

MINISTRY OF HEALTH AND SOCIAL SERVICES



**PRIMARY HEALTH CARE
DRUG FORMULARY
First Edition - March 2000**

Ministry of Health and Social Services
Directorate: Tertiary Health Care and Clinical Support Services
Division: Pharmaceutical Services
Private Bag 13 198
Windhoek

FOREWORD

Since Namibia became independent in 1990 the Ministry made considerable efforts to reorient the formerly highly fragmented and curative oriented public health services towards the primary health care strategy.

Amongst others this strategy emphasises access to essential drugs. With the publication of the Treatment Manual for Clinics in 1992 and subsequently the first and second editions of the Namibia Essential Drugs List major steps were taken to rationalise drug supply management and use in order to provide sustainable quality treatment to our people.

While accessibility to essential drugs when and where they are needed is surely a precondition for effective health services provision it has become more and more clear that the way these drugs are used is as important. This was incorporated into the Revised Drug Strategy adopted by the World Health Assembly in 1986. Appropriate use of drugs also features prominently in the National Drug Policy for Namibia which was launched in 1998.

One precondition for appropriate drug use is adequate information. So far basic information on essential drugs was not easily accessible to our nurses at clinics and health centres. This book is intended to improve the situation.

The Primary Health Care Drug Formulary includes clear information on those drugs normally available at clinics and health centres, information relevant to prescribers and patients.

I would therefore like to urge health workers to make extensive use of this formulary in order to improve their knowledge and consequently the quality of health services provided to the community.

Dr Libertina Amathila
Minister

PREFACE

This Primary Health Care Drug Formulary provides basic information on essential drugs available at clinics and health centres in Namibia. It fills the gap between the Treatment Guidelines for Clinics and other national treatment guidelines, which inform about diagnosing and prescribing, and the Namibia Essential Drugs List which contains the drugs available at the different levels of the Namibian public health sector .

The first draft of the formulary was widely circulated and comments invited from regions, and regional and national level directorates. Comments were included in the edited version which was approved by the Ministry's policy making bodies.

The formulary begins with a section on how to use the book followed by general remarks on the appropriate use of drugs.

The section Drug Information Sheets lists the included drugs in alphabetical order. For each drug basic information on therapeutic action, indications, available preparations, dose, precautions and side effects and patient counselling is provided. Terms specifying therapeutic action are explained in the glossary.

The Annex contains step by step guidelines on how to use special dosage forms, like suppositories, inhalers, eye preparations. These guidelines are directed at the patients and health workers should use them when explaining to the patients how to apply the prescribed medicines.

All in all this book provides comprehensive information which I hope will assist improving the quality of health services as well as contribute to empowering patients by increasing their knowledge.

The production of this book would not have been possible without the dedication of Nick Duncan who worked as a pharmacist at the State Hospital Oshakati through the British organisation Volunteers Overseas (VSO). It was him who had the idea and produced the first draft.

I would also like to thank Dr I El Saidi, Ms S Kumaravel, Mr B Nwachukwu, Dr O J Oosthuizen, and Ms M Unland for their written comments on the first draft. Finally, I would like to express my appreciation for the technical and financial support provided to this project by the European Union through the Namibia Integrated Health Programme.

Dr Kalumbi Shangula
Permanent Secretary

LIST OF ABBREVIATIONS

General

BNF	British National Formulary
GV	Gentian Violet (Paint)
Hb	Haemoglobin
HIV	Human Immunodeficiency Virus
Nedlist Namibia	Essential Drugs List
NGT	Nasogastric Tube
ORS	Oral Rehydration Solution
PID	Pelvic Inflammatory Disease
STD	Sexually Transmitted Disease
UTI	Urinary Tract Infection
>	more than (e.g. 'children >8kg' means children weighing more than 8kg)
<	less than (e.g. 'children < 1yr' means children less than 1 year old)

Route of drug administration

if nothing is indicated the route of administration is oral (by mouth)

IM	intramuscular
IV	intravenous
sc	subcutaneous

Frequency of drug administration

bd	twice daily (usually every 12 hours)
od	once daily
prn	when necessary
qds	four times per day (usually every 6 hours)
stat	at once
tds	three times per day (usually every 8 hours)

Units

iu	international unit
kg	kilogram
L	litre
mcg	microgram
mg	milligram
ml	millilitre
Mu	Million units (mega units)

TABLE OF CONTENTS

FOREWORD.....	i
PREFACE	iii
LIST OF ABBREVIATIONS	iv
TABLE OF CONTENTS.....	vi
INTRODUCTION	1
HOW TO USE THIS BOOK.....	1
GENERAL REMARKS ON THE USE OF DRUGS	2
DRUG INFORMATION SHEETS.....	5
GLOSSARY OF THERAPEUTIC CLASSIFICATIONS / CATEGORIES.....	74
BIBLIOGRAPHY.....	76
ANNEX: HOW TO USE SPECIAL DOSAGE FORMS.....	77
INDEX.....	Error! Bookmark not defined.

INTRODUCTION

The Primary Health Care Drug Formulary is written for health workers at clinics and health centres in Namibia. Its purpose is to provide basic information about the drugs used at these service levels. Therefore the drugs included are those classified as ABC in the Namibia Essential Drugs List (Nedlist).

The information provided is not intended to replace standard textbooks of medicine or pharmacology. The aim is rather to provide easy access to accurate and reliable information on important aspects of drug treatment. Publications which were consulted are listed in the bibliography.

It should be noted that the information in this book is based on current pharmaceutical and medical evidence and practice and is provided in good faith. Utmost care has been taken to avoid errors. However, it is the prescriber who will finally be responsible for prescribed treatments.

HOW TO USE THIS BOOK

The drugs included in this book appear in order of the alphabet using their generic names. The index at the end of the book indicates the relevant page numbers for every item.

The following information is provided for each drug:

1. Drug name: the generic name of the drug and in brackets examples of brand names common in the country
2. Therapeutic action: describes how the drug is acting in the human body. In the glossary at the end of the book technical terms used in this section are explained.
3. Indications: describes for which diagnosed conditions the drug is normally used. The indications mentioned in this book are only those included in the Treatment Manual for Clinics and other treatment guidelines for clinics and health centres.

In case a drug is only available at clinics for follow up treatment of chronic patients this is noted in bold. Prescription of these drugs has to be initiated by a doctor.

4. Preparations: lists the different dosage forms available (e.g. syrup, tablets) and their strengths. However, note the following:

Always double check the strength (concentration) on the drug container's label. It might differ from the strength usually available. In this case the dose (number of tablets, ml of syrup, ml of inhalation etc.) has to be adjusted.

5. Dose: notes the **normal** dose , its frequency, and the duration of treatment. This information is provided for adults and children. If applicable the doses for children are further expressed considering the patients' weight. This is safer than just considering the age of the children. Please note that doses eventually prescribed may vary from the normal dose indicated, particularly for the treatment of chronic conditions.
6. Precautions and side effects: provides information on contra indications, on interaction with other drugs, and on use in particular patients (e.g. pregnant women), and lists the main known side effects of the drug.
7. Counselling points: provides information which the health worker should communicate to the patient, e.g. details on how to take the medicine, how to store the medicine, and what to avoid during treatment.
8. Other points: lists any other relevant information.

In addition, information for patients on how to use specific dosage forms, e.g. eye drops or inhalers, is provided in the Annex.

GENERAL REMARKS ON THE USE OF DRUGS

The Treatment Manual for Clinics and other treatment guidelines issued by PHC programmes provide clear guidance on which treatment to prescribe once a diagnosis has been established.

Two points are important to remember:

1. Treatment does not always mean treatment with drugs. Some conditions will get better by simple life style changes, e.g. exercise, rest, a change in diet.
2. Establishing a diagnosis is very important. Treatment of symptoms only may lead to prescribing too many drugs and still not address the cause of the disease at all.

However, even if the correct treatment is prescribed success is not always guaranteed. For that co-operation of the patient is mandatory. Several issues have to be addressed to improve compliance with prescribed treatments:

- when dispensing medicines, carefully explain to the patient how the medicines have to be used, what effects and side effects s/he should expect, why it is important to use the medicines as directed etc.. Ensure that the patient understood everything by letting him/her repeat the instructions. Only dispense clearly labelled medicines so that the patient can refer to the instructions on the label once at home.

- only prescribe the minimum number of drugs necessary. With too many drugs it will be very difficult for the patient to remember the different instructions and to take the medicines correctly.
- prescribe STAT doses if possible, e.g. metronidazole for STDs, and do not unnecessarily prescribe injections which require that the patient comes back to the clinic every day (e.g. rather prescribe phenoxymethylpenicillin tablets than procaine benzyl penicillin injections).

If the prescribed treatment fails, incorrect drug use has always to be considered as a possible reason. Particularly in chronic patients compliance has to be monitored carefully.



DRUG INFORMATION SHEETS

Adrenaline (Epinephrine)

(Adrenotone®.....)

Therapeutic action

Sympathomimetic

Indications

Anaphylactic shock - give by injection

Acute croup - give by inhalation

Acute laryngeal oedema - give by injection and inhalation

Preparations

1mg/ml (1:1000) injection

Dose

Injection

Age	Dose	BNF
New-born	0.1ml	
2 months	0.15ml	
4 months	0.2ml	0.05
1 year	0.23ml	0.1
2 years		0.2
3 years	0.35ml	0.3
5 years	0.4ml	0.4
7 years	0.5ml	0.5
12 years	0.75ml	
Adult	1.0ml	0.5-1

Administer subcutaneously (s/c) or intra muscular using an insulin syringe.

