2005[11]

Sex ratio (males per 100 females) 106/2003[12]

Population under 15 years (%) 38/2004[3]

Population 60 years and above (%) 7/2004[3]

Crude birth rate (per 1000 population) 20.9/2003[3]

Crude death rate (per 1000 population) 5.9/2003[3]

Natural (population) growth rate (%) 1.54/2001[2] (Exponential Growth Rate)

Total fertility rate (per woman) 3.0/2004[3]

Urban population (%) 31/2003[12]

SOCIOECONOMIC SITUATION

Gross national product per capita (US $) 444/2003-04[4]

Adult literacy rate (%) Total 49.6 Male 55.5 Female 43.4/2002[2]

Prevalence of low birth weight (weight <2500gm at birth) (%) 40/2005[13]

Prevalence of underweight (weight-for-age) in children <5 years of age (%) 47.7 1994-99[7] (<-2SD from NCHS median)

HEALTH SYSTEM INPUTS

Facilities:

Number of hospital beds 51,648/2005[11]

Population per hospital bed 2571/2005[11]

Hospital beds per 10,000 population 3.43/2005[11]

Number of health centres 1385/2004[5]

Human resources:

Number of physicians 42,881/2005[11]

Population per physician 3169/2005[11]

Physicians per 10,000 population 3/2005[11]

Population per nurses 6442/2005[11]

Budgetary resources:

Total Expenditure on Health (THE) as % of Gross Domestic Product (GDP) 3.4/2003[8]

Public Expenditure on Health (PHE) as % of Total Expenditure on Health (THE) 31/2003[8]

Private Expenditure on Health (PvtHE) as % of Total Expenditure on Health (THE) 69/2003[8]

FUNCTIONS

Pregnant women attended by trained personnel during pregnancy (%) 27.2/2004[8]

Deliveries attended by trained personnel (%) 13.4/ 2004[8]

Women of childbearing age using family planning (%) 58.1/2004[8]

One year olds immunized against measles (%) 77/2005[14]

Women that have been immunized with tetanus toxoid (TT) during pregnancy (%) 29/2003[6]

Environment

Population with access to improved water source (%) 97.3/2004[3]

Population with access to improved sanitation (%) 59/2004[3]

Out-of-Pocket Spending on Health (OOPS) as % of Private Expenditure on Health (PvtHE) 85.9/2003[13]

OUTCOMES

Life expectancy at birth (years): Total 64.9 Male 64.5 Female 65.4/2002[2]

Infant mortality rate (per 1000 live births) 53/2003[3]

Under-five mortality rate (per 1000 live births) 88/2003[3]

Maternal mortality ratio (per 100,000 live births) 380/2002[2]

GENDER EQUITY

Life expectancy at birth ratio (females as a % of males) 101/2002[2]

Seats held in parliament (% of women) 2 2004 9

Professional and technical workers (% women) 25/1992-2001[9]

Ratio of earned income (females as a % of males) 0.56/1991-2001[9]

Adult literacy ratio (females as a % of males) 78.1/2002[2]

Computed Primary school enrolment ratio (females as a % of males) 104/2002-03[10]

Computed Secondary school enrolment ratio (females as a % of males) 111/2002-03[10]

MDG HEALTH RELATED INDICATORS

G1.T2.I4 - Prevalence of underweight children (under-five years of age)(%) 47.7/2004[13]

G1.T2.I5 - Proportion (%) of population below minimum level of dietary energy consumption 30/2005[15]

G4.T5.I13 - Under-five mortality rate (probability of dying between birth and age 5) 88/2003[3]

G4.T5.I14 - Infant mortality rate 53/2003[12]

G4.T5.I15 - Proportion (%) of 1 year-old children immunized for measles 77/2004[8]

G5.T6.I16 -Maternal mortality ratio 380/2002[2]

G5.T6.I17 - Proportion (%) of births attended by skilled health personnel 13.4/2004[3]

G6.T7.I18 - HIV prevalence in 15-49 years (per 100,000 population) 100/2004[13]

G6.T8.I21b-Malaria death rate per 100,000 (all ages) 0.5/2003[5]

G6.T8.I21c - Malaria incidence per 100,000

44/2004[11]

G6.T8.I23a - Tuberculosis death (% of total deaths) 7/2002[16]

G6.T8.I23b - Tuberculosis prevalence rate per 100,000 435/2004[17]

G6.T8.I24a - Proportion (%) of Smear- Positive Pulmonary Tuberculosis cases detected and put under directly observed treatment short course (DOTS) 41/2003[5]

G6.T8.I24b - Proportion (%) of Smear- Positive Pulmonary Tuberculosis cases detected cured under directly observed treatment short course (DOTS) 84/2003[5]

G7.T10.I30a - Proportion (%) of population with sustainable access to an improved water source, rural 97/2004[3,13]

G7.T10.I30b - Proportion (%) of population with sustainable access to an improved water source, urban 99/2004[3,13]

G7.T11.I31 - Proportion (%) of urban population with access to improved sanitation 71/2004[3,13]

ANNEX-2

MILLENNIUM DEVELOPMENT GOALS :

GOAL 1: ERADICATE EXTREME POVERTY & HUNGER

Target 1 : Halve, between 1990 and 2015, the proportion of people who suffer from hunger.

Challenges :

1. Addressing income poverty: Promoting strong economic growth.
2. Reaching the poor: Promoting pro-poor growth.
3. Protecting the vulnerable: Supporting effective and sustainable safety net programmes for the vulnerable in poor areas.
4. Reducing hunger and malnutrition: Comprehensive programme of integrated actions on many fronts.

GOAL 2: REDUCE CHILD MORTALITY

Target 2 : Reduce under-five mortality rates by two-thirds between 1990-2015

Challenges:

1. Cost of immunization.
2. Sustaining Success.

GOAL 3: IMPROVE MATERNAL HEALTH

Target 3 : Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio.

Challenges :

1. Reducing the Total Fertility Rate.
2. Achieving MDG 5 -Target 2: Reduce the maternal mortality ratio to 143 per 100,000 live births by 2015
3. Rapidly increasing the proportion of births attended by skilled health personnel.
4. Increasing by two years the median age of girls at first marriage.
5. Providing reproductive services to all by 2015[19]

GOAL 4: COMBAT HIV/AIDS, MALARIA & OTHER DISEASES

Target 4: Have halted by 2015 and begun to reverse the spread of HIV/AIDS.

Challenges :

1. While Bangladesh has a relatively low HIV prevalence, there are many factors that make it particularly vulnerable to HIV/AIDS. They include socio-economic and cultural factors that can only be addressed effectively through a multisectoral and multi-dimensional approach. Sentinel surveillance remains key to follow trends of HIV infection and behaviour change as well as to monitor the outcome and impact of responses to HIV/AIDS.
2. Essential policy review and legal/law reform to enhance enabling environment and the impetus for HIV/AIDS prevention, care and support need to be promoted and facilitated by the different stakeholders.
3. Initiatives should be intensified to mainstream HIV/AIDS into different public and private sectors and to ensure effective leadership support and involvement at all levels in advancement of appropriate measures to deal with HIV/AIDS. Since HIV/AIDS is a development concern, all development and health programmes such as PRSP, SWAP and HNPSP are expected to accord due prominence to and coverage of HIV/AIDS.

Target 5: Have halted by 2015 and begun to reverse the incidence of malaria & tuberculosis.

GOAL 5: ENSURE ENVIRONMENTAL SUSTAINABILITY

Target 6: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.

Challenges :

1. Ensuring 100 percent coverage of safe water.
2. Ensuring access to basic sanitation.
3. Resources needed to meet Target 6.

Target 7 : Significantly improve the lives of at least 100 million slum dwellers by 2020.

Challenges :

The global indicator for Target 7 is the proportion of households with access to secure tenure. Four additional dimensions of this target have been identified by UN Habitat: i) access to safe water; ii) access to sanitation; iii) durability of housing; and iv) sufficient living area.

Sources reference:

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2. Bangladesh Bureau of Statistics, Sample and Vital Registration System, 2002.
3. Ministry of Health, Bangladesh Demographic & Health Survey 2004 NIPORT&MA, Sept 2004
4. National Accounts Statistics (July 2004)
5. Country Health System Profile 2003, MIS, DGHS, Mohakhali Dhaka, Bangladesh, 2005
6. EPI Report, 2004
7. Ministry of Health, Bangladesh Demographic & Health Survey 1999-2000, Dhaka, May 2001.
8. The World Health Organization, World Health Report 2006.
9. UNDP, the Human Development Report 2004.
10. UNESCO.http://www.unesco.org, September 2004 Assessment.
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12. Bangladesh Bureau of Statistics, Sample Registration System, 2003 (SVRS2003)
13. Millennium Development Goals, Bangladesh Progress Report 2005, Government of Bangladesh, Dhaka
14. EPI -Evaluation 2005, Bangladesh
15. Sustainable Development Networking Project, Bangladesh
16. WHO Mortality Fact Sheet 2006
17. WHO Global Tuberculosis Report 2006

DRUGS APPROVED BY THE FDA IN 2008

(Courtesy: www.fda.gov)
Source: Internet

The following drugs have been approved in 2008 by the Food & Drug Administration of America.

1. Accretropin (somatropin rDNA Original); For the treatment of growth failure in pediatrics; Cangene Corp; Approved January 2008
2. Alvesco (ciclesonide); For the maintenance treatment of asthma as prophylactic therapy in adults and adolescents; Nycomed; Approved January 2008
3. Intelence (etravirine); For the treatment of HIV-1; Tibotec; Approved January 2008
4. Moxatag (amoxicillin); For the treatment of tonsillitis and/or pharyngitis secondary to Streptococcus pyogenes in adults and pediatrics; MiddleBrooke Pharmaceuticals; Approved January 2008
5. Tysabri (natalizumab); For the maintenance treatment of moderate to severe Crohn's disease; Biogen IDEC; Approved January 2008
6. Welchol (colesevelam hydrochloride); For the improvement of glycemic control in adults with type 2 diabetes mellitus; Daiichi Sankyo; Approved January 2008
7. Aplenzin (bupropion hydrobromide); For the treatment of major depressive disorder; Biovail Labs; Approved April 2008

