CHAPTER-III
SECTION A

PREPARATION OF REAGENTS AND SOLUTIONS

AR Grade Chemical are used for preparation of Reagents and solutions in the present investigation

HYDROCHLORIC ACID SOLUTION (0.1N):

Hydrochloric acid solution (0.1N) is prepared by diluting the requisite volume of concentrated AR hydrochloric acid (Runbacks make) with distilled water and standardized by usual procedure.

SODIUM NITRITE SOLUTION (0.1N):

0.69 g of Sodium nitrite is dissolved in distilled water and the resulting solution is made upto the mark in the 100 ml standard flask with distilled water. This solution is also standardized with the usual analytical procedure.

SODIUM CARBONATE SOLUTION (0.5N):

5.3 g of Sodium carbonate is dissolved in distilled water and the resulting solution is made upto the mark in the 100 ml standard flask with distilled water. This solution is also standardized with the usual analytical procedure.

SALBUTAMOL SOLUTION (1%):

Accurately weighed 1.0 g of salbutamol solution is dissolved in methanol and the volume adjusted to 100 ml with methanol.
UREA SOLUTION (1%):

Accurately weighed 1 gm of Urea is dissolved in double distilled water and the volume adjusted to 100 ml with double distilled water.

RITODRINE HYDROCHLORIDE SOLUTION (1%):

Accurately weighed 1.0 g of ritodrine hydrochloride solution is dissolved in methanol and the volume adjusted to 100 ml with methanol.

OFLOXACIN SOLUTION: About 50 mg of ofloxacin (pure) was accurately weighed and dissolved in 20 ml methanol in 50 ml volumetric flask and diluted upto the mark with methanol to obtain a stock solution of 1 mg/ml. The final concentration of ofloxacin was brought to 20 µg/ml with methanol.

METRONIDAZOLE SOLUTION:

An accurately weighed 50 mg of tinidazole is dissolved in methanol and the volume is adjusted to 50 ml with methanol in 50 ml standard flask. 1ml of this solution is diluted to 50 ml with methanol to give the working concentration of 20 µg/ml.

DAPSONE SOLUTION:

Fifty mg of pure dapsone is weighed and dissolved in 20 methanol. The resultant solution is adjusted to 50 ml with methanol in 50 ml standard flask.
One ml of this solution containing 1.0 mg/ml. Further diluted to required concentration.

CISAPRIDE SOLUTION:
An accurately weighed 50 mg of cisapride is dissolved in methanol. The volume is adjusted to 50 ml with methanol in 50 ml standard flask. One ml of this solution containing 1mg/ml. Further this solution is diluted to get desired concentration.

SULFAMOXLE SOLUTION:
An accurately weighed 50 mg of Sulfamoxole is dissolved in methanol and the volume is adjusted to 50 ml with methanol in 50 ml standard flask. One ml of this solution containing 1.0 mg/ml. Further diluted to get working concentration of 100 μg/ml

SPARFLOXACIN SOLUTION:
About 50 mg of sparfloxan (pure) was accurately weighed and dissolved in 20 ml methanol in 50 ml volumetric flask and diluted upto the mark with methanol to obtain a stock solution of 1 mg/ml. The final concentration of sparfloxacin was brought to 20 μg/ml with methanol.

NIMUSULIDE SOLUTION:
An accurately weighed 50 mg of nimusulide is dissolved in methanol and the volume is adjusted to 50 ml with methanol in 50 ml standard flask. One ml of
this solution is diluted to 10 with distilled water, to give the working concentration of 100 μg/ml.

PARACETAMOL SOLUTION:
Pure paracetamol (50 mg) was dissolving in 50 ml methanol. Further 1 ml of the stock solution was further diluted to 50 ml with methanol to get working concentration of 20 μg/ml.

RIFAMPICIN SOLUTION:
An accurately weighed 50 mg of rifampicin is dissolved in methanol and the volume is adjusted to 50 ml with methanol in 50 ml standard flask. This stock solution is further diluted, to give the working concentration of 50 μg/ml.

ISONIAZID SOLUTION:
Pure isoniazid (50 mg) was dissolving in 50 ml methanol in 50 ml volumetric flask. Further 1 ml of the stock solution was further diluted to 25 ml with methanol to get working concentration of 40 μg/ml.