In severe shock (no blood pressure or pulse) it can be given by **slow** IV injection to adults: dissolve 1ml Adrenaline 1:1000 with 9 ml sodium chloride 0.9% and administer 1ml of this solution (1:10,000) over 1 minute. Stop when a response is achieved.

Inhalation

Mix 1 ml Adrenaline (1:1000) with 1ml sodium chloride 0.9%. Nebulise entire volume with oxygen by mask.

Other points

Adrenaline solution is colourless. Discard any ampoules where the solution is pink or brown in colour.

Albendazole

(Zentel®.....)

Therapeutic action

Anthelmintic

Indications

Intestinal worms

Preparations

200mg tablets

100mg/5ml syrup

Dose

Adults and older children

400mg (2 tablets or 20ml) stat

Children age 1-2 years

200mg (10ml) stat

Precautions, side effects

Do not give if the patient is pregnant.

Do not give to children under 1 year of age

May occasionally cause epigastric pain, headache.

Counselling points

The syrup should be shaken before use.

Albendazole should be taken on an empty stomach.

Aluminium hydroxide + Magnesium trisilicate

(Gelusil@.....)

Therapeutic action

Antacid

Indications

Gastritis (heartburn)

Peptic ulcer

Preparations

tablets containing: Aluminium hydroxide 250mg plus
Magnesium trisilicate 500mg

Dose

Adults

1-2 tablets 4-6 hourly

Children

Not generally used

Precautions, side effects

Side effects are rare. May cause nausea and vomiting.

It should not be taken at the same time of the day as aspirin, chloroquine, digoxin, doxycycline, iron and isoniazid as their absorption can be reduced. It should be taken 2-3 hours before or after these drugs.

Counselling points

The patient should chew the tablets or let them dissolve in the mouth.

The tablets should be taken 1 hour after meals and at bedtime.

The patient should try and avoid alcohol, coffee, Coca-Cola, spicy or fatty foods and smoking as this can make the symptoms worse.

Amiloride + Hydrochlorothiazide

(Amizide®, Moduretic®.....)

Therapeutic action

Diuretic

Indications

Hypertension. **Only available for follow-up treatment.**

Preparations

Tablets containing amiloride 5mg + hydrochlorothiazide 50mg

Dose

Adults ½ tablet daily

Children Not generally used

Precautions, side effects

Do not give if the patient is pregnant.

Will not work if the patient has poor renal function.

May cause postural hypotension (a fall in blood pressure when the patient stands up), disturbance of electrolytes. May worsen diabetes or gout.

Amoxicillin

(Amoxil®.....)

Therapeutic action

Antibiotic (penicillin group)

Indications

Acute respiratory infections

Urinary tract infections (UTIs)

Severe middle ear infections in children <6 years

STDs (only if ciprofloxacin or ceftriaxone are not available)

Preparations

250mg capsules

125mg/5ml syrup

Dose

Adults

500mg (2 capsules) tds for 5-7 days [for UTIs in young women (not pregnant) can give 1000mg bd for 1 day]

For STDs give 3000mg (12 capsules) stat [+ probenecid 1g]

Children

5- 9 kg 2.5ml (62.5mg) tds

10-19kg 5ml (125mg) tds

20-39kg 10ml (250mg) or 1 capsule tds

40kg and above 1-2 capsules (250-500mg) tds
for 5 to 7 days

Precautions, side effects

Do not give if the patient is allergic to penicillin.

May cause diarrhoea, rash.

Counselling points

The patient must finish the course, even if they feel better after a few days.

The syrup should be stored in a cool place and shaken before use.

Other points

Once prepared, the syrup should be kept cool and will only last for one week.

Aspirin [Acetylsalicylic Acid]
(Disprin®.....)

Therapeutic action

Analgesic, antipyretic, anti-inflammatory

Indications

Dysmenorrhoea (painful menstruation)
Other conditions presenting with pain/inflammation or fever (e.g. osteo arthritis)
Prevention of eclampsia and pre-eclampsia in high risk patients

Preparations

300mg tablets

Dose

Adults

600mg (2 tablets) up to qds

Prevention of (pre) eclampsia: 150mg (1/2 tablet) daily throughout pregnancy starting in week 12

Children

Not recommended

Precautions, side effects

Aspirin is not recommended for treatment of pain or fever in children because of the risk of Reye's syndrome.

May cause gastric irritation - abdominal pain, nausea and vomiting, mucosal bleeding.

May cause allergic reactions.

Avoid in patients with asthma.

Do not give if the patient is pregnant (except for indication above) or breastfeeding.

Counselling points

Aspirin should be taken with or after food.

Aspirin should not be taken at the same time of the day as antacids as the absorption can be reduced. Leave a gap of 2-3 hours between the drugs.

Benzathine Penicillin

Therapeutic action

Antibiotic with long action (15-20 days)

Indications

Genital ulcer (in combination with other drugs as per STD treatment guidelines)

Streptococcal sore throat, throat abscess

Follow-up treatment for rheumatic fever (to prevent the development of rheumatic heart disease)

Preparations

2.4Mu vials for injection

Dose

Genital ulcer

2.4Mu (2,400,000u) IM stat - 1.2Mu into each buttock

Streptococcal throat infection

< 30 kg 0.6Mu (600,000u) IM stat

> 30 kg 1.2Mu (1,200,000u) IM stat

Rheumatic fever

0.6-1.2Mu monthly IM until the age of 20-25

Precautions, side effects

Do not give if allergic to penicillins.

May cause allergic reactions, pain at injection site.

Preparation and administration

Dissolve the contents of each vial in 5-8mls of sterile water for injections.

Administer by deep IM injection, with a maximum volume of 5ml per injection site.

After preparation the solution must be used within 24 hours.

Bisacodyl

(Dulcolax®, Oralax®.....)

Therapeutic action

Laxative

Indications

Constipation, haemorrhoids

Preparations

5mg tablets

Dose

Adults

10-15mg (2-3 tablets) at night

Children

Not recommended

Precautions, side effects

Can cause abdominal cramps.

Should not be used in patients with intestinal obstruction or undiagnosed abdominal pain.

Do not prescribe for more than 3 days to avoid habituation.

Counselling points

The tablets usually take 8-12 hours to work.

The patient should drink lots of fluids and eat more fresh fruits and vegetables in order to improve digestion.

Carbamazepine

(Capaz®, Degranol®, Tegretol®.....)

Therapeutic action

Anticonvulsant

Indications

Epilepsy

Only available for follow-up treatment

Preparations

200mg tablets

Dose

Adults

Usually 200-400mg (1-2 tablets) bd

Children

5-20mg/kg/day. Usually given in 2 divided doses.

Precautions, side effects

May cause drowsiness, dry mouth, nausea and vomiting, dizziness.

Carbamazepine can speed up the metabolism of some drugs and reduce their effectiveness e.g. contraceptives, doxycycline, theophylline, warfarin.

If possible, patients should not be prescribed carbamazepine and erythromycin together, since there is a risk of carbamazepine toxicity.

Counselling points

Carbamazepine can decrease the effectiveness of the contraceptive pill and injection. The patient should try and use other forms of contraception while taking carbamazepine.

Carbamazepine should be taken with or after food.

Ceftriaxone (Rocephin@.....)
--

Therapeutic action

Antibiotic

Indications

Genital ulcer

Vaginal discharge (pregnant)

Lower abdominal pain with suprapubic tenderness, fever or PID risk factor (pregnant)

Ophthalmia neonatorum (neonatal conjunctivitis) - mother and baby

Preparations

250mg vials for injection

Dose**Adults**

250mg IM stat

Children - (Ophthalmia neonatorum)

50mg/kg IM (max. 125mg) stat

Precautions, side effects

May cause diarrhoea, nausea and vomiting, allergic reactions.

Counselling points

IM injection can be painful.

Preparation and administration

Dissolve the contents of the vial in 1.8mls of sterile water for injection (provided). The total volume will now be 2ml and the concentration of drug will be 125mg/ml.

e.g. ⇒ if dose is 250mg - inject 2ml

if dose is 125mg - inject 1ml

Administer by deep IM injection.

After preparation, the solution can be kept for up to 6 hours at room temperature or up to 24 hours if refrigerated.

Chloroquine (Nivaquine®.....)

Therapeutic action

Antimalarial

Indications

Treatment of simple (uncomplicated) malaria

Prophylaxis of malaria in pregnant women (in combination with Proguanil)

Note - all children <5 years in malaria areas should get chloroquine whenever they have high fever.

Preparations

150mg tablets (contain 250mg of chloroquine phosphate but 150mg of chloroquine base)

50mg/5ml syrup

Dose Treatment**Adults > 45 kg**

Day 1 4 tablets

Day 2 4 tablets

Day 3 2 tablets

Children < 7.5kg

Day 1 7.5ml

Day 2 7.5ml

Day 3 3.75ml

Children 7.5-10kg Children 10-15kg

Day 1 10ml

Day 1 15ml

Day 2 10ml

Day 2 15ml

Day 3 5ml

Day 3 7.5ml

Children 15-22kg

Day 1 20ml

Day 2 20ml

Day 3 10ml

Children 22-30kg

Day 1 2 tablets

Day 2 2 tablets

Day 3 1 tablet

Children 30-45kg

Day 1 3 tablets

Day 2 3 tablets

Day 3 1 ½ tablets

Prophylaxis

Adults: 2 tablets weekly

Children: 5mg/kg weekly

Prophylactic treatment has to be started one week before entering the malaria endemic area and to be continued for 6 weeks after having left the malaria endemic area.

