

Pharmacological Classification of Drugs

With Doses and Preparations

KD Tripathi

JAYPEE

Pharmacological CLASSIFICATION OF DRUGS with Doses and Preparations

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FOURTH EDITION

KD Tripathi

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Preface

A systematized listing of drugs according to their primary actions, mechanisms, chemical nature, clinical uses and/ or other characterstics is the first step to learn about them. The mental exercise to prescribe a drug for a patient starts with identifying the class of drugs to be prescribed and then selecting the specific member most appropriate for that patient according to its subclass/group/individual characteristic. For example, the first thing one decides is whether an analgesic or an antihypertensive or an antibiotic is to be prescribed; then proceeds to consider which type of analgesic (opioid/nonopioid), or antihypertensive (β blocker/ACE inhibitor, etc.), or antibiotic (β-lactam/fluoroquinolone, etc.) is required and then which specific member is most suitable. On the other hand, every drug is known by its class and subclass, e.g. furosemide is a high-ceiling diuretic, glibenclamide is a sulfonylurea antidiabetic. Thus, the importance of grouping and compartmentalizing drugs cannot be over-emphasized. The phenomenal increase in the number of drugs in recent years has further underscored the need for drug classifications.

However, drug classifications have been criticised for being arbitrary and imperfect because of nonuniform criteria often adopted and frequent lack of watertight distinctions among drugs of different subgroups. Nevertheless, basing on pharmacological differences and applying practical criteria, meaningful drug classifications can be devised. Though, any drug has multiple actions/ properties, it can be designated by the most outstanding one. For example, labelling atenolol as a cardioselective β blocker summarises its actions, uses, etc. This booklet has adopted such a pragmatic approach and presented classifications of drugs which have been accepted by a wide section of professionals/students dealing with drugs. The present edition has been thoroghly revised and updated to include drugs marketed till Dec. 2009.

To be useful to medical/pharmacy students as well as to practitioners, the doses (including pediatric doses wherever relevant), frequency and route(s) of administration along with leading brand names of drugs and different types of dosage forms (oral, parenteral, topical, etc.) are listed distinctively after each class of drugs. Thus, essential prescribing information has been incorporated. Single drug formulations are mainly mentioned. Combined drug formulations find a place wherever important or relevant. The listing of brand names is restricted to only 1-4 per drug, and is not exhaustive. Synonyms and alternative names of drugs and classes of drugs are also mentioned. Two separate indices, one of nonproprietary (generic) names and the other of proprietary (brand) names of drugs have been provided for ready reference.

It is hoped that the booklet will coutinue to serve as an aid to remembering drug names, knowing about them, and prescribing them correctly. The credit for meticulous production of this booklet goes to the staff of M/s Jaypee Brothers.

New Delhi 6th April 2010 K.D. Tripathi

Explanatory Notes

- 1. The proprietary (brand) names appear in capital letters. The information on dosage form(s) is printed in maroon colour.
- 2. The doses and regimens are given in smaller type, while nonproprietary (generic) names appear in bigger type.
- If no brand name of a drug is listed, it is not currently marketed in India, or is marketed only in combinations. This can be found out from the composition of the combined formulations given.
- 4. If the route of administration is not specified, the drug is administered only orally, and the dose mentioned is the oral dose.
- Drug doses mentioned without specifying frequency of administration indicate the quantity for a single dose.

Abbreviations

amp	Ampoule
AP	Action potential
BD	Twice daily
	Benign hypertrophy of prostate
	Body surface area
	Capsule
	Child dose
cm	Centimeter
CR	Continuous release
Distab	Dispersible tablet
DS	Double strength
DTPA	Diethylene triamine pentaacetic acid
e.c.	Enteric coated
ER	Extended release
ERP	Effective refractory period
ext	Extract
g	Gram
	Gastrointestinal therapeutic system
	hour
i.d.	Intradermal
i.m.	Intramuscular
inj	Injection
IÚ	International unit
i.v.	intravenous
kg	Kilogram
Ĺ	Litre

LES Lower esophageal sphincter

x Abbreviations

liq Liquid

m Meter

max Maximum

mEq Milliequivalent

mg Milligram

min Minute

ml Millilitre

MR Modified release

MU Mega (million) unit

MW Molecular weight

µg Microgram

OD Once daily

oint Ointment

Pot. Potassium

QID Four times a day

rDNA Recombinant deoxyribonucleic acid

s.c. Subcutaneous

s.l. Sublingual

Sod Sodium

SR Sustained release

susp Suspension

syr Syrup

tab Tablet

TCID₅₀ Tissue culture infective dose 50%

TDS Three times a day

THFA Tetrahydrofolic acid

TTS Transdermal therapeutic system

U Unit

UV Ultra violet

yr Year (age)

ZE Zollinger-Ellison

Contents

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Antifungal, Antiviral, Antiprotozoal and Anthelmintic Drugs
Anticancer Drugs
Miscellaneous Drugs

Drugs Acting on Autonomic Nervous System

Cholinergic Drugs (Cholinomimetic, Parasympathomimetic)

CHOLINERGIC AGONISTS

- Choline esters: Acetylcholine, Methacholine, Carbachol, Bethanechol
- 2. Alkaloids: Muscarine, Pilocarpine, Arecoline

ANTICHOLINESTERASES

1. Reversible

- a. Carbamates: Physostigmine (Eserine), Neostigmine, Pyridostigmine, Edrophonium, Rivastigmine*, Donepezil*, Galantamine*
- b. Acridine: Tacrine*

2. Irreversible

- a. *Organophosphates*: Dyflos (DFP), Echothiophate, Malathione^e, Diazinon^e, Tabun^s, Sarin^s, Soman^s
- b. Carbamates: Carbaryl^e, Propoxur^e
- * Cerebroselective; used for Alzheimer's disease
- [£] Insecticides
- \$ Nerve gases for chemical warfare

- 1. Bethanechol: 10–40 mg oral, 2.5–5 mg s.c. UROTONIN 25 mg tab.
- Pilocarpine: 0.5–4% topically in eye.
 PILOCAR 1%, 2%, 4% eye drops; CARPINE 0.5% eye drops;
 PILODROPS 2% eye drops.

- 2 Drugs Acting on Autonomic Nervous System
- 3. Physostigmine: 0.5–1.0 mg oral/i.m., 0.25–0.5% topically in eye. BI-MIOTIC 0.25% eye drops with 2% pilocarpine nitrate.
- 4. Neostigmine: 15–30 mg oral, 0.5–2.5 mg s.c./i.m. PROSTIGMIN, MYOSTIGMIN, TILSTIGMIN 15 mg tab, 0.5 mg/ml in 1 ml and 5 ml inj.
- 5. Pyridostigmine: 60–180 mg oral. DISTINON, MYESTIN 60 mg tab.
- Rivastigmine: Initially 1.5 mg BD, increase every 2 weeks by 1.5 mg/day upto 6 mg/day.
 EXELON, RIVAMER 1.5, 3, 4.5, 6.0 mg caps.
- Donepezil: 5 mg at bed time once daily (max 10 mg/day). DONECEPT, DOPEZIL 5, 10 mg tabs.
- 8. Galantamine: 4 mg BD (max 12 mg BD). GALAMER 4, 8, 12 mg tabs.

Anticholinergic Drugs (Muscarinic receptor antagonists, Parasympatholytic, Atropinic)

1. Natural alkaloids

Atropine, Hyoscine (Scopolamine).

2. Semisynthetic derivatives

Homatropine, Atropine methonitrate, Hyoscine butyl bromide, Ipratropium bromide, Tiotropium bromide.

- 3. Synthetic compounds
 - (a) Mydriatics: Cyclopentolate, Tropicamide
 - (b) Antisecretory-antispasmodics:
 - (i) *Quaternary compounds:* Propantheline, Oxyphenonium, Clidinium, Pipenzolate methylbromide, Isopropamide, Glycopyrrolate.
 - (ii) *Tertiary amines*: Dicyclomine, Valethamate, Pirenzepine.
 - (c) Vasicoselective: Oxybutynin, Flavoxate, Tolterodine.
 - (d) *Antiparkinsonian*: Trihexyphenidyl (Benzhexol), Procyclidine, Biperiden.

- 1. Atropine: 0.6–2.0 mg i.m./i.v. (Ch. 10 μg/kg), 1–2% topically in eye.
 - ATROPINE SULPHATE 0.6 mg/ml inj, 1% eye drop/oint.
- 2. Hyoscine hydrobromide: 0.3–0.5 mg oral/i.m. (Ch. 10 µg/ kg).
- 3. Hyoscine butyl bromide: 20–40 mg oral/i.m./s.c./i.v. BUSCOPAN 10 mg tab, 20 mg/ml amp.
- 4. Atropine methonitrate: 2.5-10 mg oral/i.m. MYDRINDON 1 mg (adult), 0.1 mg (child) tab; in SPASMOLYSIN 0.32 mg tab.
- 5. Propantheline: 15-30 mg oral. PROBANTHINE 15 mg tab.
- 6. Oxyphenonium: 5-10 mg (Ch. 3-5 mg) oral. ANTRENYL 5, 10 mg tab.
- 7. Clidinium: 2.5–5 mg oral. In SPASRIL, EQUIREX 2.5 mg tab with chlordiazepoxide 5 mg. NORMAXIN 2.5 mg with dicyclomine 10 mg and chlordiazepoxide 5 mg tab.
- 8. Pipenzolate methyl bromide: 5–10 mg (Ch. 2–3 mg) oral. In PIPTAL 5 mg tab. 4 mg/ml drops with dimethyl polysiloxane, also PIPEN drops.
- 9. Isopropamide: 5 mg oral. In STELABID, GASTABID 5 mg tab. with trifluoperazine.
- 10. Dicyclomine: 20 mg oral. CYCLOMINOL 20 mg tab, 10 mg/ml liquid; DIOSPAS 10 mg, 20 mg tabs, CYCLOPAM INJ. 10 mg/ml in 2 ml, 10 ml, 30 ml amp/vial, also 20 mg tab with paracetamol 500 mg; in COLIMEX 20 mg with paracetamol 500 mg tab, 10 mg/ml drops with dimethicone.
- 11. Valethamate: 8 mg i.m., 10 mg oral, repeated as required. VALAMATE 8 mg in 1 ml inj, EPIDOSIN 10 mg tab, 8 mg inj.
- 12. Glycopyrrolate: 0.1–0.3 mg i.m./i.v., 1–2 mg oral. GLYCO-P 0.2 mg/ml amp., 1 mg in 5 ml vial, PYROLATE 0.2 mg/ml, 1 ml amp, 10 ml vial.
- 13. Ipratropium bromide: 40–80 µg by inhalation/nasal spray. IPRAVENT 20 µg/puff metered dose inhaler, 2 puffs 3–4 times daily; 250 µg/ml respirator soln., 0.4-2 ml nebulized in conjunction with a β_2 agonist 2–4 times daily.

4 Drugs Acting on Autonomic Nervous System

Also used to control rhinorrhoea in perennial rhinitis and common cold; IPRANASE-AQ 0.084% nasal spray (42 μg per actuation), 1–2 sprays in each nostril 3–4 times a day.

- 14. Tiotropium bromide: 18 μg by inhalation. TIOVA 18 μg rotacaps, 1 rotacap by inhalation OD.
- Oxybutynin: 5 mg BD/TDS oral; children above 5 yr 2.5 mg BD.
 OXYBUTIN, CYSTRAN, OXYSPAS 2.5 mg and 5 mg tabs.
- 16. Flavoxate: 200 mg TDS. URISPAS, FLAVATE 200 mg tab.
- 17. Tolterodine: 2 mg BD. TORQ, ROLITEN 1, 2 mg tabs.
- 18. Homatropine: 1–2% topically in eye. HOMATROPINE EYE, HOMIDE 1%, 2% eye drops.
- 19. Cyclopentotate: 0.5–1.0% topically in eye.

 CYCLOMID EYE, 0.5%, 1.0%, CYCLOGYL 1% eye drops.
- 20. Tropicamide: 0.5–1.0% topically in eye.

 OPTIMIDE, TROPICAMET, TROMIDE 1% eye drops; TROPACP, TROPICAMET PLUS 0.8% + phenylephrine 5% eye drops.
- 21. Trihexyphenidyl (benzhexol): 2–10 mg/day; PACITANE, PARBENZ 2 mg tab.
- 22. Procyclidine: 5-20 mg/day; KEMADRIN 2.5, 5 mg tab.
- 23. Biperiden: 2–10 mg/day oral, i.m. or i.v.: DYSKINON 2 mg tab., 5 mg/ml inj.

Drugs Acting on Autonomic Ganglia

GANGLIONIC STIMULANTS

Selective nicotinic agonists Nicotine (small dose) Lobeline Dimethylphenyl piperazinium iodide (DMPP)

Tetramethyl ammonium (TMA) Varenicline Nonselective/muscarinic agonists
Acetylcholine

Carbachol Pilocarpine

Anticholinesterases

MCN 343-A

Preparations

- 1. Nicotine transdermal: NICOTINELL-TTS 10, 20, 30 cm² patches releasing 7, 14, 21 mg nicotine per 24 hr respectively. In those smoking > 20 cigarettes every day—start with 30 cm² patch, shift to smaller patches every 3–5 days, treat for 3–4 weeks.
- Nicotine chewing gum: NULIFE 1, 2, 4 mg chewing gum; In those smoking > 20 cigarettes/day—start with 4 mg gum chewed slowly for 30 min when urge to smoke occurs—gradually reduce to 2 mg gum and then 1 mg gum. In less heavy smokers—start at lower doses.

GANGLION BLOCKING AGENTS

A. Competitive blockers

Quaternary ammonium compounds

Hexamethonium,

Pentolinium

Amines (secondary/tertiary)

Mecamylamine,

Pempidine

Monosulfonium compound

Trimethaphan camforsulfonate

B. Persistent depolarising blockers

Nicotine (large dose)

Anticholinesterases (large dose)

Adrenergic Drugs (Sympathomimetics)

1. Directly acting

Adrenaline, Noradrenaline, Isoprenaline, Dopamine, Phenylephrine, Methoxamine, Xylometazoline, Salbutamol

2. Indirectly acting

Tyramine

3. Mixed action

Ephedrine, Amphetamine, Mephentermine

6 Drugs Acting on Autonomic Nervous System

THERAPEUTIC CLASSIFICATION

1. Pressor agents

Noradrenaline Phenylephrine Ephedrine Methoxamine Dopamine Mephentermine

2. Cardiac stimulants

Adrenaline Dobutamine

Isoprenaline

3. Bronchodilators

Isoprenaline Bambuterol
Salbutamol (Albuterol) Salmeterol
Terbutaline Formoterol

4. Nasal decongestants

Phenylephrine Naphazoline
Xylometazoline Pseudoephedrine
Oxymetazoline Phenyl propanolamine

5. CNS stimulants

Amphetamine Methamphetamine

Dexamphetamine

6. Anorectics

Fenfluramine Sibutramine

Dexfenfluramine

7. Uterine relaxant and vasodilators

Ritodrine Salbutamol Isoxsuprine Terbutaline

- Adrenaline (Epinephrine): 0.2–0.5 mg s.c./i.m.; ADRENALINE 1 mg/ml inj.
- Noradrenaline (Norepinephrine, Levarterenol): 2–4
 μg/min i.v. infusion; ADRENOR, NORAD, NOR-DRIN 2 mg
 (base)/2 ml amp.

- 3. Isoprenaline (Isoproterenol): 20 mg s.l., 1-2 mg i.m., 5–10 μg/min i.v. infusion; NEOEPININE 20 mg sublingual tab, ISOPRIN 4 mg/2 ml inj.
- 4. Dopamine: 0.2–1.0 mg/min i.v. infusion; DOPAMINE, INTROPIN, DOPACARD 200 mg/5 ml amp.
- 5. Dobutamine: 2.5–10 μg/kg/min i.v. infusion; CARDIJECT 50 mg/4 ml and 250 mg/20 ml inj, DOBUTREX, DOBUSTAT 250 mg inj.
- 6. Ephedrine: 15–60 mg oral, 15–30 mg i.m./i.v.; 0.5–0.75% topically in nose. EPHEDRINE HCL 15, 30 mg tabs, SUFIDRIN 50 mg in 1 ml inj, ENDRINE 0.75% nasal drops.
- 7. Phenylephrine: 5-10 mg oral, 2-5 mg i.m., 0.1-0.5 mg slow i.v. inj, $30-60 \mu g/min$ i.v. infusion, 0.25% topically in nose, 5-10%topically in eye; in DECOLD PLUS 5 mg with paracetamol 400 mg + chlorpheniramine 2 mg + caffeine 15 mg tab; FRENIN 10 mg in 1 ml inj, in FENOX 0.25% with naphazoline 0.025% nasal drops, DROSYN 10% eye drops, in DROSYN-T, TROPAC-P 5% with tropicamide 0.8% eye drops.
- 8. Methoxamine: 10–20 mg i.m., 3–5 mg slow i.v. inj; VASOXINE 20 mg/ml inj.
- 9. Mephentermine: 10–20 mg oral/i.m., also by i.v. infusion. MEPHENTINE 10 mg tab, 15 mg in 1 ml amp, 3 mg/ml in 10 ml vial.
- 10. Amphetamine: 5–15 mg oral; BENZEDRINE 5 mg. tab.
- 11. Dexamphetamine: 5-10 mg (children 2.5-5 mg) oral; DEXEDRINE 5 mg. tab.
- 12. Methamphetamine: 5–10 mg oral: METHEDRINE 5 mg. tab.
- 13. Sibutramine: Start with 10 mg OD, increase to 15 mg OD if needed; OBESTAT, SIBUTREX, SIBUTRIM 5 mg, 10 mg caps.
- 14. Xylometazoline: 0.05%–0.1% topically in nose; OTRIVIN 0.05% (pediatric), 0.1% (adult) nasal drops.
- 15. Oxymetazoline: 0.025–0.05% topically in nose; NASIVION, SINAREST 0.025% (pediatric), 0.05% (adult) nasal drops.
- 16. Naphazoline: 0.1% topically in nose; PRIVINE 0.1% nasal drops.
- 17. Pseudoephedrine: 30-60 mg oral TDS; SUDAFED 60 mg tab, 30 mg/5 ml syrup; in SINAREST 60 mg with chlorpheniramine 2 mg + caffeine 30 mg + paracetamol

500 mg tab; in CHESTON 30 mg with chlorpheniramine 2 mg + bromhexine 4 mg per tab and per 5 ml syr; in ACTICOLD 60 mg with chlorpheniramine 4 mg + paracetamol 500 mg tab; in CODYLEX 60 mg with chlorpheniramine 4 mg + ibuprofen 400 mg tab.

- 18. Phenylpropanolamine: 25–50 mg TDS; In ACTIFED 25 mg with triprolidine 2.5 mg tab; in ESKOLD 50 mg with diphenylpyraline 5 mg spansule; in FLUCOLD 25 mg with chlorpheniramine 2 mg + paracetamol 500 mg tab.
- Ritodrine: 50–200 μg/min i.v. infusion, 10 mg i.m./oral 4–6 hourly; YUTOPAR, RITROD 10 mg/ml inj (5 ml amp), 10 mg tab. RITODINE 10 mg tab, 10 mg in 1 ml inj.
- 20. Isoxsuprine: 5-10 mg oral, i.m. 4-6 hourly, DUVADILAN 10 mg tab, 40 mg SR cap, 10 mg/2 ml inj.

Note: For doses and preparations of β_2 agonist bronchodilators (salbutamol, etc.) *See p.* 26.

α-Adrenergic Blocking Agents

Nonequilibrium type

(i) β -Haloalkylamines: Phenoxybenzamine

II. Equilibrium type (competitive)

A. Nonselective

- (i) Ergot alkaloids: Ergotamine, Ergotoxine
- (ii) *Hydrogenated ergot alkaloids*: Dihydroergotamine (DHE), Dihydroergotoxine
- (iii) Imidazolines: Tolazoline, Phentolamine
- (iv) Miscellaneous: Chlorpromazine, Ketanserin
- B. α_1 selective: Prazosin, Terazosin, Doxazosin, Alfuzosin, Tamsulosin
- C. α_2 selective: Yohimbine

- 1. Phenoxybenzamine: 20–60 mg/day oral, 1 mg/kg slow i.v. infusion over 1 hour; FENOXENE 10 mg cap, 50 mg/ml inj, BIOPHENOX 50 mg/ml inj.
- 2. Ergotamine: For migraine 1–3 mg oral/sublingual, repeat as required (max 6 mg in a day); rarely 0.25–0.5 mg i.m. or s.c.; ERGOTAMINE, GYNERGEN, INGAGEN 1 mg tab, 0.5 mg/ml and 1 mg/ml inj.
- Dihydroergotamine: For migraine 2-6 mg oral (max 10 mg/day), 0.5-1 mg i.m., s.c. repeat hourly (max 3 mg);
 DIHYDERGOT, DHE 1 mg tab, MIGRANIL 1 mg/ml inj.
- Dihydroergotoxine (codergocrine): For dementia 1–1.5 mg oral or sublingual, 0.15–0.6 mg i.m., HYDERGINE 1.5 mg tab, CERELOID 1 mg tab.
- 5. Phentolamine: 5 mg i.v. repeated as required; REGITINE, FENTANOR 10 mg/ml inj.
- 6. Prazosin: Start with 0.5–1 mg at bedtime; usual dose 1–4 mg BD or TDS; PRAZOPRES 0.5, 1.0 and 2.0 mg tabs. MINIPRESS XL: PRAZOSIN GITS 2.5 mg and 5 mg tablets; 1 tab OD.
- Terazosin: Usual maintenance dose 2–10 mg OD; HYTRIN, TERALFA, OLYSTER 1, 2, 5 mg tab.
- 8. Doxazosin: 1 mg OD initially, increase upto 8 mg BD; DOXACARD, DURACARD, DOXAPRESS 1, 2, 4 mg tabs.
- 9. Alfuzosin: 2.5 BD-QID or 10 mg OD as modified release tab. ALFUSIN, ALFOO 10 mg ER tab.
- Tamsulosin: URIMAX, DYNAPRES 0.2, 0.4 mg MR cap; CONTIFLO-OD 0.4 mg cap; 1 cap (max 2) in the morning with meals.
- 11. Yohimbine: 2 mg oral; YOHIMBINE 2 mg tab.

β-Adrenergic Blocking Agents

Nonselective (β_1 and β_2)

- a. Without intrinsic sympathomimetic activity Propranolol, Sotalol, Timolol
- b. With intrinsic sympathomimetic activity
 Pindolol
- c. With additional α blocking property Labetalol, Carvedilol

Cardioselective (β₁)

Metoprolol, Atenolol, Acebutolol, Bisoprolol, Esmolol, Betaxolol, Celiprolol, Nebivolol

GENERATIONWISE CLASSIFICATION

- 1. First Generation (older, nonselective) Propranolol, Timolol, Sotalol, Pindolol
- 2. Second Generation (β₂ selective)
 Metoprolol, Atenolol, Acebutolol, Bisoprolol, Esmolol
- 3. Third Generation (with additional α blocking and/ or vasodilator property)
 Labetalol, Carvedilol, Celiprolol, Nabivolol

- Propranolol: Oral—10 mg BD to 160 mg QID (average 40–160 mg/day). Start with a low dose and gradually increase according to need; i.v.—2 to 5 mg injected over 10 min with constant monitoring. It is not injected s.c. or i.m. because of irritant property.
 - INDERÂL, CIPLAR 10, 40, 80 mg tab, 1 mg/ml inj., BETABLOC 10, 40 mg tab.
- 2. Sotalol: 80 mg BD–160 mg TDS oral; SOTAGARD 40, 80 mg tabs.
- Pindolol: 5–15 mg BD; PINADOL 5 mg tab, VISKEN 10, 15 mg tab.
- Metoprolol: 25 mg BD-100 mg QID oral, 5-15 mg slow i.v. inj; BETALOC 25, 50, 100 mg tab, 5 mg/ml inj., LOPRESOR, METOLAR 50, 100 mg tab.

- 5. S(-) Metoprolol: 12.5 mg BD-50 mg QID; METPURE-XL 12.5, 25, 50 mg ER tabs.
- 6. Atenolol: 25 mg OD-50 mg BD; BETACARD, ATEN, TENORMIN 25, 50, 100 mg tabs.
- 7. S(-) Atenolol: 12.5-50 mg OD; ATPURE 12.5, 25, 50 mg tabs.
- 8. Acebutolol: 200 mg BD-400 mg TDS oral; 20-40 mg slow i.v. injection; SECTRAL 200, 400 mg tabs, 10 mg/2 ml amp.
- 9. Bisoprolol: 2.5–10 mg OD; CONCOR, CORBIS 5 mg tab.
- 10. Esmolol: 0.5 mg/kg i.v. injection followed by 0.05–0.2 mg/kg/ min i.v. infusion; MINIBLOCK 100 mg/10 ml, 250 mg/10 ml inj.
- 11. Celiprolol: 100 mg OD-300 mg BD; CELIPRES 100, 200 mg tab.
- 12. Nebivolol: 5 mg OD (start with 2.5 mg OD in elderly; NODON 5 mg tab, NEBICARD 2.5, 5 mg tabs.
- 13. Labetalol: Start with 50 mg BD, increase to 100–200 mg TDS oral. In hypertensive emergencies 20-40 mg slow i.v. injection every 10 min till desired response is obtained. NORMADATE 50, 100, 200 mg tab; LABESOL, LABETA 20 mg/ 4 ml inj.
- 14. Carvedilol: CHF: Start with 3.125 mg BD for 2 weeks, if well tolerated, gradually increase to max. of 25 mg BD.