DILOXANIDE FUROATE SOLUTION:
50 mg of pure diloxanide furoate is weighed and dissolved in 30 ml methanol in 50 standard flask. The volume is adjusted to 50 ml with methanol in 50 ml standard flask. One ml of this solution is diluted to 50 with distilled water, to give the working concentration of 20 μg/ml.
SPIRANOLACTONE SOLUTION:
An accurately weighed 50 mg of spiranolactone is dissolved in methanol and the volume is adjusted to 50 ml with methanol in 50 ml standard flask. One ml of this solution is diluted to 25 with distilled water, to give the working concentration of 40 μg/ml.

FRUSEMIDE SOLUTION:
One hundred milligrams of pure frusemide was dissolved in methanol and diluted to 100 ml with methanol. It was further diluted with distilled water to get a working concentration of 20 μg/ml.

ORNIDAZOLE SOLUTION:
Fifty mg of pure ornidazole was dissolved in 50 ml methanol to obtain the working concentration of 1 mg/ml. One ml of the above stock solution was further diluted to 25 ml with methanol to get working concentration of 40 μg/ml.

MOSAPRIDE SOLUTION:
Fifty milligrams of pure mosapride is dissolved in methanol and diluted to 50 ml with methanol. From this stock solution, further diluted to get desirable working concentration of 100 μg/ml.
RITODRINE HYDROCHLORIDE SOLUTION:

Accurately weighed 50 mg of ritodrine hydrochloride and solution dissolved in 30 methanol. The volume is adjusted to 50 ml with methanol in 50 ml volumetric flask. This stock solution is further diluted to obtain working concentration of 100 µg/ml.
BRIEF DESCRIPTION OF INSTRUMENTS EMPLOYED

Brief descriptive account of the instruments namely Milton Roy Supertonic 1001. plus, Spectrophotometer employed in the present investigation is given in this chapter.

SPECTROPHOTOMETER:

Spectronic 1001. plus Spectrophotometer model No.335002 with battery back up test memory is used for all the Spectrophotometric studies. The instrument provides a unique monochromatic design and a variety of micro process controlled features to give fast and accurate spectrophotometric measurements.

The instrument contains a superior optical system, which splits of a small fraction of light beam and uses it as a reference beam to achieve a high level of stability. High intensity deuterium and tungsten-halogen lamps, silica coated steroidal mirrors and Milton Roy own blazed holographic grating produced exceptional energy and spectral purity. It has a 2 nm spectral bandwidth, which provides high resolution sample measurements. This means that we can have precise and accurate results for an extensive range of samples and test procedures time after time. Further the instrument can be used for increased
reproducibility by automating the testing with programmed test formats because the test parameters can be stored and recalled quickly and easily.

Spectronic 1001. Plus is easy to use because the soft touch keyboard is remarkably responsive and well organized. A full alpha numeric display gives us messages step by step to guide and help us during set up and testing. This means that the instrument alerts us to any incorrect entries. The microprocessor control enhances reliability of the results.

Once the tests are programmed they can be run on sample after sample with no deviation. The Spectronic 1001. Plus is preprogrammed for a variety of test mode operations and applications.

The Spectrophotometer is useful to perform a variety of test models and functions. The instrument displays the name of each test mode or function with its assigned number. It has three distinct segments of memory namely non-erasable memory, long-term memory and current memory.

The Spectrophotometer recognizes two types of numerical entries namely the prompted entries and the unprompted entries. Entries made while editing the parameters of a test are called prompted entries and all other numerical are called unprompted entries. Thus the instrument has a number of special programming options, functions, test modes and parameters setups etc.
For optical operation of the instrument, it is allowed to warm on 30 minutes prior to operation and then another 15 minutes are allowed as warm up period whenever a lamp is first turned on. Once the proportional sequence and the instrument are warmed up the spectrophotometer is used to analyze the samples. The instrument can express the results of analysis in any of three data modes namely absorbance, transmittance or concentrations.