Precautions, side effects

May cause nausea and vomiting, headache, skin rashes and itching, visual disturbances.

Counselling points

Best taken with or after food. Avoid alcohol.

Chloroquine should not be taken at the same time of the day as antacids as the absorption can be reduced. Leave a gap of 2-3 hours between the drugs.

Other points

If the patient vomits within 30 minutes of being given chloroquine, repeat the dose. If he/she vomits again, refer to hospital.

<p style="text-align: center;">Ciprofloxacin (Ciprobay®.....)</p>
--

Therapeutic action

Antibiotic

Indications

Urethral discharge

Scrotal swelling

Ophthalmia neonatorum (neonatal conjunctivitis) - mother's partner

Vaginal discharge (non-pregnant)

Lower abdominal pain with suprapubic tenderness, fever or PID risk factor (non-pregnant)

Preparations

500mg tablets

Dose

500mg (1 tablet) stat

Precautions, side effects

Do not give if the patient is pregnant or breastfeeding.

May cause nausea and vomiting, abdominal pain, diarrhoea, headache.

Clotrimazole (Canesten@.....)

Therapeutic action

Antifungal

Indications

Vaginal discharge with low risk of STD

Preparations

500mg pessary (vaginal tablet)

Dose

Adults

500mg stat

Precautions, side effects

Local irritation may occur occasionally but is usually mild.

Counselling points

The pessary should be inserted high into the vagina using the plastic applicator.

The pessary can still be used if the patient is menstruating.

Chlorphenamine (Chlorpheniramine)

(Piriton ® ...)

Therapeutic action

Antihistamine

Indications

Symptomatic relief of allergy (e.g. hay fever, urticaria, insect bites)

Preparations

4 mg tablets

2mg/5ml syrup

Dose

Adults

up to 4mg (1 tablet) qds

Children

under 1 year: not recommended

1 - 2 years 1mg (2.5ml) bd

2 - 5 years 1mg (2.5ml) qds

6 - 12 years 2mg (5ml) qds

Precautions, side effects

May cause drowsiness and influence the capacity to drive.

Counselling points

Alcohol should be avoided when taking this medication.

Co-Trimoxazole

(Bactrim®, Purbac®, Septran®.....)

Therapeutic action

Antibiotic

Indications

Acute respiratory infection if resistance is not established
Urinary tract infection (UTI) if resistance is not established
Dysentery (diarrhoea with blood) if resistance is not established
Skin abscess, secondary infected genital herpes lesions
Genital ulcer - only if ceftriaxone not available
Other STDs - same indications as doxycycline. Only to be used if doxycycline is not available.

Preparations

480mg tablets: 400mg sulphamethoxazole + 80mg trimethoprim 240mg/5ml
syrup: 200 mg sulphamethoxazole + 40mg trimethoprim

Dose

Adults

2 tablets bd for 5-7 days - can give for 1 day if UTI in young, non-pregnant woman with no fever
- give for 21 days if inguinal bubo

Children

5-8kg 120mg (2.5ml) bd for 5-7days
9-14kg 240mg (5ml) bd for 5-7 days
15-20kg 360mg (7.5ml) bd for 5-7 days
21-30kg 480mg (1 tablet) bd for 5-7 days
> 30kg 480-960mg (1-2 tablets) bd for 5-7days

Precautions, side effects

Avoid if the patient is pregnant.
May cause nausea and vomiting, epigastric pain.
Discontinue immediately if rash occurs.
Co-trimoxazole can increase the hypoglycaemic effect of glibenclamide.
Side effects occur more frequently in the elderly.

Counselling points

The patient must finish the course, even if they feel better after a few days.
The syrup should be shaken before use.

Darrow's ½ strength with 5% Dextrose

Therapeutic action

I.V. fluid and electrolyte replacement

Indications

Severe dehydration due to diarrhoea

Preparations

200ml solution for infusion

Dose

Children under 1 year

30ml/kg administered over one hour followed by

70ml/kg administered over 5 hours

Children over 1 year and adults

30ml/kg administered over 30 minutes followed by

70ml/kg administered over 2 ½ hours

Precautions, side effects

Too much I.V. fluids can be dangerous.

Other points

I.V. therapy of dehydration due to diarrhoea should only be used if the patient cannot drink ORS or if ORS therapy failed.

Asses the patient every 1 to 2 hours and start ORS therapy as soon as possible.

Dextrose 5% in 0.45% Sodium Chloride

Therapeutic action

I.V. fluid ,electrolyte and energy replacement

Indications

Prolonged labour due to various reasons

Preparations

1000ml infusion

Dose

An average adult needs 3 L /24 hours.

The infusion rate has to be adjusted according to the clinical features.

<p style="text-align: center;">Diazepam (Valium@.....)</p>

Therapeutic action

Anticonvulsant
Anxiolytic, sedative

Indications

Agitation and aggressive behaviour
Convulsions, eclampsia

Preparations

5mg/ml injection (2ml)

Dose

Severe agitation, aggression - 10mg IV [over 2-3 minutes] or IM

Eclampsia - 5-10mg IV

Convulsions (including fever convulsions in children)

Adults - 10mg IV [over 2-3 minutes] or IM

Children - 0.2mg/kg IV [over 2-3 minutes] or rectally (the IV solution can be used)

Dose can be repeated after 2-3 minutes (in children after 20 minutes) if necessary.

Precautions, side effects

If diazepam is injected too quickly IV, there is a risk of respiratory depression.

IV administration is preferable to IM. IM administration is painful and leads to slow and unreliable absorption.

Ergometrine

Therapeutic action

Oxytocic (uterine stimulant)

Indications

Prevention and treatment of post-partum bleeding

Preparations

0.5mg/ml injection

Dose

0.5mg IM to mother immediately after birth

Precautions, side effects

Before administering, make sure that the expulsion of the placenta is complete.

If there is a multiple pregnancy do not use until after the birth of the last child.

Other points

Ergometrine has to be stored in a refrigerator (2-8°C).

The colour of the solution is normally white to pink. If it becomes yellow/green, the solution has deteriorated and should not be used.

Erythromycin

Therapeutic action

Antibiotic

Indications

Infections where the first line antibiotic is a penicillin and the patient is allergic to penicillins

Impetigo

Cellulitis

Whooping cough (pertussis): treatment and prophylaxis

Ophthalmia neonatorum - mother and baby

Other STDs - same indications as doxycycline. Only to be used if the patient is pregnant, or doxycycline is not available.

Preparations

250mg tablets, 125mg/5ml syrup

Dose

Adults and children > 25kg

Respiratory tract infections: 250-500mg (1-2 tablets) qds for 5-7 days

STDs: 500mg (2 tablets) qds for 7 days (21 days for inguinal bubo)

Children 50mg/kg/day in four divided doses:

<8kg 62.5mg (2.5ml) qds

8-12kg 125mg (5ml) qds

13-17kg 187.5mg (7.5ml) qds

18-25kg 250mg (1 tablet) qds

Ophthalmia neonatorum: 50mg/kg/day in 4 divided doses for 14 days

Precautions, side effects

May cause nausea and vomiting, diarrhoea, rashes.

Erythromycin can slow down the metabolism of certain drugs and increase their toxicity - digoxin, carbamazepine, theophylline, warfarin. If possible, use another antibiotic if the patient is taking one of these drugs.

Counselling points

The patient must finish the course, even if they feel better after a few days.

The syrup should be stored in a cool place and shaken before use.

Other points

Once prepared, the syrup should be kept cool and will only last for one week.

Ethambutol (ETH)

Therapeutic action

“Antituberculous” antibiotic

Indications

Tuberculosis

Preparations

400mg tablets

100mg/5ml syrup

Dose

Adults

<50kg 800mg (2 tablets) od for 2 months (6-8 months for retreatment)

>50kg 1.2g (3 tablets) od for 2 months (6-8 months for retreatment)

Children >6 years

15mg/kg od for 2 months

Also refer to the TB Treatment Guidelines.

Precautions, side effects

May damage vision - symptoms include blurred vision, red/green colour blindness. If this occurs, refer to hospital.

Not to be used in children <6 years because the visual problems are hard to identify in young children.

Counselling points

The patient must not stop taking the medicine unless the doctor tells him/her to.

The medicine has to be taken together with the other anti-tuberculosis medicines prescribed. Otherwise the disease will not be cured.

Ethionamide

(Etharyl®.....)

Therapeutic action

“Antituberculous” antibiotic

Indications

Tuberculosis. For retreatment of children <6 years only.

Preparations

250mg tablets

Dose

Children <6 years

10mg/kg od for 2 months

Also refer to the TB Treatment Guidelines.

Precautions, side effects

May cause nausea and vomiting, diarrhoea, metallic taste in mouth, a prickling feeling in the fingers and toes. If any of these side effects occur, refer to hospital.

Counselling points

The patient must not stop taking the tablets unless the doctor tells him/her to.

The medicine has to be taken together with the other anti-tuberculosis medicines prescribed. Otherwise the disease will not be cured.

Ferrous salt [Iron]

(Pregamal®.....)

Therapeutic action

Needed for the production of red blood cells

Indications

Prevention of anaemia during pregnancy

Treatment of anaemia due to lack of iron (If Hb = 7-10g/dl)

Preparations

tablets - ferrous fumarate 200mg (= 65mg of iron) + folic acid 0.1mg

syrup - ferrous fumarate 100mg/5ml (= 33mg of iron / 5ml)

Dose

Adults

Prevention of anaemia during pregnancy - 1 tablet daily

Treatment of anaemia (not pregnant): 2 tablets daily

(pregnant): 2 tablets bd

Children

<5 years 0.5ml (3.3mg)/kg daily

>5 years 1 tablet daily

Precautions, side effects

May cause gastro-intestinal disturbances e.g. nausea, epigastric pain, diarrhoea, constipation. The patient's stools may turn black.