Hypertension/angina: 6.25 mg BD initially, titrate to max. of 25 mg BD.

CARVIL, CARLOC, CARVAS 3.125, 6.25, 12.5, 25 mg tabs; ORICAR 12.5, 25 mg tabs.

Drugs Used for Glaucoma

- 1. β -adrenergic blockers: Timolol, Betaxolol, Levobunolol, Cartiolol, Metipranolol.
- 2. α -adrenergic agonists: Adrenaline, Dipivefrine, Apraclonidine, Brimonidine.
- 3. Prostaglandin analogues: Latanoprost, Isopropyl unoprostone, Travoprost, Bimatoprost.
- 4. *Miotics:* Pilocarpine, Physostigmine.
- 5. Carbonic anhydrase inhibitors: Acetazolamide, Dorzolamide.
- 6. Osmotic diuretics: Mannitol, Glycerol (Glycerine).

- Timolol: Start with 0.25% eye drops BD, change to 0.5% drops in case of inadequate response. 0.5% OD as gel forming solution. GLUCOMOL, OCUPRES, IOTIM, LOPRES 0.25% and 0.5% eye drops. TIMOLAST 0.5% gel forming eye drops (long acting). Timolol 0.5% + Latanoprost 0.005%: LAPROST PLUS, LATOCHEK-T eye drops.
- 2. Betaxolol: 0.5% topically in eye BD; OPTIPRES, IOBET 0.5% eye drops.
- 3. Levobunolol: 0.5% topically in eye OD; BETAGAN 0.5% ophthalmic solution.
- 4. Dipivefrine: 0.1% topically in eye BD; PROPINE 0.1% eye drops.
- 5. Apraclonidine: 0.5–1.0% topically in eye; ALFADROPS-DS 1% eye drops.
- 6. Brimonidine: 0.2% topically in eye TDS; ALPHAGAN, BRIMODIN, IOBRIM 0.2% eye drops.
- Latanoprost: 0.005% topically in eye OD in evening; LACOMA, XALATAN, IOPROST, 9 PM 50 μg/ml eye drops (store in cold place).
- 8. Travoprost: 0.004% topically in eye OD in evening; TRAVATAN 0.004% eye drops (store at 4-8° C).
- 9. Bimatoprost: 0.03% as eye drops OD in evening; LUMIGAN, CAREPROST 0.03% eye drops (store at 4-8° C).
- 10. Pilocarpine: 0.5%-4% topically in eye; CARPINE, PILOCAR 0.5%, 1%, 2%, 4% eye drops.
- 11. Acetazolamide: 250 mg OD-BD; DIAMOX, SYNOMAX 250 mg tab.
- 12. Dorzolamide: 2% topically in eye BD-TDS; DORTAS, DORZOX 2% eye drops.
- Mannitol hypertonic: 20% 100–350 ml infused i.v.;
 MANNITOL 20% i.v. infusion vac 100, 350 ml.
- 14. Glycerine: 50% 100–200 ml as retention enema.

2

Autacoids and Related Drugs

Histaminergic Agonists

1. Nonselective (H₁+H₂+H₃) agonists

Histamine

Betahistine: 4–8 mg 6 hourly; VERTIN 8 mg tab.

2. Selective H₁ agonists

2-Methylhistamine, 2-Pyridyl ethylamine, 2-Thiazolyl ethylamine.

3. Selective H₂ agonists

4-Methylhistamine, Dimaprit, Impromidine.

4. Selective H₃ agonists

(R) α -Methylhistamine, Imetit.

H₁-Antagonists

(Conventional Antihistaminics)

1. Highly sedative

Diphenhydramine, Dimenhydrinate, Promethazine, Hydroxyzine

2. Moderately sedative

Pheniramine, Cyproheptadine, Meclozine (Meclizine), Buclizine, Cinnarizine

3. Mildly sedative

Chlorpheniramine, Dexchlorpheniramine, Dimethindine, Triprolidine, Mebhydroline, Cyclizine, Clemastine

4. Second generation (Nonsedating)

Terfenadine, Fexofenadine, Astemizole, Loratadine, Desloratadine, Cetirizine, Levocetirizine, Azelastine, Mizolastine, Ebastine, Rupatadine.

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- 1. Diphenhydramine: 25–50 mg oral; BENADRYL 25 mg cap, 12.5 mg/5 ml syr.
- Dimenhydrinate: 25–50 mg oral, i.m.; DRAMAMINE 16 mg/
 ml syr, 50 mg tab, GRAVOL 50 mg tab.
- 3. Promethazine: 25–50 mg oral, i.m. (1 mg/kg); PHENERGAN 10, 25 mg tab., 5 mg/ml elixer, 25 mg/ml inj.
- 4. Hydroxyzine: 25–50 mg oral, i.m.; ATARAX 10, 25 mg tab., 10 mg/5 ml syr, 6 mg/ml drops, 25 mg/ml inj.
- Pheniramine: 20–50 mg oral, i.m.; AVIL 25 mg, 50 mg tab, 15 mg/5 ml syr, 22.5 mg/ml inj.
- 6. Cyproheptadine: 4 mg oral; PRACTIN, CIPLACTIN 4 mg tab., 2 mg/5 ml syrup.
- Meclozine (Meclizine): 25–50 mg oral; In DILIGAN 12.5 mg + niacin 50 mg tab., In PREGNIDOXIN 25 mg + Caffeine 20 mg tab.
- 8. Buclizine: 25–50 mg oral; LONGIFENE 25 mg tab, 6 mg/5 ml syrup.
- 9. Cinnarizine: 25–50 mg oral; STUGERON, VERTIGON 25 and 75 mg tab.
- Chlorpheniramine: 2–4 mg (0.1 mg/kg) oral, i.m.; PIRITON, CADISTIN 4 mg tab.
- 11. Dexchlorpheniramine: 2 mg oral; POLARAMINE 2 mg tab., 0.5 mg/5 ml syrup.
- Dimethindene: 1 mg oral; FORISTAL 1 mg tab., 2.5 mg SR tab.
- 13. Triprolidine: 2.5–5 mg oral; ACTIDIL 2.5 mg tab.
- 14. Mebhydroline: 100–300 mg oral; INCIDAL 50 mg (base) tab.
- 15. Cyclizine: 50 mg oral; MAREZINE 50 mg tab.
- 16. Clemastine: 1–2 mg oral; TAVEGYL 1 mg tab., 0.5 mg/5 ml syr.
- 17. Fexofenadine: 120–180 mg oral; ALLEGRA, ALTIVA, FEXO 120, 180 mg tab.
- 18. Astemizole: 10 mg oral; STEMIZOLE, HISTALONG, STEMIZ, 5 mg, 10 mg tab., 1 mg/ml susp.

- 19. Loratadine: 10 mg oral; LORFAST, LORIDIN, LORMEG, 10 mg tab, 1 mg/ml susp.
- 20. Desloratadine: 5 mg oral; DESLOR, LORDAY 5 mg tab.
- 21. Cetirizine: 10 mg oral; ALERID, CETZINE, ZIRTIN, SIZON 10 mg tab, 5 mg/5 ml syr.
- 22. Levocetirizine: 5 mg oral; LEVORID, LEVOSIZ, TECZINE 5 mg tab.
- 23. Azelastine: 4 mg oral, 0.28 mg intranasal; AZEP NASAL SPRAY 0.14 mg per puff nasal spray.
- 24. Mizolastine: 10 mg oral; ELINA 10 mg tab.
- 25. Ebastine: 10 mg oral; EBAST 10 mg tab.
- 26. Rupatadine: 10 mg oral; RUPAHIST 10 mg tab.

Note: For H₂-Antagonists (H₂-Antihistaminics) *See p.* 88, 89.

5-Hydroxytryptamine (5-HT) Antagonists

1. Nonselective 5-HT antagonists/partial agonistantagonists

Ergotamine, Lysergic acid diethyl amide (LSD), 2-Bromo-LSD, Methysergide, Cyproheptadine, Cinnarizine.

2. 5-HT₂ antagonists

Ketanserin, Ritanserin, Clozapine, Risperidone, Olanzapine.

3. 5-HT₃ antagonists

Ondansetron, Granisetron, Tropisetron.

Drugs for Migraine

A. During attack

- 1. *Simple analgesics:* Paracetamol, Aspirin (low dose), Metamizol, Codeine.
- 2. Nonsteroidal antiinflammatory drugs (NSAIDs): Ibuprofen, Naproxen, Diclofenac, Mephenamic acid.

- 3. *Antiemetics:* Metoclopramide, Domperidone, Prochlorperazine, Promethazine.
- 4. *Ergot alkaloids:* Ergotamine, Dihydroergotamine (DHE).
- Selective 5-HT _{IB/ID} receptor agonists: Sumatriptan, Rizatriptan, Zolmitriptan, Naratriptan, Frovatriptan.

B. For prophylaxis of attacks

- 1. Propranolol (also other β blockers)
- 2. Amitriptyline (also other tricyclic antidepressants)
- 3. Flunarizine (also verapamil)
- 4. Methysergide, Cyproheptadine

- Ergotamine: 1 mg oral/sublingual half hourly till relief obtained (max. 6 mg), 0.25–0.5 mg s.c./i.m.; ERGOTAMINE, INGAGEN, GYNERGEN 1 mg tab, 0.5 mg/ml inj.
 - MIGRANIL: Erogotamine 1 mg, caffeine 100 mg, belladonna dry ext 10 mg, paracetamol 250 mg tab.
 - MIGRIL: Ergotamine 2 mg, caffeine 100 mg, cyclizine 50 mg tab. VASOGRAIN: Ergotamine 1 mg, caffeine 100 mg, paracetamol 250 mg, prochlorperazine 2.5 mg tab.
 - ERGOPHEN: Ergotamine 0.3 mg, belladonna dry ext. 10 mg, phenobarbitone 20 mg tab.
- 2. Dihydroergotamine (DHE): 1–2 mg half hourly (max 10 mg), 0.5–1.0 mg i.m.; DHE 1 mg tab, MIGRANIL 1 mg/ml inj.
- 3. Sumatriptan: 6 mg s.c., 50–100 mg oral at the onset of migraine attack, may be repeated once within 24 hours if required. Those not responding to the first dose should not be given the second dose; SUMINAT, SUMITREX 25, 50, 100 mg tabs, MIGRATAN 50, 100 mg tabs, SUMITREX-INJ KIT 6 mg in 0.5 ml inj.; also SUMINAT 25 mg per actuation nasal spray.
- Rizatriptan: 10 mg at the onset of migraine attack, may be repeated after 2 hours if required. Those not responding to the first dose should not be given the second dose; RIZACT, RIZATAN 5 mg, 10 mg tabs.

5. Flunarizine: 10–20 mg OD, children 5 mg OD; NOMIGRAIN, FLUNARIN 5 mg, 10 mg caps/tab.

Note: For preparations of other drugs See Index.

Prostaglandins (PGs) and their Analogues

 PGE₂ (Dinoprostone): PROSTIN-E₂ for induction/ augmentation of labour, midterm abortion.

Vaginal gel (1 mg or 2 mg in 2.5 ml) 1 mg inserted into posterior fornix, followed by 1–2 mg after 6 hour if required.

Vaginal tab (3 mg) 3 mg inserted into posterior fornix, followed by another 3 mg if labour does not start within 6 hour.

Extraamniotic solution (10 mg/ml in 0.5 ml amp.) infrequently used. Intravenous solution (1 mg/ml in 0.75 ml amp., 10 mg/ml in 0.5 ml amp) rarely used.

Oral tablet PRIMIPROST 0.5 mg tab, one tab. hourly till induction, max 1.5 mg per hr; rarely used.

Cervical gel CERVIPRIME (0.5 mg in 2.5 ml prefilled syringe) 0.5 mg inserted into cervical canal for preinduction cervical softening and dilatation in patients with poor Bishop's score.

- 2. Gemeprost: CERVAGEM 1 mg vaginal pessary: for softening of cervix in first trimester–1 mg 3 hr before attempting dilatation; for 2nd trimester abortion/molar gestation—1 mg every 3 hours, max. 5 doses.
- 3. $PGF_{2\alpha}$ (Dinoprost): PROSTIN F₂ ALPHA intraamniotic injection, 5 mg/ml in 4 ml amp. for midterm abortion/ induction of labour (rarely used).
- 4. 15-methyl PGF_{2 α} (Carboprost): PROSTODIN 0.25 mg in 1 ml amp; 0.25 mg i.m. every 30–120 min for PPH, midterm abortion, missed abortion.
- Misoprostol (methyl-PGE₁ ester): 200 μg oral 6 hourly; CYTOLOG 200 μg tab, MISOPROST 100, 200 μg tab.
 T-PILL + MISO Mifepristone 200 mg tab (3 tabs) + misoprostol 200 μg (2 tabs); mifepristone 3 tab orally followed 2 days later by misoprostol 2 tab orally for termination of pregnancy of upto 49 days.
- PGE₁ (Alprostadil): 0.5 mg by slow i.v. infusion; PROSTIN–VR, BIOGLANDIN 0.5 mg in 1 ml inj.

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- 7. Latanoprost (PGF $_{2\alpha}$ analogue): 0.005% topically in eye OD in the evening; LACOMA, XALATAN, LATOPROST 50 μ g/ml eye drops.
- PGI₂ (Prostacyclin, Epoprostenol): 0.5 mg by i.v. infusion or injection in extracorporial circulation; FLOLAN 0.5 mg per vial for reconstitution.

Antipyretic-Analgesics and Nonsteroidal Antiinflammatory Drugs (NSAIDs)

A. Nonselective COX inhibitors (conventional NSAIDs)

- 1. Salicylates: Aspirin.
- 2. *Propionic acid derivatives:* Ibuprofen, Naproxen, Ketoprofen, Flurbiprofen.
- 3. Anthranilic acid derivative: Mephenamic acid.
- 4. Aryl-acetic acid derivatives: Diclofenac, Aceclofenac.
- 5. Oxicam derivatives: Piroxicam, Tenoxicam.
- 6. Pyrrolo-pyrrole derivative: Ketorolac.
- 7. Indole derivative: Indomethacin.
- Pyrazolone derivatives: Phenylbutazone, Oxyphenbutazone.

B. Preferential COX-2 inhibitors

Nimesulide, Meloxicam, Nabumetone, Etodolac.

C. Selective COX-2 inhibitors

Celecoxib, Etoricoxib, Parecoxib.

D. Analgesic-antipyretics with poor antiinflammatory action

- 1. *Paraaminophenol derivative:* Paracetamol (Acetaminophen).
- Pyrazolone derivatives: Metamizol (Dipyrone), Propiphenazone.
- 3. Benzoxazocine derivative: Nefopam.

- Aspirin: Antiinflammatory dose 3–5 g/day (75–100 mg/kg/day); analgesic-antipyretic dose 0.3–0.6 g 6–8 hourly; antiplatelet dose 75–150 mg/day. ASPIRIN 350 mg tab, COLSPRIN 100, 325, 650 mg tabs, ECOSPRIN 75, 150, 325 mg tabs, DISPRIN 350 mg tab, LOPRIN 75, 162.5 mg tabs.
 - BIOSPIRIN: Lysine acetylsalicylate 900 mg + glycine 100 mg/vial for dissolving in 5 ml water and i.v. injection.
- Indomethacin: 25–50 mg BD–QID. Those not tolerating the drug orally may be given nightly suppository. IDICIN, INDOCAP 25 mg cap, 75 mg SR cap, ARTICID 25, 50 mg cap, INDOFLAM 25, 75 mg caps, 1% eye drop. RECTICIN 50 mg suppository.
- 3. Ibuprofen: 400–800 mg TDS; BRUFEN, EMFLAM, IBUSYNTH 200, 400, 600 mg tab, IBUGESIC also 100 mg/5 ml susp.
- 4. Naproxen: 250 mg BD-TDS; NAPROSYN, NAXID, ARTAGEN, XENOBID 250 mg tab., NAPROSYN also 500 mg tab.
- Ketoprofen: 50–100 mg BD–TDS; KETOFEN 50, 100 mg tab; OSTOFEN 50 mg cap. RHOFENID 100 mg tab, 200 mg SR tab; 100 mg/2 ml amp.
- 6. Flurbiprofen: 50 mg BD-QID; ARFLUR 50, 100 mg tab, 200 mg SR tab, FLUROFEN 100 mg tab., OCUFLUR 0.03% eye drops.
- Mephenamic acid: 250–500 mg TDS; MEDOL 250, 500 mg cap; MEFTAL 250, 500 mg tab, 100 mg/5 ml susp. PONSTAN 125, 250, 500 mg tab, 50 mg/ml syrp.
- Diclofenac: 50 mg TDS, then BD oral, 75 mg deep i.m.; VOVERAN, DICLONAC, MOVONAC 50 mg enteric coated tab, 100 mg S.R. tab, 25 mg/ml in 3 ml amp. for i.m. inj. DICLOMAX 25, 50 mg tab, 75 mg/3 ml inj. Diclofenac potassium: VOLTAFLAM 25, 50 mg tab, ULTRA-K 50
 - Diclofenac potassium: VOLTAFLAM 25, 50 mg tab, ULTRA-K 50 mg tab; VOVERAN 1% topical gel.
- Aceclofenac: 100 mg BD; ACECLO, DOLOKIND 100 mg tab, 200 mg SR tab.
- 10. Piroxicam: 20 mg BD for two days followed by 20 mg OD; DOLONEX, PIROX 10, 20 mg cap, 20 mg dispersible tab, 20 mg/ml inj in 1 and 2 ml amps; PIRICAM 10, 20 mg cap.
- 11. Tenoxicam: 20 mg OD; TOBITIL 20 mg tab.

- 12. Ketorolac: 10–20 mg oral 6 hourly, 15–30 mg i.m./i.v. 6 hourly (max 90 mg/day); KETOROL, ZOROVON, KETANOV, TOROLAC 10 mg tab, 30 mg in 1 ml amp., KETLUR, ACULAR 0.5% eye drops.
- 13. Nimesulide: 100 mg BD; NIMULID, NIMEGESIC, NIMODOL 100 mg tab, 50 mg/5 ml susp.
- 14. Meloxicam: 7.5–15 mg OD; MELFLAM, MEL-OD, MUVIK, M-CAM 7.5 mg, 15 mg tabs.
- 15. Nabumetone: 500 mg OD; NABUFLAM 500 mg tab.
- 16. Etodolac: 200-400 mg BD-TDS; ETOVA 200, 300, 400 mg tabs.
- 17. Celecoxib: 100–200 mg BD; CELACT, CELCOX, COLCIBRA, COBIX 100, 200 mg tabs.
- 18. Etoricoxib: 60–120 mg OD; ETODY, ETOXIB, ETOSHINE, NUCOXIA 60, 90, 120 mg tabs.
- Parecoxib: 40 mg oral/i.m./i.v. repeated after 6–12 hours (max. 80 mg/day); PAROXIB 40 mg tab, REVALDO, VALTO-P 40 mg/ vial inj.
- 20. Paracetamol: 0.5–1 g TDS; infants 50 mg; children 15 mg/kg (1–3 years 80–160 mg, 4–8 years 240–320 mg, 9–12 years 300–600 mg); CROCIN 0.5 g tab, 125 mg/5 ml and 250 mg/5 ml syr, 100 mg/ml pediatric drops, CROCIN PAIN RELIEF 650 mg with caffeine 50 mg tab; METACIN, PARACIN 500 mg tab, 125 mg/5 ml syrup, 150 mg/ml ped. drops, ULTRAGIN, PYRIGESIC, CALPOL 500 mg tab, 125 mg/5 ml syrup, NEOMOL, FEVASTIN, FEBRINIL 300 mg/2 ml inj.
- 21. Metamizol: 0.5–1.5 g oral/i.m./i.v.; ANALGIN 0.5 g tab; NOVALGIN, BARALGAN 0.5 g tab, 0.5 g/ml in 2 ml and 5 ml amps; ULTRAGIN 0.5 g/ml inj in 2 ml amp and 30 ml vial.
- 22. Propiphenazone: 300–600 mg TDS; marketed only in combination in several 'over the counter' preparations—in SARIDON, ANAFEBRIN: propiphenazone 150 mg + paracetamol 250 mg tab, DART: propiphenazone 150 mg + paracetamol 300 mg + caffeine 50 mg tab.
- 23. Nefopam: 30–60 mg TDS oral, 20 mg i.m. 6 hourly; NEFOMAX 30 mg tab, 20 mg in 1 ml amp.

Topical NSAIDs

 Diclofenac 1% gel: VOVERAN, EMULGEL, RELAXYL GEL, DICLONAC GEL

- 2. Ibuprofen 10% gel: RIBUFEN GEL
- 3. Naproxen 10% gel: NAPROSYN GEL
- 4. Ketoprofen 2.5% gel: RHOFENID GEL
- 5. Flurbiprofen 5% gel: FROBEN GEL
- 6. Nimesulide 1% gel: NIMULID TRANS GEL, ZOLANDIN GEL, NIMEGESIC-T-GEL
- 7. Piroxicam 0.5% gel: DOLONEX GEL, MOVON GEL, PIROX GEL, MINICAM GEL

Antirheumatoid Arthritis Drugs

A. Disease Modifying Antirheumatic Drugs (DMARDs)

- *Immunosuppressants:* Methotrexate, Azathioprine, Cyclosporine
- 2. Sulfasalazine
- 3. Chloroquine or Hydroxychloroquine
- 4. Leflunomide
- 5. Gold sod, thiomalate, Auranofin
- 6. d-Penicillamine

B. Biologic Response Modifiers (BRMs)

- 1. $TNF\alpha$ inhibitors: Etanercept, Infliximab, Adalimumab
- 2. IL-1 antagonist: Anakinra

c. Adjuvant Drugs

Corticosteroids: Prednisolone and others.

- 1. Auranofin: 6 mg/day in 1–2 doses, RIDURA, GOLDAR 3 mg tab.
- 2. Chloroquine: 150 mg (base) per day; LARIAGO, RESOCHIN, NIVAQUIN-P 250 mg as phosphate (150 mg base) tab.
- 3. Hydroxychloroquine: initially 200 mg BD followed by 200 mg OD for maintenance; ZHQUINE, ZYQ 200 mg tab.
- 4. Sulfasalazine: 1–3 g/day in 2–3 divided doses; SALAZOPYRIN, SAZO-EN 0.5 g tab.

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- 5. Leflunomide: 100 mg/day for 3 days loading dose followed by 20 mg OD; LEFRA 10 mg, 20 mg tabs.
- 6. Methotrexate: 7.5–15 mg weekly oral; NEOTREXATE, BIOTREXATE 2.5 mg tab.
- 7. Azathioprine: 50–150 mg/day; IMURAN 50 mg tab.
- 8. d-Penicillamine: 125-250 mg OD (max 250 mg BD); ARTIN 150, 200 mg caps, CILAMIN 250 mg cap.
- 9. Etanercept: 25-50 mg s.c. twice weekly; ENBREL, ENBROL 25 mg/0.5 ml and 50 mg/1 ml inj.

Note: For preparations of corticosteroids - See Index.

Antigout Drugs

For acute gout NSAIDs Colchicine Corticosteroids

For chronic gout/hyperuricaemia

Uricosurics Synthesis inhibitor

Probenecid Allopurinol

Sulfinpyrazone

- Colchicine: For control of acute attack 0.5 mg 1–3 hourly to a total of 3 doses; maintenance dose 0.5–1 mg/day; for prophylaxis 0.5–1.5 mg/day; ZYCOLCHIN, GOUTNIL 0.5 mg tab.
- 2. Probenecid: 0.25–1.0 g BD; BENEMID, BENCID 0.5 g tab.
- Sulfinpyrazone: 100-200 mg BD (max. 800 mg/day);
 ANTURANE, ARTIRAN 200 mg cap.
- Allopurinol: Start with 100 mg OD, gradually increase to maintenance dose of 300 mg/day; maximum 600 mg/day. ZYLORIC, 100, 300 mg tabs., ZYLOPRIM, CIPLORIC 100 mg cap.

Drugs for Respiratory Disorders

Drugs for Cough

1. Pharyngeal Demulcents

Lozenges, cough drops, linctuses containing Syrup, Glycerine, Liquorice.