Thus the instrument Spectronic 1001.plus gives us precise and accurate results and is one of the well-recognized instruments in the laboratories throughout the world for its superior and data handling capabilities.
SECTION C
BRIEF PROFILE OF SELECTED DRUGS

(A) PARACETAMOL

Paracetamol \((C_8H_9NO_2\text{ M.W. } 151.2)\) is Chemically, 4-hydroxyacetanilide. It is white crystalline powder and odourless. It is freely soluble in ethanol and acetone; but sparingly soluble in water. The structural formula of paracetamol is as given in fig.I:3A.1.

\[
\begin{align*}
\text{HO} & \quad \text{NHCOCH}_3 \\
\end{align*}
\]

Fig.I:3A.1: Paracetamol

USES

Paracetamol is one of the most commonly used 'over the counter' analgesic for headache, musculoskeletal pain, dysmenorrhoea etc., where anti-inflammatory action is not required. It is one of the best drugs to be used as antipyretic. Dose to dose it is equally efficacious as aspirin for noninflammatory conditions. It is much safer than aspirin in terms of gastric irritation, ulceration and bleeding (can be given to ulcer patients), does not prolong bleeding time. Hypersensitivity reactions are rare; no metabolic effects or acid-base disturbances; can be used in patients in whom aspirin is
contraindicated. It does not have significant drug interactions. Thus, it may be preferred over aspirin for most minor conditions.

DOSE

0.5-1g TDS; infants 50 mg; children 1-3 years 80-160 mg, 4-8 years 240-320 mg, 9-12 years 300-600 mg. Usual dose range 0.5 to 1g; upto to 4g daily in divided doses.

Paracetamol is available in different trade names in pharmaceutical markets such as CROCIN, METACIN, PARACIN 500 mg tab, 125 mg/5 ml syrup, 150 mg/ml paed.drops, ULTRAGIN, PYRIGESIC 500 mg tab, 125 mg/5ml syrup, NEOMOL, FEVASTIN, FEBRINIL 300 mg/2ml injection.

ADVERSE EFFECTS

In isolated antipyretic doses paracetamol is safe and well tolerated. Nausea and rashes occur occasionally, leukopenia is rare. Analgetic nephropathy occurs after years of heavy ingestion of analgesics; such individuals probably have some personality defect. It manifests as papivary necrosis, tubular atrophy followed by renal febrrosis. Urine concentrating ability is lost and the kidneys shrink.

Acute paracetamol poisoning: It occurs specially in small children who have low hepatic glucuronide conjugating ability. If a large dose (>150 mg/kg
or >10g in an adult) is taken, serious toxicity can occur. Fatality is common with >250 mg/kg.

Early manifestations are just nausea, vomiting, abdominal pain and liver tenderness with no impairment of consciousness. After 12-18 hours centrilobular hepatic necrosis occurs which may be accompanied by renal tubular, necrosis and hypogly caemia that may progress to coma. Jaundice starts after 2 days. Further course depends on the dose taken. Fulminating hepatic failure and death are likely if the plasma levels are above the line joining 200μg/ml at 4 hours and 30μg/ml at 15 hours. If the levels are lower-recovery with supportive treatment in the rule.
(B) ORNIDAZOLE

Ornidazole (C$_7$H$_{10}$Cl N$_3$O$_3$) chemically, α-(chloromethyl)-2-methyl-5-nitro-1H-imidazole-1-ethanol. It is a 5-nitro imidazole derivative. It’s antimicrobial actions are similar to Metronidazole and is used similarly in the treatment of susceptible protozoal infections and prophylaxis of anaerobic bacterial infections. It is soluble in methanol and toluene. The structural formula of ornidazole is represented in fig.I.3.B.1.

![Structural formula of ornidazole](image)

**Fig.I.3.B.1: Ornidazole**

**USES:** It is used in the treatment of Amoebiasis, Amoebic dysentery and Bacterial vaginosis.

**Doses:**

**Amoebiasis:** Adults: 500 mg twice a day orally for 5 days

Childrens: 10 to 25 mg/kg body weight in two divided doses.

**Amoebic dysentery:** Adults: 1.5 gm orally once a day for 3 day.

Childrens: 40 mg per kg body weight, once a day for three days.
Bacterial vaginosis: 3 tablets of 500 mg each as a single dose or 1 tablet of 500 mg once daily for 5-7 days.

Ornidazole is available in the market in different trade names. DAZOLIC Tab 500, GIRO Tab 500 mg, HORN Tab 500 mg, ONIDAZ Tab 500 mg, ORNI 500 Tab mg and ORNIDA 500 mg.