Counselling points

Iron is best absorbed if taken before food. However, if the patient suffers from gastro-intestinal side effects it can be taken with food.

Iron should not be taken at the same time of day as antacids or doxycycline as the absorption can be reduced. Leave a gap of 2-3 hours between the drugs.

It is dangerous to take too much iron. Make sure that the tablets and syrup are kept out of reach of children.

Eat foods that contain plenty of iron - green vegetables, meat, eggs, milk.

Furosemide

(Lasix®.....)

Therapeutic action

Diuretic

Indications

Emergency treatment of - hypertensive crisis with signs of heart failure
- dyspnoea associated with heart failure

Preparations

40mg tablets

20mg injection

Dose

Hypertensive crisis

40mg (IV or po) stat.

Can be repeated after 15 minutes if symptoms persist.

Dyspnoea associated with heart failure

40mg IV stat (or IM, if IV not possible)

Precautions, side effects

Give IV injection slowly, over 10 minutes.

May cause hypokalaemia (↓ potassium), hypotension.

Glibenclamide

(Daonil®.....)

Therapeutic action

Oral hypoglycaemic

Indications

Non-insulin-dependent diabetes mellitus (NIDDM).

Only available for follow-up treatment.

Preparations

5mg tablets

Dose

Adults

2.5-15mg (½-3 tablets) daily, in 1-2 divided doses

Children

Not used

Precautions, side effects

Do not give if the patient is pregnant or breastfeeding. Insulin should be used instead.

Avoid if the patient has severe renal impairment.

May cause headache, dizziness, gastrointestinal disturbances, hypoglycaemia, rash.

Counselling points

Make sure that the patient is aware of the symptoms of hypoglycaemia : palpitations, headache, hunger, nervousness or confusion.

Explain to the patient and caretakers what to do if hypoglycaemia occurs (i.e. drink soft drink, sugar water, eat chocolate, bread).

Glycerine paediatric suppositories

Therapeutic action

Rectal stimulant

Indication

Constipation in children

Preparations

2 g suppository

Dose

1 suppository STAT

Precautions, side effect

Severe conditions which may cause constipation have to be excluded before using any laxatives, e.g. appendicitis, or bowel obstruction.

Counselling points

To ease administration the suppository should be moistened with water before use.

Advise the caretaker to ensure sufficient fluid intake for the child.

<p style="text-align: center;">Hydrocortisone (Solu-cortef®.....)</p>
--

Therapeutic action

Corticosteroid

Indications

Acute asthma (if salbutamol ineffective)

Anaphylactic reaction

Acute laryngeal oedema

Preparations

100mg vial, dry powder for injection (makes 2ml)

Dose

Adults

200mg IV stat (can give IM if cannot find a vein)

Children

50-100mg IV stat

Precautions, side effects

Give IV injection slowly, over at least 1 minute.

After preparation, the solution must be used within 24 hours.

Hyoscine Butylbromide

(Buscopan®.....)

Therapeutic action

Antispasmodic

Indications

Abdominal cramps

Preparations

10mg tablets

Dose

Adults

10-20mg (1-2 tablets) tds for maximum 5 days

Children

Not recommended

Precautions, side effects

Do not give if one of the following is suspected:
acute abdomen, peritonitis, acute appendicitis, bowel obstruction

Do not use in pregnancy.

Avoid if the patient has glaucoma.

May cause dry mouth, constipation , blurred vision.

Ipecacuanha

Therapeutic action

Emetic

Indications

Treatment of poisoning - it induces vomiting

Preparations

Syrup

Dose

15-20ml followed by a cup of water.

This may be repeated after 20 minutes if the patient has not vomited.

Precautions, side effects

Do not induce vomiting with ipecacuanha if the patient:

- is unconscious
- has convulsions
- has taken acid, corrosives or petroleum products e.g. paraffin

Ipecacuanha has an unpleasant taste so children <3 years may not swallow it. They may need to be given the drug + water through a nasogastric tube.

As a general rule, it is worth inducing vomiting if the poison has been ingested in the last 6 hours (12 hours for aspirin).

Isoniazid (INH)

Therapeutic action

“Antituberculous” antibiotic

Indications

Tuberculosis

Prophylaxis of tuberculosis in infants born to smear positive mothers

Preparations

100mg tablets

Dose

Adults

300mg (3 tablets) od for 6 months (can be up to 8 months for retreatment)

Children

10mg/kg od for 6 months

Also refer to the TB Treatment Guidelines.

Precautions, side effects

May cause hepatitis (jaundice), nausea and vomiting, a prickling feeling in the fingers and toes. If any of these side effects occur, refer to hospital.

Counselling points

Isoniazid should be taken ½-1 hour before food.

The patient must not stop taking the tablets unless the doctor tells him/her to.

The medicine has to be taken together with the other anti-tuberculosis medicines prescribed. Otherwise the disease will not be cured.

Isoniazid should not be taken at the same time of day as antacids as the absorption can be reduced. Leave a gap of 2-3 hours between the drugs.

<p style="text-align: center;">Levonorgestrel + Ethinylestradiol (Microgynon®, Nordette®, Triphasil®.....)</p>

Therapeutic action

Oral contraceptive

Indications

Contraception

Preparations

Monophasic: tablets containing: Levonorgestrel (a progestogen) 35mcg

Ethinylestradiol (an oestrogen) 150mcg

Biphasic: tablets containing: Ethinylestradiol 50mcg

Levonorgestrel in different strength in first and second phase

Triphasic: tablets containing: Levonorgestrel + Ethinylestradiol

in different strengths in first, second and third phase

Each packet contains 21 active tablets and 7 inactive tablets

Dose

1 tablet daily

Precautions, side effects

Should not be used in cases of:

heart disease	liver disease	smoking	hypertension	severe
headaches	pregnancy	history of thrombosis	cancer	
breast-feeding				

May cause nausea and vomiting, depression, breast discomfort, fluid retention. Rarely thromboembolism, jaundice (see counselling points).

Counselling points

The patient must contact the hospital if she develops any of the following - severe abdominal pain, chest or arm pain, shortness of breath, severe pain or swelling in legs, eye problems, bad headaches, yellowing of skin or eyes.

Take the first pill in the packet on the first day of your period / cycle i.e. on the first day of bleeding. Take the pill at the same time every day. If you forget a pill, take it as soon as you remember and carry on with the next pill at the right time. If the pill was more than 12 hours late the pill may not work. Use an additional method of contraception (e.g. condoms) for the next 7 days. The pill may not work if the patient is also taking rifampicin, anticonvulsants or a course of antibiotics. The patient should try and use an additional method of contraception (e.g. condoms).

Lignocaine (Lidocaine)

(Xylocaine ®, ...)

Therapeutic action

Local anaesthetic

Indication

Local anaesthesia of wounds before suturing

Local anaesthesia before episiotomy

Preparations

1% injection

Dose

Depends on the nature of the procedure (e.g. size of area), the patients age (weight), the patient's response, the degree of anaesthesia required, and the rate of absorption.

In general the lowest effective dose should always be used.

Adults: use not more than 20ml

Children: over 5 years use not more than 10ml
under 5 years use not more than 7.5ml

Inject into the subcutaneous layers of the skin only.

Never inject into blood vessels or nerves.

Precaution, side effects

Nausea, sleepiness, dizziness and paraesthesias can occur due to systemic effects of the drug. These side effects will subside on their own.

If the drug is injected into a blood vessel severe side effects including convulsions, loss of consciousness, cardiac arrhythmias, hypotension and respiratory depression can occur. Acute or cumulative over dose of the drug may cause the same side effects.

Other points

If you need to inject a larger amount than the maximum amount specified above (e.g. if the wound is big), you can dilute the original lignocaine solution with 0.9% sodium chloride (normal saline).

<p style="text-align: center;">Medroxyprogesterone (Depo-Provera®.....)</p>
--

Therapeutic action

Contraceptive

Indications

Contraception

Preparations

150mg/ml injection

Dose

1 injection every 12 weeks

Precautions, side effects

Should not be used in cases of arterial thrombosis (myocardial infarction or stroke), liver disease, unexplained abnormal vaginal bleeding , pregnancy, or if pregnancy is planned.

May cause nausea and vomiting, depression, breast discomfort, fluid retention. May also cause menstrual irregularities (e.g. unusually heavy or light periods).

Recovery of fertility after stopping injections can be delayed for up to 2 years.

Counselling points

Tell patient to come back to clinic if she develops headache, dizziness or heavy bleeding.

The injection may not work if the patient is also taking rifampicin or anticonvulsants. The patient should try and use an additional method of contraception (e.g. condom) or else the injection can be given every 8 weeks instead.

To maintain contraceptive effect it is important that the patient comes for her next injection in time

<p style="text-align: center;">Methyldopa (Aldomet®.....)</p>
--

Therapeutic action

Antihypertensive

Indications

Hypertension (particularly in pregnant women)

Only available for follow-up treatment.

Preparations

250mg tablets

Dose

Adults

500-2000mg daily, in 2-4 divided doses

Children

Not generally used

Precautions, side effects

Avoid if acute liver disease.

May cause drowsiness, dry mouth, oedema due to salt and water retention, depression, impotence. If drowsiness is a problem, methyldopa can be administered as 2 unequal doses, with the higher dose at bedtime.

Counselling points

May cause drowsiness. If affected, the patient should not drive.