2. Expectorants (Mucokinetics)

- (a) Bronchial secretion enhancers Sodium or Potassium citrate, Potassium iodide, Guaiphenesin (Glyceryl guaiacolate), balsum of Tolu, Vasaka, Ammonium chloride.
- (b) *Mucolytics* Bromhexine, Ambroxol, Carbocisteine, Acetylcysteine.

3. Antitussives (Cough centre suppressants)

- (a) Opioids Codeine, Pholcodeine, Ethylmorphine.
- (b) *Nonopioids* Noscapine, Dextromethorphan, Chlophedianol.
- (c) *Antihistamines* Chlorpheniramine, Diphenhydramine, Promethazine.

4. Adjuvant Antitussives

Bronchodilators Salbutamol, Terbutalin.

- 1. Sod./Pot. citrate/acetate: 0.3–1.0 g TDS.
- 2. Pot. iodide: 0.2–0.3 g TDS.
- 3. Guaiphenesin: 100–200 mg TDS.
- 4. Tolu balsum: 0.3-0.6 g TDS.
- 5. Vasaka syrup: 2-4 ml TDS.
- 6. Ammonium chloride: 50-200 mg TDS.

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- 7. Bromhexine: 8 mg TDS, child 1–5 yr 4 mg BD, 5–10 yr 4 mg TDS; BROMHEXINE 8 mg tab, 4 mg/5 ml elixer.
- Ambroxol: 15–30 mg TDS; AMBRIL, AMBROLITE, AMBRODIL, MUCOLITE 30 mg tab, 30 mg/5 ml liq, 7.5 mg/ml drops.
- 9. Carbocisteine: 250–750 mg TDS; MUCODYNE 375 mg cap, 250 mg/5 ml syr.
- Acetylcysteine: 200 mg/ml solution by nebulization or instillation through tracheostomy tube; MUCOMIX 200 mg/ml inj in 1, 2, 5 ml amps.
- 11. Codeine: 15–30 mg TDS; children 2–6 years 7.5 mg, 6–12 years 15 mg; CODINE 15 mg tab, 15 mg/5 ml linctus.
- 12. Ethylmorphine: 10-30 mg TDS; DIONINDON 16 mg tab.
- 13. Pholcodeine: 10-15 mg BD-TDS.
- 14. Noscapine: 15–30 mg, children 2–6 years 7.5 mg, 6–12 years 15 mg; COSCOPIN 7 mg/5 ml syrup, COSCOTABS 25 mg tab.
- 15. Dextromethorphan: 10–20 mg TDS, child 2–6 yr 2.5–5 mg, 6–10 yrs 5–10 mg.
- Chlophedianol: 20–40 mg BD-TDS; DETIGON, TUSSIGON 20 mg/5 ml linctus with Ammon. chloride 50 mg and menthol 0.25 mg.

Some combined formulations

ASTHALIN EXPECTORANT: Salbutamol 2 mg, guaiphenesin 100 mg per 10 ml syr; dose 10–20 ml.

ASCORIL-C: Codeine 10 mg, chlorpheniramine 4 mg per 5 ml syr.

AXALIN: Ambroxol 15 mg, guaiphenesin 50 mg, salbutamol 1 mg, menthol 1 mg per 5 ml syr.

BRONCHOSOLVIN: Guaiphenesin 100 mg, terbutalin 2.5 mg, bromhexine 8 mg per 10 ml susp.

CADICOFF, GRILINCTUS: Dextromethorphan 5 mg, chlorpheniramine 2.5 mg, guaiphenesin 50 mg, amm. chloride 60 mg per 5 ml syr.

BENADRYL COUGH FORMULA: Diphenhydramine 14 mg, amm. chlor. 138 mg, sod. citrate 57 mg, menthol 1.1 mg per 5 ml syrup; dose 5–10 ml, children 2.5–5 ml.

BRO-ZEDEX: Bromhexine 8 mg, guaiphenesin 100 mg, terbutaline 2.5 mg, menthol 5 mg per 10 ml syrup; dose 10 ml.

CADISTIN EXPECTORANT: Chlorpheniramine 2 mg, glyceryl guaiacolate 80 mg, amm. chlor. 100 mg, sod. citrate 44 mg, menthol 0.8 mg, terpin hydrate 4 mg, tolu balsum 6 mg, vasaka syrup 0.13 ml per 5 ml syrup; dose 10 ml.

CLISTIN: Dextromethorphan 10 mg, Carbinoxamine 4 mg, amm. chlor. 240 mg, sod. citrate 240 mg per 10 ml syrup.

COREX: Chlorpheniramine 4 mg, codeine phos. 10 mg, menthol 0.1 mg per 5 ml syrup; dose 5 ml, children 1.25–2.5 ml.

COSCOPIN LINCTUS: Noscapine 7 mg, chlorpheniramine 2 mg, citric acid 29 mg, sod. citrate 3 mg, amm. chlor. 28 mg per 5 ml syrup; dose 10–20 ml.

COSOME: Bromhexine 8 mg, phenylephrine 10 mg, chlorpheniramine 4 mg per 10 ml syr; dose 10 ml.

SOLVIN EXPECTORANT: Bromhexine 4 mg, pseudoephedrine 30 mg tablet and in 10 ml liquid; dose 1 tablet or 5 ml liquid.

TOSSEX: Codeine phos 10 mg, chlorpheniramine 4 mg, menthol 1.5 mg, sod. citrate 75 mg per 5 ml liquid; dose 5 ml.

VENTORLIN EXPECTORANT: Salbutamol 2 mg, guaiphenesin 100 mg per 10 ml syrup; dose 10 ml, children 2.5–7.5 ml.

ZEET EXPECTORANT: Diphenhydramine 8 mg, amm. chlor. 100 mg, guaiphenesin 50 mg, bromhexine 4 mg, menthol 1 mg per 5 ml syr.

ZEET LINCTUS: Dextromethorphan 10 mg, guaiphenesin 50 mg, phenylpropanolamine 25 mg per 5 ml syr; dose 5 ml.

Drugs for Bronchial Asthma

A. Bronchodilators

- 1. β_2 *Sympathomimetics*: Salbutamol, Terbutaline, Bambuterol, Salmeterol, Formoterol, Ephedrine.
- 2. *Methylxanthines*: Theophylline (anhydrous), Aminophylline, Choline theophyllinate, Hydroxyethyl theophylline, Theophylline ethanolate of piperazine, Doxophylline.
- 3. *Anticholinergics*: Ipratropium bromide, Tiotropium bromide.

B. Leukotriene antagonists

Montelukast, Zafirlukast.

C. Mast cell stabilizers

Sodium cromoglycate, Ketotifen.

D. Corticosteroids

- 1. Systemic: Hydrocortisone, Prednisolone and others.
- 2. *Inhalational:* Beclomethasone dipropionate, Budesonide, Fluticasone propionate, Flunisolide, Ciclesonide.

E. Anti-IgE antibody

Omalizumab.

- Salbutamol (Albuterol): 2–4 mg oral, 0.25–0.5 mg i.m./s.c., 100–200 μg by inhalation; ASTHALIN 2, 4 mg tab., 8 mg SR tab., 2 mg/5 ml syrup, 100 μg metered dose inhaler; 5 mg/ml respirator soln., 200 μg rota caps; CROYSAL 0.5 mg/ml inj, SALOL 2.5 mg/3 ml inj; VENTORLIN 2 mg/5 ml syr, 4 mg, 8 mg CR caps., DERIHALER 100 μg metered dose inhaler.
- Terbutaline: 5 mg oral, 0.25 mg s.c., 250 µg by inhalation; TERBUTALINE, BRICAREX 2.5, 5 mg tab., 3 mg/5 ml syrup, 0.5 mg/ml inj; MISTHALER 250 µg/metered dose, 10 mg/ml nebulizing soln.; BRICANYL 0.5 mg/ml inj, 2.5 mg, 5 mg tabs, 1.5 mg/5 ml syr.

- 3. Bambuterol: 10–20 mg OD in the evening; BAMBUDIL 10 mg, 20 mg tabs, 5 mg/5 ml oral soln; BETADAY 10, 20 mg tabs.
- Salmeterol: 50–100 μg by inhalation;
 SALMETER, SEROBID 25 μg per metered dose inhaler; 2 puffs BD; severe cases 4 puffs BD; also SEROBID ROTACAPS 50 μg; 1–2 caps BD by inhalation.
 SEROFLO—100/250/500 ROTACAPS: Salmeterol 50 μg +

fluticasone 100 µg/250 µg/500 µg per rotacap SEROFLO—125/250, COMBITIDE—125/250, INHALERS: Salmeterol 25 µg + fluticasone 125 µg or 250 µg per puff.

- Formoterol: 12–24 μg by inhalation twice daily; FORATEC 12 μg rotacaps.
- Theophylline (Anhydrous): 100–300 mg TDS (15 mg/kg/day), THEOLONG 100, 200 mg SR cap., DURALYN-CR 400 mg continuous release cap, UNICONTIN 400 mg, 600 mg CR tabs.
- 7. Aminophylline (Theophylline-ethylenediamine; 85% theophylline) water soluble, can be injected i.v. but not i.m. or s.c., 250–500 mg oral or slow i.v. injection; children 7.5 mg/kg i.v.; AMINOPHYLLINE 100 mg tab, 250 mg/10 ml inj.
- 8. Hydroxyethyl theophylline (Etophylline, 80% theophylline) water soluble; can be injected i.v. and i.m. (but not s.c.), 250 mg oral/i.m./i.v.; DERIPHYLLIN 100 mg tab., 300 mg SR tab., 220 mg/2 ml inj.
- 9. Choline theophyllinate (Oxtriphylline; 64% theophylline) 250–500 mg oral, CHOLIPHYLLINE 125 mg cap., 125 mg/5 ml elixir.
- 10. Theophylline ethanolate of piperazine: 250–500 mg oral or i.v.; CADIPHYLLATE, 80 mg/5 ml elixir; ETOPHYLATE 125 mg/5 ml syrup.
- 11. Doxophylline: 400 mg OD-BD, Children 12 mg/kg/day; DOXORIL 400 mg tab, 100 mg/5 ml syr.
- 12. Ipratropium bromide: 40– $80~\mu g$ by inhalation; IPRAVENT $20~\mu g/puff$ metered dose inhaler, 2 puffs 3–4 times daily; $250~\mu g/ml$ respirator soln., 0.4–2~ml nebulized in conjunction with a β_2 agonist 2–4 times daily.
- 13. Tiotropium bromide: 18 μ g by inhalation; TIOVA 18 μ g rotacaps; 1 rotacap by inhalation OD.

- Montelukast: 10 mg OD; children 2–5 yr 4 mg OD, 6–14 yr 5 mg OD; EMLUKAST, MONTAIR, VENTAIR 4 mg, 5 mg, 10 mg tabs.
- 15. Zafirlukast: 20 mg BD; children 5–11 yr 10 mg BD; ZUVAIR 10 mg, 20 mg tabs.
- Sodium cromoglycate: 2–10 mg by inhalation 3–4 times a day;
 FINTAL inhaler: 1 mg metered dose aerosol; 2 puffs 4 times daily.

FINTAL inhaler: 1 mg metered dose aerosol; 2 puffs 4 times daily. CROMAL-5 INHALER: 5 mg metered dose aerosol, 2 puffs 4 times daily.

- 17. Ketotifen: 1–2 mg BD; children 0.5 mg BD; ASTHAFEN 1 mg tab, 1 mg/5 ml syrup; KETOVENT 1 mg tab.
- 18. Beclomethasone dipropionate: Initially 100–200 μg BD by inhalation, increase as needed upto 400 μg QID;

BECLATE INHALER 50 $\mu g,\,100~\mu g,\,200~\mu g$ per metered dose, 200 doses inhaler, BECORIDE 50, 100, 250 μg per puff inhaler.

BECLATE ROTACAPS (with rotabaler) 100, 200, 400 μg powder per cap.

AEROCORT INHALER 50 $\mu g/metered$ aerosol dose with salbutamol 100 $\mu g.$

AEROCORT ROTACAPS 100 μg with salbutamol 200 μg rotacaps (with rotahaler).

19. Budesonide: 200–400 μg BD–QID by inhalation in asthma; 200–400 μg /day by intranasal spray for allergic rhinitis.

PULMICORT 100, 200, 400 μ g/metered dose inhaler, BUDECORT 100 μ g/metered dose inhaler.

FORACORT: Formoterol 6 μg + Budesonide 100 $\mu g/200~\mu g$ rotacaps.

RHINOCORT 50 μ g per metered dose nasal spray; BUDENASE AQ 100 μ g/metered dose aqueous nasal spray; for prophylaxis and treatment of seasonal and perennial allergic or vasomotor rhinitis, nasal polyposis; initially 2 puffs in each nostril every morning, maintenance 1 puff in each nostril in the morning.

 Fluticasone propionate: 100–250 μg BD (max 1000 μg/day) by inhalation; FLOHALE INHALER 25 μg, 50 μg, 125 μg per actuation.

FLOHALE ROTACAPS 50 µg, 100 µg, 250 µg rotacaps. FLOMIST 50 µg per actuation nasal spray.

- 21. Flunisolide: 25 μg by local spray in each nostril BD-TDS; SYNTARIS 25 μg per actuation nasal spray (for allergic rhinitis).
- 22. Ciclesonide: 80-160 μg by inhalation OD in the evening; CICLEZ 80 μg and 160 μg per metered dose inhaler.

Note: For preparations of systemic corticosteroids *–see* Index.

Some combined formulations

BRONKOPLUS: Salbutamol 2 mg, anhydrous theophylline 100 mg tab., also per 5 ml syrup.

BRONKOTUS: Bromhexine 8 mg, salbutamol 2 mg tab., also syrup—bromhexine 4 mg, salbutamol 2 mg per 5 ml.

DUOLIN INHALER Salbutamol 100 μg + ipratropium 20 μg per metered dose inhaler.

DUOLIN ROTACAP salbutamol 200 μg + ipratropium 40 μg per rotacap. DUOLIN RESPULES salbutamol 2.5 mg + ipratropium 500 μg in 2.5 ml respirator solution.

TERPHYLIN: Terbutaline 2.5 mg, etophylline 100 mg tab.

THEO ASTHALIN: Salbutamol 2 mg, theophylline anhydrous 100 mg tab.

THEO ASTHALIN-SR: Salbutamol 4 mg, theophylline 300 mg SR tab, also syrup—Salbutamol 2 mg, theophylline 100 mg per 10 ml.

THEO BRIC: Terbutaline 2.5 mg, theophylline 100 mg tab.

THEOBRIC SR: Terbutaline 5 mg, theophylline 300 mg SR tab.

Anterior Pituitary Hormones and Related Drugs

A. Anterior pituitary hormones

Growth hormone (GH), Prolactin (Prl.) Thyroid stimulating hormone (TSH, Thyrotropin) Adrenocorticotropic hormone (ACTH, Corticotropin) Gonadotropins (Gns): Follicle stimulating hormone (FSH), Luteinizing hormone (LH)

B. Drugs altering anterior pituitary hormone secretion

- Drugs inhibiting GH release: Somatostatin, Octreotide
- 2. *Drugs inhibiting Prl release:* Bromocriptine, Cabergoline, Apomorphine
- 3. *Drugs enhancing Prl release:* Chlorpromazine (and other neuroleptics), Metoclopramide, Reserpine
- 4. Superactive/long acting GnRH agonists: Nafarelin, Triptorelin, Buserelin, Goserelin, Leuprolide

- 1. Growth hormone (Somatropin: recombinant human GH): 0.03–0.07 mg/kg (0.06-0.16 IU/kg) i.m./s.c. 3 times a week; GENOTROPIN, NORDITROPIN 4 IU, 12 IU, 16 IU, 36 IU, SAIZEN 10 IU vials for injection (12 IU = 5 mg).
- 2. Corticotropin: ACTHAR inj. 5 ml vial (40 IU/ml on reconstitution) ACTH INJ 25 IU/ml, 50 IU/ml inj.
- Menotropins (FSH + LH) obtained from urine of menopausal women:

- PREGNORM, PERGONAL, GYNOGEN 75/150; 75 IU FSH + 75 IU LH activity per amp, also 150 IU FSH + 150 IU LH per amp.
- 4. Urofollitropin or Menotropin (pure FSH): METRODIN, ENDOGEN, FOLICULIN, PUREGON 75 IU and 150 IU per amp.
- 5. Human chorionic gonadotropin (HCG) derived from urine of pregnant women.
 - CORION, PROFASI, PUBERGEN 1000 IU, 2000 IU, 5000 IU, 10,000 IU, all as dry powder with separate solvent for injection.
- 6. Somatostatin: For upper g.i.bleeding 250 µg slow i.v. injection over 3 min followed by 3 mg i.v. infusion over 12 hours. STILMEN, SOMATOSAN 250 µg and 3 mg amps.
- Octreotide: 100 μg i.v. followed by 25 μg/hour;
 SANDOSTATIN, OCTRIDE 50 μg, 100 μg in 1 ml amp.
- 8. Bromocriptine: Start with 1.25 mg BD, titrate upward upto 10 mg BD; PROCTINAL, PARLODEL, SICRIPTIN, BROMOGEN 1.25 mg, 2.5 mg tabs.
- Cabergoline: Start with 0.25 mg twice weekly, increase upto 1 mg twice weekly as needed; CABERLIN 0.5 mg tab, CAMFORTE 0.5, 1 mg tabs.
- Nafarelin: For endometriosis 200 μg intranasal spray BD; For precocious puberty 800 μg intranasal spray BD; NASAREL 2 mg/ ml solution for nasal spray, 200 μg per actuation.
- 11. **Triptorelin**: For endometriosis and carcinoma prostate: 2.5-3.75 mg of depot injection i.m. every 4 weeks;
 - For female infertility: 0.1 mg s.c. daily for 10-12 days starting on 2nd day of menstruation;
 - For precocious puberty: 50 $\mu g/kg$ i.m. of depot injection every 4 weeks.
 - DECAPEPTYL DAILY 0.1~mg inj, DECAPEPTYL DEPOT 3.75~mg inj, TRYPTOLOG 2.5~mg/5~ml inj.
- Leuprorelin: For palliative treatment of advanced carcinoma prostate—1 mg s.c. OD or 3.75 mg i.m./s.c. once a month of depot preparation; LUPRIDE 1 mg inj, 3.75 mg depot inj, PROGTASE 1 mg/ml inj.

Thyroid Hormone

Thyroxine (T_4) Triiodothyronine $(T_{3}$, Liothyronine)

Preparations

l-Thyroxine sod: Adult hypothyroidism—start with 50 μg/day, increase every 2–3 weeks by 25–50 μg to the optimum dose of 100–200 μg/day adjusted by the clinical response and serum TSH level. Cretinism—6–8 μg/kg/day; ELTROXIN, ROXIN 100 μg tab, THYRONORM, THYROX 25 μg, 50 μg, 100 μg tabs.

Thyroid Inhibitors

- 1. *Inhibit hormone synthesis (Antithyroid drugs)* Propylthiouracil, Methimazole, Carbimazole
- Inhibit iodide trapping (Ionic inhibitors)
 Thiocyanates (-SCN), Perchlorates (-ClO₄),
 Nitrates (-NO₃)
- 3. *Inhibit hormone release* Iodine, Iodides of Na and K, Organic iodide.
- 4. Destroy thyroid tissue Radioactive iodine (131I, 125I, 123I).

- Propylthiouracil: 50-150 mg TDS followed by 25-50 mg BD-TDS for maintenance. PTU 50 mg tab.
- Methimazole: 5–10 mg TDS initially, maintenance dose 5–15 mg daily in 1–2 divided doses.
- 3. Carbimazole: 5–15 mg TDS initially, maintenance dose 2.5–10 mg daily in 1–2 divided doses, NEO MERCAZOLE, THYROZOLE, ANTITHYROX 5 mg tab.
- 4. Lugol's solution (5% iodine in 10% Pot. iodide solution): LUGOL'S SOLUTION, COLLOID IODINE 10%: 5–10 drops/day. COLLOSOL 8 mg iodine/5 ml liq.
- Iodide (Sod./Pot.): 100–300 mg/day—therapeutic, 5–10 mg/day prophylactic for endemic goiter.

Antidiabetic Drugs (Hypoglycaemic Drugs)

INSULIN

A. Rapid Acting

- 1. Insulin lispro
- 2. Insulin aspart
- 3. Insulin glulisine

B. Short Acting

- 1. Regular (soluble) Insulin
- Prompt Insulin Zinc Suspension (amorphous) or Semilente

C. Intermediate Acting

- 1. Insulin Zinc Suspension or Lente (Ultra: Semi: 7:3)
- 2. Neutral Protamine Hagedorn (NPH) or Isophane Insulin

D. Long Acting

- Extended Insulin Zinc Suspension (crystalline) or Ultralente
- 2. Protamine Zinc Insulin (PZI)
- 3. Insulin glargine

Preparations

(Dose to be individualized according to requirement)

- Highly purified insulins (pork/beef)
- 1. ACTRAPID, RAPIDICA: Highly purified pork regular insulin; 40~U/ml.
- 2. LENTARD, ZINULIN: Highly purified pork lente insulin; 40~U/ml.
- 3. ACTRAPHANE, RAPIMIX, MIXTARD: Highly purified pork regular insulin (30%) and isophane insulin (70%) 40 U/ml.
- 4. ILETIN-NPH: Highly purified bovine-porcine isophane insulin 40 U/ml.
- ACTRAPID MC: Monocomponent pork regular insulin; 40 U/ml, 100 U/ml.
- 6. MONOTRAD MC: Monocomponent pork lente insulin; 40 U/ml.

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II. Human insulins

- HUMAN ACTRAPID: Human regular insulin; 40 U/ml, 100 U/ml, ACTRAPID HM PENFIL 100 U/ml pen inj., WOSULIN-R 40 U/ml inj and 100 U/ml pen injector cartridges.
- 2. HUMAN MONOTRAD: Human lente insulin; 40 U/ml, 100 U/ml.
- 3. HUMAN INSULATARD, HUMINSULIN-N: Human isophane insulin 40 U/ml, WOSULIN-N 40 U/ml inj and 100 U/ml cartridges.
- HUMAN ACTRAPHANE, HUMINSULIN 30/70, HUMAN MIXTARD: Human soluble insulin (30%) and isophane insulin (70%), 40 U/ml, WOSULIN-30/70 40 U/ml inj and 100 U/ml cartridges.
- 5. ACTRAPHANE HM PENFIL: Human soluble insulin 30% + isophane insulin 70% 100 U/ml pen injector.
- INSUMAN 50/50: Human soluble insulin 50% + isophane insulin 50% 40 U/ml inj; WOSULIN 50/50 40 U/ml inj. and 100 U/ml cartridges.

III. Insulin analogues

- Insulin Lispro (rDNA origin): HUMALOG 100 U/ml inj; to be injected s.c. within 15 min before or immediately after a meal.
- 2. Insulin Aspart: NOVOLOG, NOVORAPID 100 U/ml inj; NOVOMIX 30 FLEXPEN inj (biphasic insulin aspart).
- Insulin Glargine: LANTUS OPTISET 100 U/ml prefilled pen injector 3 ml and vial 5 ml.

ORAL HYPOGLYCAEMIC DRUGS

1. Sulfonylureas

First generation Second generation

Tolbutamide Glibenclamide (Glyburide)

Chlorpropamide Glipizide Gliclazide

Glimepiride

2. Biguanide

Metformin

3. Meglitinide/Phenylalanine analogues Repaglinide Nateglinide

4. Thiazolidinediones

Rosiglitazone Pioglitazone

5. α Glucosidase inhibitors

Acarbose Miglitol

6. Dipeptidyl peptidase-4 (DPP-4) inhibitor

Sitagliptin Vildagliptin

- 1. Tolbutamide: 0.5–3 g/day in 2–3 divided doses; RASTINON 0.5 g tab.
- 2. Chlorpropamide: 0.1–0.5 g OD; DIABINESE 0.1, 0.25 g tab.
- 3. Glibenclamide (Glyburide): 5–15 mg/day in 1–2 doses; DAONIL, EUGLUCON, BETANASE 2.5, 5 mg tab.
- Glipizide: 5-20 mg/day in 1-2 doses; GLYNASE, GLIDE, MINIDIAB 5 mg tab.
- Gliclazide: 40-240 mg/day in 1-2 doses; DIAMICRON 80 mg tab, DIAZIDE 20, 80 mg tab, GLIZID 30, 40, 80 mg tab.
- Glimepiride: 1–6 mg OD; AMARYL, GLYPRIDE, GLIMER 1, 2 mg tab.
- 7. Metformin: 0.5–2.5 g/day in 2–4 doses; GLYCIPHAGE, GLYCOMET 0.5, 0.85 g tab.
- 8. Repaglinide: 1.5–8 mg/day in 3–4 doses; EUREPA, REGAN, RAPLIN 0.5, 1, 2 mg tab.
- 9. Nateglinide: 180–480 mg/day in 3–4 doses; GLINATE 60, 120 mg tab.
- Rosiglitazone: 4-8 mg/day in 1-2 doses; REGLIT, ROSINORM, ROSS 2, 4, 8 mg tab.
- 11. Pioglitazone: 15–45 mg OD; PIONORM, PIOREST, PIOZONE 15, 30 mg tab.
- 12. Acarbose: 50–100 mg TDS taken just before each major meal; GLUCOBAY 50, 100 mg tabs, ASUCROSE, GLUCAR 50 mg tab.
- Sitagliptin: 100 mg OD-BD before meals; JANUVIA 100 mg tab.
- 14. Vildagliptin: 50 mg OD-BD before meals; GALVUS 50 mg tab.