SIDE EFFECTS: Nausea, pain in the abdomen, vertigo, headache, skin rash are generally reported.
(C) FRUSEMIDE

Frusemide (C₁₂H₁₁ClN₂O₅S) chemically, 5-(Aminosulfonyl)-4-chloro-2[(2-furanylmethyl)amino]-benzoic acid. It is a strong diuretic but lacks specific anti-hypertensive action. Thus anti-hypertensive efficacy is directly related to diuretic potency. Fall in BP is due only to reduce plasma extra cellular fluid volume. It is soluble in water, chloroform, ether acetone, methanol, DMF etc. The structural formula of frusemide is given below in fig.I.3.C.1

Fig.I.3.C.1: frusemide

USES: It is used as diuretic and antihypertensive.

DOSAGE: Adults: 20-80 mg as single dose. If satisfactory results are not obtained, then 20-40 mg after six hours. Infants and children up to 12 years 2 mg/kg body weight increased by 1-2 mg/kg 6-8 hours after the previous dose. Maximum 40 mg per day. Frusemide is available in different trade names by different manufacturers. EXNA Tab 40 and LASIX Tab 40 mg.

SIDE EFFECTS: Vertigo, visual impairment, sodium deficiency may cause arthostatic hypotension. Muscle cramps, weakness, dizziness, vomiting, deafness.
SPIRANOLACTONE

Spiranolactone (C$_{24}$H$_{32}$O$_{4}$S) chemically, 7α-acetythio-3-oxo-17α-pregn-4-3n3-21,17β-carbolactone. It is a potassium sparing diuretic having antihypertensive action similar to thiazides. It is soluble in most organic solvents, insoluble in water.

The structural formula of spiranolactone is as follows in fig.I.3.D.1

![Spiranolactone Structural Formula](image)

USES: It is used as an antihypertensive and diuretic.

DOSES: Adults: 25-200 mg daily in single or divided doses.

Childrens: 3.3 mg per kg per day. Dpiranolactone is available in different trade names by different manufacturers. ALDACTONE Tab 25, Tab 100 mg.

SIDE EFFECTS: Headache, drowsiness, mental confusion, octaxia, rash, gynaecomastia.
Nimusulide (C₁₃H₁₂N₂O₅S) chemically, 4-nitro-2-phenoxy methane sulfonamide. It is an analgesic and antipyretic in action, apart from its antiinflammatory action. It is absorbed rapidly and completely after oral administration. It acts by inhibiting the release of tumour necrosis factor-alpha, acts as a competitive inhibitor of histamine release and reduces superoxide anion formation. It is soluble in organic solvents. The structural formula of nimusulide is represented in fig.1.3.E.1

![Nimusulide structural formula](image)

**Fig.1.3.E.1: NIMUSULIDE**

**USES:** It is used as an analgesic and antipyretic.

**DOSAGE:** Adults: 100 mg twice a day. Childrens: 5 mg/kg/day in 2 or 3 divided doses. Nimsulide is available in different trade names by different manufacturers. DENIN Tab 100 mg, DOLONIM Tab 200 mg, EMSULIDE Tab 100 mg, FLEXULID Tab 100 mg, AMLID Tab 100 mg, CRESNIL Tab 100 mg.

**SIDE EFFECTS:** Epigastric pain, heart burn, nausea, diarrhea, vomiting, skin rash, dizziness, headache.
(F) DILOXANIDE FUROATE

Diloxanide Furoate (C₁₄H₁₁Cl₂NO₄) chemically, 4-(N-methyl-2,2-dichloro-autamido)phenyl-2-furoats. It is soluble in organic solvents. It is highly effective luminal amoebicide, directly kill trophozoites responsible for protection of cysts. No systemic anti amoebic activity is evident despite its absorption. Diloxanide furoate exerts no antimicrobial action. It has produced high cure rates in mild intestinal amoebiasis and in a symptomatic, cystpassers. The structural formula of the diloxanide furate is given below in fig: I.3F.1.

Fig: I.3F.1 Diloxanide furoate

USES: It is used as an antiamoebic.

DOSES: Adults: 500 mg thrice daily, Childrens: 20 mg/kg body weight daily in divided doses. All for 5-10 days. Diloxanide furoate is available in different trade names by different manufacturers. FURAMIDE Tab 500 mg.