8. Cimzia (Certolizumab Pegol); For the treatment of Crohn's disease; UCB Inc.; Approved April 2008
9. Orencia (abatacept); For the treatment of Juvenile Idiopathic Arthritis; Bristol-Myers Squibb; Approved April 2008
10. Patanase (olopatadine hydrochloride); For the treatment of seasonal allergic rhinitis; Alcon; Approved April 2008
11. Rotarix (Rotavirus Vaccine, Live, Oral); For the prevention of rotavirus gastroenteritis caused by G1 and non-G1 types (G3, G4, and G9) in pediatrics; GlaxoSmithKline; Approved April 2008
12. Entereg (alvimopan); For the treatment of postoperative ileus; GlaxoSmithKline; Approved May 2008
13. Aptivus (tipranavir); For the treatment of HIV; Boehringer Ingelheim; Approved June 2008
14. Durezol (difluprednate); For the treatment of inflammation and pain associated with ocular surgery; Sirion Therapeutics; Approved June 2008
15. Stavzor (valproic acid delayed release); For the treatment of bipolar manic disorder, seizures and migraine headaches; Banner Pharmacaps; Approved July 2008
16. Cleviprex (clevidipine); For the treatment of hypertension when oral therapy is not feasible or not desirable; The Medicines Company; Approved August 2008
17. Nplate (romiplostim); For the treatment of thrombocytopenia in patients with chronic immune (idiopathic) thrombocytopenic purpura; Amgen; Approved August 2008
18. Viread (tenofovir disoproxil fumarate); For the treatment of hepatitis B; Gilead; Approved August 2008
19. Xenazine (tetrabenazine); For the treatment of chorea due to Huntington's disease; Prestwick Pharma; Approved August 2008
20. Sancuso (granisetron); For the treatment of chemotherapy-induced nausea and vomiting; ProStrakan; Approved September 2008
21. Akten (lidocaine hydrochloride); For anesthesia during ophthalmologic procedures; Akorn; Approved October 2008
22. Cinryze (Cl Inhibitor (Human)); For the treatment of angioedema attacks in adolescents/adults with Hereditary Angioedema; Lev Pharmaceuticals; Approved October 2008
24 Toviaz (fesoterodine fumarate); For the treatment of overactive bladder; Pfizer; Approved October 2008
25. Treanda (bendamustine hydrochloride); For the treatment of Chronic lymphocytic leukemia and B-cell non-Hodgkin's lymphoma; Cephalon; Approved October 2008
26. Vimpat (lacosamide); For the treatment of partial-onset seizures in adults with epilepsy; Schwarz Pharma; Approved October 2008
27. Banzel (rufinamide); For the treatment of seizures associated with Lennox-Gastaut syndrome in pediatrics and adults; Eisai; Approved November 2008
28. Gleevec (imatinib mesylate) for a new indication - keeping cancer from growing in patients following surgical removal of a gastrointestinal stromal tumor or GIST. Approved December 2008
29. Mozobil (plerixafor), a drug that helps increase the number of blood stem cells for bone marrow transplantation in patients with certain forms of blood cancer. Approved December 2008

Sources

FDA approves more drugs, still misses deadlines (AP Press)

FDA approvals up in '08, missed deadlines abound (FierceBioTech)

DRUGS APPROVED BY FDA IN 2009

The following drugs have been approved in 2009 (up to May, 2009) by the Food & Drug Administration of America.

Cardiology/Vascular Diseases :

1. Adcirca (tadalafil); Eli Lilly; For the treatment of pulmonary arterial hypertension, Approved May 2009
2. Atryn (antithrombin recombinant lyophilized powder for reconstitution); GTC BioTherapeutics; For the prevention of peri-operative and peri-partum thromboembolic events, Approved January 2009

Endocrinology :

1. Cycloset, bromocriptine mesylate; VeroScience; For the treatment of type 2 diabetes mellitus, Approved May 2009

Hematology :

1. Atryn (antithrombin recombinant lyophilized powder for reconstitution); GTC BioTherapeutics; For the prevention of peri operative and peri-partum thromboembolic events, Approved January 2009
2. Samsca (tolvaptan); Otsuka; For the treatment of hyponatremia, Approved May of 2009

Immunology/Infectious Diseases :

1. Besivance (besifloxacin ophthalmic suspension); Bausch & Lomb; For the treatment of bacterial conjunctivitis, Approved June 2009
2. Coartem (artemether/lumefantrine); Novartis; For the treatment of malaria infections due to Plasmodium falciparum, Approved April 2009
3. Lxiaro (Japanese Encephalitis Vaccine, Inactivated, Adsorbed); Intercell AG; For the prevention of disease caused by Japanese encephalitis virus, Approved March 2009

Musculoskeletal :

1. Cimzia (certolizumab pegol); UCB; For the treatment of rheumatoid arthritis, Approved May of 2009
2. Savella (milnacipran hydrochloride); Forest Labs; For the treatment of fibromyalgia, Approved January 2009

Nephrology/Urology :

1. Afinitor (everolimus); Novartis; For the treatment of renal cell carcinoma, Approved March 2009
2. Gelnique (oxybutynin chloride); Watson Labs; For the treatment of overactive bladder, Approved January 2009

Neurology :

1. Cambia (diclofenac potassium for oral solution); Kowa Pharmaceuticals; For the treatment of migraine attacks, Approved June of 2009
2. Edluar (zolpidem tartrate); Orexo; For the treatment of insomnia, Approved March 2009
3. Zipsor (diclofenac potassium); Xanodyne; For the treatment of mild to moderate acute pain, Approved June 2009

Oncology :

1. Afinitor (everolimus); Novartis; For the treatment of renal cell carcinoma, Approved March 2009

Ophthalmology :

1. Besivance (besifloxacin ophthalmic suspension); Bausch & Lomb; For the treatment of bacterial conjunctivitis, Approved June 2009
2. Ozurdex (dexamethasone); Allergan; For the treatment of macular edema following branch retinal vein occlusion or central retinal vein occlusion, Approved June 2009

Psychiatry/Psychology :

1. Edluar (zolpidem tartrate); Orexo; For the treatment of insomnia, Approved March 2009
2. Fanapt (iloperidone); Vanda; For the treatment of schizophrenia, Approved May of 2009

Pulmonary/Respiratory Diseases :

1. Adcirca (tadalafil); Eli Lilly; For the treatment of pulmonary arterial hypertension, Approved May 2009

Rheumatology :

1. Cimzia (certolizumab pegol); UCB; For the treatment of rheumatoid arthritis, Approved May of 2009
2. Uloric (febuxostat); Takeda; For the treatment of chronic hyperuricemia in patients with gout, Approved February 2009

Trauma/Emergency Medicine :

1. Atryn (antithrombin recombinant lyophilized powder for reconstitution); GTC BioTherapeutics; For the prevention of peri-operative and peri-partum thromboembolic events, Approved January 2009.

APPENDICES & INDICES

Section-4

APPENDIX : 1

Physiological Norms & Values for some Body Fluids:

(In the following tables abbreviations used are: B = Blood; P = Plasma; S = Serum)

BLOOD

Physical Values

Circulation time	3 to 8 seconds (arm to lung)
Freezing-point	—0.52
Osmolality, plasma	280 to 295 mmol per kg
pH. arterial	7.35 to 7.45
Pressure, arterial	
Systolic	140 mmHg
Diastolic	90 mmHg
Specific gravity	1.05 to 1.06
Volume, blood	50 to 80 ml per kg body-weight
Volume, plasma	31 to 55 ml per kg body-weight

Haematological Values

Blood count, complete	
Haematocrit (Packed Cell Volume)	Male: 40 to 54%
	Female: 35 to 47%
Haemoglobin	Male: 13 to 18gm per 100ml
	Female: 12 to 16gm per 100ml
Red cell count	Male: 4.5 to 6.5 million per mm^3 or 4.5 to 6.5 x 10^{12} per litre
	Female: 3.9 to 5.6 million per mm^3 or 3.9 to 5.6 x 10^{12} per litre
White cell count, total	4000 to 11000 per mm^3
Coagulation tests	
Bleeding time	
Duke's method	7 minutes
Ivy method	7 minutes
Clotting time, Lee white method	5 to 11 minutes
Partial thromboplastin time, activated	35 to 60 seconds
Prothrombin time, Quick one stage	12 to 20 seconds
Erythrocyte sedimentation rate (ESR)	Male: 3 to 5 mm in 1 hour
(Westergren method)	Female: 4 to 7 mm in 1 hour
Haemoglobin A_2	1.5 to 3.5%
Haemoglobin F	2%
Haptoglobin	0.3 to 2.0gm per litre
Platelet count	150 000 to 400 000 per mm^3 or per mcl
Red cell diameter	6.7 to 7.7 mcm (average 7.2 mcm)
Red cell thickness	1.7 to 2.5 mcm
Red cell volume	23 to 35 ml per kg body-weight
Reticulocyte count	0.5 to 2.0% of red cells

White cell count differential		
Neutrophils, segmented		2500 to 7500 per mm^3 or per mcl
Lymphocytes		1500 to 3500 per mm^3 or per mcl
Monocytes		200 to 800 per mm^3 per mcl
Eosinophils		40 to 440 per mm^3 or per mcl
Basophils		15 to 100 per mm^3 or per mcl

Blood Gases & Acid-Base Values

Base excess	(±) 2.3 mmol per litre
Bicarbonate	
Plasma	21 to 30 mmol per litre
Standard	22 to 28 mmol per litre
Buffer base	45 to 50 mmol per litre
Carbon dioxide	
Arterial PCO_2	36 to 44 mmHg
Total CO_2	23 to 33 mmol per litre
Oxygen	
Arterial PO_2	90 to 110 mmHg

Chemical Values

		Metric	SI
Alpha-amino acid nitrogen	P	30 to 55mg per litre	2.1 to 4 mmol per litre
Ammonium nitrogen			
(enzymatic method)	B	400 to 800mcg per litre	29 to 57 mcmol per litre
Amylase	S	0.8-1.8 Somogyi units per ml	—
		3-10 Wohlgemuth units per ml	—
Angiotensin II		86-268 iu per litre	—
Ascorbic acid	B	5-20mg per litre	28 to 114 mcmol per litre
Bicarbonate	P	—	21 to 28 mmol per litre
Bilirubin			
total	S	1 to 15mg per litre	1.7 to 25 mcmol per litre
total, newborn	S	10 to 120mg per litre	17 to 205 mcmol per litre
Calcium			
Total	S	84 to 105mg per litre	2.1 to 2.6 mmol per litre
ionised	S	40 to 50mg per litre	1 to 1.25 mmol per litre
Catecholamines, at rest			
Adrenaline	P	55ng per litre	0.3 nmol per litre
Nor-adrenaline	P	254ng per litre	1.5 nmol per litre
Chloride	S	or P 3.368 to 3.723gm per litre	95 to 105 mmol per litre
Copper	S	or P 0.7 to 1.5mg per litre	11 to 24 mcmol per litre
Creatinine	S	or P 6 to15mg per litre	53 to 133 mcmol per litre
Fibrinogen	P	2 to 4gm per litre	—
Glucose, fasting	S	or P 0.7 to 1.1gm per litre	3.9 to 6.1 mmol per litre
Growth hormone	S	10mcg per litre	—
Immunoglobulins			
IgA	S	0.5 to 4gm per litre	—
IgD	S	5 to 50mg per litre	—
IgE	S	0.1 to 1.3mg per litre	—
IgG	S	8 to 16gm per litre	—
IgM	S	0.4 to 2.9gm per litre	—
Insulin	S	4 to 30 milliunits per litre	
Iodine, protein-bound(PB)	S	35 to 80mcg per litre	276 to 630 nmol per litre
Iron, total	S	0.5 to 1.8mg per litre	9 to 32 mcmol per litre
Iron-binding capacity	S	2.5 to 4.5mg per litre	45 to 81 mcmol per litre
Ketones (acetoacetate and acetone)	B	30mg per litre	—
Lactic acid			
arterial	B	30 to 70mg per litre	0.3 to 0.8 mmol per litre
venous	B	50 to 200mg per litre	0.56 to 2.2 mmol per litre