Corticosteroids

I. GLUCOCORTICOIDS

A. Short acting

Hydrocortisone (cortisol), Cortisone

B. Intermediate acting

Prednisolone, Methyl-prednisolone, Triamcinolone

C. Long acting

Dexamethasone, Betamethasone, Deflazacort

II. MINERALOCORTICOIDS

Desoxycorticosterone acetate (DOCA), Fludrocortisone, Aldosterone

- 1. Cortisone: 20–100 mg/day oral/i.m.
- Hydrocortisone: 20–30 mg/day oral for replacement therapy; 100 mg i.v. 8 hourly (as hemisuccinate); 100–200 mg i.m./ intraarticular (as acetate), 2.0 g as retention enema; LYCORTIN-S, EFCORLIN SOLUBLE 100 mg/2 ml vial (as hemisuccinate for i.v. inj.) WYCORT, EFCORLIN 25 mg/ml vial (as acetate for i.m./intraarticualr inj.). PRIMACORT 100, 200, 400 mg/vial inj; ENTOFOAM 2 g in 20 g foam cream (10%) for retention enema.
- 3. Prednisolone: 5–60 mg/day oral, 10–40 mg i.m./intraarticular; DELTACORTRIL, HOSTACORTIN-H, 5, 10 mg tab, 20 mg/ml (as acetate) for i.m., intraarticular inj., WYSOLONE, NUCORT, 5, 10, 20, 40 mg tab.
- 4. Methyl prednisolone: 4–32 mg/day oral, 0.5–1.0 g slow i.v. injection for pulse therapy; SOLU-MEDROL Methylprednisolone (as sod. succinate) 4 mg tab; 40 mg, 125 mg, 0.5 g (8 ml) and 1.0 g (16 ml) vial, for i.m. or slow i.v. inj., DEESOLONE 4 mg, 16 mg tab, 0.5 g, 1.0 g inj.
- 5. Triamcinolone: 4–32 mg/day oral, 5–40 mg i.m./intraarticular; KENACORT, TRICORT 1, 4, 8 mg tab., 10 mg/ml, 40 mg/ml (as acetonide) for i.m., intraarticular inj., LEDERCORT 4 mg tab., KENALOG-S EYE 0.1% with neomycin 0.25% and gramicidin 0.025% eye oint.

- 6. Dexamethasone: 0.5-5 mg/day oral, 4-20 mg i.v. or i.m.; DECADRON, DEXONA 0.5 mg tab, 4 mg/ml (as sod. phosphate) for i.v., i.m. inj, 0.5 mg/ml oral drops; WYMESONE, DECDAN 0.5 mg tab, 4 mg/ml inj, OCUDEX, MINIDEX, DEXONA 0.1% eye drops.
- 7. Betamethasone: 0.5–5 mg/day oral, 4–20 mg i.v./i.m. inj; BETNESOL, BETACORTRIL, CELESTONE 0.5 mg, 1 mg tab, 4 mg/ml (as sod. phosphate) for i.v., i.m. inj., 0.5 mg/ml oral drops. BETNELAN 0.5 mg, 1 mg tabs, BETNESOL EYE/EAR 0.1% drops and oint.
- 8. Deflazacort: Initially 60-120 mg/day, maintenance 6-18 mg/ day, children 0.25-1.5 mg/kg on alternate days. DEFLAR, DEFZA, DFZ 1, 6, 30 mg tabs, DEFGLU 6, 30 mg tabs.
- 9. Desoxycorticosterone acetate (DOCA): 2-5 mg sublingual, 10-20 mg i.m. once or twice weekly; in DOCABOLIN 10 mg/ml inj. (along with nandrolone).
- 10. Fludrocortisone: Replacement therapy in Addison's disease 50–200 µg daily. Congenital adrenal hyperplasia in patients with salt wasting 50-200 µg/day.
 - Idiopathic postural hypotension 100–200 μg/day. FLORICORT 100 µg tab.

TOPICAL STEROIDS

A. Potent

1.	Beclomethasone dipropionate	0.025%	BECLATE cream
2.	Betamethasone benzoate	0.025%	TOPICASONE
			cream, oint.
3.	Betamethasone valerate	0.12%	BETNOVATE
			cream, oint.,
			BETASONE cream
4.	Halcinonide	0.1%	CORTILATE,
			HALOG cream
5.	Clobetasol propionate	0.05%	LOBATE,
			TENOVATE,
			DERMOTYL cream

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6.	Dexamethasone sod. phosphate	0.1%	DECADRON cream (with Neomycin 0.35%)
7.	Dexamethasone trimethyl-acetate	0.1%	MILLICORTENOL cream
8.	Fluocinolone acetonide	0.025%	FLUCORT oint., LUCI oint.
9.	Fluocortolone	0.5%	ULTRALAN oint.
	Triamcinolone acetonide	0.1%	LEDERCORT oint.
Mod	erately potent		
	Fluocinolone acetonide	0.01%	FLUCORT-H oint.
2.	Clobetasol butyrate	0.05%	EUMOSONE cream
3.	Fluocortolone	0.25%	COLSIPAN oint.
4.	Mometasone	0.1%	MOMATE, CUTIZONE oint, cream
5.	Fluticasone propionate	0.05%	FLUTIVATE, MOLIDERM cream
6.	Hydrocortisone	1%	COTARYL-H
	+ urea 12%		cream.
7.	Hydrocortisone acetate	2.5%	WYCORT oint.
Mild	l		
1.	Hydrocortisone acetate	0.1– 1.0%	LYCORTIN 1% oint., in CORTOQUINOL 1% with quiniodochlor 4% cream, GENTACYN-HC TOPICAL 1% with gentamicin 0.1%, CORTISON-KEMICETINE 0.5% with chloramphenicol 0.5%.
2.	Hydrocortisone butyrate	0.001%	LOCOID cream

Androgens and Related Drugs

Natural Androgens
Testosterone, Dihydrotestosterone
Synthetic Androgens
Methyl testosterone, Fluoxymesterone, Mesterolone

Preparations

- Testosterone (free): 25 mg i.m. daily to twice weekly; AQUAVIRON 25 mg in 1 ml inj.
- 2. Testosterone propionate: 25–50 mg i.m. daily to twice weekly: TESTOVIRON, PARENDREN, TESTANON 25, 50 mg/ml inj.
- 3. TESTOVIRON DEPOT 100: testo. propionate 25 mg + testo. enanthate 100 mg in 1 ml amp; 1 ml i.m. weekly.
- 4. TESTOVIRON DEPOT 250: testo. propionate 250 mg + testo. enanthate 250 mg in 1 ml amp; i.m. every 2–4 weeks.
- SUSTANON '100': testo. propionate 20 mg + testo. phenyl propionate 40 mg + testo. isocaproate 40 mg in 1 ml amp; 1 ml i.m. every 2–3 weeks.
- 6. SUSTANON '250': testo. propionate 30 mg + testo. phenylpropionate 60 mg + testo. isocaproate 60 mg + testo. decanoate 100 mg in 1 ml amp; 1 ml i.m. every 3–4 weeks.
- Testosterone undecanoate: NUVIR 40 mg cap, 1–3 cap daily for male hypogonadism, osteoporosis.
- Mesterolone: 25 mg OD-TDS oral; PROVIRONUM, MESTILON 25 mg tab.
- 9. Dihydrotestosterone: 100–250 mg cutaneous application daily; ANDRACTIM 25 mg/g gel for application over nonscrotal skin once daily.

Anabolic Steroids

- Methandienone: 2-5 mg OD-BD oral; children 0.04 mg/kg/day, 25 mg i.m. weekly; ANABOLEX 2, 5 mg tab, 2 mg/ml drops, 25 mg/ml inj.
- Nandrolone phenyl propionate: 10–50 mg; children 10 mg; i.m. once or twice weekly; DURABOLIN 10, 25 mg/ml inj.

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- 3. Nandrolone decanoate: 25–100 mg i.m. every 3 weeks, DECADURABOLIN, 25, 100 mg/ml inj.
- Oxymetholone: 5–10 mg, children 0.1 mg/kg, OD; ADROYD 5 mg tab.
- 5. Stanozolol: 2–6 mg/day; MENABOL, NEURABOL 2 mg tab.

Impeded Androgen

 Danazol: 200–800 mg/day; DANAZOL, LADOGAL, DANOGEN, GONABLOK 50, 100, 200 mg cap.

Antiandrogens

Cyproterone acetate Flutamide Bicalutamide Nilutamide

- Flutamide: 250 mg TDS; PROSTAMID, FLUTIDE, CYTOMID 250 mg tab.
- 2. Bicalutamide: 50 mg OD; BIPROSTA, CALUTIDE, TABI 50 mg tab.

5α-Reductase Inhibitor

- Finasteride: For benign hypertrophy of prostate (BHP) 5 mg OD, review after 6 months; for male pattern baldness 1 mg/day. FINCAR, FINARA, FINAST 5 mg tab, FINPECIA, ASTIFINE 1 mg tab.
- 2. Dutasteride: For BHP 0.5 mg/day. DUPROST, DURIZE 0.5 mg tab.

Drugs for Erectile Dysfunction

- 1. Androgens
- 2. Phosphodiesterase-5 (PDE-5) inhibitors

Sildenafil Tadalafil Vardenafil

- 3. Papaverine/phentolamine (intracavernosal injection)
- 4. Prostaglandin E₁ (PGE₁): Alprostadil (intracavernosal injection)

Preparations

- Sildenafil: 50 mg (max. 100 mg) 1 hour before intercourse; elderly 25 mg.
 - PENEGRA, CAVERTA, EDEGRA 25, 50, 100 mg tabs.
- Tadalafil: 10 mg (max. 20 mg) at least ½ hr before intercourse.
 MEGALIS, TADARICH, TADALIS 10, 20 mg tab, MANFORCE
 10 mg tab.

Estrogens and Related Drugs

Natural Estrogens

Estradiol, Estrone, Estriol, Equilin

Synthetic Estrogens

- 1. Steroidal: Ethinylestradiol, Mestranol, Tibolone.
- 2. Nonsteroidal: Diethylstilbestrol, Hexestrol, Dienestrol.

- Estradiol benzoate/cypionate/enanthate/valarate: 2.5-10 mg i.m.; OVOCYCLIN-P 5 mg inj, PROGYNON DEPOT 10 mg/ml inj.
- Conjugated estrogens: 0.625–1.25 mg/day oral; PREMARIN 0.625 mg, 1.25 mg tab, 25 mg inj (for dysfunctional uterine bleeding).
- Ethinylestradiol: for menopausal syndrome 0.02–0.2 mg/day oral; LYNORAL 0.01, 0.05, 1.0 mg tab, PROGYNON-C 0.02 mg tab.
- Mestranol: 0.1–0.2 mg/day oral; in OVULEN 0.1 mg tab, with ethynodiol diacetate 1 mg.
- Estriol succinate: 4–8 mg/day initially, maintenance dose in menopause 1–2 mg/day oral: EVALON 1, 2 mg tab, 1 mg/g cream for vaginal application in atrophic vaginitis 1–3 times daily.
- Fosfestrol tetrasodium: initially 600–1200 mg slow i.v. inj for 5 days, maintenance dose 120–240 mg/day oral or 300 mg 1– 3 times a week i.v.; HONVAN 120 mg tab, 60 mg/ml inj 5 ml amp.
- 7. Dienestrol: 0.01% topical; DIENESTROL 0.01% vaginal cream.

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- 8. Estradiol transdermal: ESTRADERM-MX: Estradiol 25, 50 or 100 μg per 24 hr transdermal patches; apply to nonhairy skin below waist, replace every 3–4 days using a different site; add an oral progestin for last 10–12 days every month.
- 9. Estradiol dermal gel: 1–2.5 mg/day; OESTRAGEL 3 mg/5 g gel in 80 g tube; apply 1.5-4 g gel over arms & shoulder daily.
- 10. Tibolone: 2.5 mg/day without interruption in postmenopausal women; LIVIAL, TIBOFEM 2.5 mg tab.

Antiestrogen

Clomiphene citrate: for infertility in women—50 mg/day for 5 days starting from 5th day of cycle, increase to 100 mg/day after 2–3 unsuccessful cycles (max. 200 mg/day); for oligozoospermia in men—25 mg daily for 24 days in a month upto 6 months; CLOMID, FERTOMID 25, 50 mg tabs, CLOFERT, CLOME 25, 50, 100 mg tabs.

Selective Estrogen Receptor Down Regulator/ Pure Estrogen Antagonist

Fulvestrant: 250 mg i.m. (in gluteal region) monthly.

Selective Estrogen Receptor Modulators (SERMs)

- 1. Tamoxifen citrate: 10–20 mg BD. TAMOXIFEN, MAMOFEN, TAMODEX 10, 20 mg tabs.
- 2. Toremifene: 60 mg OD.
- 3. Raloxifene: 60 mg/day; OSRAL, BONMAX, RALOTAB, ESSERM 60 mg tab.

Aromatase Inhibitors

- Letrozole: 2.5 mg/day oral; FEMARA, ONCOLET, LETOVAL, LETROZ 2.5 mg tab.
- 2. Anastrozole: 1 mg/day oral; ARMOTRAZ, ALTRAZ 1 mg tab.
- 3. Exemestane: 25 mg/day oral.

Progestins

Progesterone derivatives

Medroxyprogesterone Hydroxyprogesterone

acetate caproate

Megestrol acetate Nomegestrol acetate

Dydrogesterone

19-Nortestosterone derivatives

Older compounds Newer compounds (Gonanes)

Norethindrone Desogestrel (Norethisterone) Norgestimate Lynestrenol (Ethinylestrenol) Gestodene

Allylestrenol

Levonorgestrel (Gonane)

- Progesterone: 10–100 mg i.m. (as oily solution) OD; PROGEST, PROLUTON, GESTONE 50 mg/ml inj., 1 and 2 ml amp; 100–400 mg OD oral: NATUROGEST, OGEST, DUBAGEST 100, 200, 400 mg caps containing micronized oily suspension.
- Hydroxyprogesterone caproate: 250–500 mg i.m. at 2–14 days intervals; PROLUTON DEPOT, MAINTANE INJ, PROCAPRIN 250 mg/ml in 1 and 2 ml amp.
- 3. Medroxyprogesterone acetate: 5–20 mg OD–BD oral, 50–150 mg i.m. at 1–3 month interval; FARLUTAL 2.5, 5, 10 mg tab., PROVERA, MEPRATE, MODUS 10 mg tab, DEPOT-PROVERA 150 mg in 1 ml inj. (as contraceptive).
- 4. Dydrogesterone: 5–10 mg OD/TDS oral; DUPHASTON 5 mg tab.
- Norethindrone (Norethisterone): 5–10 mg OD–BD oral;
 PRIMOLUT-N, STYPTIN, REGESTRONE, NORGEST 5 mg tab;
 REGESTRONE HRT, NORETA HRT 1 mg tab (for HRT);

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- NORISTERAT 200 mg/ml inj (as enanthate) for contraception 1 ml i.m every 2 months.
- Lynestrenol (Ethinylestrenol): 5-10 mg OD oral;
 ORGAMETRIL 5 mg tab.
- 7. Allylestrenol: 10–40 mg/day; GESTANIN, FETUGARD, MAINTANE 5 mg tab, PROFAR 25 mg tab.
- 8. Levonorgestrel: 0.1–0.5 mg/day; DUOLUTON-L, OVRAL 0.25 mg + ethinylestradiol 0.05 mg tab.
- 9. Desogestrel: 150 μg + ethinylestradiol 30 μg (NOVELON) tab, 1 tab OD, 3 weeks on 1 week off cyclic therapy.

Antiprogestin

- Mifepristone: 200–600 mg single oral dose; MIFEGEST, MIFEPRIN 200 mg tab.
- 2. Onapristone
- 3. Gestinone

Oral Contraceptives

Combined Pills

- Norgestrel 0.3 mg + Ethinylestradiol 30 μg; MALA-D (21 tabs + 7 ferrous sulfate 60 mg tabs)
- 2. Norgestrel 0.5 mg + Ethinylestradiol 50 µg; OVRAL-G
- Levonorgestrel 0.25 mg + Ethinylestradiol 50 μg; OVRAL, DUOLUTON-L
- Levonorgestrel 0.15 mg + Ethinylestradiol 30 μg; OVRAL-L, BANDHAN
- 5. Desogestrel 0.15 mg + Ethinylestradiol 30 μg; NOVELON
- 6. Desogestrel 0.15 mg + Ethinylestradiol 20 μg; FEMILON

Phased Pills

- Levonorgestrel 50–75–125 μg + Ethinylestradiol 30–40–30 μg; TRIQUILAR (6 + 5 + 10 tablets)
- Norethindrone 0.5–0.75–1.0 mg + Ethinylestradiol 35–35–35 μg; ORTHONOVUM 7/7/7 (7+7+7 tabs)

Postcoital Pills

- Levonorgestrel 0.25 mg + Ethinylestradiol 50 µg; OVRAL, DUOLUTON-L (2 + 2 tabs)
- Levonorgestrel 0.75 mg; NORLEVO, ECEE2 (1 + 1 tab) 2.
- 3. Levonorgestrel 1.5 mg iPILL (1 tab).
- Mifepristone 600 mg; MIFEGEST, MIFEPRIN 200 mg (3 tabs) 4.

Mini Pills

- Norethindrone 0.35 mg
- Norgestrel 75 µg

Anti implantation SERM

Centchroman (Ormeloxifene); 30 mg twice weekly for 12 weeks and then 30 mg weekly; CENTRON, SAHELI 30 mg tab.

Injectable contraceptives

- 1. Depot medroxyprogesterone acetate (DMPA): 150 mg i.m. at 3 month intervals.
 - DEPOT-PROVERA 150 mg in 1 ml vial for deep i.m. injection during first 5 days of menstrual cycle. Repeat every 3 months.
- 2. Norethindrone (Norethisterone) enanthate (NEE): 200 mg i.m. at 2 month intervals.
 - NORISTERAT 200 mg in 1 ml vial for deep i.m. injection during first 5 days of menstrual cycle. Repeat every 2 months.

Uterine Stimulants (Oxytocics, Abortifacients)

- 1. Posterior pituitary hormone: Oxytocin; Desaminooxytocin
- 2. Ergot alkaloids: Ergometrine (Ergonovine), Methylergometrine
- 3. Prostaglandins: PGE₂, PGF₂, 15-methyl PGF₂, Misoprostol
- 4. Miscellaneous: Ethacridine, Quinine.

Preparations

- Oxytocin: for induction/augmentation of labour 2–10 milli IU/min i.v. infusion (total 2–4 IU); for postpartum haemorrhage 5 IU i.m. or i.v. infusion; OXYTOCIN, SYNTOCINON 2 IU/2 ml and 5 IU/ml inj., PITOCIN 5 IU/0.5 ml inj.
- Desamino-oxytocin: for induction 50 IU buccal every 30 min, for uterine inertia 25 IU buccal every 30 min; for breast engorgement 25–50 IU just before breast feeding; BUCTOCIN 50 IU buccal tab.
- 3. Ergometrine: 0.2–0.5 mg i.m./i.v., 0.25–0.5 mg TDS oral; ERGOMETRINE 0.25, 0.5 mg tab, 0.5 mg/ml inj.
- Methylergometrine: 0.2–0.5 mg i.m./i.v., 0.125–0.25 mg TDS oral; METHERGIN, METHERONE, ERGOMET 0.125 mg tab, 0.2 mg/ml inj.
- 5. Ethacridine: 150 mg extra-amniotic infusion; EMCREDIL, VECREDIL 50 mg/50 ml inj.

(*Note*: For preparations of prostaglandins *See p.* 17)

Uterine Relaxants (Tocolytics)

- 1. β -Adrenergic agonists: Ritodrine, Salbutamol, Terbutaline, Isoxsuprine
- 2. *Calcium channel blockers*: Nifedipine (and other dihydropyridines)
- 3. Magnesium sulfate
- 4. Progesterone
- 5. Oxytocin antagonist: Atosiban
- 6. *Miscellaneous drugs*: Nitrates, Diazoxide, Atropine, Ethyl alcohol, Chlorpromazine, Halothane, PG synthesis inhibitors.

(*Note:* For preparations – *See* Index)

Skeletal Muscle Relaxants

PERIPHERALLY ACTING MUSCLE RELAXANTS

I. Neuromuscular blocking agents

- A. Nondepolarizing (Competitive) blockers
- 1. *Long acting*: d-Tubocurarine, Pancuronium, Doxacurium, Pipecuronium
- 2. Intermediate acting: Vecuronium, Atracurium, Cisatracurium, Rocuronium, Rapacuronium
- 3. Short acting: Mivacurium

B. Depolarizing blockers

Succinylcholine (SCh., Suxamethonium), Decamethonium (C-10)

II. Directly acting agents

Dantrolene sodium Quinine

CENTRALLY ACTING MUSCLE RELAXANTS

- 1. *Mephenesin congeners:* Mephenesin, Carisoprodol, Chlorzoxazone, Chlormezanone, Methocarbamol
- 2. Benzodiazepines: Diazepam and others
- 3. GABA derivative: Baclofen
- 4. Central α_2 agonist: Tizanidine

Preparations

(Note: Doses of neuromuscular blocking agents given below are initial paralysing doses for nitrous oxide-oxygen/opioid anaesthesia. These doses are to be reduced to 1/3–1/2 in patients anaesthetised with ether/halothane/isoflurane etc.)

- 1. d-Tubocurarine: 0.2-0.4 mg/kg i.v.
- 2. Pancuronium: 0.04–0.1 mg/kg i.v.; PAVULON, PANURON, NEOCURON 2 mg/ml in 2 ml amp.
- 3. Doxacurium: 0.03–0.08 mg/kg i.v.
- 4. Pipecuronium: 0.05–0.08 mg/kg i.v.; ARDUAN 4 mg/2 ml inj.
- 5. Vecuronium: 0.08–0.1 mg/kg i.v.; NORCURON, NEOVEC 4 mg amp. and 10 mg vial; dissolve in 1–2.5 ml solvent supplied.
- 6. Atracurium: 0.3–0.6 mg/kg i.v.; TACRIUM 10 mg/ml in 2 ml vial.
- 7. Cisatracurium: 0.15-0.2 mg/kg i.v.
- 8. Rocuronium: 0.6–0.9 mg/kg i.v.; CUROMID, ROCUNIUM 50 mg/5 ml, 100 mg/10 ml vials.
- 9. Mivacurium: 0.07–0.15 mg/kg i.v.
- 10. Succinylcholine (Suxamethonium): 0.5–0.8 mg/kg i.v.; MIDARINE, SCOLINE, MYORELEX, ENTUBATE 50 mg/ml in 2 ml amp.
- 11. Dantrolene: 25–100 mg QID oral, 1 mg/kg i.v. repeated as required.
- 12. Carisoprodol: 350 mg TDS–QID oral; CARISOMA 350 mg tab; SOMAFLAM 175 mg + ibuprofen 400 mg tab.
- 13. Chlorzoxazone: 500 mg BD-TDS; PARAFON DSC 500 mg tab; MOBIZOX 500 mg + diclofenac 50 mg + paracetamol 500 mg tab; PARAFON: 250 mg + paracetamol 300 mg tab; FLEXON-MR 250 mg + ibuprofen 400 mg + paracetamol 325 mg tab.
- 14. Chlormezanone: 100–200 mg TDS–QID; WINTRAC 100 mg tab; DOLOBAK 100 mg + paracetamol 450 mg tab.
- 15. Methocarbamol: 400–800 mg TDS oral, 100–200 mg i.m./i.v.; ROBINAX 0.5 g tab, 1 TDS: 100 mg/ml inj. for i.v. or i.m. use.

- ROBIFLAM 750 mg + ibuprofen 200 mg tab; FLEXINOL 400 mg + paracetamol 325 mg tab.
- 16. Baclofen: 10 mg BD-25 mg TDS oral; LIORESAL, LIOFEN 10, 25 mg tabs.
- 17. Tizanidine: 2 mg TDS; max 24 mg/day; SIRDALUD 2 mg tab; TIZAN 2, 4 mg tab; TIZAFEN 2 mg + ibuprofen 400 mg tab; TIZANAC 2 mg + diclofenac 50 mg tab., PROXIVON-MR 2 mg + nimesulide 100 mg cap.