SIDE EFFECTS: Flatulence, nausea, itching, early urticaria.
ISONIAZID

Isoniazid (C$_6$H$_7$N$_3$O) chemically, Isonicotinyl hydrazide. Isoniazid is more effective against tuberculosis than both streptomycin and PAS. It is well absorbed from the alimentary track and distributed throughout the body water, penetrating easily into the cerebrospinal fluid. It should always be given in cases where there is a special risk of meningitis. Isoniazid enters milk in about the same concentrations as in the blood. It is soluble in benzene, methanol and ether. The structural formula of Isoniazid is as follows in fig.I:3.G.1.

![Structural formula of Isoniazid](image)

**USES:** It is used in the treatment of tuberculosis.

**DOSES:** Adults: 300 mg daily in 1-3 doses. Childrens: 10-20 mg/kg body weight in 1-3 doses. Maximum dose: 300-500 mg daily. It is available in different trade by different manufacturers. ISONEX Tab 100, SOLONEX Tab 300 MG, ERBAZIDE Tab 400 MG.
Metronidazole (C₆H₉N₃O₃ M.W.171), chemically is 1-(2-hydroxyethyl)-2-methyl-5-nitroimidazole. It is a yellow powder, soluble in distilled water. The structural formula of metronidazole is represented in Fig.I:3.H.1.

![Structural formula of metronidazole](image)

Fig.I.3.H.1: Metronidazole

It is the prototype nitroimidazole introduced in 1959 for trichomoniasis and later found to be a highly active amoebicide. It has broad spectrum cidal activity against protozoa, including Giardia lamblia in addition to the above two, many anaerobic bacteria, such as Bact.fragilis, Fusobacterium, clostridium, Perfringes, Helicobacter pylori and anaerobic Streptococci are sensitive.

USES

Amoebiasis: It is a first line drug for all forms of amoebic infection. Many dosage regimens have been tried; the current recommendation are; for invasive dysentery and liver abscess-800mg TDS for 5-10 days. In serious cases of liver abscess 1g may be infused intra venous slowly followed by 0.5 g every 12 hours till oral therapy is instituted.
For mild intestinal disease-400 mg TDS for 5-7 days. Metronidazole is less effective than many luminal amoebicides in eradicating amoebic cysts from the colon, because it is nearly completely absorbed from the upper bowel.

Giardiasis: It is highly effective in a dose of 200 mg TDS for 7 days. A shorter course of 3 days with 2g/day has been found to be effective. It is also used in the treatment of Trichomons vaginitis, anaerobic infections, Pseudomembranous enterocolitis, Guinea worm infestation etc.

DOSES

Metronidazole is used in the dose of 600-800 mg orally three times a day for 5 to 10 days. Metronidazole is available for oral therapy as 200 mg tablets and as vaginal tablets containing 500 mg. It may also given intravenously. Metronidazole is available in different trade names in pharmaceutical markets such as FLAGYL, METROGYL, ALDEZOLE, 400 mg tab, 200 mg/5ml suspension; 500 mg/100 ml intra venous infusion, ARISTOGYL, METRON 200,400 mg tab, 100 mg/5ml suspension; 500 mg/100 ml intra venous infusion, UNIMEZOL 200, 400 mg tabs, 200 mg/5ml suspension.

ADVERSE EFFECTS

Side effects to metronidazole are relatively frequent, but mostly non serious. Anorexia, nausea, metallic taste and abdominal cramps are the most common, looseness of stool is occasional. Less frequent side effects are
headache, glossitis, dryness of mouth, dizziness, rashes and transient neutropenia. Prolonged administration may cause peripheral neuropathy and CNS effects seizures have followed very high doses.
OFLOXACIN

Ofloxacin is ±-9-Fluoro-2,3-dihydro-3-methyl-10-(4-methyl-1-piperazinyl)-7-oxo-7H-pyrido{1,2,3-de}-1,4-benzoxazine-6-carboxylic acid. It is freely soluble in methanol. The structure of Ofloxacin is represented as follows in Fig.I:3.1.1.

Fig.I:3.1.1. Ofloxacin

USES: It is used in the treatment of Genito urinary, respiratory, Gastro intestinal, Skin & Soft tissue infections, Feritonities, Gonorrhoea.

Urinary tract infection: 200-800 mg daily lower respiratory tract infection: 400-800 mg daily Gonorrhoea: 400 mg as a single dose.