		Metric	SI
Lead	B	800mcg per litre	3.9 mcmol per litre
Lipids			
total	S	4 to 10gm per litre	—
cholesterol	S	1.1 to 3.0gm per litre	2.8 to 7.8 mmol per litre
triglycerides	S	0.4 to 1.5gm per litre	—
Magnesium	S	18 to 30mg per litre	0.7 to 1.2 mmol per litre
Phosphatase			
acid, total	S	0.5 to 4 King-Armstrong units per 100ml	—
alkaline, total	S	4 to 13 King-Amrstrong units per 100ml	—
Phosphorus, inorganic, adult	S	or P 25 to 45mg per litre	0.8 to 1.5 mmol per litre
Potassium	P	137 to 196mg per litre	3.5 to 5 mmol per litre
Prolactin	S	2 to 15mcg per litre	—
Proteins			
total, serum	S	60 to 84gm per litre	—
albumin	S	30 to 52gm per litre	—
globulin	S	23 to 37gm per litre	—
Pyruvic acid	B	3 to 10mg per litre	34 to 114 mcmol per litre
Sodium	P	3.1 to 3.4gm per litre	135 to 148 mmol per litre
Sulphate, inorganic	S	9 to 60mg per litre	94 to 625 mcmol per litre
Transaminases			
SGOT	S	0 to 30 iu per litre	—
SGPT	S	0 to 24 iu per litre	—
Thyroid hormone tests			
TSH	S	0.5 to 3.5 milliunits per litre	—
T_3 (Radio-immuno-assay)	S	0.7 to 1.9mcg per litre	—
T_4 (Radio-immuno-assay)	S	40 to 120mcg per litre	—
T_4 Free	S	10 to 40ngm per litre	—
Urea nitrogen (BUN)	B	or S 80 to 250mg per litre	5.7 to 17.9 mmol per litre
Urea	B	171 to 535mg per litre	2.9 to 8.9 mmol per litre
Uric acid	S	15 to 70mg per litre	89 to 417 mcmol per litre
Vitamin A	S	150 to 900mcg per litre	0.5 to 3.1 mcmol per litre
Zinc	S	0.5 to 1.5mg per litre	8 to 23 mcmol per litre

CEREBROSPINAL FLUID

Physical Values

Osmolality	306 mmol per kg
pH	7.33 to 7.37
Pressure	60 to 180mm of water
Specific gravity	1.0062 to 1.0082
Volume, adult	100 to 160ml

Chemical Values

Calcium	1 to 1.5 mmol per litre
Chloride	120 to 130 mmol per litre
Glucose	2.5 to 4.5 mmol per litre
Protein	
Lumbar	150 to 500mg per litre
Cisternal	100 to 300mg per litre
Ventricular	0 to 150mg per litre
Albumin/Globulin ratio	2:1
Infants 1 year	1:1
Albumin	100 to 300mg per litre
Globulin	60 to 160mg per litre
Urea	2 to 7 mmol per litre

URINE

Physical Values

Glomerular filtration rate	100 to 150ml per minute
Osmolality	100 to 1000 mmol per kg
pH	4.5 to 8.0
Specific gravity	1.010 to 1.025
Volume, normal adult	800 to 2000ml per 24 hours

Clearance Values

Serum and Urine

Aminohippuric acid (PAH) clearance	600 to 750ml per min
Creatinine clearance (endogenous)	95 to 135ml per min
Inulin clearance	100 to 150ml per min
Urea clearance	
average standard	41 to 65ml per min
average maximum	64 to 99ml per min

Chemical Values

	Metric	SI
Amino acid nitrogen	50 to 300mg per 24 h	3.6 to 2.4 mmol per 24 h
Aminolaevulinic acid	0.1 to 7.5mg per 24 h	0.8 to 57 nmol per 24 h
Calcium	100 to 300mg per 24 h	2.5 to 7.5 mmol per 24 h
Catecholamines		
Adrenaline	20mcg per 24 h	109 nmol per 24 h
Nor-adrenaline	100mcg per 24 h	591 nmol per 24 h
Chloride	3.545 to 8.863gm per 24 h	100 to 250 mmol per 24 h
Creatine, adult		
0 to 100mg per 24 h	0 to 763 mcmol per 24 h	
Creatinine	1 to 2gm per 24 h	8 to 18 mmol per 24 h
Formiminoglutamic acid (FIGLU)	0 to 3mg per 24 h	0 to 17 mcmol per 24 h
After 15gm of L-histidine	4mg per 8 h	23 mcmol per 8h
Homovanillic acid (HVA)	0 to 15mg per 24 h	0 to 82 mcmol per 24 h
Hydroxyindole acetic acid	3 to 14mg per 24 h	16 to 73 mcmol per 24 h
Lead	100mcg per 24 h	483 nmol per 24 h
Megnesium	49 to 243mg per 24 h	2 to 10 mmol per 24 h
Oxalate	15 to 40mg per 24 h	167 to 444 mcmol per 24 h
Phosphate, inorganic	0.5 to 1.5gm per 24 h	16 to 48 mcmol per 24 h
Potassium	1.4 to 3.5gm per 24 h	35 to 90 mmol per 24 h
Protein	100mg per 24 h	—
Urea	10 to 30gm per 24 h	167 to 500 mmol per 24 h
Uric acid		
normal diet	0.2 to 0.5gm per 24 h	1.2 to 3 mmol per 24 h
high purine diet	up to 2gm per 24 h	up to 12 mmol per 24 h
Vanillylmandelic acid (VMA)	up to 9mg per 24 h	up to 45 mcmol per 24 h

APPENDIX: 2

Normal Values in Liver Function Tests

Tests	*Values*
Icteric Index	1 to 6 units

Tests	*Values*
Prothrombin time (Quick)	12 to 30 seconds
Bilirubin	0.1 to 0.4mg/100ml Indirect 0.2—0.7mg/100ml
Hippuric Acid Test	
Oral	2.5 to 5.5mg in hours.
I.V.	0.7 to 0.95mg in 1 hour
Thymol Turbidity	0 to 2.5 units
SGPT	5—35 units
SGOT	5-—40 units
Alkaline phosphatase	2-—4.5 Bodansky units

APPENDIX: 3

C.S.F Picture in Different Diseases

Tests	Normal	Pyogenic meningitis	Viral meningitis	T.B. Meningitis
Appearence	Clear	Yellow & turbid (cloudy or purulent)	Usually clear (may be hazy in mumps meningitis)	Colourless or (crystal clear or slight turbid; if stands forms cobweb
Pressure	3-4 mmHg	Raised	Raised	Raised
Cell count	0-4/cmm	100-60000/cmm (predominantly PMN)	Few to several thousands (average, 20-1000/cmm) Predominantly Lymphocytes	10-500/cmm (Lymphocytes)
Protein	20-40mg/dl	100-500mg/dl	50-3000mg/dl	100-500mg/dl
Glucose	50-100mg/dl	Markedly reduced or absent	Usually normal	Slight reduction <50mg/dl
Chloride	118-132 mmol/l	Reduced	Normal	Reduced
CSF glucose/ Blood glucose ratio	2:3			

* In viral meningitis CSF contains a few to several thousand cells/cmm. Early in the disease the cells are often polymorphonuclear (PMN) but not more than 90%; later they are chiefly mononuclear i.e lymphocyte.

APPENDIX: 4

Urine Test for Diabetes

1. Glucose: Benedict's Qualitative test—

Add 5 ml of benedicts qualitative reagent to 8 drops of urine in a test tube. Boil in water bath for 5 minutes. If no glucose is present the solution will remain blue.
If present:

* a yellow green precipitate indicates less than 0.5% glucose (this appear only on cooling)

** a greenish-yellow precipitate indicates 0.5—1.0% glucose.

*** a yellow precipitate indicates 1-2% glucose.

**** an orange or red precipitate indicates more than 2% glucose.

2. Estimation of the daily glucose elimination:

$$\frac{\text{24 hour's urine in ml}}{100} \times \text{percentage of glucose} + \text{daily glucose elimination.}$$

Salicylates excreted in the urine may produce an opaque green precipitate which can be confusing; streptomycin in concentration above 200mcg/ml in the urine also reduces Benedict's solution.

APPENDIX: 5

Radiological Procedure: *Preparation of a patient for Intrauenous Urography (IVU)*

1. The patient is advised to avoid leafy vegetables for 3 days preceding the date of I.V.U e.g from 6/8/2007 to 8/8/2007 and to maintain normal works & movements.
2. Tab. Ultracarbon (12/24)—1 or 2 tabs. 6 hourly for 3 days i.e from 6/8/2007 to 8/8/2007.
3. Tab. Avil (9)—1 tab 3 times daily for 3 days i.e from 6/8/2007 to 8/8/2007.
4. Drink less amount of water on 3rd day i.e on from 6/8/2007 to 8/8/2007.
5. Tab. Dulcolax/Laxenna (4)—2 tabs. at bedtime on 2nd & 3rd day, i.e on 7/8/2007 & 8/8/2007.
6. On 9/8/2007, 1 Dulcolax suppository to be inserted per rectum in the early morning at 5 AM.
7. The patient is advised to attend the x-ray dept. in empty stomach at 8 AM On 9/8/2007.
   Wearing on cotton clothes & putting off of ornaments at home. And also advised to bring the following medicines alongwith—
   a) Inj. Avil or Phenergan— 1 ampoule
   b) Inj. Oradexon— 1 ampoule
   e) Inj. Conray 420 or Inj. Urografin 76%— 20c.c, 2 or 3 ampoules.

APPENDIX: 6

EDD & Obstetric Table

DETERMINATION OF EDD

Determination of "Expected Date of Delivery (EDD)" can be done by using "Obstetric Table".
Which is given below:

Obstetric Table

Calculated from the first day of the last menstrual period

Januar	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	January
October	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	November
Februar	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28				February
November	8	9	10	11	12	13	14	15	16	7	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5				December
March	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	March
December	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	January
April	1	2	3	4	6	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		April
January	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4		February
May	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	May
February	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	1	2	3	4	5	6	7	March
July	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	June
April	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	April
August	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	August
May	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	June
September	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		September
June	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7		July
October	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	October
July	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	August
November	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		November
August	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6		September
December	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	December
September	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	October

APPENDIX: 7

Comparison Of Breast Milk & Whole Cows Milk (WCM)

Components	Breast milk	WCM (Pasteurized)
Water	87-88%	87-88%
Protein	1.0-1.5%	3.2-3.5%
Lactalbumin	0.7-0.8%	0.5%
Casein	0.4-0.5%	3.0%
Sugar (lactose)	6.5-7.5%	4.5-4.7%
Fat	3.5-4.0%	3.5-4.0%
Minerals	0.15-0.25%	0.7-0.75%
Calcium	0.034%	0.126%
Phosphorus	0.016%	0.099%
Sodium	0.015%	0.058%
Potassium	0.055%	0.138%
Iron	0.002%	0.00015%
Copper	0.00003%	0.00002%
Vitamins (Per 100ml)		
A	60-500 IU	80-220 IU
C	1.2-10.8 mg	0.9-1.8 mg
D	0.4-10 IU	0.3-4.0 IU
Thiamin	0.002-0.036 mg	0.03-0.04 mg
Riboflavin	0.15-0.08mg(?)	0.10-0.26 mg
Niacin	0.10 mg	0.10 mg
Calories/fluid oz	20	20

APPENDIX: 8

Infectious Diseases: Tables

Disease	Incubation period	Day of appearance of rash	Quarantine period
Anthrax	1—3 days	—	—
Chicken pox	11—12 days	1st day	3 weeks
Cholera, Asian	a few hours to 5 days	—	—
Diphtheria	3—6 days	—	(?) days
Dysentery, bacillary	2—7 days	—	—
Erysipelas	1—3 days	—	—
Gonorrhoea	2—3 days	—	—
Influenza	18 hours to 4 days	—	—
Malaria	9—17 days	4th day	15 days
Measles	9—14 days	—	—
Mumps	12—21 days	—	—
Para-typhoid fever (A & B)	7—21 days	—	—
Plague	2—5 days	—	—
Poliomyelitis	2—10 days	—	—
Rabies	21 days to 4 months	—	—
Small pox	10—21 days	3rd to 5th day	—
Syphilis	2—4 weeks to chancre	2—3 weeks after apperance of chancre	—
Tetanus	8—14 days	—	—