Metronidazole

(Flagyl®.....)

Therapeutic action

Antibacterial, antiprotozoal

Indications

Vaginal discharge

Lower abdominal pain with suprapubic tenderness, fever or PID risk factor

Dental infections

Preparations

400mg tablets

200mg/5ml syrup

Dose

Vaginal discharge:

2g (5 tablets) stat or 400mg (1 tablet) bd for 7 days

Lower abdominal pain (PID):

400mg (1 tablet) tds for 7 days (in combination with other drugs as per STD treatment guidelines)

Dental abscess:

Adults 400mg (1 tablet) tds for 5-7 days

Children 0.2ml (8mg) / kg tds of syrup for 5-7 days

Precautions, side effects

Do not give during the 1st trimester of pregnancy and to breastfeeding women.

Avoid in epileptic patients.

May cause nausea and vomiting, headache, metallic taste in mouth, dark discoloration of urine.

The effectiveness of metronidazole may be reduced if the patient is also taking phenobarbitone.

Counselling points

Metronidazole tablets and suspension should be taken with or after food.

The patient must finish the course, even if they feel better after a few days.

The syrup should be shaken before use and be taken 1 hour before or two hours after food.

Alcohol must be avoided during treatment with metronidazole and 48 hours before starting and 48 hours after finishing treatment.

Multivitamins

Therapeutic action

Vitamin supplement

Indications

Vitamin deficiency, e.g. in persistent diarrhoea

Preparations

tablets and syrup

	1 tablet contains	5ml syrup contains
Vitamin A	1000iu	2300iu
Vitamin B ₁ (thiamine)	1mg	1mg
Vitamin B ₂ (riboflavin)	-	1.2mg
Vitamin B ₅ (nicotinamide)	5mg	5mg
Vitamin B ₆ (pyridoxine)	-	0.5mg
Vitamin B ₁₂ (cyanocobalamin)	-	2.5mcg
Vitamin C	5mg	35mg
Vitamin D	50iu	200iu

Dose

Adults	Children
1 tablet od	<1 year 2.5ml od >1 year 5ml or 1 tablet od

Counselling points

The syrup should be shaken before use.

Eat plenty of food rich in vitamins, e.g. fresh fruits and vegetables.

Other points

Multivitamins can be used as a placebo since they are both safe and inexpensive.

<p style="text-align: center;">Nalidixic acid (Winlomylon®.....)</p>

Therapeutic action

Antibiotic

Indications

Severe cases of diarrhoea with blood (Dysentery) in areas where shigella bacteria are proven to be resistant to Co-Trimoxazole

Preparations

500mg tablets

250mg/5ml syrup (equals 50mg per 1ml syrup)

Dose

Adults

1g (2 tablets) qds for 5 days

Children

50mg/kg/day in 4 divided doses for 5 days

Example for dose calculation:

a child 6kg: $50\text{mg} \times 6\text{kg} = 300\text{mg}$ per day in four doses = 75mg per dose = 1½ ml qds

Precautions, side effects

Do not give if the patient is pregnant or breastfeeding.

May cause nausea and vomiting, abdominal pain, diarrhoea, headache.

Avoid in children under 3 months.

Counselling points

The patient must finish the course, even if they feel better after a few days.

The syrup should be shaken before use.

Norethisterone

(Micro-Novum®, Nur-Isterate®.....)

Therapeutic action

Contraceptive

Indications

Contraception (injection can be used for breastfeeding women six weeks after delivery)

Preparations

0.35mg tablets (each packet contains 28 active tablets)

200mg/ml injection

Dose

1 tablet daily

1 injection every 8 weeks

Precautions, side effects

Should not be used in cases of arterial thrombosis (myocardial infarction or stroke), liver disease, unexplained abnormal vaginal bleeding or pregnancy.

May cause nausea and vomiting, depression, breast discomfort, fluid retention. May also cause menstrual irregularities (e.g. unusually heavy or light periods).

Recovery of fertility after stopping injections can be delayed for up to 2 years.

Counselling points

Tell patient to come back to clinic if she develops headache, dizziness or heavy bleeding.

Take the first tablet in the packet on the first day of your period / cycle i.e. on the first day of bleeding. Try and take the pill at the same time every day. If you forget a pill, take it as soon as you remember and carry on with the next pill at the right time. If the pill was more than 3 hours late the pill may not work. Use an additional method of contraception (e.g. condom) for the next 7 days.

The pill/injection may not work if the patient is also taking rifampicin or anticonvulsants. The patient should try and use an additional method of contraception (e.g. condom) or else the injection can be given every 6 weeks instead.

Nystatin

(Nystan ®, Nystamont ®, ...)

Therapeutic action

Antifungal (candida albicans)

Indications

Treatment of mouth infections (including oral thrush) or vaginal infections caused by candida albicans

Preparations

uncoated tablets: 100 000 units/ tablet

oral suspension: 100 000 units / ml

Dose

Adults and children

mouth infections: 100 000 units qds for 7 days

oral thrush in HIV positive patients: 500 000 units (5ml) qds for 5 days

vaginal infections: 1 pessary at night for 15 nights

Precautions, side effects

Side effects are rare.

Counselling points

Nystatin tablets for use as pessaries have to be inserted deep into the vagina. The treatment has to be continued for 15 nights even if symptoms disappear earlier.

Other points

An alternative and cheaper drug for fungal mouth infections is gentian violet solution (GV paint).

The recommended drug for vaginal candida infection is clotrimazole pessary. Other drugs might have to be added as per STD treatment guidelines!

Oral Rehydration Salts (ORS)

Therapeutic action

Provides salt and sugar

Indications

Prevention and treatment of dehydration in case of diarrhoea and/or vomiting

Preparations

sachets of powder containing:

sodium chloride

potassium chloride

trisodium citrate

glucose (dextrose)

Dose

No dehydration

Young children: 10-20ml/kg for each episode of diarrhoea

Children >10 years + adults; drink ORS, as much as they want

Moderate dehydration

Young children:

give 100ml/kg over 4 hours and then assess. If still dehydrated give 50ml/kg over 2 hours. Give the ORS as small sips. If the child cannot drink, give via NGT - 6ml/kg every 15 minutes. After correction, treat as for no dehydration.

For more detailed dose information consult the Treatment Manual for Clinics.

Other points

Each sachet must be dissolved in 1 litre of clean, cooled boiled water.

Once made up, the solution must be used the same day.

<p style="text-align: center;">Paracetamol (Panado®.....)</p>
--

Therapeutic action

Analgesic, antipyretic

Indications

Pain, fever

Preparations

500mg tablets

120mg/5ml syrup

Dose

Adults

500mg - 1g (1 - 2 tablets) up to qds

Children

<2 years 60mg (2.5ml) up to qds

2-5 years 120mg (5ml) up to qds

6-12 years 250-500mg up to qds

Precautions, side effects

Side effects are rare. However, overdose can cause liver damage and can be fatal.

Counselling points

It is dangerous to take too much paracetamol. Make sure that the tablets and syrup are kept out of reach of children.

<p style="text-align: center;">Phenobarbitone (Gardenal®, Lethyl®.....)</p>
--

Therapeutic action

Anticonvulsant

Indications

Epilepsy

Only available for follow-up treatment

Preparations

15mg and 30mg tablets

16mg/5ml syrup

Dose

Adults

Usually 60-180mg at night

Children

5-10mg/kg/day

Precautions, side effects

Commonly causes drowsiness. This effect is increased if taken with alcohol or other drugs which act on the central nervous system e.g. diazepam, promethazine, thioridazine. May also cause blurred vision, dizziness, skin rashes.

Phenobarbitone can speed up the metabolism of some drugs and reduce their effectiveness e.g. contraceptives, doxycycline, metronidazole, theophylline, warfarin

Counselling points

Phenobarbitone can decrease the effectiveness of the contraceptive pill and injection. The patient should try and use other forms of contraception while taking phenobarbitone.

May cause drowsiness. If affected, the patient should not drive.

Avoid alcohol.

Phenoxymethylpenicillin [Penicillin VK]

Therapeutic action

Antibiotic

Indications

Dog-bite (non-rabid)
Dental abscess
Middle ear infections (children >6 years and adults)
Tonsillitis
Skin infections e.g. impetigo, erysipelas
Mastitis

Preparations

250mg tablets
250mg/5ml syrup

Dose

Adults

500mg (2 tablets) qds for 5-7 days (10 days for erysipelas)

Children

<10kg 62.5mg (1.25ml) qds for 5-7 days (10 days for erysipelas)
11-20kg 125mg (2.5ml) qds
21-40kg 250mg (1 tablet) qds
>40kg 500mg (2 tablets) qds

Precautions, side effects

May cause allergic reactions, nausea and vomiting, diarrhoea.
Do not give if the patient is allergic to penicillin.

Counselling points

The patient must finish the course, even if they feel better after a few days.
The syrup should be stored in a cool place and shaken before use.

Other points

Once prepared, the syrup should be kept cool and will only last for one week.

<p style="text-align: center;">Phenytoin (Epanutin®.....)</p>
--

Therapeutic action

Anticonvulsant

Indications

Epilepsy

Only available for follow-up treatment

Preparations

100mg tablets

Dose

Adults

Usually 150-300mg (1½-3 tablets) daily

Children

5-8mg/kg/day in 1-2 doses

Precautions, side effects

May cause gum hypertrophy (especially in young patients), nausea and vomiting, confusion, rashes, hirsutism.

Phenytoin can speed up the metabolism of some drugs and reduce their effectiveness e.g. contraceptives, doxycycline, theophylline, warfarin.