Local Anaesthetics

A. Injectable anaesthetic

- 1. Low potency, short duration
 - Procaine
 - Chloroprocaine
- 2. Intermediate potency and duration Lidocaine (Lignocaine) Prilocaine
- 3. High potency, long duration Tetracaine (Amethocaine) Bupivacaine Ropivacaine Dibucaine (Cinchocaine)

B. Surface anaesthetic

Soluble Insoluble Cocaine Benzocaine

Lidocaine Butylaminobenzoate

(Butamben) Tetracaine Benoxinate Oxethazaine

Preparations

1. Lidocaine (lignocaine): 0.5–2% for nerve block, 1–5% topically; XYLOCAINE, GESICAIN 4% topical solution, 2% jelly, 2% viscous, 5% ointment, 1% and 2% injection (with or without

- adrenaline), 5% heavy (for spinal anaesthesia); 100 mg/ml spray (10 mg per puff)
- Bupivacaine: 0.25–0.5% for nerve block, 0.5–0.75% for spinal anaesthesia; MARCAIN 0.5%, 1% (hyperbaric for spinal anaesthesia). SENSORCAINE 0.25%, 0.5% inj, 0.5% heavy inj.
- 3. Tetracaine (Amethocaine): 0.25% for nerve block, 0.25–0.5% for spinal anaesthesia, 1% topically; ANETHANE powder for preparing solution, 1% oint.
- 4. Eutectic Lidocaine-prilocaine: 5% for cutaneous anaesthesia; PRILOX 5% cream
- 5. Dibucaine: 0.25–0.5% for nerve block and spinal anaesthesia, 1% for surface anaesthesia; NUPERCAINE 0.5% inj, NUPERCAINAL 1% oint, in OTOGESIC 1% ear drops.
- Benzocaine: 5–20% topically; in PROCTOQUINOL 5% oint., ZOKEN 20% gel.
- 7. Butylaminobenzoate: 1–5% topically; in PROCTO SEDYL-M 1% oint with framycetin and hydrocortisone for anal application.
- Benoxinate: 0.4% for corneal anaesthesia; BENDZON 0.4% eye drops.
- Oxethazaine: 0.2% for gastric mucosal anaesthesia; MUCAINE 0.2% in alumina gel + magnesium hydroxide suspension; 5–10 ml orally.
 - TRICAINE-MPS: Oxethazaine 10 mg with methyl polysiloxane 125 mg, alum. hydroxide gel 300 mg, mag. hydroxide 150 mg per 5 ml gel.



General Anaesthetics

Inhalational

Gas Volatile liquids

Nitrous oxide Ether

Halothane Enflurane Isoflurane Desflurane Sevoflurane

Intravenous

Inducing agents

Thiopentone sod.

Methohexitone sod.

Propofol

Etomidate

Slower acting drugs

Benzodiazepines

Diazepam

Lorazepam

Midazolam

Dissociative anaesthesia

Ketamine Opioid analgesia Fentanyl

Preparations

- 1. Thiopentone sod.: 3–5 mg/kg i.v. for induction; PENTOTHAL, INTRAVAL SODIUM 0.5, 1.0 g for preparing injectable solution freshly.
- 2. Propofol: 2 mg/kg bolus i.v. injection for induction, 9 mg/kg/hr for maintenance;

PROPOVAN 10 mg/ml and 20 mg/ml in 10, 20 ml vials.

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- 3. Diazepam: 0.25–0.5 mg/kg by slow injection in a running i.v. drip; VALIUM, CALMPOSE 10 mg/2 ml inj.
- 4. Lorazepam: 0.04 mg/kg (2–4 mg total for adult) i.v.; CALMESE 4 mg/2 ml inj.
- Midazolam: 1–2.5 mg i.v. bolus injection, 0.02–0.1 mg/kg/hour i.v. infusion for maintenance; MEZOLAM, FULSED, SHORTAL 1 mg/ml and 5 mg/ml inj.
- 6. Ketamine: 1–3 mg/kg i.v., 5 mg/kg i.m.; KETMIN, KETAMAX, ANEKET 50 mg/ml in 2 ml amp, 10 ml vial.
- 7. Fentanyl: 2–4 μ g/kg i.v.; TROFENTYL, FENT 50 μ g/ml in 2 ml amp, 10 ml vial.

Preanaesthetic Medication

- 1. Opioids: Morphine, Pethidine, Fentanyl
- 2. *Sedative-antianxiety drugs*: Diazepam, Lorazepam, Midazolam, Promethazine
- 3. Anticholinergics: Atropine, Hyoscine, Glycopyrrolate
- 4. *Neuroleptics*: Chlorpromazine, Triflupromazine, Haloperidol
- 5. Histamine H₂ blockers: Ranitidine, Famotidine, etc.
- 6. Proton pump inhibitors: Omeprazole, Pantoprazole, etc.
- Antiemetics: Metoclopramide, Domperidone, Ondansetron.

(Note: See Index for preparations)

Sedative-Hypnotics

1. Barbiturates

Long acting Short acting Ultra short acting
Phenobarbitone Butobarbitone Thiopentone
Pentobarbitone Methohexitone

2. Benzodiazepines

HypnoticAntianxietyAnticonvulsantDiazepamDiazepamDiazepam

Flurazepam Chlordiazepoxide Lorazepam Nitrazepam Oxazepam Clonazepam Alprazolam Lorazepam Clobazam Temazepam Alprazolam

Triazolam

THAZUIAIII

3. Newer nonbenzodiazepine hypnotics Zopiclone, Zolpidem, Zaleplon

4. Other CNS depressants

Chloral hydrate, Triclophos, Paraldehyde, Glutethimide, Methyprilone, Methaqualone, Meprobamate, Promethazine, Chlorpromazine, Amitriptyline, Morphine, Hyoscine

- Phenobarbitone: 30–60 mg OD–TDS (as antiepileptic) 100–200 mg i.m./i.v.; GARDENAL 30, 60 mg tab; LUMINAL 30 mg tab; PHENOBARBITONE SOD 200 mg/ml inj.
- Diazepam: 2.5–10 mg (as hypnotic), 5–30 mg/day (as antianxiety);
 VALIUM 2, 5, 10 mg tab., 10 mg/2 ml inj., CALMPOSE 5, 10 mg tab,
 2 mg/5 ml syr, 10 mg/2 ml inj.
- Flurazepam: 15–30 mg (as hypnotic); NINDRAL, FLURAZ 15 mg cap.
- 4. Nitrazepam: 5–10 mg (as hypnotic); SEDAMON, HYPNOTEX, NITRAVET 5, 10 mg tab/cap.
- Alprazolam: 0.25–1.0 mg (hypnotic dose), 0.25–1.0 mg TDS for anxiety; ALPRAX 0.25, 0.5, 1.0 mg tabs., 0.5, 1.0, 1.5 mg SR tabs; ALZOLAM 0.25, 0.5, 1.0 mg tabs; 1.5 mg SR tab, RESTYL 0.25, 0.5, 1.0 mg tab, RESTYL-SR 0.5, 1.0, 1.5 mg SR tab.
- 6. Temazepam: 10-20 mg (as hypnotic).
- 7. Triazolam: 0.125-0.25 mg (as hypnotic).
- 8. Zopiclone: 7.5 mg (hypnotic dose), elderly 3.75 mg; ZOPICON, ZOLIUM, ZOPITRAN 7.5 mg tab.
- 9. Zolpidem: 10–20 mg (hypnotic dose), elderly and liver disease patients 5–10 mg; NITREST, ZOLDEM, DEM 5, 10 mg tabs.

 Zaleplon: 5–10 mg (max 20 mg) hypnotic dose; ZAPLON, ZASO, ZALEP 5, 10 mg tabs.

(Note: See Index for preparations of other drugs).

Antiepileptic Drugs

- 1. Barbiturate: Phenobarbitone
- 2. Deoxybarbiturate: Primidone
- 3. Hydantoin: Phenytoin, Fosphenytoin
- 4. Iminostilbene: Carbamazepine, Oxcarbazepine
- 5. Succinimide: Ethosuximide
- 6. *Aliphatic carboxylic acid*: Valproic acid (sodium valproate), Divalproex
- 7. Benzodiazepines: Clonazepam, Diazepam, Lorazepam, Clobazam
- 8. Phenyltriazine: Lamotrigine
- 9. Cyclic GABA analogue: Gabapentin, Pregabalin
- 10. *Newer drugs*: Vigabatrin, Topiramate, Tiagabine, Zonisamide, Levetiracetam

- Phenobarbitone: 60 mg OD-TDS (child 3-6 mg/kg/day), 100-200 mg i.m./i.v.; GARDENAL 30, 60 mg tab; LUMINAL 30 mg tab; PHENOBARBITONE SOD 200 mg/ml inj.
- Primidone: 250-500 mg BD (child 10-20 mg/kg/day); MYSOLINE 250 mg tab.
- 3. Phenytoin: 100–200 mg BD (child 5–8 mg/kg/day) oral, 25 mg/min slow i.v. injection (max 1.0 g); DILANTIN 25 mg, 100 mg cap., 100 mg/4 ml oral suspension, 100 mg/2 ml inj.; EPTOIN 50, 100 mg tab, 25 mg/ml syr; FENTOIN-ER 100 mg extended release cap.
- Fosphenytoin: 25-100 mg (as phenytoin sod. equivalent)/min i.v. injection (max 1.0 g) for generalized convulsive status epilepticus; FOSOLIN 50 mg/ml inj in 2 ml and 10 ml amp.
- Carbamazepine: 200–400 mg TDS, children 15–30 mg/kg/day; TEGRETOL, MAZETOL 100, 200, 400 mg tab, 100 mg/5 ml

- syr; CARBATOL 100, 200, 400 mg tab; MAZETOL-SR, TEGRITAL-CR 200, 400 mg sustained release tabs.
- Oxcarbazepine: 300–600 mg BD; OXCARB, OXEP, OXETOL 150, 300, 600 mg tabs.
- Ethosuximide: 20–30 mg/kg/day; ZARONTIN 250 mg/5 ml syr.
- 8. Valproic acid (Sodium valproate): Adults—start with 200 mg TDS, maximum 800 mg TDS; children—15–30 mg/kg/day; VALPARIN CHRONO 200, 300, 500 mg tabs, 200 mg/5 ml syr, ENCORATE 200, 300, 500 mg regular and controlled release tabs, 200 mg/5 ml syr, 100 mg/ml inj.
- Divalproex: Epilepsy—initially 15 mg/kg/day, increase gradually as required (max 60 mg/kg/day); Bipolar disorder 250–500 mg TDS;
 - Migraine 250–500 mg BD; DIPROEX, VALANCE, DEPAKOTE 125, 250, 500 mg tabs.
- Clonazepam: Adults 0.5–5 mg TDS, children 0.02–0.2 mg/kg/day; status epilepticus 1–2 mg slow i.v. inj; LONAZEP, CLONAPAX, RIVOTRIL 0.5, 1.0, 2.0 mg tab.
- Diazepam: for status epilepticus—10 mg (0.2–0.5 mg/kg) slow i.v. injection (2 mg/min), repeat fractional doses as required (max 100 mg/day); for febrile convulsions 0.5 mg/kg rectal instillation, repeat 12 hourly for 48 hours; VALIUM, CALMPOSE, PLACIDOX 10 mg/2 ml inj.
- 12. Lorazepam: for status epilepticus—0.04–0.1 mg/kg slow i.v. injection (2 mg/min); CALMESE 4 mg/2 ml inj.
- 13. Clobazam: start with 10–20 mg at bed time, can be increased upto 60 mg/day; FRISIUM, LOBAZAM, CLOZAM 5, 10, 20 mg cap.
- Lamotrigine: 50 mg/day initially, increase upto 300 mg/day as needed. LAMITOR, LAMETEC, LAMIDUS 25, 50, 100 mg tabs.
- 15. Gabapentin: start with 300 mg OD, increase to 300–600 mg TDS as required; NEURONTIN, GABANTIN 300 mg, 400 mg cap, GABAPIN 100, 300, 400 mg cap.
- Pregabalin: 75-150 mg BD, max. 600/day (used primarily for neuropathic pain).
 PREEGA, TRUGABA 75, 150 mg caps.
- 17. Vigabatrin: 2–4 g/day, child 40–100 mg/kg/day.
- 18. Topiramate: Initially 25 mg OD, increase weekly upto 100–200 mg BD as required, child 5–10 mg/kg/day. TOPEX, EPITOP, TOPAMATE, NEXTOP 25, 50, 100 mg tabs.

- 19. Zonisamide: 25-100 mg BD; ZONISEP, ZONICARE, ZONIT 50, 100 mg cap.
- Levetiracetam: 250-750 mg BD; child > 4 year 10 mg/kg BD. EPIFAST, TORLEVA, LEVROXA 250, 500, 750 mg tabs.

Antiparkinsonian Drugs

- 1. Drugs Affecting Brain Dopaminergic System
- (a) Dopamine precursor: Levodopa (l-dopa)
- (b) Peripheral decarboxylase inhibitors: Carbidopa, Benserazide
- (c) *Dopaminergic agonists*: Bromocriptine, Ropinirole, Pramipexole
- (d) MAO-B inhibitor: Selegiline
- (e) COMT inhibitors: Entacapone, Tolcapone
- (f) Dopamine facilitator: Amantadine
- 2. Drugs Affecting Brain Cholinergic System
- (a) Central anticholinergics: Trihexyphenidyl (Benzhexol), Procyclidine, Biperiden
- (b) Antihistaminics: Orphenadrine, Promethazine.

Preparations

- Levodopa: Start with 0.25 g BD after meals, gradually increase till adequate response is obtained. Usual dose is 2–3 g/day. LEVOPA, BIDOPAL 0.5 g tab.
- Carbidopa/Benserazide + Levodopa combination:
 Usual daily maintenance dose of levodopa is 0.4–0.8 g along with
 75–100 mg carbidopa or 100–200 mg benserazide, given in 3–4
 divided doses. Therapy is started at a low dose and suitable
 preparations are chosen according to the needs of individual
 patients, increasing the dose as required.

Carbidopa Levodopa (per tab/cap)
TIDOMET-LS, SYNDOPA-110, 10 mg + 100 mg
SINEMET, DUODOPA-110 10 mg + 100 mg

TIDOMET PLUS, SYNDOPA PLUS 25 mg + 100 mg TIDOMET FORTE, SYNDOPA-275 25 mg + 250 mg BENSPAR, MADOPAR: Benserazide 25 mg + levodopa 100 mg Cap.

- Bromocriptine: Start with 1.25 mg once at night, increase gradually as needed upto 5–10 mg TDS, as supplement to carbidopalevodopa combination.
 - PROCTINAL, PARLODEL, SICRIPTIN 1.25 mg, 2.5 mg tabs, ENCRIPT 2.5, 5 mg tabs.
- Ropinirole: Starting dose is 0.25 mg TDS, titrated to a maximum of 4–8 mg TDS. Early cases generally require 1–2 mg TDS. ROPITOR, ROPARK, ROPEWAY 0.25, 0.5, 1.0, 2.0 mg tabs.
- Selegiline: 5 mg with breakfast and with lunch, either alone (in early cases) or with levodopa. Reduce by 1/4th levodopa dose after 2-3 days of adding selegiline. ELDEPRYL 5, 10 mg tab, SELERIN, SELGIN 5 mg tab.
- 6. Entacapone: 200 mg with each dose of levodopa-carbidopa (max 1600 mg/day). ADCAPON 100 mg tab, COMTAN 200 mg tab.
- 7. Amantidine: 100 mg BD. AMANTREL, COMANTREL 200 mg tab.
- Trihexyphenidyl (benzhexol): 2–10 mg/day. PACITANE, PARBENZ 2 mg tab.
- 9. Procyclidine: 5–20 mg/day; KEMADRIN 2.5, 5 mg tab.
- Biperiden: 2–10 mg/day oral, i.m. or i.v.: DYSKINON 2 mg tab.,
 mg/ml inj.
- 11. Orphenadrine: 100–300 mg/day; DISIPAL, ORPHIPAL 50 mg tab.
- 12. Promethazine: 25–75 mg/day; PHENERGAN 10, 25 mg tab.

Antipsychotic Drugs (Neuroleptic, Major tranquillizer)

1. Phenothiazines

Aliphatic side chain: Chlorpromazine, Triflupromazine *Piperidine side chain*: Thioridazine

Piperazine side chain: Trifluoperazine, Fluphenazine

2. Butyrophenones: Haloperidol, Trifluperidol, Penfluridol

- 3. Thioxanthenes: Flupenthixol
- 4. Other heterocyclics: Pimozide, Loxapine, Reserpine
- 5. *Atypical neuroleptics*: Clozapine, Risperidone, Olanzapine, Quetiapine, Aripiprazole, Ziprasidone

- 1. Chlorpromazine: 100–800 mg/day; CHLORPROMAZINE, LARGACTIL 10, 25, 50, 100 mg tab. 5 mg/5 ml (pediatric) & 25 mg/5 ml (adult) Syr., 50 mg/2 ml inj.
- Triflupromazine: 50–200 mg/day; SIQUIL 10 mg tab; 10 mg/ml inj.
- 3. Thioridazine: 100–400 mg/day; MELLERIL 25, 100 mg tab, THIORIL 10, 25, 50 mg tab.
- 4. Trifluoperazine: 2–20 mg/day; TRINICALM 1, 5 mg tab, NEOCALM 5, 10 mg tab.
- 5. Fluphenazine: 1–10 mg/day; ANATENSOL 1 mg tab, 0.5 mg/ml elixir; ANATENSOL DECANOATE 25 mg/ml (as decanoate) for i.m. injection, 1–2 ml every 2–4 weeks.
- Haloperidol: 2–20 mg/day; SERENACE 1.5, 5, 10, 20 mg tab; 2 mg/ml liq, 5 mg/ml inj., SENORM 1.5, 5, 10 mg tab, 5 mg/ml inj., HALOPIDOL 2, 20 mg tab, 2 mg/ml liq, 10 mg/ml drops.
- 7. Trifluperidol: 1–8 mg/day; TRIPERIDOL 0.5 mg tab, 2.5 mg/ml inj.
- 8. Penfluridol: 20–60 mg (max. 120 mg) once weekly; SEMAP, FLUMAP, PENFLUR 20 mg tab.
- 9. Flupenthixol: 3–15 mg/day; FLUANXOL 0.5, 1, 3 mg tab; FLUANXOL DEPOT 20 mg/ml in 1 and 2 ml amp.
- Pimozide: 2–6 mg/day; ORAP, NEURAP, PIMODAC 2, 4 mg tab.
- 11. Loxapine: 20–100 mg/day; LOXAPAC 10, 25, 50 mg caps, 25 mg/ 5 ml liquid.
- 12. Clozapine: 50–300 mg/day; LOZAPIN, SIZOPIN, SKIZORIL 25, 100 mg tabs.
- 13. Risperidone: 2–12 mg/day; RESPIDON, SIZODON, RISPERDAL 1, 2, 3, 4 mg tabs.

- 14. Olanzapine: 2.5-10 mg/day; OLACE, OLANDUS 2.5, 5, 7.5, 10 mg tabs, OLZAP 5, 10 mg tab.
- 15. Quetiapine: 50–400 mg/day; QUEL, SOCALM, SEROQUIN 25, 100, 200 mg tabs.
- 16. Aripiprazole: 10–30 mg/day; ARIPRA, ARILAN, BILIEF 10, 15 mg tabs, ARIVE 10, 15, 20, 30 mg tabs.
- 17. Ziprasidone: 80–160 mg/day; AZONA, ZIPSYDON 20, 40, 80 mg tabs.

Drugs for Mania and Manic-Depressive (Bipolar) Disorder

- 1. Lithium carbonate
- 2. Anticonvulsants: Carbamazepine, Sodium valproate, Lamotrigine, Topiramate
- 3. Atypical antipsychotics: Olanzapine, Risperidone, Aripiprazole, Quetiapine

Preparations

1. Lithium carbonate: Start at 600 mg/day, adjust dose to yield steady-state plasma level of 0.5-0.8 mEq/L (for bipolar disorder) or 0.8–1.1 mEq/L (for acute mania); LICAB, LITHOSUN 300 mg tab, 400 mg SR tab.

(Note: See Index for preparations of other drugs).

Antidepressants

- 1. Reversible inhibitors of MAO-A (RIMAs) Moclobemide, Clorgyline
- 2. Tricyclic antidepressants (TCAs)
 - A. NA + 5-HT reuptake inhibitors Imipramine, Amitriptyline, Trimipramine, Doxepin, Dothiepin, Clomipramine
 - B. Predominantly NA reuptake inhibitors Desipramine, Nortriptyline, Amoxapine, Reboxetine

Fluoxetine, Fluvoxamine, Paroxetine, Sertraline, Citalopram, Escitalopram

3. Selective serotonin reuptake inhibitors (SSRIs)

4. Atypical antidepressants

Trazodone, Mianserin, Mirtazapine, Venlafaxine, Duloxetine, Tianeptine, Amineptine, Bupropion

- 1. Moclobemide: 150 mg BD-TDS (max. 600 mg/day); RIMAREX, TRIMA 150, 300 mg tabs.
- 2. Imipramine: 50-200 mg/day; DEPSONIL, ANTIDEP 25 mg tab, 75 mg SR cap.
- 3. Amitriptyline: 50-200 mg/day; AMLINE, SAROTENA, TRYPTOMER, 10, 25, 75 mg tabs.
- 4. Trimipramine: 50–150 mg/day; SURMONTIL 10, 25 mg tab.
- 5. Doxepin: 50–150 mg/day; SPECTRA, DOXIN, DOXETAR 10, 25, 75 mg tab/cap.
- 6. Clomipramine: 50-150 mg/day; CLOFRANIL, 10, 25, 50 mg tab, 75 mg SR tab, CLONIL, ANAFRANIL 10, 25 mg tab.
- 7. Dothiepin (Dosulpin): 50-150 mg/day; PROTHIADEN, DOTHIN 25, 75 mg tab.
- 8. Desipramine: 50–200 mg/day.
- 9. Nortriptyline: 50-150 mg/day; SENSIVAL, PRIMOX 25 mg tab.
- 10. Amoxapine: 100–300 mg/day; DEMOLOX 50, 100 mg tab.
- 11. Reboxetine: 4-10 mg/day; NAREBOX 4, 8 mg tabs.
- 12. Fluoxetine: 20-50 mg/day; FLUDAC 20 mg cap, 20 mg/5 ml susp; FLUNIL 10, 20 mg caps; FLUPAR, PRODAC 20 mg cap.
- 13. Fluvoxamine: 50–200 mg/day; FLUVOXIN 50, 100 mg tab.
- 14. Paroxetine: 20-50 mg/day; XET 10, 20, 30, 40 mg tabs.
- 15. Sertraline: 50–200 mg/day; SERENATA, SERLIN, SERTIL 50, 100 mg tabs.
- 16. Citalopram: 20–40 mg/day; CELICA 10, 20, 40 mg tabs.

- 17. Escitalopram: 10–20 mg OD; ESDEP, FELIZ-S 5, 10, 20 mg tabs.
- 18. Trazodone: 50–200 mg/day; TRAZODAC 25, 50 mg tab, TRAZONIL, TRAZALON 25, 50, 100 mg tabs.
- 19. Mianserin: 30–100 mg/day; TETRADEP 10, 20, 30 mg tab, SERIDAC 10, 30 mg tab.
- 20. Bupropion: 150–300 mg/day; SMOQUIT 150 mg tab.
- 21. Mirtazapine: 15–45 mg/day; MIRT 15, 30, 45 mg tabs, MIRTAZ 15, 30 mg tab.
- 22. Venlafaxine: 75–150 mg/day; VENLOR 25, 37.5, 75 mg tabs, VENIZ-XR 37.5, 75, 150 mg ER caps.
- 23. Tianeptine: 12.5 mg BD-TDS; STABLON 12.5 mg tab.
- Amineptine: 100 mg BD at breakfast and lunch; SURVECTOR 100 mg tab.
- 25. Duloxetine: 30-80 mg/day; DELOK, DULANE, DUZAC 20, 30, 40 mg caps.

Antianxiety Drugs (Anxiolytic-sedative, Minor tranquillizer)

1. *Benzodiazepines* Diazepam, Chlordiazepoxide, Oxazepam, Lorazepam, Alprazolam

2. Azapirones Buspirone, Gepirone, Ispapirone

3. Sedative Hydroxyzine

antihistaminic

4. β *blocker* Propranolol

- Diazepam: 5-30 mg/day in 2-3 divided doses; VALIUM, PLACIDOX 2, 5, 10 mg tabs; CALMPOSE 5, 10 mg tab, 2 mg/5 ml Syr.
- 2. Chlordiazepoxide: 20–100 mg/day in 2–3 divided doses, LIBRIUM 10, 25 mg tabs; EQUILIBRIUM 10 mg tab.
- Oxazepam: 30-60 mg/day in 2-3 divided doses; SEREPAX 15, 30 mg tabs.