APPENDIX: 9

Immunization Schedule

Age	Vaccine	Diseases prevented	Dose & Route of administ-ration	Duration of immunity	Remarks
0-1 yr.	B.C.G.	T.B	0.1 c.c Intradermally.	6 yrs.	In Bangladesh each children under 15 yrs should be given B.C.G irrespective or without.
6 Weeks	DPT and Oral Polio.	Diphtheria, Whooping cough, Tetanus & Polio myelitis	0.5 c.c i.m, 3 doses with a gap of 4 wks. & Polio 0.5 c.c orally 3 doses at the interval of 4 weeks	4 yrs.	a. First booster dose of DPT & polio given after 1 year and thereafter every 4 years upto childhood. b. Usually elderly children above 8 yrs. only DT is suggested.
9-12 months	Measles vaccine	Measles	0.5-1 c.c subcutane ously or i.m	4 yrs.	Given after 9 months of age as active immunity.
18 months	1st booster dose of DPT & Polio.	Diphtheria, Whooping cough, Tetanus & Poliomyelitis			
2 years	ACV & TAB	Cholera & Enteric fever	ACV: 2 doses 0.5 c.c i.m and then after 4 weeks 2nd dose.	2-6 mon. & 1 year.	ACV and TAB are given in our country during epidemic out break in a single dose.
5 or 6 years (School going age)	2nd booster dose of DPT & Polio				
7 years	1st booster dose of B.C.G				
10 years	3rd booster dose of DT & Polio.				
12 years	B.C.G is given again.				If only one B.C.G is given, it can protect the child upto 12 years in 80% cases

APPENDIX: 10
Pharmaceutical Companies Directory

ACI LIMITED
ACI Centre, 245 Tejgaon Industrial Area. Dhaka-1208
Phone: 9885694
Fax: 88-02-9884784,
88-02-9886029
Email: acil@citechco.net

Distributor for:
Astrazeneca
UCB

AD-DIN PHARMACEUTICALS LTD.
2, Bara Maghbazar, Dhaka-1217
Phone: 9353391-3
Fax: 88-02-8317306
Email: info@ad-din.org

AEXIM PHARMACEUTICALS LTD
House-197, Lane-1, New DOHS, Mohakhali, Dhaka-1206
Phone: 8837402, 8819274, 8819276
Fax: 88-02-9889734
E-mail: smhal@dhaka.net
Web: www.aeximbd.com

A.H JANAKALYAN PHARMACEUTICALS (WAQF) BANGLADESH
67/5, Pioneer Road, Kakrail, Dhaka-1000
Phone: 9352865, 8319740
E-mail: janakalyan@gmail.com
Web: www.janakalyanpharma.com

ALCO PHARMA LTD
House-21, Road-113/A, Gulshan-2, Dhaka-1212
Phone: 8825336, 8827673, 8826103, 8815856
Fax: 88-02-8814900
E-mail: alco_ph@global-bd.net
Web: www.alcopharma.com

ALCON BANGLADESH
Alcon Services Inc.
Mascot Plaza (6th Floor), Plot- 107/A, Sector-7, Uttara Model Town, Dhaka-1230
Phone: 8952225
Fax: 88-02-8920664
E-mail: alcon@sparkbd.net

AMBEE PHARMACEUTICALS LTD
House-1, Road-71, Gulshan-2, Dhaka-1212
Phone: 8827777, 8813991
Fax: 88-02-9565555

AMICO LABORATORIES LTD
Marketing & Sales Office:
12/3, Tajmahal Road, Mohammadpur, Dhaka-1207
Phone: 8125656, 9137200
Fax: 88-02-8118346
E-mail: amicolab@dhaka.net

APC PHARMACEUTICALS LTD
30, KDA Approach Road, Sonadanga, Khulna
Phnoe: 041-725868, 731703; 01711401941
Fax: 880-41-721033
E-mail: apc@khulna.bangla.net

APEX PHARMA LTD.
House-06, Rd-137, Gulshan-1 Dhaka-1212
Phone: 9863026, 8856717
Fax: 88-02-8856743
E-mail: apexpharmabd@yahoo.com

APOLLO PHARMACEUTICAL LABORATORIES LTD
Plot-10, Street-4, Section-7, Mirpur, Dhaka-1216
Phane: 9001794, 8010747
Fax: 88-02-9000713

ARISTOPHARMA LTD
7, Purana Paltan Line, Dhaka-1000
Phone: 9351691-3
Fax: 88-02-8317005
E-mail: aplhc@bangla.net.

ASIATIC LABORATORIES LTD
40-41, Siddeshwari Circular Road, (Kulsum 2nd floor), Dhaka-1217
Phone: 8311355
Fax: 880-8311633
E-mail: asiatic-lab@yahoo.com

BEACON PHARMACEUTICALS LIMITED
Orion House, 153-154 Tejgaon I/A, Dhaka-1208
Phone: 9888494, 9888176
Fax: 88-02-8829314
E-mail: beacon@beacon-pharma.com
Web: www.beacon-pharma.com

BELSEN PHARMACEUTICALS LTD
8, Circular Road, West Malibagh, Dhaka-1217
Phone: 88-02-8321419, 9357546, 8351577 Ext-109; 0173004915 (M)

BENHAM PHARMACEUTICALS LTD
TMC Building (2nd & 8th floor)
52, New Eskaton Road, Dhaka-1000
Tel: 8321340, 8313298
Fax: 88-02-8317424
E-mail: benham@bangla.net

BEXIMCO PHARMACEUTICALS LTD
19, Dhanmondi R/A, Road No-7, Dhaka-1205
Phone: 8619151-5, 8619091-5
Fax: 88-02-8613888
Telex: 675848 BXIM BJ
Email: skd@bpl.net
Web: www.beximco-pharma.com

BIOPHARMA LABORATORIES LTD
7/16, Block-B, Lalmatia, Dhaka- 1207
Phone: 8157953, 8150928, 8159481
Fax: 88-02-9134684
E-mail: b.pharma@aitlbd.net
Web: www.biopharmabd.com

BRISTOL PHARMA LIMITED
6/3, Block-B, Lalmatia, Dhaka-1207
Phone: 8129426
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❖ **Dr. Mohammad Ali** MBBS, FCPS, FRCS, Ed FACS, Fellow Hepatobiliary & Liver Transplant Surgery (Aust)
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Cardio-Vascular & Thoracic Surgeons

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❖ **Dr. A.K.M Razzaque** MBBS, FCPS (Surgery); Thoracic Surgeon
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❖ **Dr. Md. Shafi Ullah** BDS, DDS, MCPS, MS, MADRA (USA); Specialist in RCT, Crown & Asthetic Dentistry.
Cham: i) Smile 2000 Dental Clinic, 75, Saatmasjid Road, Dhanmondi R/A, Dhaka; 8117603, 8125306 (C), 01711542128 (M)

❖ **Dr. Md. Shamsul Alam** BDS, DCD (USSR), FADI (USA).
Cham: Green Life Hospital, 25/A, Green Road, Dhaka; 8628820, 8119552 (C), 01552441902 (M)

❖ **Dr. Mohammad Amirul Islam** BDS, MS, PDT, PhD, FICD (USA).
Cham: Dhanmondi Oro-Dental Surgery, 35, Dhanmondi R/A, Rd-1, Dhaka; 8631988 (C), 8158978 (R)

❖ **Dr. Mohammad Emranul Islam** BDS, MS (OMS)
Cham: Lab Aid Dental Clinic, House- 1, Road- 4, DRA. 8610793-8, 9670210-3 (C), 01199130827

❖ **Dr. Motaher Hossain Didar** BDS, PGT (BSMMU)
Cham: i) 480, DIT Road, Malibagh, Dhaka; 8317220 (C), 8314534 (R)
ii) 72/1, DIT Road Malibagh Property Rise Bldg Mouchak; 9345762 (C)

❖ **Dr. Motiur Rahman Molla** BDS, PhD (Japan), Dip (OMS), FCPS, FICS (USA), PGT (Australia)
Cham: Anwer Khan Modern Hospital, H-17, Rd-8, Dhanmondi, 8616074, 8613883 (C), 01732068612 (M)

❖ **Dr. Mujibur Rahman** BDS, PGT (IPGM&R).
Cham: Rahman's Dental Care, 25, Green Super Market (2nd Floor), Green Road, Dhaka; 8117183 (C)

❖ **Dr. Nurul Amin** BDS, Ph.D (Japan)
Cham: i) Smile 2000 Dental Clinic, 75, Saatmasjid Road, Dhanmondi R/A, Dhaka; 8117603, 8125306 (C)
ii) Holy Crescent Dental & Medical Care, Plot-1, Avenue-1, Block-B, Section-10, Mirpur, Dhaka; 9003709 (C)

❖ **Dr. Osman Gani Khan** BDS, MDS (New Zealand), Root-Canal Specialist.
Cham: Specialized Dental Surgery, 14, Green Super Market (2nd Floor), Green Road, Dhaka; 8123270 (C), 01705690986 (M)

❖ **Dr. Rafique Ahmed Bhuiyan** BDS, DDS, MCPS.
Cham: Dental Surgery, 109, Green Road, 8114919 (C), 9113704 (R), 01711542109 (M)

❖ **Dr. Sadia Islam** BDS
Cham: Bikalpa Dental Clinic, 152/2/A-2, Panthapath, Green Road Crossing, Dhanmondi, Dhaka; 9660805 (C), 01718523878 (M)

❖ **Dr. Sharif Ahmed** BDS, MS (Japan)
Cham: Sharif's Dental Surgery, H-42, Rd-2/A, DRA, Dhaka; 8625546 (C)

❖ **Dr. Sheepar Quasem** BDS, MS (BSMMU).
Cham: Dhanmondi Dental Clinic, 79, Satmasjid Road (Near Sankar), Dhanmondi, Dhaka; 01819297403 (C), 8130244 (R)

❖ **Dr. S.M Iqbal Shaheed** BDS, D-Oral Surgery (USSR), MCPS.
Cham: 41, Ring Road, Shamoli, Mohammdpur, Dhak; 9113157 (C&R), 0119346320 (M)

❖ **Dr. Syed Morshed Mowla** BDS, DDS, MS.
Cham: Teeth Savers Dental Chamber, 57/15, West Panthapath, Green Road Crossing, Dhaka; 01711800049, 01711845927 (C), 9355899 (R)

❖ **Dr. Syed T. Ahsan Ratan** BDS, FPFA (USA), PGT (Japan).
Cham: i) Ratan's Dental, 150, Green Road, Dhanmondi, Dhaka; 9111090, 9675835, 9672786 (C) 9111090 (R), 01711823382 (M)
ii) Ratan's Dental, Navana Tower, H-45, Gulshan-1, Dhaka; 8828854, 8813955 (C)

Oncologist/ Radiation Oncologist

❖ **Dr. A.F.M Kamal Uddin** MBBS, DTCD, MD (Radiation Oncology)
Cham: Anwer Khan Modern Hospital, H-17, Rd-8, Dhanmondi, 8616074, 8613883 (C), 01819409486 (M)

❖ **Dr. A.I.M Atikur Rahman** MBBS, FCPS (Ped), MD (Oncology); Special Training (UK,USA)
Cham: Pancare Hospital Ltd. Dhanmondi Tower, House-4/A, Road-16, (Old-27), DRA. 8158394, 9142422 (C), 01711532741 (M)

❖ **Dr. A.K.M Hamidur Rahman** MBBS, DMRT, Fellow-IAEA (Korea)
Cham: Udayan Poly Clinic, 16-17/1, New Eskaton Road, Dhaka, 9357095-6, 9351100-1 (C), 9333634 (R)

❖ **Dr. A.M.M Shariful Alam** MBBS, DIH, FCPS (Radiotherapy), FICS (USA)
Cham: Ibn Sina Imaging & Consultation Center, H-58, Rd-2/A, DRA, 9666497, 9663289, 8618262, 8610420 (C)