Counselling points

Phenytoin can decrease the effectiveness of the contraceptive pill and injection. The patient should try and use other forms of contraception while taking phenytoin.

Phenytoin should be taken with or after food.

Phytomenadione - Vitamin K

(Konakion®.....)

Therapeutic action

Vitamin

Indications

Prevention of haemorrhagic disease of the new-born

Preparations

1mg/0.5ml injection

Dose

Children

1mg IM stat to baby immediately after birth

Precautions, side effects

The injection should be given IM, **not IV**.

May cause localised skin reactions.

Probenecid

(Proben®.....)

Therapeutic action

Prolongs the action of amoxycillin and other penicillins

Indications

In combination with amoxycillin in the treatment of urethral or vaginal discharge or scrotal swelling (**only if ciprofloxacin or ceftriaxone are not available**).

Preparations

500mg tablets

Dose

1g (2 tablets) stat [+ amoxycillin 3000mg]

Precautions, side effects

May occasionally cause headache, nausea and vomiting, urinary frequency, flushing.

Procaine benzyl penicillin

Therapeutic action

Antibiotic with medium long action (24 hours)

Indications

Acute respiratory infections

Preparations

3,000,000u (3MU) vials for injection (300,000 u / ml)

Dose

Adults

600,000 u to 1,2 MU IM daily for three to five days

Children

<2 months (<5kg) 200,000u IM daily for 5 days

2-12 months (6-9kg) 400.000u IM daily for 5 days

1-5 years (10-19kg) 800,000u IM daily for 5 days

Precautions, side effects

Do not give if allergic to penicillin.

May cause allergic reactions.

Preparation and administration

If powder for injection, dissolve the contents of the vial in 5-8mls of sterile water for injection. After dilution, the suspension has to be shaken before it can be used. Administer by deep IM injection

After preparation the solution must be used within 24 hours.

Other points

In most cases it is not necessary to start therapy with Penicillin injection. Oral penicillin will be sufficient!

<p style="text-align: center;">Proguanil (Paludrine ®)</p>

Therapeutic action

Inhibits development of malaria parasites in humans (chemoprophylaxis)

Indications

Malaria prophylaxis (**only** in combination with Chloroquine!) for pregnant women in malaria endemic areas and non-immune travellers to malaria endemic areas

Preparations

100mg tablets

Dose

Adults: 200mg (2 tablets) daily

Children: 3mg/kg/daily

Therapy should start one day before travelling and be continued for six weeks after having left the malaria endemic area.

Precautions, side effects

Proguanil should be used with caution in renal impairment.

Occasionally mouth ulcers and stomatitis may develop.

Pregnant women should take folic acid supplement while taking proguanil tablets.

Counselling points

Travellers should be advised to prevent mosquito bites by using repellents, wearing long trousers/sleeves from dawn to dusk, and sleeping under a mosquito net.

Despite taking chemoprophylaxis people can get malaria. Advise the patients to look out for malaria symptoms and to report to the nearest clinic if these symptoms develop.

<p style="text-align: center;">Promethazine (Phenergan®.....)</p>
--

Therapeutic action

Anti-emetic, antihistamine, sedative

Note: with implementation of the second edition of the Nedlist Promethazine will be replaced with Chlorpheniramine at clinics.

Indications

Allergic reactions e.g. insect stings

Itching e.g. chicken pox

Preparations

10mg tablets

5mg/5ml syrup

25mg/ml injection (for IM administration)

Dose

Adults

10-20mg up to tds

Children

3-6 years 0.5mg/kg up to bd

6-12 years 10mg up to tds

Precautions, side effects

Commonly causes drowsiness. This effect is increased if taken with alcohol or other drugs which act on the central nervous system e.g. diazepam, phenobarbitone, thioridazine. May also cause dizziness, dry mouth and blurred vision.

The use in children under 3 years is not recommended.

Counselling points

May cause drowsiness. If affected, the patient should not drive.

Avoid alcohol.

Other points

IM injection should only be used if the patient cannot take the drug orally.

Pyrazinamide (PZA)

Therapeutic action

“Antituberculous” antibiotic

Indications

Tuberculosis

Preparations

500mg (0.5g) tablets

Dose

Adults

<50kg 1.5g (3 tablets) od for 2 months (up to 3 months for retreatment)

>50kg 2g (4 tablets) od for 2 months (up to 3 months for retreatment)

Children

35mg/kg od for 2 months

Precautions, side effects

May cause loss of appetite, nausea and vomiting, allergic reactions, hepatitis (jaundice). If any of these side effects occur, refer to hospital.

Counselling points

The patient must not stop taking the tablets unless the doctor tells him/her to.

The medicine has to be taken together with the other anti-tuberculosis medicines prescribed. Otherwise the disease will not be cured.

Reserpine

Therapeutic action

Antihypertensive

Indications

Hypertension. **Only available for follow-up treatment**

Preparations

0.25mg tablets

Dose

Adults

0.125-0.25mg (½-1 tablet) daily

Children

Not used

Precautions, side effects

Do not give if the patient is pregnant or breastfeeding.

May cause dizziness, drowsiness, depression.

Counselling points

May cause drowsiness. If affected, the patient should not drive.

Rifampicin (Rif)

(Rifcin®.....)

Therapeutic action

“Antituberculous” antibiotic

Indications

Tuberculosis
Prophylaxis of meningitis

Preparations

150mg and 450mg capsules
100mg/5ml syrup

Dose

Tuberculosis

Adults

<50kg 450mg od for 6 months
>50kg 600mg od for 6 months
(can be up to 8 months for retreatment)

Children

10mg/kg od for 6 months

Meningitis prophylaxis

Adults

600mg bd for 2 days

Children

10mg/kg bd for 2 days

Precautions, side effects

May cause hepatitis (jaundice), allergic reactions, nausea and vomiting, diarrhoea. If any of these side effects occur, refer to hospital.

Counselling points

May cause urine, tears, sweat and stools to turn orange/red in colour.

Rifampicin should be taken ½-1 hour before food and the syrup should be shaken before use.

Rifampicin can decrease the effectiveness of the contraceptive pill and injection. The patient should try and use other forms of contraception while taking rifampicin.

The patient must not stop taking the medicine unless the doctor tells him/her to. The medicine has to be taken together with the other anti-tuberculosis medicines prescribed. Otherwise the disease will not be cured.

Salbutamol

(Ventolin®.....)

Therapeutic action

Bronchodilator
(Relaxation of uterine muscle)

Indications

Asthma
(premature labour - **for cases waiting for referral only**)

Preparations

2mg tablets
metered dose inhaler - 0.1mg per puff
1mg/ml (0.1%) or 5mg/ml (0.5%) solution for inhalation

Dose

Acute asthma attack

Adult - give 10mg = 10ml (2ml if concentration is 0.5%!) of solution for inhalation via face mask

Child - give 0.15mg / kg

⇒ 0.15ml/kg of 0.1% solution or 0.03ml/kg of 0.5% solution

Dilute to 4ml with 0.9% sodium chloride.

If this is not possible, use inhaler 2 puffs stat. Repeat after 20 minutes and again after a further 20 minutes if necessary.

Chronic asthma treatment

Adults inhaler 1-2 puffs when required (up to qds)
tablets 4mg (2 tablets) tds

Children inhaler 1-2 puffs when required (up to qds)
tablets 2-5 years 1mg (½ tablet) tds
6-11 years 2mg (1 tablet) tds
12+ years 4mg (2 tablets) tds

Obstetric emergencies during referral

inhaler 2 puffs prn with every contraction

Precautions, side effects

May cause tachycardia, trembling, headache.

Counselling points

Make sure that the patient can use the inhaler correctly (See Annex)

Snake Venom Antiserum (polyvalent)

Therapeutic action

Neutralises the venom of certain snakes

Indications

Treatment of snakebite - **only for confirmed, symptomatic cases of poisoning by a venomous snake.**

Not effective if bitten by a boomslang (tree snake), bird snake, horned adder, berg adder, night adder or burrowing asp.

Preparations

10ml ampoules

Dose

Adder bite 20-40ml in 200ml 5% dextrose IV STAT

Cobra, mamba or rinkhals bite 60-80ml in 200ml 5% dextrose IV STAT

For rinsing venom from eyes, dilute ampoule 1:10 with sterile water (1ml antiserum with 9mls of water)

Precautions, side effects

Only give full dose immediately if mamba bite. For other snakebites, **administer 'test dose' first** due to high risk of anaphylaxis.

Major side effect is anaphylaxis. Facilities to treat anaphylaxis must be at hand before giving injection.

May also cause serum sickness (an allergic reaction occurring a number of days after the injection - symptoms: fever, arthralgias, skin rash, lymphadenopathy).

Other points

The antiserum has to be stored in a refrigerator (2-8°C).

Sodium chloride 0.9% (Normal Saline)

Therapeutic action

I.V. fluid replacement

Indications

Treatment and prevention of shock except in congestive cardiac failure

Blood loss, e.g. due to pregnancy related emergencies or trauma

Hyperglycaemic coma (diabetic patients)

Acute asthma (vehicle for aminophylline therapy)

Preparations

1000ml infusion solution

Dose

Adults: Normal daily requirements will be 3 L / 24 hours

According to the clinical findings much more rapid infusion may be required.

Should be titrated against the blood pressure.

Streptomycin

Therapeutic action

“Antituberculous” antibiotic

Indications

Tuberculosis. **For re-treatment only.**

Preparations

1g vials for injection

Dose

Adults

<50kg 750mg IM daily for 2 months

>50kg 1g IM daily for 2 months

Children

>6 years 20mg/kg IM daily for 2 months

Precautions, side effects

Do not give if the patient is pregnant.