DOSAGE: Adults: 200-400 daily usually for 5-7 days depending on type and severity of infection. Doses greater than 400 mg should be given in 2 divided doses.

TARIVID, Tab: 200 mg, infusion 200 mg/100ml. ZANOCIN Tab: 100 mg, 200 mg, infusion 200 mg/100ml, are available in pharmaceutical formulations.

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ADVERSE EFFECTS: Hypersensitivity reactions, skin reactions, CNS disturbances, G.I. Upset Pseudomembranous colities. Transient increases in liver enzymes. Rarely, Joint or muscle pain, bone marron depression.
Cisapride is chemically, Cis-4-amino-5-chloro-N-{l-[3-(4-fluoro phenoxy)-Propyl]-3-methoxy-4-piperidyl}-2-methoxy benzamide monohydrate. It is freely soluble in methanol. It is a recently developed prokinetic drug. It stimulates gastrointestinal motility and is used in the management of gastro-oesophageal reflux disease, non-ulcer dyspepsia. Cisapride appears to be devoid of dopaminergic blocking activity and it does not influence the concentration of prolactin in plasma or cause extra pyramidal symptoms. The structure of Cisapride monohydrate is given in Fig. II:4.J.1

**Fig. I.3.J.1: Cisapride**

USES: Cisapride is a substituted benzamide used for its prokinetic properties. It stimulates gastro-intestinal motility and is used in the treatment of gastro-oesophageal reflux disease.
DOSAGE: Non-Ulcer dyspepsia: 10 mg 3 times for four weeks. Gastro-oesophageal reflux: 10 mg 3 times: Night time symptom can be treated with an extra dose of 10 mg at bed time. Impaired gastric emptying: 10 mg, 3-4 times for about 6 weeks. Chronic constipation: 5 mg 3 times. CISAPID Tab 10 mg, CISAPRO Tab 10 mg, CIZA Tab 10 mg, MOTILAX Tab 10 mg and UNIPRIDE Tab 10 mg are available in different trade names in Pharmaceutical market.

ADVERSE EFFECTS: The most commonly reported side effects with cisapride are gastrointestinal disturbances including abdominal cramps, barborygmi and diarrhoea. Headache, tight headedness, dizziness, convulsions, tachycardia, dry mouth, insomnia.
Chemically, Dapsone (C\textsubscript{12}H\textsubscript{12}N\textsubscript{2}O\textsubscript{2}S M.W. 248.3) is bis(4-aminophenyl) sulphone. It is white or creamy-white, crystalline powder, freely soluble in ethanol (95%) and in acetone but very slightly soluble in water. It is soluble in dilute mineral acids. The structural formula of dapsone is shown in Fig.I.3.K.1.

![Dapsone](image)

**Fig.I:3.K.1: Dapsone**

**USES**

Dapsone is used in the treatment of Leprosy caused by Mycobacterium leprae. It is diaminodiphenyl sulfone (DDS) the simplest, oldest, cheapest, most active and most commonly used member of its class. All other sulfones are converted in the body to diaminodiphenyl sulfone; many have been used, but none is superior. It is leprostatic at low concentrations and arrests the growth of many other bacteria sensitive to sulfonamides. Specificity for M. leprae may be due to difference in the affinity of its folate synthesise. Doses of Dapsone needed for the treatment of acute infections are too toxic, so not used.
DOSES

Initial dose, 25 to 50 mg twice weekly, increasing by 50 to 100 mg, every month to a maximum of 0.2 to 0.4 g twice weekly. Dapsone 100 mg tablets are available in pharmaceutical markets.

ADVERSE EFFECTS

These are uncommon at doses 100 mg/day or less. Haemolysis is the most important dose related toxicity—reflects oxidizing property. Patients with G-6-PD deficiency are more susceptible; dose>50 mg/day produce haemolysis in them.

Gastric intolerance—nausea and anorexia are frequent in the beginning decrease later. Other side effects are methemoglobinemia, headache, parenthesis, mental symptoms and drug fever. Hepatitis and agranulocytosis are other rare complications.
Ritodrine Hydrochloride is Benzenemethanol, 4-hydroxy-α-[1-[2-(4-
hydroxy-phenyl)ethyl]amino]ethyl]-, hydrochloride. It is a β₂ receptor
agonist. It is freely soluble in methanol and dilute hydrochloride. The
structure of Ritodrine hydrochloride is given below in Fig.I.3.L.1

![Ritodrine hydrochloride structure]

Uses: To suppress premature labour threatened abortions.