❖ **Dr. M.A Hashem** MBBS, FCPS.
Cham: Green View Clinic, Tarokalok Complex, 25/3, Green Road, Dhanmondi, Dhaka; 8610313, 9661410 (C), 9862571 (R), 01711106136 (M)

❖ **Dr. M.A Rob Bhuiyan** MBBS, DMRT, PGT (Eng).
Cham: 103, Elephant Road, Dhaka; 8612185 (O), 8611932,8628890 (C) (R), 9119300

❖ **Dr. Md. Abdul Bari** MBBS, M.Phil (Radiotherapy)
Cham: SPRC & General Hospital, 135, New Eskaton Road, 9339089, 9342744, 8313185 (C)

❖ **Dr. Md. Abdul Hye** MBBS, DMRT; Professor, Radiation Oncology.
Cham: Doctors Diagnostic Centre Ltd, Baitul Aman Annex Building, Rd-7, DRA, Dhaka; 9123060, 8115300 (C)

❖ **Dr. Md. Ehteshamul Haque** MBBS, M.Phil (Oncology).
Cham: i) City Hospital Ltd, 1/8, Block- E, Lalmatia, Satmasjid Road, Dhaka; 8143312, 8143437, 8143166 (C), 9124701 (R), 01711673550 (M)
ii) City General Hospital & Diagnostic Centre, H-120, Rd-9/A, Dhanmondi, Dhaka; 9120862, 8130778 (C)

❖ **Dr. Md. Mofajjal Hossain (Lt. Coln-Rtd.)**

MBBS, FCPS (Med), FRCP (Edin), FRCP (Glasgo); Cancer & Medicine Specialist.
Cham: Lab Aid Specialized Hospital, H-6, Rd-4, Dhanmondi Dhaka; 8610793-8, 9670210-3 (C)

❖ **Dr. Md. Moarraf Hossain** MBBS, DMRT, FCPS, Fellowship Training (TaTa Memorial Hospital, Bombay)
Cham: Lab Aid Ltd. H-1, Rd-4, Dhanmondi, 8610793-8, 9670210-3, 8631177 (C)

❖ **Dr. Md. Salim Reza** MBBS, DMRT, FCPS (Radiotherapy)
Cham: Conscious Health Service Ltd, House-25/A, Road-6, DRA, Dhaka; 9665544, 9667604 (C), 9120577 (R), 01711608304 (M)

❖ **Dr. Md. Shahidul Islam** MBBS, DMRT, PhD (Japan).
Cham: Module General Hospital, 1/G/3, Paribag, Hatirpul, Dhaka; 8610512, 8616083 (C), 01711316371 (M)

❖ **Dr. Md. Yakub Ali** MBBS, FCPS (Radiotherapy), FRSH (London), WHO Fellow (India), FAEA Fellow (Japan)
Cham: Al-Rajhi Hospital, 12 Farmgate, Dhaka. 8119229, 8121172, 9140749, 9133563-4 (C), 01732429390 (M)

❖ **Dr. M. Kamaluddin** MBBS, DMRT (DU), Advance Training in Oncology (TMC, Mumbai).
Cham: Comfort Diagnostic Centre (Pvt) Ltd. 167, Green Road, Dhaka; 8124990 (C), 8818779 (R)

❖ **Dr. Parveen Shahida Akhter** MBBS, FCPS (Oncology)
Cham: Medinova H-71/A, Rd-5/A, DRA, Dhaka; 8620353-7, 8624907-10, 8618583 (C)

❖ **Dr. Quamruzzaman Chowdhury** MBBS, FCPS, DMRT.
Cham: Square Hospitals Ltd, 18/F, West Panthapath, Dhaka; 8159457, 8142431, 8141522, 8144400, 8142333; PABX-01713141447.

❖ **Dr. Rakib Uddin Ahmed** MBBS, MD (Radiotherapy)
Cham: Panaroma Hospital Ltd, H-16, Rd-8, Dhanmondi R/A, Dhaka, 9668961-3 (C)

❖ **Dr. Salahuddin Ahmed** MBBS, FCPS (R. Oncology), FRSH (UK), Fellow WHO (Oncology).
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ii) Park Way General Hospital Ltd, 1, Momenbagh. Razarbagh, Dhaka; 9340275, 9341499 (C)

❖ **Dr. Md. Syed Hossain (Shaheen)** MBBS, M.Phil (Radiotherapy).
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❖ **Dr. Mrs. Happy Hossain** MBBS, M.Phil (Clinical Oncology).
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❖ **Dr. Sarwar Alam** MBBS, DIH (DU), M.Phil (Oncology).
Cham: Health and Hope Ltd 152/1-H, Green Road, Panthapath (Crossing), Dhaka; 9137076, 9145786 (C), 01819494530 (M)

❖ **Dr. Shamsun Nahar** MBBS, FCPS (Radiotherapy)
Cham: Brighton Hospital & Diagnostic Centre, 163-164 Sonargoan Road, Hatirpool, Dhaka; 8626901-2 (C), 01713244990 (M)

❖ **Dr. Sk. Golam Mostafa** MBBS, FCPS, GTC (Japan, France).
Cham: Reliance Medical Services Ltd, 50, Mohakhali, T.B Gate, Dhaka; 9887366, 9887469

❖ **Dr. Zafor Md. Masud** MBBS, M.Phil, FCPS, Fellow in Medical Oncology (NCC, Singapore).
Cham: City Hospital Ltd, 1/8, Block- E, Lalmatia, Satmasjid Road, Dhaka; 8143312, 8143437, 8143166 (C), 01819238181 (M)

Blood Cancer & Blood Disease Specialist

❖ **Dr. A.B.M Younus** MBBS, M.Phil, FCPS (Haematology), WHO Fellow in Hemato-Oncology (Singapore)
Cham: Green View Clinic, Tarokalok Complex, 25/3, Green Road, Dhanmondi, Dhaka; 8610313, 9661410 (C), 8617118 (O), 01552471393 (M)

❖ **Dr. Alamgir Kabir** MBBS, FCPS (Haematology)
Cham: Medinova, H-71/A, Rd-5/A, DRA, Dhaka; 8620353-7, 8618583 (C)

❖ **Dr. M.A Khan** MBBS, FCPS (Haematology)
Cham: Lab Aid Specialized Hospital, H-6, Rd-4, Dhanmondi Dhaka; 8610793-8, 9670210-3, 8631177 (C), 9665574 (R); 01715-134767 (M)

❖ **Dr. Md. Anwarul Karim** MBBS, FCPS (Child); Asst. Professor of Child Haematology & Oncology.
Cham: Health and Hope Ltd. 152/1-H, Green Road, Panthapath (Crossing), Dhaka; 9137076, 9145786 (C)

❖ **Dr. Md. Fakhruddin Bhuyan** MBBS, MCPS, FCPS (Haematology)
Cham: Prime Diagnostic Limited, 36, Purana Paltan Line, VIP Road, Dhaka; 8313215, 8317422 (C), 7215707 (R); 01552345148 (M)

❖ **Dr. Monzur Morshed** MBBS, FCPS, MRCP (UK); Haematology & Bone Marrow Transplant Specialist.
Cham: Lab Aid Specialized Hospital, H-6, Rd-4, Dhanmondi Dhaka; 8610793-8, 9670210-3 (C), 01711521898 (M)

❖ **Dr. Muhammad Tawfique** MBBS, MD (Paed) MD (Paed Haematology & Oncology)
Cham: Square Hospitals Ltd, 18/F, West Panthapath, Dhaka-1205; 8159457, 8142431, 8141522, 8144400; PABX - 01713141447.

Anaesthesiologist

❖ **Dr. Majibur Rahman** MBBS, DA (London)
Cham: H-4 (Apart-405), Rd-27, Dhanmondi, Dhaka; 8610660, 8627973 (C)

❖ **Dr. Md. Ahsanul Habib** MBBS, FCPS (Anaes)
Cham: Square Hospitals Ltd, 18/F, West Panthapath, Dhaka-1205; 8159457, 8142431 (C)
Res: 111/B Malibagh, Dhaka; 01711627249 (M)

❖ **Dr. Fukhrun Nissa** MBBS, DA, FCPS (Hon)
Cham: Res: 64, Central Road, Dhanmondi, Dhaka; 8615144 (R), 01711528234 (M)

❖ **Dr. Md. Khalilur Rahman** MBBS, DA, FFARCS.
Res: A-30 Ramna Estate Mghbazar, 8317235

❖ **Dr. Muksudul Alam (Basu)** MBBS, FCPS.
Cham: I/G-3 Paribag, 8610512 (C), 9110522 (R), 01819216929 (M)

❖ **Dr. S.N Samad Chowdhury** DA (Lond), FCPS, FICS, FRCA
Cham: 'Analgesia' H-6, Rd-2, DRA. 9661589

❖ **Dr. Zonaid Shafique** MBBS, PhD (Pain Medicine)
Cham: Japan Bangladesh Friendship Hospital, H-55, Rd-3/A, (Near Zigatola Bus Stand), Dhanmondi, Dhaka; 9672277, 9664028-9 (C), 01711647877 (M)

Physical Medicine & Physiotherapy

❖ **Dr. A.K.M Salek** MBBS, FCPS (Physical Medicine)
Cham: Lab Aid Cardiac Hospital H-1, Rd-4, Dhanmondi, Dhaka; 8610793-8, 9670210-3 (C),

❖ **Dr. Altaf Hossain Sarkar** BSPT, MD (Med-Alt.), M.DT (Spine), SRP, MWM, MS (Physio), PhD.
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❖ **Dr. Debesh Sarkar** BPT (India), DPM (India), FIAcA (India), MIAP (India), DAc (India)
Cham: Shaj Bhaban, Flat-B-16, 9th Floor, 27 Bijoynagar, Dhaka, 01726588927 (M)

❖ **Dr. Dina Khan Sadequin** Physiotherapist (UZB) & Chiro Practic.
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❖ **Dr. Fahmida Hafez** MBBS, FCPS (Physical Medicine).
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❖ **Dr. Kazi Abdullah Al-Mamun** MBBS, FCPS (Physical Medicine).
Cham: Cham: Ibn Sina Consultation Centre, H-58, Rd-2/A, DRA, 8618262, 8610420, 8628118, 9666497, 9663289 (C), 01824587336 (M)

❖ **Dr. M.A Rashid** MBBS, FCPS (Physical Medicine).
Cham: Square Hospitals Ltd, 18/F, West Panthapath, Dhaka-1205; 8159457, 8142431, 8141522, 8144400, 8142333 (C), 01552432717

❖ **Mr. Md. Abdur Rahman** BSPT (DU), DRPD (Norway), MS (Physio), PhD (Inida)
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❖ **Mr. Md. Abu Yusuf Khan** B.Sc in Physiotherapy, MDT (Back & Neck Pain), PGD (Sports Therapy), STC (Speech Therapy).
Cham: Northern International Medical College Hospital, H-8/A, Rd-7, Dhanmondi, Dhaka; 9668018, 8621479 (C), 01711159892, 01911496620 (M)

❖ **Dr. Md. Ahsan Ullah** MBBS, FCPS.
Cham: Khidmah Hospital, C-287/2-3, Khilgaon Bishwa Road, Dhaka; 7210749 (C), 01711372372 (M)

❖ **Physio Md. Delawar Hossain** BPT (DU), PGT (P.G Hospital)

Cham: Ibn Sina Hospital & Diagnostic centre (Fuad Al-Khatib Unit), 2/2, Kalyanpur, Mirpur, Dhaka; 9007188, 8013638, 9004317 (C), 01818343839 (M)