- 4. Lorazepam: 1–6 mg/day in 1–2 divided doses; LARPOSE, ATIVAN 1, 2 mg tab. CALMESE 1, 2 mg tabs, 4 mg/2 ml inj.
- Alprazolam: 0.25–1.0 mg TDS; upto 6 mg/day in panic disorder; ALPRAX 0.25, 0.5, 1.0 mg tabs., 0.5, 1.0, 1.5 mg SR tabs; ALZOLAM 0.25, 0.5, 1.0 mg tabs; 1.5 mg SR tab, ALPROCONTIN 0.5, 1.0, 1.5 mg CR tabs. RESTYL-SR 0.5, 1.0, 1.5 mg SR tabs.
- 6. Buspirone: 5–15 mg 1–3 times daily; BUSCALM, ANXIPAR, BUSPIN 5, 10 mg tabs.
- 7. Hydroxyzine: 50–200 mg/day; ATARAX 10, 25 mg tabs, 10 mg/5 ml syr, 25 mg/2 ml inj.

Opioid Analgesics

- 1. Natural opium alkaloids: Morphine, Codeine
- 2. *Semisynthetic opiates*: Diacetylmorphine (Heroin), Pholcodeine, Oxymorphone, Hydromorphone, Oxycodone
- 3. *Synthetic opioids*: Pethidine (Meperidine), Fentanyl, Alfentanil, Sufentanil, Methadone, Dextropropoxyphene, Tramadol.

- 1. Morphine: 10–50 mg oral, 10–15 mg i.m. or s.c., 2–6 mg i.v.; 2–3 mg epidural/intrathecal; children 0.1–0.2 mg/kg. MORPHINE SULPHATE 10 mg/ml inj; MORCONTIN 10, 30, 60, 100 mg continuous release tabs; 30–100 mg BD; RILIMORF 10, 20 mg tabs, 60 mg SR tab.
- 2. Codeine: 30–60 mg oral; CODEINE 15 mg tab, 15 mg/5 ml syr.
- 3. Pethidine: 50–100 mg oral/i.m./s.c., 10–15 mg i.v. (rarely); PETHIDINE 50, 100 mg tabs, 100 mg/2 ml inj.
- 4. Fentanyl: $2-4 \,\mu g/kg$ i.v.; $25-75 \,\mu g/hr$ transdermal; TROFENTYL, FENT 50 $\,\mu g/ml$ in 2 ml amp and 10 ml vial, DUROGESIC transdermal patch delivering $25 \,\mu g/hr$, $50 \,\mu g/hr$ or $75 \,\mu g$ per hour; the patch is changed every 2–3 days.
- 5. Methadone: 2.5–10 mg oral/i.m.; PHYSEPTONE 10 mg inj., 2 mg/5 ml linctus.

- Dextropropoxyphene: 60–120 mg oral; PARVODEX 60 mg cap; PARVON, PROXYVON, WALAGESIC: dextropropoxyphene 65 mg + paracetamol 400 mg cap; WYGESIC, SUDHINOL 65 mg + paracetamol 650 mg cap.
- Tramadol: 50–100 mg oral/i.m./slowi.v.infusion (children 1–2 mg/kg) 4–6 hourly. CONTRAMAL, DOMADOL, TRAMAZAC 50 mg cap, 100 mg SR tab; 50 mg/ml inj in 1 and 2 ml amps.

Complex Action Opioids and Opioid Antagonists

- Agonist-antagonists (κ-analgesics)
 Nalorphine, Pentazocine, Nalbuphine, Butorphanol
- Partial/weak μ agonist + κ antagonist Buprenorphine
- 3. *Pure antagonists*Naloxone, Naltrexone, Nalmefene

- 1. Nalorphine: 3–5 mg i.v./i.m.
- 2. Pentazocine: 50–100 mg, oral, 30–60 mg i.m., s.c., FORTWIN 25 mg tab., 30 mg/ml inj., PENTAWIN, SUSEVIN 30 mg/ml inj.
- 3. Butorphanol: 1–4 mg i.m./i.v.; BUTRUM 1 mg/ml and 2 mg/ml inj.
- Buprenorphine: 0.3–0.6 mg i.m., s.c. or slow i.v., also sublingual 0.2–0.4 mg 6–8 hourly; NORPHIN, TIDIGESIC 0.3 mg/ml inj. 1 and 2 ml amps. 0.2 mg sublingual tab; BUPRIGESIC, PENTOREL 0.3 mg/ml inj in 1, 2 ml amp.
- 5. Naloxone: Adults 0.4–0.8 mg i.v. every 2–3 min (max 10 mg); neonates 10 μ g/kg in the umbilical cord; NARCOTAN 0.4 mg in 1 ml (adult) and 0.04 mg in 2 ml (infant) amps; NALOX, NEX 0.4 mg inj.
- 6. Naltrexone: 50 mg/day oral; NALTIMA, NALTROX 50 mg tab.

Central Nervous System Stimulants

- 1. *Convulsants:* Strychnine, Picrotoxin, Bicuculline, Pentylenetetrazol (PTZ).
- 2. Analeptics: Doxapram.
- 3. *Psychostimulants*: Amphetamines, Methylphenidate, Modafinil, Pemoline, Cocaine, Caffeine.

Preparations

- 1. Doxapram: 40–80 mg i.m. or i.v.; 0.5–2 mg/kg/hr i.v. infusion. CAROPRAM 20 mg/ml in 5 ml amp.
- 2. Methylphenidate: Adults 5–10 mg BD, child 0.25 mg/kg/day (max 1 mg/kg/day); RETALIN 5, 10 mg tab.
- Modafinil: 100-200 mg morning and afternoon (for day time sleepiness), 200 mg 1 hour before starting night shift. MODALERT, PROVAKE 100, 200 mg tabs.
- 4. Caffeine: 20–100 mg oral; in CAFERGOT: Caffeine 100 mg + ergotamine 1 mg tab. MICROPYRIN: Caffeine 20 mg + aspirin 350 mg tab.

Cognition Enhancers (Cerebroactive Drugs)

- 1. Cholinergic activators:
 - Tacrine, Rivastigmine, Donepezil, Galantamine
- 2. Glutamate (NMDA) antagonist:
 - Memantine
- 3. *Miscellaneous cerebroactive drugs:*Piracetam, Pyritinol (Pyrithioxine), Dihydroergotoxine (Codergocrine), Piribedil, Ginkgo biloba, Citicoline.

Preparations

 Rivastigmine: Start with 1.5 mg BD, increase every 2 weeks by 1.5 mg/day upto 6 mg/day; EXELON, RIVAMER 1.5, 3.0, 6.0 mg caps.

- Donepezil: 5 mg once at bed time (max. 10 mg OD);DONECEPT, DOPEZIL 5, 10 mg tabs.
- 3. Galantamine: 4 mg BD (max. 12 mg BD); GALAMER 4, 8, 12 mg tabs.
- 4. Memantine: 5 mg OD, increase up to 10 mg BD; ADMENTA 5, 10 mg tabs, ALMANTIN 5 mg tab.
- Piracetam: 0.8–1 g TDS; children 20 mg/kg BD–TDS; 1–3 g i.m. 6 hourly in stroke/head injury; NORMABRAIN, NEUROCETAM, NOOTROPIL 400, 800 mg cap, 500 mg/5 ml syr., 300 mg/ml inj.
- 6. Pyritinol (Pyrithioxine): 100–200 mg TDS, child 50–100 mg TDS oral, 200–400 mg 6 hourly (max. 1 g/day) i.v.; ENCEPHABOL 100, 200 mg tab, 100 mg/5 ml susp, 200 mg dry powder in vial with solvent for i.v. infusion.
- Dihydroergotoxine (Codergocrine): 1–1.5 mg TDS oral/ sublingual, 0.3 mg i.m. OD; HYDERGINE 1 mg tab, 0.3 mg/ml ini, CERELOID 1 mg tab.
- 8. Piribedil: 50 mg OD-BD; TRIVASTAL-LA 50 mg tab.
- Ginkgo biloba: 40 mg TDS; GINKOCER, BILOVAS, GINKOBA 40 mg tab.
- Citicoline: Oral 200-600 mg/day in divided doses;
 Parenteral 0.5-1.0 g/day i.m./i.v.
 STROLIN 500 mg tab, CITILIN, CITINOVA 500 mg tab, 500 mg/2 ml inj.

Cardiovascular Drugs

Antihypertensive Drugs

- 1. Angiotensin converting enzyme (ACE) inhibitors Captopril, Enalapril, Lisinopril, Perindopril, Ramipril, Benazepril, Trandolapril, Fosinopril, Imidapril
- 2. Angiotensin (AT₁ receptor) antagonists
 Losartan, Candesartan, Irbesartan, Valsartan,
 Telmisartan, Olmesartan
- 3. Calcium channel blockers

 Verapamil, Diltiazem, Nifedipine, Felodipine,
 Amlodipine, S(-) Amlodipine, Nitrendipine,
 Lacidipine, Benidipine, Lercanidipine
- 4. Diuretics

Thiazides: Hydrochlorothiazide, Chlorthalidone,

Indapamide

High ceiling: Furosemide, etc.

K+ sparing: Spironolactone, Triamterene, Amiloride

- **5. β Adrenergic blockers** Propranolol, Metoprolol, Atenolol, etc.
- 6. $\beta + \alpha$ Adrenergic blockers Labetalol, Carvedilol
- α Adrenergic blockers
 Prazosin, Terazosin, Doxazosin,
 Phentolamine, Phenoxybenzamine
- **8. Central sympatholytics** Clonidine, Methyldopa
- 9. Vasodilators

Arteriolar: Hydralazine, Minoxidil, Diazoxide Arteriolar + venous: Sodium Nitroprusside

- 1. Captopril: Initially 25 mg BD, increase up to 50 mg TDS as needed. To be taken 1 hr before or 2 hr after a meal; ANGIOPRIL 25 mg tab, ACETEN, CAPOTRIL 12.5, 25 mg tabs.
- 2. Enalapril: 2.5 mg OD-20 mg BD; ENAPRIL, ENVAS, ENAM 2.5, 5, 10, 20 mg tabs.
- 3. Lisinopril: 5 mg OD-20 mg BD; LINVAS, LISTRIL, LIPRIL 2.5, 5, 10 mg tabs, LISORIL 2.5, 5, 10, 20 mg tabs.
- 4. Perindopril: 2 mg OD-4 mg BD; COVERSYL 2, 4 mg tabs.
- 5. Ramipril: 1.25 mg OD-5 mg BD; CARDACE, RAMIRIL, CORPRIL, RPRIL 1.25, 2.5, 5 mg caps.
- 6. Benazepril: 10 mg OD-20 mg BD; BENACE 5, 10, 20 mg tabs.
- 7. Trandolapril: 2 mg OD-4 mg BD; ZETPRIL 1, 2 mg tabs.
- 8. Fosinopril: 10–40 mg OD; FOSINACE, FOVAS 10, 20 mg tabs.
- 9. Imidapril: Start with 5 mg (elderly 2.5 mg) OD, max. 10 mg BD; TANATRIL 5, 10 mg tabs.
- 10. Losartan: 50 mg OD (max. 50 mg BD), liver disease and volume depleted patients 25 mg OD; LOSAR, LOSACAR, TOZAR, ALSARTAN 25, 50 mg tabs.
- 11. Candesartan: 8 mg OD (max. 8 mg BD), liver/kidney disease patients 4 mg OD; CANDESAR 4, 8, 10 mg tabs, CANDILONG, CANDESTAN 4, 8 mg tabs.
- 12. Irbesartan: 150-300 mg OD; IROVEL, IRBEST 150, 300 mg tabs.
- 13. Valsartan: 80-160 mg OD; DIOVAN 40, 80, 160 mg tabs. STARVAL, VALZAAR 80, 160 mg tabs.
- 14. Telmisartan: 20–80 mg OD; TELMA, TELSAR, TELVAS 20, 40 mg tabs.
- 15. Olmesartan medoxomil: 20-40 mg OD; OLMAT 20, 40 mg tabs.
- 16. Verapamil: 40–160 mg TDS oral, 5 mg by slow i.v. inj; CALAPTIN 40, 80 mg tab, 120, 240 mg SR tab; VPL 5 mg/2 ml inj.
- 17. Diltiazem: 30-60 mg TDS-QID oral; DILZEM 30, 60 mg tabs, 90 mg SR tab; 25 mg/5 ml inj; ANGIZEM 30, 60, 90, 120, 180 mg tab, DILTIME 30, 60 mg tab; 90, 120 mg SR tab.

- 18. Nifedipine: 5–20 mg BD–TDS oral; CALCIGARD, DEPIN, NIFELAT 5, 10 mg cap, also 10 mg, 20 mg SR (RETARD) tab; NICARDIA 5, 10 mg tab; 10, 20, 30 mg SR tab.
- 19. Felodipine: 5–10 mg OD (max. 10 mg BD); FELOGARD, PLENDIL, RENDIL 2.5, 5, 10 mg ER tab.
- Amlodipine: 5–10 mg OD; AMLOPRES, AMCARD, AMLOPIN, MYODURA 2.5, 5, 10 mg tabs.
- 21. S(-) Amlodipine: 2.5–5 mg OD; S-NUMLO 1.25, 2.5, 5.0 mg tabs; ESAM, S-AMCARD, ASOMEX 2.5, 5.0 mg tabs.
- 22. Nitrendipine: 5–20 mg OD (max. 20 mg BD); CARDIF, NITREPIN 10, 20 mg tab.
- 23. Lacidipine: 4–6 mg OD; LACIVAS, SINOPIL 2, 4 mg tabs.
- 24. Benidipine: 4-8 mg OD; CARITEC 4, 8 mg tabs.
- 25. Lercanidipine: 10–20 mg OD; LERKA, LEREZ 10, 20 mg tabs.
- 26. Hydrochlorothiazide: 12.5–50 mg OD; AQUAZIDE. HYDRAZIDE, HYDRIDE 12.5, 25, 50 mg tabs.
- 27. Chlorthalidone: 25–100 mg OD; HYTHALTON 100 mg tab.
- 28. Indapamide: 2.5 mg OD; LORVAS, NATRILIX 2.5 mg tab, NATRILIX-SR, DIURIX-SR 1.5 mg tab.
- 29. Clonidine: Start with 100 μg OD or BD, max 300 μg TDS, orally or i.m.; CATAPRES 150 μg tab, ARKAMIN 100 μg tab.
- 30. Methyldopa: 0.25–0.5 g BD–QID; EMDOPA, ALPHADOPA 250 mg tab.
- 31. Hydralazine: 25–50 mg OD-TDS; NEPRESOL 25 mg tab.
- 32. Sodium nitroprusside: Initiate i.v. infusion with 0.02 mg/min, titrate with lowering of blood pressure upto 0.1–0.3 mg/min; SONIDE, PRUSIDE, NIPRESS 50 mg in 5 ml inj.

Note: See Index for preparations of other drugs.

Antianginal Drugs

1. Nitrates

(a) *Short acting:* Glyceryl trinitrate (GTN, Nitroglycerine)

(b) *Long acting*: Isosorbide dinitrate (short acting by sublingual route), Isosorbide mononitrate, Erythrityl tetranitrate, Penta erythritol tetranitrate

2. β Blockers

Propranolol, Metoprolol, Atenolol and others.

- 3. Calcium channel blockers
 - (a) Phenyl alkylamine: Verapamil
 - (b) Benzothiazepine: Diltiazem
 - (c) *Dihydropyridines*: Nifedipine, Felodipine, Amlodipine, S(-) Amlodipine, Nitrendipine, Lacidipine, Benidipine, Lercanidipine
- 4. Potassium channel opener

Nicorandil

5. Others

Dipyridamole, Trimetazidine, Ranolazine, Ivabradine, Oxyphedrine

Preparations

1. Glyceryl trinitrate (GTN), Nitroglycerine:

0.5 mg sublingual; ANGISED 0.5 mg tab, 0.4–0.8 mg s.l. spray; NITROLINGUAL, GTN spray 0.4 mg per spray.

5–15 mg oral; ANGISPAN-TR 2.5, 6.5 mg SR cap, NITROCONTIN, CORODIL 2.6, 6.4 mg CR tabs.

One transdermal patch for 14–16 hr per day; NITRODERM-TTS 5 or 10 mg patch.

5–20 $\mu g/min~i.v.;$ MYOVIN, MILLISROL, NITROJECT 5 mg/ml~inj.

2. Isosorbide dinitrate:

5–10 mg sublingual; SORBITRATE 5, 10 mg tab. 10–20 mg oral; ISORDIL 5 mg sublingual & 10 mg oral tab. 20–40 mg sustained release oral; DITRATE 5, 10 mg tab; 20, 40 mg SR tab.

3. Isosorbide-5-mononitrate:

20–40 mg oral; MONOTRATE 10, 20, 40 mg tab, 50 mg SR tab, 5-MONO, MONOSORBITRATE 10, 20, 40 mg tab.

4. Erythrityl tetranitrate:

15-60 mg oral; CARDILATE 5, 15 mg tab.

70 Cardiovascular Drugs

- Pentaerythritol tetranitrate:
 10–40 mg oral; PERITRATE 10 mg tab.
 80 mg sustained release oral; PERITRATE-SA 80 mg SR tab.
- 6. Nicorandil: 5–20 mg BD; NIKORAN, 5, 10 mg tabs, 2 mg/vial and 48 mg/vial inj; KORANDIL 5, 10 mg tabs.
- Trimetazidine: 20 mg TDS after meals; FLAVEDON, 20 mg tabs, 35 mg modified release tab; CARVIDON, TRIVEDON 20 mg tab.
- 8. Ranolazine: 0.5-1.0 g BD as SR tab; RANOZEX, REVULANT, RANX, CARTINEX 500 mg SR tab.
- 9. Ivabradine: 5-7.5 mg BD; IVABRAD 5, 7.5 mg tab.
- 10. Oxyphedrine: 8–24 mg TDS oral, 4–8 mg i.v. OD–BD; ILDAMEN 8, 24 mg tab., 4 mg/2 ml inj.

(*Note: See* Index for preparations of β -blockers and calcium channel blockers).

Drugs for Peripheral Vascular Diseases

- 1. Rheological agent: Pentoxiphylline (Oxpentifylline)
- 2. *Direct acting vasodilators*: Cyclandelate, Xanthinol nicotinate (Nicotinyl xanthinate)
- 3. β -adrenergic agonists: Isoxsuprine, Nylidrin
- 4. *α-adrenergic blockers*: Prazosin, Tolazoline, Phenoxybenzamine
- Calcium channel blockers: Nifedipine and other dihydropyridines
- 6. Phosphodiesterase inhibitor: Cilostazol
- 7. Antiplatelet drugs: Aspirin, Clopidogrel, Ticlopidine
- 8. Antioxidants: Vitamin E

- Pentoxiphylline: 400 mg BD-TDS; TRENTAL-400, FLEXITAL 400 mg SR tab, 300 mg/15 ml for slow i.v. injection.
- Cyclandelate: 200–400 mg TDS; CYCLOSPASMOL, CYCLASYN 200, 400 mg tab/cap.

- 3. Xanthinol nicotinate: 300–600 mg TDS oral; 300 mg by i.m. or slow i.v. injection; COMPLAMINA 150 mg tab, 500 mg retard tab, 300 mg/2 ml inj.
- 4. Cilostazol: 100 mg BD; CILODOC, PLETOZ, STILOZ 50, 100 mg tabs.

(Note: See Index for preparations of other drugs).

Drugs for Congestive Heart Failure

1. Inotropic drugs

- (a) Cardiac glycosides: Digoxin, Digitoxin, Ouabain
- (b) Sympathomimetics: Dobutamine, Dopamine
- (c) Phosphodiesterase III inhibitors: Amrinone (Inamrinone), Milrinone

2. Diuretics

- (a) High ceiling diuretics: Furosemide, Bumetanide
- (b) Thiazide like diuretics: Hydrochlorothiazide, Metolazone, Xipamide

Inhibitors of Renin-Angiotensin system

- (a) ACE-inhibitors: Enalapril, Ramipril and others
- (b) Angiotensin (AT, receptor) antagonists: Losartan and others

4. Vasodilators

- (a) Venodilator. Glyceryl trinitrate and other nitrates
- (b) Arteriolar dilator. Hydralazine
- (c) Arteriolar + Venodilator: Sod. Nitroprusside

5. β-Adrenergic blockers

Metoprolol, Bisoprolol, Carvedilol

6. Aldosterone antagonist Spironolactone, Eplerenone

Preparations

1. Digoxin: 0.25-0.5 mg/day (elderly 0.125-0.25 mg/day) oral adjusted according to response, 0.25 mg slow i.v. injection followed

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- by 0.1 mg 1–2 hourly as needed; DIGOXIN 0.25 mg tab, 0.05 mg/ml pediatric elixir, 0.5 mg/2 ml inj. LANOXIN 0.25 mg tab, CARDIOXIN, DIXIN 0.25 mg tab, 0.5 mg/2 ml inj.
- Digitoxin: 0.05–0.2 mg/day oral adjusted according to response; DIGITOXIN 0.1 mg tab.
- Amrinone (Inamrinone): 0.5 mg/kg i.v. bolus injection followed by 5–10 μg/kg/min i.v. infusion (max. 10 mg/kg in 24 hours). AMICOR, CARDIOTONE 5 mg/ml (as lactate) 20 ml amp.
- 4. Milrinone: 50 μg/kg i.v. bolus followed by 0.4–1.0 μg/kg/min infusion; PRIMACOR IV 10 mg/10 ml inj.

(Note: See Index for preparations of other drugs)

Antiarrhythmic Drugs

- CLASS I: Membrane stabilizing agents (Na+ channel blockers)
 - A. *Moderately decrease dv/dt of 0 phase*Quinidine, Procainamide, Disopyramide,

 Moricizine
 - B. Little decrease in dv/dt of 0 phase Lidocaine, Mexiletine
 - C. Marked decrease in dv/dt of 0 phase Propafenone, Flecainide
- CLASS II: Antiadrenergic agents (β blockers)
 Propranolol, Esmolol, Sotalol (also class III)
- CLASS III: Agents widening AP
 (prolong repolarization and ERP)
 Amiodarone, Bretylium (also class II),
 Dofetilide, Ibutilide
- CLASS IV: Calcium channel blockers Verapamil, Diltiazem

Note: Class IA agents also have Class III property; propranolol has Class I action as well; sotalol and bretylium have both Class II and Class III actions.

Additional antiarrhythmic drugs

- 1. For paroxysmal supraventricular tachycardia (PSVT): Adenosine, Digitalis.
- 2. *For atrio-ventricular (A-V) block*: Sympathomimetics—Isoprenaline, etc. Anticholinergics—Atropine.

- Quinidine: 100–200 mg TDS oral: rarely 100–300 mg slow i.v. inj. QUINIDINE SULPHATE 200 mg tab; QUININGA 300 mg tab, 600 mg/2 ml inj, NATCARDINE 100 mg tab.
- Procainamide: for abolition of arrhythmia—0.5–1 g oral or i.m. followed by 0.25–0.5 g every 2 hours; or 500 mg i.v. loading dose (25 mg/min injection) followed by 2 mg/kg/hour. Maintenance dose—0.5 g every 4–6 hours; PRONESTYL 250 mg tab., 1 g/10 ml inj.
- 3. Disopyramide: 100–150 mg 6 hourly oral; rarely 2 mg/kg by slow i.v. injection; NORPACE, 100, 150 mg cap, REGUBEAT 100 mg tab.
- 4. Lidocaine (Lignocaine): 50–100 mg bolus followed by 20–40 mg every 10–20 min or 1–3 mg/min infusion; XYLOCARD, GESICARD 20 mg/ml inj. (5, 50 ml vials). These preparations for cardiac use contain no preservative. The local anaesthetic preparations should not be used for this purpose.
- Mexiletine: 100–200 mg i.v. over 10 min., 1 mg/min infusion.
 Oral: 150–200 mg TDS with meals; MEXITIL 50, 150 mg caps, 250 mg/10 ml inj.
- Propafenone: 150 mg BD-300 mg TDS oral; RHYTHMONORM 150 mg tab.
- Propranolol: 1 mg/min (max 5 mg) i.v. injection under close monitoring; 40–80 mg (max 160 mg) BD to QID oral; INDERAL, CIPLAR 10, 40, 80 mg tabs, 1 mg/ml inj, BETABLOCK 10, 40 mg tabs.
- Sotalol: 40-80 mg BD-QID oral; SOTAGARD 40, 80 mg tabs.