The dose should be reduced if the patient has renal impairment.

May cause dizziness, buzzing of ears and hearing loss. May also damage the kidneys.

Preparation and administration

Dissolve the contents of the vial with 3.4ml of sterile water for injections. The total volume will now be 4ml and the concentration of drug will be 250mg/ml, e.g. ⇒ if dose is 1g - inject 4ml

if dose is 750mg - inject 3ml

After preparation, the solution can be kept for **only 1 hour.**

The medicine has to be given together with the other anti-tuberculosis medicines prescribed. Otherwise the disease will not be cured.

Sulfadoxine + Pyrimethamine

(Fansidar®.....)

Therapeutic action

Antimalarial

Indications

Treatment of simple (uncomplicated) malaria resistant to chloroquine. Only to be used after chloroquine has failed and malaria slide is positive.

Preparations

Tablets containing 500mg sulfadoxine + 25mg pyrimethamine

Dose

Body weight	No. of tablets
10-14kg	½
15-19kg	1
20-35kg	1½
36-60kg	2
>60kg	3

Precautions, side effects

Not to be given to infants <6 months and pregnant or breastfeeding women.

May cause nausea and vomiting, skin reactions, abdominal discomfort, headache.

<p style="text-align: center;">Theophylline (Bronchophen®, Theo-dur®.....)</p>

Therapeutic action

Bronchodilator

Indications

Asthma

Only available for follow up treatment.

Preparations

200mg slow release (SR) tablets

25mg/5ml syrup

Dose

Adults

Usually 200mg (1 tablet) bd

Children

Syrup: 15mg/kg/day in 3 divided doses

SR tablets: <30kg 100mg (½ tablet) bd

>30kg 200mg (1 tablet) bd

Precautions, side effects

If possible, patients should not be prescribed theophylline and erythromycin together since there is a risk of theophylline toxicity.

May cause nausea and vomiting, headache, epigastric pain. Overdose can occur easily and signs of overdose include repeated vomiting, arrhythmias, convulsions.

This is not a cough syrup !

Thioridazine

(Melleril@.....)

Therapeutic action

Anti-psychotic

Indications

Schizophrenia and other psychoses.

Only available for follow-up treatment.

Preparations

25mg tablets

Dose

Adults

Usually 25-300mg daily

Children

Not used

Precautions, side effects

May cause anticholinergic side effects [dry mouth, blurred vision, constipation], hypotension, extrapyramidal symptoms (e.g. tremor, abnormal face and body movements, restlessness).

May also cause drowsiness. This effect is increased if taken with alcohol or other drugs which act on the central nervous system e.g. diazepam, phenobarbitone, promethazine.

Counselling points

May cause drowsiness. If affected, the patient should not drive.

Avoid alcohol.

Vitamin A

Therapeutic action

Vitamin

Indications

Prevention and treatment of vitamin A deficiency and related conditions (e.g. night blindness)

Preparations

200,000u capsules

Dose

Adults

Prevention in mothers immediately after delivery - 200,000u stat
(Do not give later than 1 month after delivery)

Children

Treatment of deficiency:

<1 year or <8kg 100,000u days 1,2 and 28

>1 year 200,000u days 1,2 and 28

Prevention:

6/12-1 year or <8kg 100,000u stat with measles vaccine

1-6 years 200,000u twice a year

Prevention in children presenting with measles, marasmus, kwashiorkor, diarrhoea for 7 days or longer, TB, HIV/AIDS, acute respiratory infection:

6/12-1 year or <8kg 100,000u days 1 and 2

1-6 years 200,000u days 1 and 2

Precautions, side effects

Do not give in pregnancy.

Do not give to children less than six months old

Counselling points

Eat foods which contain plenty of vitamin A - milk, eggs, liver, dark green vegetables (e.g. spinach), yellow fruits, sunflower oil.

Other points

To administer 100,000u, make a hole in the capsule with a needle and squeeze out half the contents (1 capsule contains approximately 8 drops).

Preparations for external use

Acetic acid in spirit ear drops 1%

Indications: Outer ear infections

Dose: 4 drops qds for 4 days

Benzoic acid compound ointment (Whitfield's ointment)

Indications: Fungal infections of scalp, trunk, feet and nails

Dose: Apply twice a day for up to 6 months, depending on infection.

Benzyl benzoate emulsion 25%

Indications: Scabies

Dose: Apply to whole body in the evening and leave to dry overnight. Repeat the next day and 10 days later.

For children <6 years dilute with equal parts of water.

Other points: For complete treatment of an adult, 2-3 bottles will be needed.

Bismuth iodoform paste

Indications: Acute epistaxis (nose bleeding)

Dose: Apply to ribbon gauze and use the gauze for packing the nose

Precautions: Avoid in patients with over functioning of the thyroid glands (hyperthyroidism)

Bismuth subgallate compound suppositories

Indications: To relieve itching and pain related to mild haemorrhoids

Dose: 1 suppository 1-2 times per day, preferably after a bowel movement

Other points: This treatment is only symptomatic and will not make the haemorrhoids disappear.

Preparations for external use (continuing)

Calamine lotion

Indications: Itching e.g. chicken pox, herpes zoster, sunburn

Dose: Apply twice a day

Chloramphenicol eye ointment 1%

Indications: Infective conjunctivitis and other eye infections

Dose: Apply tds for 5 days

Other points: Apply 1cm of ointment inside lower eye-lid. Try not to touch dropper to eye, finger or any surface. Then close eye and disperse drug by rolling the eyeball in all directions.

Chlorhexidine mouthwash 0.2%

Indications: Oral hygiene

Dose: Rinse 5-10ml round the mouth for about 1 minute 2 times a day.

Other points: Prolonged use may cause brown staining of the teeth (reversible).

Chlortetracycline ointment (Aureomycin@....)

Indications: Bacterial skin infections e.g. impetigo, erysipelas

Dose: Apply three times a day

Other points: Can stain clothing

Gentian violet (GV paint)

Indications: Fungal infections in mouth, drying of herpes lesions, nappy rash

Dose: Apply twice a day

Preparations for external use (continuing)

Ichthammol ointment

Indications: Eczema, chronic leg ulcers

Dose: Apply up to three times a day

Merchurochrome 1% solution

Indications: Cleaning and disinfecting of small superficial wounds

Dose: Apply once a day

Precautions: Do not use together with povidone iodine (Betadine ®) preparations.
Do not use on large areas.

Methylated spirits

Indications: Cleaning of umbilical cord, drying of herpes lesions

Dose: Apply up to three times a day

Methylsalicylate ointment

Indications: Back pain - acts as a counter-irritant

Dose: Apply three times a day

Oxymetazoline eye drops 0.025% (Oxvlin®....)

Indications: Allergic conjunctivitis, nasal congestion in children (see below)

Dose: 1-2 drops tds for 3 days

Other points: Do not use eye drops more than 4 weeks after opening.

To administer - tilt head back and drop medicine inside lower lid while looking up. Try not to touch dropper to eye, finger or any surface. Release lower lid and do not blink for 30 seconds.

Preparations for external use (continuing)

Oxymetazoline nose drops 0.05% (Drixine®, Nazene®....)

Indications: Nasal congestion

Dose: Adults and children >6 years 1-2 drops up to tds
 Children <6 years [use 0.025% eye drops] 1-2 drops up to tds

Other points: Do not use for longer than 5 days due to risk of rebound congestion

Paraffin gauze dressing (Jelonet®....)

Indications: Dressing for wounds

Povidone Iodine ointment and scrub (Betadine®....)

Indications: Disinfection of skin and wounds, skin infections

Dose: Apply up to twice a day

Precautions: Do not use together with Mercurochrome.

Sodium Hypochlorite solution (Eusol®....)

Indications: Cleaning and debridement of septic wounds

Dose: Apply daily

Preparations for external use (continuing)

Tetracycline eye ointment

Indications: Infective conjunctivitis; prevention of ophthalmia neonatarum (conjunctivitis of the new-born)

Dose: For treatment of conjunctivitis apply 2 hourly, for prophylaxis apply STAT

Other points: Apply 0.5 cm of ointment inside lower eye-lid. Try not to touch dropper to eye, finger or any surface. Then close eye and disperse drug by rolling the eyeball in all directions.

Wax softening ear drops (Waxsol®....)

Indications: Removal of hard wax

Dose: With the head tilted, fill the ear using the dropper provided.
Repeat the next day.