❖ **Dr. Md. Mahmudur Rahman** MBBS, FCPS (Physical Medicine).
Cham: i) Jabal-E-Noor Hospital, 38, Rabindra Sarani, Sector-7, Uttara, Dhaka; 8924311 (C), 01552153890, 01711191280 (M)
ii) Brighton Hospital & Diagnostic Centre, 163-164 Sonargoan Road, Hatirpool, Dhaka; 8626901-2 (C)

❖ **Dr. Md. Moyeenuzzaman** MBBS, FCPS (Physical Medicine), WHO Fellow (Singapore).
Cham: SPRC & Neurology Hospital, 135, New Eskaton Road, 9339089, 9342744, 8313185 (C), 9675187 (O)

❖ **Dr. Md. Moniruzzaman Khan** MBBS, FCPS (Physical Medicine)
Cham: Central Hospital H-2, Rd-5, Green Road, Dhanmondi, Dhaka; 9660015-19/703 (C)

❖ **Dr. Md. Quamrul Islam** MBBS, FCPS; DTM&H (Eng) D. PHYS. MED, RCP (Lond), FRCP (Edin)
Cham: Kalyani Diagnostic Centre, 346, Elephant Road, 8613975, 7317771 (C)

❖ **Dr. Md. Rahatuzzaman** Physiotherapist, Trained in West Germany.
Cham: Pan Pacific Hospital, 24, Outer Circular Road, Shajahanpur, Dhaka; 9349794, 9351777, 9351476 (C), 01711766455 (M)

❖ **Dr. Md. Taslim Uddin** MBBS, FCPS (Physical Medicine), Musculoskeletal System Physician.
Cham: Popular Consultation Centre-2, Novera Square, Rd-2, Dhanmondi, Dhaka, 9662741, 01553341063 (C)

❖ **Dr. M. Habibur Rahman** MBBS, FCPS (Physical Medicine)
Cham: Lab Aid Cardiac Hospital
H-1, Rd-4, Dhanmondi, Dhaka; 8610793-8, 9670210-3 (C), 01726511922 (M)

❖ **Dr. Monirul Islam** MBBS, FCPS (Physical Medicine)
Cham: The Medical Centre Ltd, H-84, Rd-7/A, Satmasjid Road, Dhanmondi, Dhaka; 9118219, 9135381, 9136116 (C), 9130364 (R), 01711009321 (M)

❖ **Dr. M. Shahidur Rahman** MBBS, FCPS (Physical Medicine).
Cham: SPRC & Neurology Hospital, 135, New Eskaton Road, 9339089, 9342744, 8313185 (C)

❖ **Dr. M.Z.H Russeel** BSPT (DU), RPT, CPR (Dhaka).
Cham: Uttara Crescent Hospital, Plot-21, Rd-15, Sector-3, Rabindra Sarani, Uttara, Dhaka; 8932430, 8933298, 8912744, 01714040695 (C)

❖ **Dr. Shamsun Nahar** MBBS, FCPS (Physical Medicine).
Cham: Medinova, H-71/A, Rd-5/A, DRA, 8620353-6, 8624907-10 (C), 9663033 (R)

❖ **Dr. Syad Mozaffar Ahmed** MBBS, FCPS (Physical Medicine).
Cham: Lab Aid Cardiac Hospital
H-1, Rd-4, Dhanmondi, Dhaka; 8610793-8, 9670210-3 (C)

Pathologist/Pathological Laboratories

❖ **Ahmed Diagnostic Clinic**
33, New Circular Road, Shantinagar Chowrasta, Dhaka; 9330790, 8333476

❖ **Allergy Centre**
4-5, Green Super Market (2nd Floor), Green Road, Dhaka; 8122074, 9135287

❖ **Al-Rajhi Hospital Pathology**
12 Farm Gate, 8119229

❖ **Anowara Diagnostic Center**
44/12, West Panthapath, Dhaka; 9123253, 9145908

❖ **Badda General Hospital & Diagnostic Centre (Pvt. Ltd)**
Cha-107/2, North Badda, Progati Sharoni, Dhaka; 8857828-30, 9890071

❖ **B.K Diagnosis (Medical Lab)**
44/16, West Panthapath, Dhaka; 8144138, 01711860016, 0181999090

❖ **City Diagnostic Centre**
H-120, Rd-9/A, Dhanmondi, Dhaka; 9120862, 8130778

❖ **Comfort Diagnostic Centre**
167, Green Road, DRA, Dhaka, 8124990 (PABX), 8124380, 8127394

❖ **Compath Limited**
136, Elephant Road, Hatirpool, 8617844, 9660086

❖ **Confirm Diagnostic Ltd**
23/B, M.C Roy Lane, Pilkhana, Dhaka; 9665842

❖ **Dhaka City Diagnostic Center**
H-11, Rd-1, Dhanmondi; 8610652, 8628687

❖ **Diacom Diagnostic Centre Ltd.**
44, Sonargaon Road (1st Floor), Hatirpool, Dhaka; 9660966, 8619251

❖ **Dipham Research & Service Centre**
H-57, Rd-27 (Old), 16 (New) Dhanmondi, Dhaka; 8117772-3, 9125811

❖ **Doctors Diagnostic Centre Ltd.**
Baitul Aman Annex Building, Rd-7, DRA, Dhaka; 9123060, 8115300

❖ **Fame Diagnostic & Physiotherapy Centre**
290, Khilgaon Rail Gate, Jone-A, Dhaka; 7214050

❖ **Green View Clinic**
Tarokalok Complex, 25/3, Green Road, Dhanmondi, Dhaka; 8610313, 9661410

❖ **Ibn Sina Medical Imaging & Consultation Center**
House No-58, Rd-2/A, Zigatola Bus Stand, DRA, 8628118, 9666497, 9663289, 8610420, 8618262, 01711625173

❖ **Ibn Sina Diagnostic & Imaging Center**
H-48, Rd-9/A, Dhanmondi, Satmasjid Road, Dhaka; 9126625-6, 9128835-7, 8122992, 8122472, 01717351631.

❖ **Ibn Sina Diagnostic Laboratory & Consultation Center**
Dayagonj, 28, Dayagonj (Hut Lane), Sutrapur, Dhaka; 7120450, 7120460 (C)

❖ **Insaf Diagnostic & Consultation Centre**
129, New Eskaton Road, Dhaka; 9350884, 9351164, 9337521, 9349190, 01716306631 (M)

❖ **Kallyan Diagnostic Centre**
Eye Hospital Building, Mirpur-1, Dhaka; 8016002, 01191528866

❖ **Kalyani Diagnostic Centre**
346, Elephant Road, 8613975, 7317771 (C)

❖ **Lab-Aid Ltd.**
H-1, Rd-4, Dhanmondi, Dhaka; 8610793-8, 9670210-3, 8631177

❖ **Lab Science**
5/7, Block-D, Lalmatia, Dhaka; 8121326, 8159711

❖ **Life Diagnostic Centre**
35/C, Naya Paltan, VIP Road, Dhaka; 9333704, 8317739

❖ **Medifair Diagnostic Centre**
63/B, Green Road, Dhaka; 9662762

❖ **Medinova Medical Services**
H-71, Rd-5/A, DRA, 8620353-6, 8624907-10, 8618583

❖ **Medinova Medical Services Ltd.**
Malibag branch, Hosaf Tower, 6/9 Outer Circuler Road, Malibag More, Dhaka. 8333811-3, 01711047189

❖ **Mina Laboratory**
98, New Elephant Road, 8612185, 01716645660

❖ **Modern Diagnostic Centre Ltd.**
i) 194/2 Fakirapool, 8322432, 9342169, 9337745
ii) H-17, Rd-8, Dhanmondi, 8616074, 8613883, 9670295
iii) 33-34, Johnson Road, Dhaka; 7118882, 7163935-6

❖ **Module General Hospital & Diagnostics**
1/G/3, Paribag, Hatirpul, Dhaka; 8610512, 01713492776

❖ **National Diagnostic Complex**
20/5, Block-B, Babar Road, Mohammadpur, Dhaka; 8125545

❖ **Nova Medical Centre**
H-107, Block-E, Rd-13, Banani, Dhaka; 8827264

❖ **Padma Diagnostic Centre Ltd.**
New Circular Road, Malibag, Dhaka; 8352335, 8352455 (C), 01819262778 (M)

❖ **Park Way Hospital & Diagnostic Ltd**
1, Momenbagh, Rajarbagh, Dhaka; 9340275, 9341499

❖ **Popular Diagnostic Centre Ltd.**
H-11/A, Rd-2, Dhanmondi, 9661491-3, 9669480-8

❖ **Popular Diagnostic Centre**
32, New Circular Road, Shantinagar, Dhaka; 9359811, 9334408

❖ **Prime Diagnostic Ltd**
36, Purana Paltan Line, VIP Road, Dhaka; 8317422, 8313215

❖ **Proshanti Diagnostic Ltd.**
3 Outer Circular Road, (Malibag-more), Dhaka; 8318699, 9348728

❖ **Rafa Medical Services**
53, Mohakhali, Dhaka; 9861111

❖ **Reliance Medical Services Ltd**
53, Mohakhali, T.B Gate, Dhaka; 9887366, 9887469

❖ **Shandhani Diagnostic Complex**
Green Super Market (4th Floor), Green Road; 9126670, 8112454

❖ **Shapla Diagnostic Centre**
25/16, Khiljee Road, Shamoli, Dhaka; 8118649 (O)

❖ **Square Diagnostic & Hospital Services Ltd**
19, West Panthapath, Green Road, Dhaka; 8616389

❖ **The Diagnostic Laboratory & X-Ray**
480, DIT Road, Malibagh, Dhaka; 8321501

❖ **The Laboratory**
Padma Complex (2nd Floor) 57/15, West Panthapath, Dhaka; 8127801

❖ **Unipath Diagnostic Centre**
239, New Circular Road, Maghbazar Chourasta, Dhaka; 9344703 (C)

Hospitals & Institutes

❖ **Ahsania Mission Cancer Hospital**
Plot No. M-1/C, Mirpur-14, Dhaka; 9008919

❖ **Bangabandhu Sheik Mujib Medical University (BSMMU)**
8612550-4, 8614001-5, 8614545-9

❖ **Bangladesh Medical College & Hospital**
Rd-14/A, Dhanmondi, R/A, 8115843, 9120792-3

❖ **Bangladesh Institute for Research and Rehabilitation in Diabetes, Endocrine and Metabolic diseases (BIRRDEM)**
122, Kazi Nazrul Islam Road, Shahbag, Dhaka; 8616641-50, 9661551-60

❖ **City Dental College & Hospital**
37/B, E-3, Malibagh Chowdhury Para, Dhaka; 8331307, 9353787

❖ **Dhaka Lion's Eye Institute & Hospital**
Agargaon, Sher-e-Bangla Nagar, Dhaka; 8110894, 9131990

❖ **Dhaka Medical College Hospital**
Fuller Road, Ramna, Dhaka; 8626812, 8626818

❖ **Dhaka National Medical College & Hospital**
53/1, Johnson Road, Dhaka; 7117300, 7113469

❖ **Dhaka Shishu Hospital,** 8116061-2

❖ **Holy Family Red Crescent Medical College & Hospital**
Eskaton Garden Road, 8311721-5, 9353031

❖ **Institute of Child Health & Shishu Hospital**
6/2, Barabag, Mirpur-2 Dhaka; 8023894

❖ **Islamia Eye Hospital**
Farmgate, 9119315, 8112856

❖ **J.H Sikder Women's Medical College**
Monika State, West Dhanmondi, 8113313, 8125108