Dose: 10 to 20 mg every 2-6 hours with a maximum daily dose of 120 mg.

The ritodrine hydrochloride is available in the market by different trade
names. MIOLENE Tab 10, PREGTAR Tab 10 mg, RITODINE Tab 10 mg,
RITROD Tab 10 mg etc.

Adverse effects: Hypertension, tachycardia, pulmonary edema, Tremors
It is highly bactriocidal to mycobacterian tuberculosis. Administred orally quick absorption leads to high and well sustained blood levels. It's use in combination with various other antitubercular drugs which are considered highly effective. Amino salicylic acid may delay absorption of rifampicin, and if given concurrently, they should be given separately at an interval of 8 to 12 hours.

DOSAGE: Adults: below 50 kg: 450 mg daily as a single dose. More than 50 kg upto 600 mg daily. Childrens: 10-15 mg/kg body weight daily as a single dose. Rifampicin is available in different trade names by different manufacturers. A-C0X Tab 450 mg, CAVIKID Tab 50 mg, COXID 450 Tab 450 mg, MACOX Tab 100 mg, Cap 300 mg, 450 mg, 600 mg.

SIDE EFFECTS: Nausea, Vomiting, skin rash, peripheral, neuropathy and liver impairment.
Sparfloxacin (C$_{19}$H$_{22}$F$_2$N$_4$O$_3$) chemically, 5-amino-1-cyclopropyl-7-(cis-3,5-dimethyl-1-piperazinly)-6, 8-difluoro-1,4dihydro-4-oxo-3-quinoline carboxylic acid. It is a broadspectrum antibiotic. It is a pale yellow powder, freely soluble in methanol but sparingly soluble in water. The structural formula of sparfloxacin is as shown in Fig.I.3.N.1.

![Structural formula of sparfloxacin](image)

**Fig.I:3N.1: Sparfloxacin**

Uses: It is used as an antibiotic.

Doses: Lower respiratory tract infections: 400 mg as single dose on the first day followed by 200 mg each day for 10 days. Acute bacterial sinusitis: 400 mg as a single dose or the first day followed 200 mg each day for an average of 4 days. Sparfloxacin is available in different trade names in the Market. ARTISPAR Tab 100 mg, 200 mg, SPARFLIN Tab 200 mg, ZOSPAR Tab 100 mg, 200 mg, SPARLOX Tab 100 mg, 200 mg etc.
Adverse effects: Cutaneous allergy and photosensitivity, digestive disorders. Rare cases of headache and sleep disorders, transient and moderate increase of transaminases, hypoglycemia.
Sulfamoxole \( \text{C}_{11}\text{H}_{13}\text{N}_{3}\text{O}_{3}\text{S} \) is aminobenzene sulponamido)-4,5-dimethyl furan. It is white crystalline powder, soluble in dilute hydrochloric acid but sparingly soluble in water. The structural formula of sulfamoxole is as shown in Fig.1:30.1.

\[
\text{H}_2\text{N}-\text{SO}_2\text{NH}-\text{CH}_3
\]

Fig.1:3.O.1: Sulfamoxole

**USES**

Sulfamoxole is an antibiotic used in (1) Urinary tract infections (2) Streptococcal pharyngitis and gum infections. (3) Trachoma (4) malaria (5) Toxoplasmosis.

**DOSES**

1g BD on first day, then 0.5g BD: SULFUNO 0.5 g tablets are available in pharmaceutical formulations.

**ADVERSE EFFECTS**

The common side effect are (1) crystalluria, haematuria. (2) Hypersensitivity reactions occurs in 2.5% patients. (3) Hepatitis.

Fig.I:3.P.1: Mosapride

Uses: It is used in gastrointestinal symptoms associated with chronic gastritis.

Doses: 2.5 to 10 mg two to three times a day, with meals. Mosapride is available in the market by different trade names by different manufactures REMOT 5 mg Tab, MOZA 5 mg Tab, MIC Tab 5 mg and REMO 5 mg Tab.

Adverse effect: Diarrhoea, constipation, headache, abdominal pain, irritated feeling and dizziness.