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- 9. Esmolol: 0.5 mg/kg in 1 min followed by 0.05–0.2 mg/kg/min i.v. infusion; MINIBLOCK 100 mg/10 ml, 250 mg/10 ml inj.
- Amiodarone: 400–600 mg/day orally for few weeks, followed by 100–200 mg OD for maintenance; 100–300 mg (5 mg/kg) slow i.v. injection over 30–60 min; CORDARONE, ALDARONE, EURYTHMIC 100, 200 mg tabs, 150 mg/3 ml inj.
- 11. Verapamil: 5 mg slow i.v. injection over 2–3 min (to terminate PSVT), 60–120 mg TDS orally for maintenance; CALAPTIN 40, 80 mg tab; 120, 240 mg SR tab, 5 mg/2 ml inj.
- 12. Diltiazem: 25 mg by slow i.v. inj (to terminate PSVT), 30–60 mg TDS orally for maintenance; DILZEM 30, 60 mg tabs, 90 mg SR tab; 25 mg/5 ml inj.
- 13. Adenosine: 6–12 mg (free base) by rapid i.v. injection in a central vein; ADENOJECT, ADENOCOR, 3 mg adenosine base per ml in 2 ml and 10 ml amp.

Drugs Acting on Kidney

Diuretics

- 1. High efficacy diuretics (Inhibitors of Na⁺-K⁺-2Cl⁻ cotransport)
 - (a) Sulphamoyl derivatives: Furosemide, Bumetanide, Torasemide
 - (b) Phenoxyacetic acid derivative: Ethacrynic acid.
- 2. Medium efficacy diuretics (Inhibitors of Na⁺-Cl⁻ symport)
 - (a) Benzothiadiazines (thiazides): Hydrochlorothiazide, Benzthiazide, Hydroflumethiazide, Clopamide
 - (b) *Thiazide like (related heterocyclics)*: Chlorthalidone, Metolazone, Xipamide, Indapamide.
- 3. Weak or adjunctive diuretics
 - (a) Carbonic anhydrase inhibitors: Acetazolamide
 - (b) Potassium sparing diuretics
 - (i) Aldosterone antagonist: Spironolactone, Eplerenone
 - (ii) *Inhibitors of renal epithelial Na⁺ channel:* Triamterene, Amiloride
 - (c) Osmotic diuretics: Mannitol, Isosorbide, Glycerol
 - (d) Xanthines: Theophylline

Preparations

 Furosemide (Frusemide): Usually 20–80 mg once daily in the morning. In renal insufficiency, upto 200 mg 6 hourly given by i.m./i.v. route. In pulmonary edema 40–80 mg i.v.; LASIX 40 mg tab., 20 mg/2 ml inj. LASIX HIGH DOSE 500 mg tab,

- 250 mg/25 ml inj; (solution degrades spontaneously on exposure to light), SALINEX 40 mg tab, FRUSENEX 40, 100 mg tab.
- 2. Bumetanide: 1–5 mg oral once daily in the morning, 2–4 mg i.v./i.m. (max 15 mg/day in renal failure); BUMET 1 mg tab, 0.25 mg/ml inj.
- 3. Torasemide: 2.5–20 mg once daily in the morning; DIURETOR 10, 20 mg tabs, DYTOR 10, 20, 100 mg tabs.
- 4. Hydrochlorothiazide: 12.5–100 mg OD in the morning; AQUAZIDE, HYDRAZIDE, HYDRIDE 12.5, 25, 50 mg tabs.
- 5. Benzthiazide: 25–100 mg OD in the morning; FOVANE 25 mg tab.
- 6. Hydroflumethiazide: 25–100 mg OD in the morning; NACLEX 25 mg tab.
- 7. Chlorthalidone: 50–100 mg OD in the morning; HYTHALTON 100 mg tab.
- 8. Metolazone: 5–20 mg OD in the morning; XAROXOLYN 5, 10 mg tab, DIUREM 2.5, 5 mg tabs.
- 9. Xipamide: 20–40 mg OD in the morning; XIPAMID 20 mg tab.
- 10. Indapamide: 2.5–5 mg OD in the morning; LORVAS 2.5 mg tab.
- 11. Clopamide: 10–60 mg OD in the morning; BRINALDIX 20 mg tab.
- 12. Acetazolamide: 250 mg OD-BD; DIAMOX, SYNOMAX 250 mg tab. IOPAR-SR 250 mg SR cap.
- 13. Spironolactone: 25–50 mg BD–QID; ALDACTONE 25, 100 mg tabs; ALDACTIDE: Spironolactone 25 mg + hydroflumethiazide 25 mg tab. LACILACTONE, SPIROMIDE, AMIFRU-S Spironolactone 50 mg +furosemide 20 mg tab.
- 14. Eplerenone: 25-50 mg/day; EPTUS 25, 50 mg tab, EPLERAN 25 mg tab.
- 15. Triamterene: 50–100 mg daily; DITIDE, triamterene 50 mg + benzthiazide 25 mg tab; FRUSEMENE, triamterene 50 mg + furosemide 20 mg tab.
- Amiloride: 5-10 mg OD-BD; BIDURET, KSPAR: Amiloride 5 mg + hydrochlorothiazide 50 mg tab, LASIRIDE, AMIFRU amiloride 5 mg + furosemide 40 mg tab.

17. Mannitol: 100-500 ml of 10-20% solution infused i.v.; MANNITOL 10%, 20% in 100, 200, 350 and 500 ml vac.

Antidiuretics

- 1. Antidiuretic hormone (ADH) and its analogues: Vasopressin, Desmopressin, Lypressin, Terlipressin.
- 2. Diuretics: Thiazides, Amiloride.
- 3. Miscellaneous: Chlorpropamide, Carbamazepine.

Preparations

- 1. Aqueous Vasopressin (Arginine Vasopressin, AVP): 5-10 U i.v/i.m./s.c.; PROSTACTON 10 U inj.
- 2. Lypressin: 10 IU i.m. or s.c. or 20 IU diluted in 100-200 ml of dextrose solution and infused i.v. over 10-20 min; PETRESIN, VASOPIN 20 IU/ml inj.
- 3. Terlipressin: 2 mg i.v., repeat 1–2 mg every 4–6 hours as needed; GLYPRESSIN, TERLINIS, T-PRESSIN 1 mg freez dried powder with 5 ml diluent for inj.
- 4. Desmopressin (dDAVP): Intranasal: Adults 10-40 µg/day in 2-3 divided doses, children 5-10 µg at bed time

Oral: 0.1-0.2 mg TDS

Parenteral (s.c. or i.v.) 2-4 µg/day in 2-3 divided doses.

MINIRIN 100 μg/ml nasal spray (10 μg per actuation); 100 μg/ml intranasal solution in 2.5 ml bottle with applicator; 0.1 mg tablets; $4 \mu g/ml$ inj.

(Note: See above for preparations of thiazide diuretics and amiloride. Carbamazepine and chlorpropamide are not used to treat diabetes insipidus).

Drugs Affecting Blood

Haematinics

1. Iron

- (a) Oral: Ferrous sulfate, Ferrous fumarate, Ferrous gluconate, Ferrous succinate, Colloidal ferric hydroxide, Iron hydroxy polymaltose, Ferric ammonium citrate, Iron calcium complex, Carbonyl iron
- (b) Parenteral
 Iron-dextran, Iron-sorbitol-citric acid

2. Maturation factors

- (a) Vitamin B₁₂: Cyanocobalamin. Hydroxocobalamin, Methylcobalamin
- (b) Folic acid, Folinic acid (leucovorin, citrovorum factor, 5-formyl THFA)

3. Miscellaneous

Copper, Pyridoxine, Riboflavin

Preparations

Oral iron: Therapeutic dose: 100–200 mg elemental iron per day (children 3–5 mg/kg/day).

Prophylactic dose: 30 mg elemental iron (children 1 mg/kg) per day.

- Ferrous sulfate (hydrated salt 20% iron, dried salt 32% iron); FERSOLATE 200 mg tab.
- 2. Ferrous fumarate (33% iron); NORI-A 200 mg tab.
- 3. Ferrous gluconate (12% iron); FERRONICUM 300 mg tab, 400 mg/15 ml elixir.
- 4. Colloidal ferric hydroxide (50% iron); NEOFERUM 200 mg tab, 400 mg/5 ml liquid, 100 mg/ml drops.

Combination preparations

Trade name	Iron compound	Other ingredients
CONVIRON Cap	Fe. sulfate (dried) 60 mg	B_{12} 15 µg, folic acid 1.5 mg, B_{6} 1.5 mg, vit. C 75 mg
FESOVIT- SPANSULE Cap	Fe. sulfate (dried) 150 mg	$B_{\scriptscriptstyle 12}$ 15 µg, folic acid 1 mg, nicotinamide 50 mg, $B_{\scriptscriptstyle 6}$ 2 mg
FEFOL SPANSULE Cap	Fe. sulfate 150 mg	Folic acid 0.5 mg
HEMGLOB syr (15 ml)	Fe. gluconate 300 mg	B ₁₂ 15 μg, B ₁ 5 mg, B ₂ 5 mg, B ₆ 1.5 mg, niacinamide 45 mg
AUTRIN Cap	Fe. fumarate 300 mg	B_{12} 15 µg, folic acid 1.5 mg, vit. C 150 mg
DUMASULES Cap	Fe. fumarate 300 mg	B_{12} 7.5 µg, folic acid 0.75 mg, B_1 5 mg, niacinamide 50 mg, vit. C 75 mg, B_6 1.5 mg
HEMSYNERAL Cap	Fe. fumarate 200 mg	B_{12} 15 µg, folic acid 1.5 mg
HEMATRINE Cap	Fe. succinate 100 mg	B_{12} 2.5 µg, folic acid 0.5 mg, vit. C 25 mg, niacinamide 15 mg
POLYRON tab, BIOFER tab POLYFER chewable tab	Iron hydroxy polymaltose (Iron 100 mg)	Folic acid 0.35 mg
MUMFER	Iron hydroxy polymaltose (Iron 100 mg)	Folic acid 0.5 mg
TONOFERON syr (5 ml)	Colloidal ferric hydroxide 500 mg (iron 250 mg)	Folic acid 0.5 mg, $$B_{\rm 12}5~\mu g$$
drops (1 ml)	—do—50 mg (Iron 25 mg)	Folic acid 0.2 mg, B_{12} 5 μg

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Contd...

Trade name	Iron compound	Other ingredients
FERRICARB cap	Carbonyl iron (Iron 100 mg)	Folic acid 1.5 mg, B_{12} 15 μ g, Zinc sulf 88 mg, pyridoxin 3 mg, selenite 60 μ g
HBFAST tab	Carbonyl iron (Iron 100 mg)	Folic acid 0.35 mg
FERROCHELATE Syr (5 ml) drops (1 ml)	Ferric ammon. cit. (Iron 60 mg) —do— (Iron 20 mg)	B_{12} 5 µg, folic acid 1 mg B_{12} 4 µg, folic acid 0.2 mg
RARICAP tab	Iron cal. complex (Iron 25 mg)	Folic acid 0.3 mg
PROBOFEX Cap	Fe. aminoate (60 mg Iron)	B_{12} 15 µg, folic acid 1.5 mg, B_6 3 mg
DEXORANGE Cap, syrup (15 ml)	Ferric ammon. cit. 160 mg	$B_{\scriptscriptstyle 12}7.5~\mu g,$ folic acid 0.5 mg.

Parenteral Iron

- Iron-dextran: 50 mg elemental iron/ml in colloidal solution; 2 ml deep i.m. injection by 'Z' track technique, daily or on alternate days; 2 ml by slow i.v. injection (taking 10 min) daily;
 - IMFERON 2 ml amp.
- Iron-sorbitol-citric acid: 50 mg elemental iron/ml; 1.5 ml daily by deep i.m. injection using 'Z' track technique; JECTOFER 1.5 ml amp.
- 3. Iron-sucrose injection: ICOR 50 mg/2.5 ml and 100 mg/5 ml for i.m. injection.

Maturation factors

 Cyanocobalamin: Therapeutic dose: 30–1000 μg/day by i.m. or deep s.c. injection (not i.v.) for 10 days followed by weekly and then monthly doses; Prophylactic dose 3–10 μg/day oral; REDISOL, MACRABIN 35 μg/5 ml elixir, 100, 500, 1000 μg inj.

- Hydroxocobalamin: doses similar to cyanocobalamin, used only parenterally; REDISOL-H, MACRABIN-H 500, 1000 μg inj.
- Methylcobalamin: 0.5–1.5 mg/day oral; BIOCOBAL, DIACOBAL, METHYLCOBAL 0.5 mg tab, MECOBA, BIGVIN 500 μg/ml inj.
- 4. Folic acid: Therapeutic dose 2–5 mg/day oral/i.m.; prophylactic dose 0.5 mg/day; FOLVITE, FOLITAB 5 mg tab.
- 5. Folinic acid: 1–3 mg i.v.; CALCIUM LEUCOVORIN 3 mg/ml inj; FASTOVORIN 3 mg, 15 mg amps, 50 mg vial; RECOVORIN 15 mg tab, 15 mg and 30 mg vial for inj.

Erythropoietic factor

Recombinant human erythropoietin (Epoetin α , β): 25–100 IU/kg s.c./i.v. 3 times a week (max 600 IU/kg/week);

HEMAX 2000 IU/ml and 4000 IU/ml vials; EPREX 2000 IU, 4000 IU and 10,000 IU in 1 ml prefilled syringes; ZYROP (epoetin β) 2000 IU and 4000 IU vials.

Coagulants

1. Vitamin K

K₁ (from plants, : Phytonadione (Phylloquinone)

fat soluble)

K₂ (produced by : Menaquinones

bacteria) K₃ (synthetic)

—Fat soluble : Menadione, Acetomenaphthone

—Water soluble: Menadione sod. bisulfite,

Menadione sod. diphosphate

2. Miscellaneous: Fibrinogen (human)

: Antihaemophilic factor

: Adrenochrome monosemicarbazone

: Rutin, Ethamsylate

Preparations

 Vitamin K: 5–10 mg oral/i.m. repeated as required; Phytonadione: VITAMIN-K, KENADION 10 mg/ml for i.m. injection. Menadione: 0.66 mg in GYNAE CVP with vit C 75 mg, ferrous gluconate 67 mg, Cal. lactate 300 mg and citras bioflavonoid 150 mg per cap.

Acetomenaphthone: ACETOMENADIONE 5, 10 mg tab; KAPILIN 10 mg tab.

Menadione sod. bisulfite 20 mg, in CADISPER-C with vit C 100 mg, adrenochrome monosemicarbazone, 1 mg, rutin 60 mg, methylhesperidin 40 mg, Cal. phosphate 100 mg per tab.

STYPTOCID 10 mg with adrenochrome monosemicarbazone 0.5 mg, rutin 50 mg, vit C 37.5 mg, vit D 200 i.u., Cal. phosphate 260 mg per tab.

- 2. Fibrinogen: 0.5 g by i.v. infusion; FIBRINAL 0.5 g Vac.
- 3. Antihaemophilic factor: 5–10 U/kg by i.v. infusion, repeated 6–12 hourly. FIBRINAL-H, ANTIHAEMOPHILIC FACTOR: 150 U or 200 U + fibrinogen 0.5 g/bottle for i.v. infusion.
- Adrenochrome monosemicarbazone: 1–5 mg oral/i.m.; STYPTOCHROME 3 mg/2 ml inj., STYPTOCID: 2 mg/2 ml inj; in CADISPER-C, STYPTOCID 1 mg, 0.5 mg tab, with other ingredients.
- Rutin: 60–200 mg BD–TDS oral/i.m.; In CADISPER-C 60 mg tab, in KERUTIN-C 100 mg tab, in STYPTOBION 100 mg tab, 200 mg/ 2 ml inj.
- Ethamsylate: 250-500 mg TDS oral/i.v.; ETHAMSYL, DICYNENE, HEMSYL, K. STAT 250, 500 mg tabs; 250 mg/2 ml inj.

Anticoagulants

1. Used in vivo

A. *Parenteral anticoagulants*Heparin, Low molecular weight heparin
Heparinoids–Heparan sulfate, Danaparoid,

Lepirudin, Ancrod

- B. Oral anticoagulants
 - (i) Coumarin derivatives: Bishydroxycoumarin (Dicumarol), Warfarin sod., Acenocoumarol (Nicoumalone), Ethylbiscoumacetate
 - (ii) Indandione derivative: Phenindione

2. Used in vitro

- A. Heparin
- B. *Calcium complexing agents*: Sodium citrate, Sodium oxalate, Sodium edetate

Preparations

1. Heparin (unfractionated): 5000–10,000 U (children 50–100 U/kg) i.v. bolus doses every 4–6 hours, or i.v. bolus dose followed by 750–1000 U/hr i.v. infusion; alternatively 10,000–20,000 U s.c. 8–12 hourly.

Low dose (s.c.) regimen: 5000 U s.c. every 8–12 hours; HEPARIN SOD., BEPARINE, NUPARIN 1000 and 5000 U/ml in 5 ml vials for injection.

2. Low molecular weight (LMW) heparins:

Enoxaparin: CLEXANE 20 mg (0.2 ml) and 40 mg (0.4 ml) prefilled syringes; 20–40 mg OD, s.c. (start 2 hour before surgery). Reviparin: CLIVARINE 13.8 mg (eq. to 1432 anti Xa IU) in 0.25 ml prefilled syringe; 0.25 ml s.c. once daily for 5–10 days.

Nadroparin: FRAXIPARINE 3075 IU (0.3 ml) and 4100 IU (0.4 ml) inj., CARDIOPARIN 4000 anti Xa IU/0.4 ml, 6000 anti Xa IU/0.6 ml, 100,000 anti Xa IU/10 ml inj.

Dalteparin: 2500 IU s.c. OD for prophylaxis; 100 U/Kg 12 hourly or 200 U/Kg 24 hourly s.c. for treatment of deep vein thrombosis. FRAGMIN 2500, 5000 IU prefilled syringes.

Parnaparin: 0.6 ml s.c. OD for unstable angina and prophylaxis of DVT; FLUXUM 3200 IU (0.3 ml), 6400 IU (0.6 ml) inj.

Ardeparin: 2500–5000 IU s.c. OD; INDEPARIN 2500 IU, 5000 IU prefilled syringes.

- 3. Bishydroxycoumarin (Dicumarol): 200 mg for 2 days followed by 50–100 mg/day oral; DICOUMAROL 50 mg tab.
- 4. Warfarin sod. (recemic): 10–15 mg followed by 2–10 mg/day; UNIWARFIN 1, 2, 5 mg tabs, WARF-5 5 mg tab.
- 5. Acenocoumarol (Nicoumalone): 8–12 mg followed by 2–8 mg/day; ACITROM, NISTROM 1, 2, 4 mg tabs.
- 6. Ethylbiscoum acetate: 900 mg followed by 300–600 mg/day.

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- 7. Phenindione: 200 mg followed by 50–100 mg/day; DINDEVAN 50 mg tab.
- 8. Sodium citrate: 1.65 g for 350 ml of blood (for transfusion); ANTICOAGULANT ACID CITRATE DEXTROSE SOLUTION 2.2 g/100 ml (75 ml is used for 1 unit of blood).
- 9. Sodium oxalate: 10 mg for 1 ml blood (for blood counts etc.).
- 10. Sodium edetate: 2 mg for 1 ml blood (for investigations).

Fibrinolytics (Thrombolytics)

- Streptokinase: For myocardial infarction: 7.5–15 lac IU infused i.v. over 1 hr. For deep vein thrombosis and pulmonary embolism: 2.5 lac IU loading dose over 1/2–1 hr, followed by 1 lac IU/hr for 24 hr; STREPTASE, (freeze dried powder in vials) 2.5 lac, 7.5 lac and 15 lac IU/vial, ESKINASE, CARDIOSTREP 7.5 lac, 15 lac IU/vial.
- Urokinase: For myocardial infarction: 2.5 lac IU i.v. over 10 min followed by 5 lac IU over next 60 min (stop in between if full recanalization occurs) or 6000 IU/min for upto 2 hr. For venous thrombosis and pulmonary embolism: 4400 IU/kg over 10 min i.v. followed by 4400 IU/kg/hr for 12 hr; UROKINASE, KD-UNASE, 2.5 lac, 5 lac, 10 lac IU per vial inj.
- 3. Alteplase (recombinant tissue plasminogen activator (rt-PA): For MI: 15 mg i.v. bolus injection followed by 50 mg over 30 min, then 35 mg over the next 1 hr. For pulmonary embolism: 100 mg i.v. infused over 2 hr; ACTILYSE 50 mg vial with 50 ml solvent water.
- 4. Reteplase: 10 mg i.v. over 10 min, repeat after 30 min.
- 5. Tenecteplase: 0.5 mg/kg 1.v. in one dose or two doses 30 min apart.

Antifibrinolytics

1. Epsilon amino-caproic acid (EACA): Initial priming dose is 5 g oral/i.v., followed by 1 g hourly till bleeding stops (max. 30 g in 24 hrs).

- AMICAR, HEMOCID, HAMOSTAT 0.5 g tab., 1.25 g/5 ml syr., 5 g/20 ml inj.
- 2. Tranexaemic acid: 10–15 mg/kg 2–3 times a day or 1–1.5 g TDS oral, 0.5-1 g TDS by slow i.v. infusion.
- CYCLOKAPRON 500 mg tab, 100 mg/ml inj.
- 3. Aprotinin: 5 lac KIU (Kallikrein inactivator unit) initially, followed by 2 lac KIU every 4 hr, all as slow i.v. infusion; TRASYLOL INF 5 lac KIU in 50 ml inj; APROGEN 1 lac KIU (10 ml) and 5 lac KIU (50 ml) inj.

Antiplatelet Drugs (Antithrombotic Drugs)

- 1. Aspirin: 75-150 mg OD oral; ASA 50 mg tab., COLSPRIN, DISPRIN CV-100: 100 mg soluble tab, LOPRIN 75 mg tab, ASPICOT 80 mg tab, ECOSPRIN 75, 150 mg tab.
- 2. Dipyridamole: 150–300 mg/day; PERSANTIN, 25, 100 mg tabs, THROMBONIL 75, 100 mg tabs, DYNASPRIN: dipyridamole 75 mg + aspirin 60 mg e.c. tab.
- 3. Ticlopidine: 250 mg BD with meals; TYKLID, TICLOVAS, TICLOP, 250 mg tab; ASTIC ticlopidine 250 mg + aspirin 100 mg tab.
- 4. Clopidogrel: 75 mg OD; CLODREL, CLOPILET, DEPLATT 75 mg tab; Clopidogrel 75 mg + aspirin 75 mg: CLODREL PLUS, CLOPITAB-A, THROMBOSPRIN, SYNPLATT tab.
- 5. Abciximab: (Glycoprotein II_b/III_a receptor antagonist) 0.25 mg/kg i.v. 10-60 min before PTCA, followed by 10 µg/min for 12 hr; REOPRO 2 mg/ml inj.
- 6. Eptifibatide: Initially 180 μg/kg/i.v. followed by 2 μg/kg/min i.v. infusion for upto 72 hours. ANTIGRALIN, CLOTIDE, COROMAX 20 mg/10 ml and 75 mg/100 ml inj.
- 7. Tirofiban: Initially 0.4 µg/kg/min i.v. infusion for 30 min, followed by 0.1 µg/kg/min infusion for 48-108 hours. AGGRAMED, AGGRITOR 5 mg/100 ml infusion.

Hypolipidaemic Drugs

- 1. HMG-CoA Reductase Inhibitors (Statins): Lovastatin, Simvastatin, Pravastatin, Atorvastatin, Rosuvastatin
- 2. Bile acid sequestrants (Resins): Cholestyramine, Colestipol
- 3. Lipoprotein lipase activators (Fibric acid derivatives): Clofibrate, Gemfibrozil, Bezafibrate, Fenofibrate.
- 4. Inhibitor of triglyceride synthesis and lipolysis: Nicotinic acid
- 5. Others: Gugulipid, Ezetimibe.

- 1. Lovastatin: 10-40 mg/day; ROVACOR, AZTATIN, LOVAMEG 10, 20 mg tabs.
- 2. Simvastatin: 5-20 mg/day (max 40 mg); SIMVOTIN, SIMCARD, ZOSTA 5, 10, 20 mg tabs.
- 3. Pravastatin: 10-40 mg/day; PRAVATOR 10, 20 mg tabs.
- 4. Atorvastatin: 10-40 mg/day (max 80 mg); AZTOR, ATORVA, ATORLIP 5, 10, 20 mg tabs.
- 5. Rosuvastatin: 5-20 mg/day (max. 40 mg/day); ROSUVAS, ROSYN 5, 10, 20 mg tab.
- 6. Cholestyramine: 4 g TDS oral
- 7. Gemfibrozil: 600 mg BD; GEMPAR, NORMOLIP, 300 mg cap., LOPID 300 mg cap, 600 mg and 900 mg tabs.
- 8. Bezafibrate: 200 mg TDS with meals; BEZALIP 200 mg tab, 400 mg (retard) tab.
- 9. Fenofibrate: 200 mg OD with meals; FENOLIP, LIPICARD 200 mg cap.
- 10. Nicotinic acid: Start with 100 mg TDS, gradually increase to 2-6 g per day in divided doses. It should be taken just after food to minimize flushing and itching; NIALIP 250, 375, 500 mg tabs.
- 11. Gugulipid: 25 mg TDS; GUGLIP 25 mg tab.
- 12. Ezetimibe: 10 mg OD; ZETICA, EZEDOC 10 mg tab.