❖ **National Centre for Hearing & Speach Mohakhali,** Dhaka; 8822007, 9881535

❖ **National Heart Foundation Hospital & Research Institute**
Plot-7/2, Sec-2, Mirpur, Dhaka; 8061314-6, 8053935-6

❖ **National Institute of Cancer Research & Hospital**
Mohakhali, Dhaka; 8826561-5

❖ **National Institute of Cardiovascular Disease (NICVD)**
9122560-79, 8114089, 9111881

❖ **National Institute of Kidney Diseases and Urology, Dhaka**
Sher-E-Bangla Nagar, Shyamoli, 913569-3

❖ **National Institute of Preventive & Social Medicine (NIPSOM)**
Mohakhali, Dhaka-1212, 8821236

❖ **Rehabilitation Institute and Hospital for Disabled (RIHD)**
(Pongu Hospital) 9144190-4, 9112150

❖ **Sarkari Karmajibi Hospital**
Old Railway Hospital Building, 9558017

❖ **Sir Salimullah Medical COllege & Hospital (SSMCH)**
7319002-5, 7117404

❖ **University Dental College & Hospital**
120/1, Siddeshwari Outer Circular Road, Century Arcade, Moghbazar, Dhaka; 8355079, 9337417

❖ **Z.H Sikder Womens Medical College**
8115951, 8113313, 8125108, 9133355

Private Clinics/ Hospitals

❖ **Abdal Medical Centre**
Zinnat Mansion, 73/1, New Elephant Road, 8615331

❖ **Abeer General Hospital**
18, New Eskaton, Dhaka; 8360780, 8360790

❖ **Ad-din Hospital**
2 Baro Maghbazar, Dhaka; 9353392-3

❖ **Ahmad Medical Centre**
House-71/1, Rd-15/A, DRA, 8113628, 9119738

❖ **Ahsania Mission Cancer Hospital**
Plot No: M-1/C, Mirpur-14, Dhaka; 9008919

❖ **Al-Ashraf General Hospital**
H-12, Rd-21, Sector-4, Uttara, Dhaka; 8952851-2

❖ **Al-Barakah Kidney Hospital**
129, New Eskaton Road, Dhaka; 9350884. 9351164, 9337521

❖ **Al-Manar Hospital Ltd.**
H-5/4, Block-F, Lalmatia, Dhaka, 9121387, 9121588

❖ **Al-Markajul Islami Hospital**
H-29, Rd-3, Shayamoli, 9129426, 9129217

❖ **Al-Noor Eye Hospital**
1/9 E, Satmasjid Road, Lalmatia, Dhaka, 9135451-2, 8124348

❖ **Al-Rajhi Hospital Pvt. Ltd.**
12, Farmgate, Dhaka; 8119229, 8121172, 9117775, 9133563-4

❖ **Al-Sami Hospital Pvt. Ltd.**
Sha-23/Ka, Adarshanagar Middle Badda, Dhaka; 8827239, 8831252 (C), 01711076896 (M)

❖ **Al-Sheefa Diagnostic & Medical Center**
351, East Rampura, DIT Road, 8319882

❖ **Anwer Khan Modern Hospital Ltd.**
H-17, Rd-8, Dhanmondi, Dhaka; 9661213, 8613883, 8616074, 9670295

❖ **Apollo Hospital Dhaka**
Rd-81, Block-E, Bashundhara R/A, Dhaka; 9891661-2, 9891680-1, 01713046684-5 (M)

❖ **Asian General & Dental Hospital Ltd.**
H-4, Rd-11, Pragoti Sarani, Merul Badda, Dhaka; 9860000, 9898899

❖ **Badda General Hospital Pvt. Ltd**
Cha-107/2, North Badda, Progati Sarani; 8857828-29, 9890071

❖ **Bangladesh Eye Hospital**
H-19/1, Rd-6, Dhanmondi, Dhaka; 8651950-3

❖ **Barakah Kidney Hospital**
129, New Eskaton Road, Dhaka, 9350884, 9351164, 9349190 01716306601

❖ **Barnali Nursing Home**
Plot-3, Block-G, Section-1, Main Road, Mirpur, Dhaka; 8011178, 8017873

❖ **Brighton Hospital & Diagnostic Center**
163,164 Sonargoan Road, Hatirpool; 8651128-35, 9677792-5, 8626901-2 (H), 01713040600, 01713040700, 01712000422 (M)

❖ **Central Hospital Ltd.**
H-2, Rd-5, Green Road, Dhanmondi, Dhaka; 9660015-9

❖ **City General Hospital & Diagnostic Centre**
H-120, Rd-9/A, Dhanmondi, Dhaka; 9120862, 8130778

❖ **City Hospital Ltd**
1/8, Block-E, Lalmatia, Satmasjid Road, Dhaka; 8143312, 8143437, 8143166

❖ **Comfort Hospital**
Comfort Tower, 167/B, Green Road, DRA, Dhaka, 8124990, 8124380, 8127394

❖ **Conscious Health Services Ltd**
H-25/A, Rd-6, DRA, 9665544, 9667604

❖ **Crescent Gastroliver & General Hospital Ltd**
25/I, Green Road, Dhanmondi; 8621612, 8611936

❖ **Dhaka Community Hospital**
190/1, Bara Moghbazar, Wireless Railgate; 9351190-1, 8314887

❖ **Dhaka Hospital/New Dhaka Clinic**
17, D.C Roy Road, Mitford, 7316713, 7310750, 7320212, 7316643

❖ **Dhaka Monorog Clinic**
1 l/A-1/13, Mirpur, Rd-11, Dhaka; 9005050

❖ **Dhaka Paediatric-Neonatal & General Hospital**
H-48/A, Rd-2/A, Dhanmondi R/A, Dhaka; 8614606, 8631795, 9672814

❖ **Dhanmondi Hospital Pvt. Ltd**
H-19/E, Green Road, Dhaka; 8628849, 9671660

❖ **Dr. Salahuddin Hospital**
H-37, Rd-9/A, DRA, Dhaka, 9122264, 9121779

❖ **Eden Multicare Hospital**
753, Satmosjid Road, Dhanmondi, Dhaka; 8150507-10,

❖ **Euro-Bangla Heart Hospital**
5/7, Block-D, Lalmatia, Dhaka; 8159711-2

❖ **Fashion Eye Hospital Ltd**
Fashion tower, 98/6-A, Elephant Road, Bara Moghbazar, Dhaka; 9338986, 9343961-2

❖ **Gastro Liver Hospital & Research Institute**
69/D, Green Road, Panthapath, Dhaka; 9667339, 8620960, 8627853, 8625393

❖ **General Medical Hospital**
103, Elephant Road, 8611932, 8628890

❖ **Greenland Hospital**
H-4, Rd-4, Sector-7, Azampur, Uttara Model Town, 8912663, 8915189, 8915688

❖ **Green Life Hospital**
25/A, Green Road, Dhaka; 8628820-21, 8611213

❖ **Harun Eye Foundation & Green Hospital**
H-31, Rd-6, DRA, 8612412, 8619068, 9663183

❖ **Health and Hope Ltd.**
152/1-H, Green Road, Panthapath (Crossing), Dhaka; 9137076, 9145786

❖ **Ibn Sina Hospital**
H-68, Rd-15/A, DRA, 8113709, 8119513-5

❖ **Ibn Sina Hospital & Diagnostic centre** (Fuad Al-Khatib Unit)
2/2, Kalyanpur, Mirpur, Dhaka; 9007188, 8013638, 9004317

❖ **Islamia Arogya Sadan Ltd.**
H-35, Rd-1, DRA, Dhaka; 8612798, 9145692, 8629493, 9671612

❖ **Islami Bank Central Hospital**
30 V.I.P Road, Kakrail, Dhaka; 9338810, 8316166, 9355801-2. 9360331-2

❖ **Islami Bank Hospital**
24/B Outer Circular Road, Shajahanpur, 9336421-3

❖ **Japan Bangladesh Friendship Hospital**
H-55, Rd-3/A, (Near Zigatola Bus Stand), Dhanmondi, Dhaka; 9672277, 9664028-9

❖ **Khidmah Hospital**
C-287/2-3, Khilgaon Bishwa Road, Dhaka;

7210749, 7219220

❖ **Kidney Foundation Hospital**
H-6, Rd-8, Dhanmondi, Dhaka; 8653410, 9665440

❖ **Kidney & Urology Hospital (Pvt) Ltd**
Fattah Plaza, 70, Green Road, Dhaka; 9664535, 9673739, 01552445272

❖ **Lab Aid Cardiac Hospital**
H-1, Rd-4, Dhanmondi, Dhaka; 8610793-8, 9670210-3 (C), 0176585828 (M)

❖ **Lab Aid Specialized Hospital**
H-6, Rd-4, Dhanmondi Dhaka; 8610793-8, 9670210-3

❖ **Life line Medical Services**
75/K, Rahman Mansion, Mohakhali, 8826677

❖ **Lubana General Hospital Ltd**
H-1, Rd-18, Rabindra Sarani, Sector-7, Uttara, Dhaka; 8960616, 8962568

❖ **Marie Stopes Clinic**
67, Elephant Road; 8631500, 01711621083
6/28, Humayun Road, Mohammadpur; 9144591
166, Dholairpar, Jatrabari, Dhaka; 7414560

❖ **Medi Aid Clinic**
70/C, Lake Circus, Kalabagan, 9112076, 8117043, 8118456

❖ **Medi-Tech General Hospital**
H-3, Rd-1, Nikunja-2, Khilkhet, Dhaka; 8918345
01711628762

❖ **Memory Medical Centre**
22, New Eskaton, 8314317, 8319323

❖ **Metropolitan Asthma Chest & Allergy Centre**
215, North Shahjahanpur, Dhaka; 9330016

❖ **Metropolitan Medical Centre**
Mohakhali (Opposite to Bus Terminal), 9899209, 8824155, 9897933

❖ **Millennium Heart & General Hospital Ltd.**
4/9, Block-F, Lalmatia, Dhaka; 9124046, 9122115, 8120097

❖ **Module General Hospital**
1/G/3, Paribag, Hatirpul, Dhaka; 8610512, 8616083, 01703492774-6 (C)

❖ **Monowara Hospital (Pvt.) Ltd.**
54, Siddeswari, 8318135, 8318529, 8319802, 8318135

❖ **Mukti Mental Hospital, Drug & Alcohol** Treatment Center
H-2, Rd-49, Gulshan-2, Dhaka; 9889044, 9883991, 8814562

❖ **Naz-E-Noor Hospital Pvt. Ltd.**
H-69, Rd-9/A, DRA, 9130152, 8118226

❖ **Neurology Foundation Hospital**
3/1, Lake Circus, Kalabagan, Dhaka; 8114846

❖ **New Al-Rajhi Hospital**
32, Green Road, 8628820-1, 8611213

❖ **New Modern Dhaka Clinic**
4, D.C. Roy Road, Mitford, Dhaka; 7317496, 7313557

❖ **New Mukti Clinic**
i) 301, Elephant Road, Dhaka; 8611360, 8621889
ii) 12, South Kalyanpur, Mirpur, Dhaka; 8058078, 8033675

❖ **Nirupam Hospital Pvt. Ltd.**
H-1/5, Block-D, Lalmetia; 8114429, 9131037

❖ **Northern International Medical College** Hospital
H-8/A, Rd-7, Dhanmondi, Dhaka; 9668018, 8621479-83

❖ **Padma General Hospital Ltd.**
290 Sonargaon Road, Dhaka. 9661528, 9662502, 8620889-90

❖ **Pancare Hospital Ltd.**
Dhanmondi Tower, House-4/A, Road-16, (Old-27), DRA. 8158394, 9142422