Other points: Treatment should be done at the clinic. Do not give to patients to take home

Zinc cream

Indications: Eczema, napkin rash

Dose: Apply up to three times a day

GLOSSARY OF THERAPEUTIC CLASSIFICATIONS / CATEGORIES

Analgesic	pain killer
Antacid	to neutralise hydrochloric acid in the stomach that causes discomfort and pain in gastritis or stomach ulcers
Anthelmintic	to treat worm infections
Antibacterial	to treat bacterial infections
Antiprotozoal	to treat infections of small organisms such as giardia or amoebae
Antibiotic	to treat bacterial infections
Anticonvulsant	to stop convulsions
Antifungal	to treat fungal infections (e.g. candida, athlete's foot)
Antihistamine	to block certain histamine receptors in the body and thereby have an anti-allergic effect
Antihypertensive	to lower high blood pressure
Anti-inflammatory	to treat symptoms of inflammation, e.g. swelling of tissue
Antimalarial	to treat infection with the malaria parasite
Anti-psychotic	to treat symptoms of psychosis
Antipyretic	to lower body temperature in case of fever
Antispasmodic	to relax tense muscles and thereby ease spastic pain
Anxiolytic	to ease feelings of anxiety
Bronchodilator	to dilate the bronchi in e.g. asthma
Contraceptive	to prevent contraception (pregnancy)
Corticosteroid	certain hormones produced in the human body - therapeutic use includes anti-inflammatory and hormone replacement therapy
Diuretic	to promote the excretion of water and electrolytes by the kidneys - used for the treatment of e.g. oedema and hypertension
Emetic	to induce vomiting
Hypoglycaemic	to lower blood glucose levels
Laxative	to induce defaecation (in severe constipation or pre-operative)

Local Anaesthetic	to produce loss of sensation (including pain) around the area of application (mostly by s.c. injection)
Oxytocic	to contract the uterus - therapeutic use includes induction and maintenance of labour and control of post-partum bleeding
Sedative	to produce a state of calmness or relaxation
Sympathomimetic	stimulate sympathetic nerves in the human body - effects include heart and central nervous system stimulation, vasoconstriction of small blood vessels in skin and mucous membranes, and dilatation of bronchi

BIBLIOGRAPHY

1. British Medical Association and the Royal Pharmaceutical Society of Great Britain: *British National Formulary; London 1998*
2. Bunjes R: *Sanavita health care; Sanavita Health Care GmbH, Werne*
3. Council of the Royal Pharmaceutical Society of Great Britain: *Martindale - The Extra Pharmacopoeia, 29th Edition, The Pharmaceutical Press, London 1989*
4. Dept of Pharmacology University of Cape Town, Dept of Pharmacy, University of Durban-Westville: *Rational Drug Prescribing Training Course; Health Systems Trust, Durban, 1997*
5. Dept of Pharmacology, University of Cape Town: *South African Medicines Formulary, 4th edition; Medical Association of South Africa, Pinelands, 1997*
6. Ministry of Health and Social Services: *Guidelines for the syndromic management of sexually transmitted diseases; Windhoek 1999*
7. Ministry of Health and Social Services: *Namibia Essential Drugs List; Windhoek 1999*
8. Ministry of Health and Social Services: *Treatment Manual for Clinics, Windhoek 1992*
9. Moeller H, Donohue S: *Primary Health Care Formulary; Medicos Pharmacy Project, Medunsa RSA 1995*
10. National Essential Drugs List Committee: *Hospital Level Standard Treatment Guidelines and Essential Drugs List Adults, National Department of Health, RSA 1998*
11. National Essential Drugs List Committee: *Primary Health Care Standard Treatment Guidelines and Essential Drugs List, National Department of Health, RSA 1998*

ANNEX: HOW TO USE SPECIAL DOSAGE FORMS

A. Eye Drops

1. Wash your hands
2. Do not touch the dropper opening
3. Look upward
4. Pull the lower eyelid down to make a 'gutter'
5. Bring the dropper as close to the gutter as possible without touching it or the eye
6. Apply the prescribed amount of drops in the 'gutter'
7. Close the eye for about two minutes. Do not shut the eye too tight.
8. Excess fluid can be removed with a tissue
9. Eye drops may cause a burning feeling but this should not last for more than a few minutes. If it does last longer consult your health worker.

When giving eye drops to children

1. Let the child lie back with head straight
2. The child's eyes should be closed
3. Drip the amount of drops prescribed into the corner of the eye
4. Keep the head straight
5. Remove excess fluid

Once opened eye drops should not be used for more than four weeks.

B. Eye ointment

1. Wash your hands
2. Do not touch anything the tip of the tube
3. Tilt the head backwards a little
4. Take the tube in one hand, and pull down the lower eyelid with the other hand, to make a 'gutter'
5. Bring the tip of the tube as close to the 'gutter' as possible
6. Apply the amount of ointment prescribed
7. Close the eye for two minutes
8. Remove excess ointment with a tissue
9. Clean the tip of the tube with another tissue

C. Nasal drops

1. Blow nose
2. Sit down and tilt head backward strongly or lie down with a pillow under the shoulders; keep head straight
3. Fill the dropper with nasal drops
4. Insert the dropper one centimetre into the nostril
5. Apply the amount of drops prescribed and remove the dropper
6. Immediately afterwards tilt head forward strongly (head between knees)
7. Sit up after a few seconds; the drops will then drip into the pharynx
8. Repeat the procedure for the other nostril, if necessary
9. Rinse the dropper with clean (boiled) water before replacing it on the bottle

D. Inhaler

1. Cough up as much sputum as possible
2. Shake the inhaler before use
3. Hold the inhaler as indicated in the manufacturer's instructions (usually upside down)
4. Place the lips tightly around the mouthpiece
5. Tilt the head backward slightly
6. Breathe out slowly, emptying the lungs of as much air as possible
7. Breeze in deeply and at the same time squeeze the inhaler, keeping the tongue down
8. Hold the breath for ten to fifteen seconds
9. Breathe out through the nose
10. Rinse the mouth with (warm) water

E. Suppository

1. Wash your hands
2. Remove the covering of the suppository (unless too soft)
3. If the suppository is too soft let it harden first by cooling it (fridge or in cold water still packed) then remove the covering
4. Remove possible sharp rims by warming in the hand
5. Moisten the suppository with cold water
6. Lie on your side and pull up your knees
7. Gently insert the suppository, rounded end first, into the back passage
8. Remain lying down for several minutes
9. Wash your hands
10. Try not to have a bowel movement during the first hour

F. Vaginal tablet with applicator

1. Wash your hands
2. Remove the wrapper from the tablet
3. Place the tablet into the open end of the applicator
4. Lie on your back, draw your knees up a little and spread them apart
5. Gently insert the applicator with the tablet in front into the vagina as far as possible. **Do not use force.**
6. Depress the plunger so that the tablet is released
7. Withdraw the applicator
8. Discard the applicator
9. Wash your hands

G. Vaginal tablet without applicator

1. Wash your hands
2. Remove the wrapper from the tablet
3. Dip the tablet in lukewarm water just to moisten it
4. Lie on your back, draw your knees up and spread them apart
5. Gently insert the tablet into the vagina as high as possible. **Do not use force.**
6. Wash your hands

INDEX

A

<u>Acetic acid in spirit ear drops</u>	
<u>1%</u>	69
Adrenaline (Epinephrine).....	6
Albendazole.....	7
Aluminium hydroxide + Magnesium trisilicate.....	8
Amiloride + Hydrochlorothiazide.....	9
Amoxicillin.....	10
Aspirin [Acetylsalicylic Acid].....	11

B

Benzathine Penicillin.....	12
<u>Benzoic acid compound</u>	
<u>ointment (Whitfield's</u>	
<u>ointment)</u>	69
<u>Benzyl benzoate emulsion 25%</u>	69
Bisacodyl.....	13
<u>Bismuth iodoform paste</u>	69
<u>Bismuth subgallate compound</u>	
<u>suppositories</u>	69

C

<u>Calamine lotion</u>	70
Carbamazepine.....	14
Ceftriaxone.....	15
<u>Chloramphenicol eye ointment</u>	
<u>1%</u>	70
<u>Chlorhexidine mouthwash</u>	
<u>0.2%</u>	70
Chloroquine.....	16
<u>Chlortetracycline ointment</u>	70
Ciprofloxacin.....	18
Clotrimazole.....	19
Co-Trimoxazole.....	21

D

Darrow's ½ strength with 5%	
Dextrose	22
Dextrose 5% in 0.45% Sodium	
Chloride	23
Diazepam.....	24
Doxycycline.....	25

E

Ergometrine.....	26
Erythromycin.....	27
Ethambutol (ETH).....	28
Ethionamide.....	29

F

Ferrous salt [Iron].....	30
Furosemide.....	31

G

<u>Gentian violet (GV paint)</u>	70
Glibenclamide.....	32
Glycerine paediatric suppositories.....	33

H

Hydrocortisone.....	34
Hyoscine Butylbromide.....	35

I

<u>Ichthammol ointment</u>	71
Ipecacuanha.....	36
Isoniazid (INH).....	37

L

Levonorgestrel + Ethinylestradiol.....	38
---	----

Lignocaine (Lidocaine)..... 39

M

Medroxyprogesterone 40

Merchurochrome 1% solution71

Methylated spirits..... 71

Methyldopa 41

Methylsalicylate ointment..... 71

Metronidazole..... 42

Multivitamins..... 43

N

Nalidixic acid 44

Norethisterone 45

Norgestrel + Ethinyloestradiol46

Nystatin 47

O

Oral Rehydration Salts (ORS)48

Oxymetazoline eye drops

0.025%..... 71

Oxymetazoline nose drops

0.05%..... 72

P

Paracetamol 49

Paraffin gauze dressing..... 72

Phenobarbitone..... 50

Phenoxymethylpenicillin
 [Penicillin VK] 51

Phenytoin 52

Phytomenadione - Vitamin K53

Povidone Iodine ointment and
scrub 72

Probenecid..... 54

Procaine benzyl penicillin 55

Proguanil 56

Promethazine 57

Pyrazinamide (PZA) 58

R

Reserpine..... 59

Rifampicin (Rif) 60

S

Salbutamol 61

Snake Venom Antiserum..... 62

Sodium chloride 0.9% (Normal
 Saline) 63

Sodium Hypochlorite solution72

Streptomycin 64

Sulfadoxine + Pyrimethamine65

T

Tetracycline eye ointment..... 73

Theophylline..... 66

Thioridazine 67

V

Vitamin A 68

W

Wax softening ear drops 73

Z

Zinc cream..... 73