❖ **Panorama Hospital Ltd**
H-16, Rd-8, Dhanmondi, Dhaka; 9668961-3, 01711540610

❖ **Pan Pacific Hospital**
24, Outer Circular Road, Shajahanpur, Dhaka; 8359731-3, 9349794, 9351777, 9351476

❖ **Park Way General Hospital Ltd.**
1, Momenbag, Rajarbag, Dhaka; 9340275, 9341499

❖ **Proshanti Hospital Ltd.**
3, Outer Circular Road, (Malibag-more), Dhaka; 9348728

❖ **Rahima Maternity Hospital**
H-1, Rd-5, Sec-6, Block-A, Mirpur, Dhaka; 8013193

❖ **Rainbow Heart Ltd.**
68, Satmasjid Road, Dhanmondi, Dhaka; 9131207, 9115602

❖ **Rashmono General Hospital**
208-209, Outer Circular Road, Moghbazar, Dhaka; 8317606, 8317819, 9357354

❖ **Renaissance Hospital & Research Institute Ltd.**
H-60/A, Rd-4/A, Dhanmondi, 9664930, 8615792, 8611455

❖ **Rushmono General Hospital**
208-9, Outer Circular Road, Moghbazar, 8317606, 8317819, 9357354, 9332358

❖ **Sakalpa Dental Clinic (Pvt) Ltd.**
3, New Eskaton, Mona Tower, Dhaka; 9336301, 8352012

❖ **Salauddin Ash-Shifa General Hospital Ltd.**
Salauddin Bhaban, 44/A, Hatkhola Road, Sutrapur, Dhaka; 7168411, 7168422, 7168433, 7114582, 7167974

❖ **Samorita Hospital (Pvt.) Ltd.**
89/1, Green Road (Panthapath), 8611307, 9131901

❖ **Sheba Drug Abuse Mental Treatment & Rehabilitation Centre**
364, Elephant Road, Dhanmondi, Dhaka; 8610257

❖ **South View Hospital**
H-31, Main Road-1 Section-10, Mirpur, Dhaka; 9005106, 8018065

❖ **Special Care Hospital & Cancer Center Ltd.**
43/R/4, West Panthapath, Dhaka; 8121850

❖ **SPRC & General Hospital**
135, New Eskaton Road, 9339089, 8313185

❖ **Square Hospitals Ltd.**
18/F, West Panthapath, Dhaka-1205; 8159457, 8142431, 8141522, 8144400, 8142333; PABX Mobile- 01713141447

❖ **Sumona Hospital**
3-4 Patuatuly, Dhaka, 7112583, 7115531, 9561786

❖ **The Barakah General Hospital**
937, Outer Circular Road, Rajarbag, Dhaka, 8317765, 9337534, 9346265, 8354854

❖ **Udayon Poly Clinic**
16, 17/1, 17/2, New Eskaton, Dhaka; 8016300-1, 9357095-6

❖ **United Hospital**
H-15, Rd-71, Gulshan-2, Dhaka; 8836000, 8836444

❖ **Uttara Central Hospital & ICU**
H-1, Rd-7, Sector-1, Uttara Model Town, Dhaka; 8911551, 8918778, 01711182522

❖ **Uttara Crescent Hospital**
Plot-21, Rd-15, Sector-3, Rabindra Sarani, Uttara, Dhaka; 8932430, 8933298, 8912744, 01714040695 (M)

❖ **Uttara Modern Hospital Ltd**
Sec-7, Uttara, Dhaka; 8914807, 8914017

❖ **Vision Eye Hospital**
3/D, West Dhanmondi, Satmasjid road, Dhaka. Phone: 01199833106 (M)

❖ **Women's & Children's Hospital Ltd.**
H-48/6, Rd-9/A, Satmasjid Road, Dhanmondi, Dhaka; 9115458, 9121077 (C)

Blood Bank

❖ **Dhaka Medical College Hospital**
8616744, 8626812-19, 9663429

❖ **DMC Sandhani**
9668690, 0181507477 (M)

❖ **Red Crescent Blood Bank**
7/5, Aurangazab Road, Mohammadpur, 9116563

Eye Bank

❖ **Sandhan National Eye Donation Society**
8614040

❖ **Sandhani Eye Bank**
8614040

Ambulance Services

❖ **Al-Amin Ambulance Service**
43/R/5, Indira Road, Dhaka; 8128996, 9134171, 01711809903, 01819137479

❖ **Alif Ambulance Service**
76/A, Ahmad Plaza, West Panthapath, Dhaka; 9131688, 8117576, 01552637705, 01713205555

❖ **Al-Markajul Islami**
19/1, Babar Road, Mohammadpur, 9129217, 8114980

❖ **Anjuman-e-Mofidul Islam**
9336611, 9346970

❖ **Fire Service**
9556666-7, 9553333-7, 9555555

❖ **Holy Family Red Crescent Hospital**
8311721-25

❖ **Medinova Medical Services**
8620353, 8113721

❖ **Shishu Hospital**
8116061, 8116062, 8114571-2

LEADING PRIVATE HOSPITALS & CLINICS OF MEGA CITIES OF BANGLADESH

CHITTAGONG

❖ **Holy Crescent Hospital Pvt. Ltd.**
500/A, Zakir Hossain Road, Kulshi, Chittagong; 616001-4
❖ **Chittagong Metropolitan Hospital Pvt. Ltd.**
948, O.R Nizam Road, Chittagong; 654732, 655791, 651242
❖ **Surgiscope Pvt. Ltd.**
53/1, Panchlaish R/A, Chittagong; 652038, 653882, 652721
❖ **Medical Centre**
953, O.R Nizam Road, Chittagong; 651054, 651944
❖ **Centre Point Hospital Ltd.**
100, Momin Road, Chittagong; 639025-7
❖ **Chittagong Health Care Hospital Pvt. Ltd.**
4, O.R Nizam Road, Chittagong; 652728, 653965
❖ **Upasham Hospital Ltd.**
45, Panchlaish R/A, Chittagong; 654051, 654230
❖ **Chittagong Poly Clinic Pvt. Ltd.**
45, Panchlaish R/A, Chittagong; 650911, 656041
❖ **Panaroma Hospital Pvt. Ltd.**
99/A, Chatteswari Road, Chittagong; 619921, 613874, 630549
❖ **Niramoy Clinic Pvt. Ltd.**
75, Panchlaish R/A, Chittagong; 653041, 653824

COX'S BAZAR

❖ **Dr. Mohammad Humayun Kabir MBBS, D-Card (DU)**
Cham: Chevron Clinical Laboratory, Hospital Road, Cox's Bazar; 0341-62633, 01199741509 (C), 01712052322 (M)

KHULNA

❖ **Khulna Surgical & Medical Hospital**
Sonadanga R/A, Khulna; 041-724450, 723966
❖ **Garibe Nawaz Clinic**
KDA Avenue, Khulna; 041-720081-3
❖ **Cure Home General Hospital**
KDA Avenue, Khulna; 041-723542
❖ **Nargis Memorial Hospital**
TB Cross Road, Khulna; 041-
❖ **Upasham Hospital**
Ahshan Ahmed Road; 041-
❖ **Khulna Medical College Hospital**
Boyra, Khulna; 041-761531-5
❖ **Khalispur Clinic**
Khalispur, Khulna; 041-761637

BARISAL

❖ **Fare Health Clinic**
Kalibari Road, Barisal, 64412, 2173904, 01711345827
❖ **Patuakhali Clinic**
Kazibari Road, Patuakhali
❖ **Himi Clinic**
Patuakhali Town, Patuakhali
❖ **Mukti Clinic**
Women College Road, Patuakhali
❖ **Doctors Clinic**
Govt. College Road, Borguna
❖ **Eden Nursing Home**
Bogra Road, Barisal; 64879, 01711358544
❖ **Sheba Clinic**
Band Road, Barisal; 52704
❖ **Khadem Hossain Clinic**
Bangla Bazar, Barisal; 52830
❖ **Poly Clinic**
Bangla Bazar, Barisal

SYLHET

❖ **Niramoy Poly Cinic**
Nawab Road, Sylhet; 716254
❖ **Metropoliton Hospital**
Rikaby Bazar, Sylhet; 712694
❖ **Mother Care Hospital**
Stadium Road, Sylhet; 713131
❖ **City Poly Clinic**
Old Hospital Road, Sylhet; 715433
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❖ **Noorjahan Poly Clinic**
Dharga Mohalla, Sylhet; 714120
❖ **Sheba Poly Clinic**
Dharga Mohalla, Sylhet; 713900
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❖ **Purbasha Poly Clinic**
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❖ **Sylhet Shisu Clinic**
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❖ **Ayesha Medicare**
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❖ **Safe Way-Med Clinic**
Jamtala, Sylhet; 721272
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Tali Houre, Sylhet; 710220
❖ **Paribarik Shastbaya Sheba Clinic**
Machu Digir Par, Sylhet; 721307
❖ **South Surma Poly Clinic**
Station Road, Sylhet; 722426
❖ **VARD**
Upasar Road, Sylhet;
❖ **Jalalabad Clinic**
Jail Road, Sylhet; 713778

MYMENSINGH

❖ **Nasima Nursing Home**
Akua, Mymensingh; 54100
❖ **Ideal Nursing Home**
Bhatikashar, Mymensingh; 01711611101, 01724735931 (M)
❖ **Momata Nursing Home**
Chorpara, Mymensingh; 54576, 01711661388
❖ **Momenshahi Nursing Home**
J.C Guha Road, Mymensingh; 55856
❖ **Shahana Nursing Home**
Mashkanda, Dhaka Road, Mymensingh; 54542
❖ **Fatema Nursing Home**
97/8/1, Kalibari Road, Patgudam, Mymensingh; 53264, 01711632049 (M)
❖ **Uposhom Private Clinic**
106/2, Kalibari Road, Patgudam, Mymensingh; 01711632708 (M)
❖ **Niramoy Clinic**
46/D, Padri Mission Road, Bhatikashar, Mymensingh; 52053, 01711631578 (M)
❖ **Uttaran Nursing Home**
33/1, Zamir Bepari Lane, Bhatikashar, Mymensingh, 01711627857 (M)
❖ **Maa Nursing Home**
17/1, Mashkanda, Chorpara, Mymensingh; 52431, 01711619311 (M)
❖ **Paricharza Hospital**
12, Shehora, Mymensingh; 56094
❖ **Al Zannat Hospital**
42, Daulat Munshi Road, Kristopur, Mymensingh; 01711627854 (M)
❖ **Sheba Clinic**
6, R.K Mission Road, Mymensingh; 55618
❖ **Bashundhora Clinic**
71/E, Saroda Gosh Road, Mymensingh; 54503
❖ **Nazma Nursing Home**
66/C, Bagmara Road, Mymensingh; 53942
❖ **Hena Nursing Home**
29, Shehora, Mymensingh; 53384
❖ **Popular Nursing Home**
15/B, C.K Ghosh Road, Mymensingh; 54972
❖ **Jahangir Health Complex**
44/1, Brammo Palli, Chorpara More, Mynensingh; 01711880705 (M)
❖ **Al Amin Nursing Home**
14, Brammo Palli Road, Mymensingh; 55777
❖ **Janoni Nursing Home**
170, Chorpara, Mymensingh; 01711642326, 01711631598 (M)
❖ **Moytri Nursing Home**
252, Chorpara, Mymensingh; 53219
❖ **Amina Nursing Home**
185, Chorpara Bi-lane, Mymensingh; 52123, 52014
❖ **Ali Reza Eye Clinic**
Dhopa Khola More, Shehora, Mymensingh; 53277
❖ **Parmita Eye Clinic**
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❖ **Model Clinic**
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