Plasma Expanders

- 1. Human Albumin: 5–20% by i.v. infusion; ALBUDAC, ALBUPAN (20%) 50, 100 ml inj., ALBUMED 5%, 20% infusion (100 ml).
- Dextran-70 (MW 70,000): 6% by i.v. infusion; DEXTRAN-70, LOMODEX-70; 6% solution in dextrose or saline, 540 ml vac.
 Dextran-40 (MW 40,000; low MW dextran): 10% by i.v. infusion LOMODEX 10% solution in dextrose or saline, 540 ml vac.
- 3. Polygeline (degraded gelatin polymer): 3.5% by i.v. infusion; HAEMACCEL, SERACCEL 500 ml vac. (as 3.5% solution in balanced electrolyte medium).
- 4. Hetastarch (Hydroxyethyl starch, HES): 6% by i.v. infusion; EXPAN 6% in 100, 500 ml vac.
- Polyvinylpyrrolidone (PVP): 3.5% by i.v. infusion; OSMO-PLASMA, SIOPLASMA; 3.5% solution in buffered normal saline, 540 ml vac.

Gastrointestinal Drugs

Drugs for Peptic Ulcer

1. Gastric acid secretion inhibitors

- (a) *H*₂ *antihistamines*: Cimetidine, Ranitidine, Famotidine, Roxatidine
- (b) *Proton pump inhibitors*: Omeprazole, Esomeprazole, Lansoprazole, Pantoprazole, S (-) Pantoprazole, Rabeprazole, Dexrabeprazole.
- (c) *Anticholinergics*: Pirenzepine, Propantheline, Oxyphenonium
- (d) Prostaglandin analogues: Misoprostol

2. Gastric acid neutralizers (Antacids)

- (a) Systemic: Sodium bicarbonate, Sod. citrate
- (b) Nonsystemic: Magnesium hydroxide Mag. trisilicate, Aluminium hydroxide gel, Magaldrate, Calcium carbonate

3. Ulcer protectives

Sucralfate, Colloidal bismuth subcitrate (CBS)

4. Anti-H. pylori drugs

Amoxicillin, Clarithromycin, Metronidazole, Tinidazole, Tetracycline

- Cimetidine: 400 mg BD or 800 mg OD at bed time, 50 mg/hour i.v. infusion; CIMETIDINE, 200 mg, 400 mg, 800 mg tabs, 200 mg/2 ml inj., LOCK-2 200 mg tab.
- Ranitidine: For ulcer healing-150 mg BD or 300 mg at bed time; For prevention of ulcer recurrence-150 mg at bed time; For Zollinger-

- Ellison syndrome—300 mg TDS or QID; Parenteral dose 50 mg i.m. or slow i.v. injection every 6–8 hours or 0.1–0.25 mg/kg/hr i.v. infusion; ULTAC, ZINETAC 150 mg, 300 mg tabs; HISTAC, RANTAC, RANITIN, ACILOC 150 mg, 300 mg tabs, 50 mg/2 ml inj.
- 3. Famotidine: 40 mg at bed time or 20 mg BD (for healing); 20 mg at bed time for maintenance; upto 480 mg/day in ZE syndrome; parenteral dose 20 mg i.v. 12 hourly. FAMTAC, FAMONITE, TOPCID 20 mg, 40 mg tabs; FAMOCID, FACID 20, 40 mg tabs, 20 mg/2 ml inj.
- 4. Roxatidine: 150 mg at bed time or 75 mg BD; maintenance 75 mg at bed time. ROTANE, ZORPEX 75 mg, 150 mg SR tabs.
- 5. Omeprazole: 20–60 mg/day, ZE syndrome 60–120 mg/day in two divided doses; OMIZAC, NILSEC 20 mg cap. OMEZ, OCID, OMEZOL 10, 20 mg caps, PROTOLOC 20, 40 mg caps containing enteric coated granules. Capsules must not be opened or chewed; to be taken in the morning before meals.
 - Esomeprazole (s-omeprazole): 20–40 mg OD; NEXPRO, RACIPER, IZRA 20, 40 mg tab.
- Lansoprazole: Ulcer healing dose: 15–30 mg OD; LANZOL, LANZAP, LEVANT, LANPRO 15, 30 mg caps.
- 7. Pantoprazole: 40 mg OD; PANTOCID, PANTODAC 40 mg enteric coated tab; PANTIUM 40 mg tab, 40 mg inj for i.v. use. S(-) Pantoprazole: 20 mg OD; PANPURE, ZOSECTA 20 mg tab.
- 8. Rabeprazole: 20 mg OD, ZE syndrome 60 mg/day; RABLET, RAZO, RABLOC, PRORAB 10, 20 mg tabs. HAPPI 10, 20 mg tab, 20 mg/ml vial for inj.
- 9. Dexrabeprazole: 10-20 mg OD; DEXPURE, 5, 10 mg tabs.
- Misoprostol (Methyl PGE₁ ester): 200 μg QID; CYTOLOG 200 μg tab; MISOPROST 100 μg, 200 μg tabs.
- 11. Magnesium hydroxide: 0.4–1.0 g as often as required; MILK OF MAGNESIA 0.4 g/5 ml suspension.
- 12. Aluminium hydroxide gel: 0.6–2.4 g as required; ALUDROX 0.84 g tab, 0.6 g/10 ml suspension.

13. Magaldrate: 0.4–0.8 g as required; STACID 400 mg tab, 400 mg/5 ml susp; ULGEL 400 mg with 20 mg simethicone per tab or 5 ml susp.

14. Combination antacid preparations

ACIDIN: Mag. carb. 165 mg, dried alum. hydrox. gel 232 mg, cal. carb. 165 mg, sod. bicarb. 82 mg, with kaolin 105 mg and belladonna herb 30 µg per tab.

ALMACARB: Dried alum. hydrox. gel 325 mg, mag. carb. 50 mg, methyl polysilox. 40 mg, deglycyrrhizinated liquorice 380 mg per tab.

ALLUJEL-DF: Dried alum. hydrox. gel 400 mg, mag. hydrox. 400 mg, methyl polysilox. 30 mg per 10 ml susp.

DIGENE: Dried alum. hydrox. gel 300 mg, mag. alum. silicate 50 mg, mag. hydrox. 25 mg, methylpolysilox. 10 mg per tab.

DIGENE GEL: Mag. hydrox. 185 mg, alum. hydrox. gel 830 mg, sod. carboxymethyl cellulose 100 mg, methylpolysilox. 25 mg per 10 ml susp.

GELUSIL: Dried alum. hydrox. gel 250 mg, mag. trisilicate 500 mg per tab.

GELUSIL LIQUID: Mag. trisilicate 625 mg, alum. hydrox. gel 312 mg per 5 ml susp.

MUCAINE: Alum. hydrox. 290 mg, mag. hydrox. 98 mg, oxethazaine 10 mg per 5 ml susp.

TRICAINE-MPS: Alum. hydrox. gel 300 mg, mag. hydrox. 150 mg, oxethazaine 10 mg, simethicone 10 mg per 5 ml gel.

MAYLOX: Dried alum. hydrox. gel 225 mg, mag. hydrox. 200 mg, dimethicone 50 mg per tab and 5 ml susp.

POLYCROL FORTE GEL: Mag. hydrox. 100 mg, dried alum. hydrox. gel 425 mg, methylpolysilox. 125 mg per 5 ml susp.

- 15. Sucralfate: Ulcer healing dose: 1 g taken 1 hour before 3 major meals and at bed time; To prevent recurrences 1 g BD; SUCRACE, ULCERFATE, RECULFATE 1 g tab.
- 16. Colloidal bismuth subcitrate (CBS, Tripotassium dicitrato-bismuthate): 120 mg (as Bi₂O₃) taken 30 min before 3 major meals and at bed time; TRYMO, DENOL 120 mg tab.

Anti-H. pylori antimicrobials

Amoxicillin: 750–1000 mg BD Clarithromycin: 500 mg BD or TDS

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Tetracycline: 500 mg QID Metronidazole: 400 mg QID

Tinidazole: 500 mg BD

Regimens consist of two of the above antimicrobials taken along with a proton pump inhibitor for 1–3 weeks.

Anti-H. pylori kits (one kit to be taken daily in 2 doses)

HP-KIT, HELIBACT, OMXITIN: Omeprazole 20 mg 2 cap +

Amoxicillin 750 mg 2 tab + Tinidazole 500 mg 2 tab.

PYLOMOX: Lansoprazole 15 mg 2 cap + Amoxicillin 750 mg 2 tab

+ Tinidazole 500 mg 2 tab.

LANSI KIT: Lansoprazole 30 mg 1 cap + Amoxicillin 750 mg 1 tab

+ Tinidazole 500 mg 1 tab (one kit twice a day)

PYLOKIT, HELIGO: Lansoprazole 30 mg 2 cap + Clarithromycin

250 mg 2 cap + Tinidazole 500 mg 2 tab.

LANPRO AC: Lansoprazole 30 mg 2 cap + Clarithromycin 250 mg

2 tab + Amoxicillin 750 mg 2 tab.

Antiemetics

1. Anticholinergics: Hyoscine, Dicyclomine

2. *H*₁ antihistaminics: Promethazine, Diphenhydramine,

Dimenhydrinate, Cyclizine, Doxylamine, Meclozine,

Cinnarizine

3. Neuroleptics: Chlorpromazine, Prochlorperazine

Haloperidol, etc.

4. Prokinetic drugs: Metoclopramide, Domperidone,

Cisapride, Mosapride, Itopride,

Tegaserod

5. 5-HT₃ antagonists: Ondansetron, Granisetron

6. Adjuvant Dexamethasone, Benzodiazepines,

antiemetics: Cannabinoids (Nabilone,

Dronabinol)

Preparations

1. Hyoscine: 0.2-0.4 mg oral/i.m.

2. Dicyclomine: 10-20 mg oral.

- 3. Promethazine theoclate: 25–50 mg oral; AVOMINE 25 mg tab.
- 4. Diphenhydramine: 25-50 mg oral.
- 5. Dimenhydrinate: 25–50 mg oral.
- 6. Cyclizine: 50 mg oral.
- 7. Meclozine: 25-50 mg oral.
- 8. Doxylamine: 10-20 mg at bed time (for morning sickness). DOXINATE, GRAVIDOX, VOMNEX, NOSIC 10 mg tab (with pyridoxine 10 mg)
- 9. Cinnarizine: 25-50 mg oral.
- 10. Chlorpromazine: 10-25 mg oral/i.m.
- 11. Prochlorperazine: 5–25 mg oral/i.m.; STEMETIL 5, 25 mg tabs, 12.5 mg/ml inj in 1 ml amp. and 10 ml vial.
- 12. Metoclopramide: 10 mg (children 0.25–0.5 mg/kg) TDS oral or i.m. For chemotherapy induced vomiting 0.3–1.0 mg/kg i.v./i.m; PERINORM, MAXERON, REGLAN, SIGMET, 10 mg tab; 5 mg/5 ml syr; 10 mg/2 ml inj.; 50 mg/10 ml inj.
- 13. Domperidone: 10–40 mg (Children 0.3–0.6 mg/kg) TDS; DOMSTAL, DOMPERON, NORMETIC 10 mg tab, 1 mg/ml susp, MOTINORM 10 mg tab, 10 mg/ml drops.
- 14. Cisapride: 10–20 mg TDS; SYSPRIDE, UNIPRIDE, NUPRIDE 10 mg tab; MOTEN, PULSID 10 mg tab, 5 mg/5 ml susp.; CIZA also 20 mg tab.
- 15. Mosapride: 5 mg (elderly 2.5 mg) TDS; MOZA, MOZASEF, NORMAGUT 2.5 mg, 5 mg tabs; MOZA MPS: 5 mg + methylpolysiloxane 125 mg tab.
- 16. Itopride: 50 mg TDS; ITOFLUX, ITOKINE, TONATE, ZETO 50 mg tab.
- 17. Tegaserod: 2-6 mg BD before meals; TEGIBIS, IBSINORM 2, 6 mg tabs, TAGON, TEGOD 6 mg tab.
- 18. Ondansetron: For cisplatin and other highly emetogenic drugs—8 mg i.v. by slow injection over 15 min ½ hr before chemotherapeutic infusion, followed by 2 similar doses 4 hour apart. To prevent delayed emesis 8 mg oral is given twice a day for 3–5 days. For postoperative nausea/vomiting 4–8 mg i.v. given before induction is repeated 8 hourly. For less emetogenic

drugs and for radiotherapy an oral dose of 8 mg is given 1–2 hr prior to the procedure and repeated twice 8 hrly. EMESET, VOMIZ, OSETRON, EMSETRON 4, 8 mg tabs,

2 mg/ml inj in 2 ml and 4 ml amps.

- 19. Granisetron: 10 μg/kgi.v. 30 minbefore chemotherapy, repeated after 12 hr. For less emetogenic regimen 2 mg oral 1 hr before chemotherapy or 1 mg before and 1 mg 12 hr after it. GRANICIP, GRANISET 1 mg, 2 mg tabs; 1 mg/ml inj. (1 ml and 3 ml amps).
- Dexamethasone: 8–20 mg i.v. 1/2–1 hour before emetogenic chemotherapy, generally to supplement metoclopramide/ ondansetron.
- Diazepam: 5–10 mg oral to supplement metoclopramide/ ondansetron.

(Note: See Index for preparations of other drugs).

Drugs for Gastroesophageal Reflux Disease (GERD)

A. Inhibitors/neutralizers of gastric acid secretion

- 1. *Proton pump inhibitors (PPIs)*: Omeprazole, Pantoprazole and others.
- 2. H₂ blockers: Ranitidine, Famotidine
- 3. *Antacids*: Magnesium hydroxide, Aluminium hydroxide
- **B.** Barrier agent Sodium alginate
- C. Prokinetic drugs: (Enhance LES tone and promote gastric emptying)

Cisapride, Mosapride, Metoclopramide

Preparations

Sodium alginate: 200–500 mg (along with antacids);
 REFLUX LIQUID: Sod. alginate 200 mg + alum. hydrox. gel 300 mg
 + mag. trisilicate 125 mg/10 ml susp; REFLUX FORTE Aginic acid
 20 mg + sod. bicarb. 70 mg + alum. hydrox. 300 mg tab; GAVISCON
 Alginic acid 500 mg + mag. trisilicate 25 mg + alum. hydrox. gel
 100 mg + sod. bicarb. 170 mg tab.

(Note: See above for preparations of other drugs)

Laxatives (Purgatives, Cathartics)

1. Bulk forming agents

Dietary fibre: Bran, Psyllium (Plantago) Ispaghula, Methylcellulose

2. Stool softener

Docusates (DOSS), Liquid paraffin

3. Stimulant purgatives

(a) Diphenylmethanes

Phenolphthalein, Bisacodyl, Sodium picosulfate

(b) Anthraguinones (Emodins)

Senna, Cascara sagrada

(c) 5-HT₄ agonist

Tegaserod

(d) Fixed oil

Castor oil

4. Osmotic purgatives

Magnesium salts: sulfate, hydroxide Sodium salts: sulfate, phosphate Sod. pot. tartrate

Lactulose

Preparations

- 1. Psyllium hydrophilic mucilloid: 6-12 g to be taken just after mixing with water; ISOVAC 65 g/100 g granules.
- 2. Ispaghula (refined husk): 3–12 g freshly mixed with water or milk 2-3 times a day;

ISOGEL (27 g/30 g), NATURE CURE (49 g/100 g), FYBOGEL (3.5 g/5.4 g) powder FIBRIL (3.4 g/11 g) powder;

- 3. Methyl cellulose: 4-6 g/day mixed with water.
- 4. Docusates (Dioctyl sodium sulfosuccinate, DOSS): 100-400 mg/day; CELLUBRIL 100 mg cap; LAXICON 100 mg tab, DOSLAX 150 mg cap.

As enema 50-150 mg in 50-100 ml; LAXICON 125 mg in 50 ml enema.

- 5. Liquid paraffin: 15–30 ml/day as such or in emulsified form.
- 6. Phenolphthalein: 60–130 mg; LAXIL 130 mg tab. To be taken at bedtime (tab. not to be chewed).
- 7. Bisacodyl: 5-15 mg; DULCOLAX 5 mg tab; 10 mg (adult) 5 mg (child) suppository; CONLAX 5 mg, 10 mg suppository, BIDLAX-5 5 mg tab.
- 8. Sodium picosulfate: 5-10 mg at bed time; CREMALAX, LAXICARE 10 mg tab, PICOFIT 5 mg/5 ml syr.
- 9. Senna (as Sennosides Cal. salt): 10-40 mg at bed time: GLAXENNA 11.5 mg tab; PURSENNID 18 mg tab; SOFSENA 12 mg tab.
- 10. Tegaserod: 2-6 mg BD before meals; TEGIBIS, IBSINORM 2, 6 mg tabs, TAGON, TEGOD 6 mg tab.
- 11. Mag. sulfate (Epsom salt): 5-15 g dissolved in 150-200 ml water, taken in the morning.
- 12. Mag. hydroxide (as 8% W/W suspension—milk of magnesia) 30 ml.
- 13. Sod. sulfate (Glauber's salt): 10-15 g dissolved in 150-200 ml water, taken in the morning.
- 14. Sod. phosphate: 6–12 g dissolved in 150–200 ml water, taken in the morning.
- 15. Sod. pot. tartrate (Rochelle salt): 8-15 g dissolved in 150-200 ml water, taken in the morning.
- 16. Lactulose: 10 g BD taken with water; LACSAN, MTLAC 10 g/ 15 ml liquid, DUPHALAC, LIVOLUK 6.67 g/10 ml liq.

Some combined preparations

AGAROL: Liquid paraffin 9.5 ml, phenolphthalein 400 mg, agar 60 mg per 30 ml emulsion.

CREMAFFIN: Milk of magnesia 11.25 ml, liq. paraffin 3.75 ml per 15 ml emulsion; CREMAFFIN PINK with phenolphthalein 50 mg per

JULAX: Bisacodyl 10 mg, casanthranol 10 mg dragees.

PURSENNID-IN (with DOS): Purified senna ext. (cal salt) 18 mg, docusates 50 mg tab.

Nonspecific Antidiarrhoeal Drugs

A. Absorbants

Ispaghula, Psyllium, Methylcellulose

B. Antisecretory drugs

Sulfasalazine, Mesalazine, Olsalazine, Balsalazide, Bismuth subsalicylate, Atropine, Octreotide, Racecadotril

C. Antimotility drugs (opioids)

Codeine, Diphenoxylate-atropine, Loperamide

Preparations

- 1. Sulfasalazine (Salicylazosulfapyridine): For inflammatory bowel disease—Remission inducing dose 3-4 g/day, maintenance dose 1.5-2 g/day oral; SALAZOPYRIN, SAZO-EN 0.5 g tab.
- 2. Mesalazine (Mesalamine): 1.2–2.4 g/day oral; 4 g by retention MESACOL, TIDOCOL 0.4 g tab, ETISA enema; 0.5 g sachet; MESACOL ENEMA 4 g/60 ml.
- 3. Balsalazide: 1.5 g BD-2.25 g TDS; COLOREX 750 mg cap and per 5 ml syr., INTAZIDE 0.75 g tab.
- 4. Racecadotril: 100 mg (children 1.5 mg/kg) TDS for a maximum of 7 days; CADOTRIL, RACIGYL 100 mg cap, 15 mg sachet, REDOTIL 100 mg cap, ZEDOTT, ZOMATRIL 100 mg cap, 10 mg and 30 mg sachets and dispersible tabs.
- 5. Codeine: 60 mg TDS oral.
- 6. Diphenoxylate-atropine: LOMOTIL 2.5 mg diphenoxylate + 0.025 mg atropine per tab and 5 ml liquid; 2-4 tab followed by 1-2 tab 6 hourly.
- 7. Loperamide: 4 mg followed by 2 mg after each motion (max. 10 mg in a day); 2 mg BD for chronic diarrhoea. IMODIUM, LOPESTAL, DIARLOP: 2 mg tab, cap.

(Note: See Index for preparations of other drugs)

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Antibacterial Drugs

A. Chemical classification

- Sulfonamides and related drugs: Sulfadiazine and others, Sulfones—Dapsone (DDS), Paraaminosalicylic acid (PAS).
- 2. *Diaminopyrimidines:* Trimethoprim, Pyrimethamine.
- 3. *Quinolones:* Nalidixic acid, Norfloxacin, Ciprofloxacin, Gatifloxacin, etc.
- β-lactam antibiotics: Penicillins, Cephalosporins, Monobactams, Carbapenems, β-lactamase inhibitors—Clavulanic acid, Sulbactam.
- 5. Tetracyclines: Oxytetracycline, Doxycycline, etc.
- 6. Nitrobenzene derivative: Chloramphenicol.
- 7. Aminoglycosides: Streptomycin, Gentamicin, Amikacin, Neomycin, etc.
- 8. *Macrolide antibiotics*: Erythromycin, Roxithromycin, Clarithromycin, Azithromycin.
- 9. Lincosamide antibiotics: Lincomycin, Clindamycin.
- 10. Glycopeptides: Vancomycin, Teicoplanin.
- 11. Oxazolidinone: Linezolid.
- 12. *Polypeptide antibiotics:* Polymyxin-B, Colistin, Bacitracin, Tyrothricin.
- 13. *Nitrofuran derivatives*: Nitrofurantoin, Furazolidone.
- 14. *Nitroimidazoles:* Metronidazole, Tinidazole and others.
- Nicotinic acid derivatives: Isoniazid, Pyrazinamide, Ethionamide.
- 16. *Others:* Rifampin, Spectinomycin, Cycloserine, Viomycin, Ethambutol, Thiacetazone, Clofazimine.

B. Classification on the basis of mechanism of action

- 1. Inhibit cell wall synthesis: Penicillins, Cephalosporins, Cycloserine, Vancomycin, Bacitracin.
- 2. Cause leakage from cell membranes: Polypeptides—Polymyxins, Colistin, Bacitracin.
- 3. Inhibit protein synthesis: Tetracyclines, Chloramphenicol, Erythromycin, Clindamycin, Linezolid.
- 4. Cause misreading of m-RNA code and affect permeability: Aminoglycosides—Streptomycin, Gentamicin, etc.
- 5. Inhibit DNA gyrase: Fluoroquinolones—Ciprofloxacin, etc.
- 6. Interfere with DNA function: Rifampin, Metronidazole.
- 7. Interfere with intermediary metabolism: Sulfonamides, Sulfones, PAS, Trimethoprim, Ethambutol.

C. Classification according to spectrum of activity

Narrow spectrum Broad spectrum Penicillin G Tetracyclines Chloramphenicol Streptomycin

Erythromycin

Intermediate spectrum Aminopenicillins Cephalosporins (2nd/3rd Gen) Fluoroquinolones Newer macrolides

D. Classification according to type of action

Primarily bacteriostatic

Sulfonamides Ethambutol Tetracyclines Clindamycin Chloramphenicol Linezolid

Erythromycin

Primarily bactericidal

Penicillins Cephalosporins
Aminoglycosides Vancomycin
Polypeptides Nalidixic acid
Rifampin Ciprofloxacin
Cotrimoxazole Metronidazole
Isoniazid Pyrazinamide

Sulfonamides

- 1. Short acting (4-8 hr): Sulfadiazine.
- 2. Intermediate acting (8–12 hr): Sulfamethoxazole.
- 3. Long acting (~7 days): Sulfadoxine, Sulfamethopyrazine.
- Special purpose sulfonamides: Sulfacetamide sod., Sulfasalazine, Mafenide, Silver sulfadiazine.

Preparations

- 1. Sulfadiazine: 0.5–2.0 g TDS; SULFADIAZINE 0.5 g tab.
- 2. Sulfamethoxazole: 1 g BD for 2 days, then 0.5 g BD; GANTANOL 0.5 g tab.
- 3. Sulfacetamide sodium: 6%–30% topically in the eye; LOCULA, ALBUCID 10%, 20%, 30% eye drops, 6% eye oint.
- 4. Mafenide: 1% topical application; SULFAMYLON 1% skin cream.
- 5. Silver sulfadiazine: 1% topical application; SILVIRIN 1% cream, ARGENEX 1% cream with chlorhexidine 0.2%.

(Note: See Index for preparations of other sulfonamides).

Cotrimoxazole

(Trimethoprim-Sulfamethoxazole 1:5)

SEPTRAN, SEPMAX, BACTRIM, CIPLIN, ORIPRIM, SUPRISTOL, FORTRIM

Trimethoprim Sulfamethoxazole

80 mg + 400 mg tab: 2 BD for 2 days then 1 BD.

160 mg + 800 mg tab: double strength (DS); 1 BD.

20 mg + 100 mg pediatric tab.

40 mg + 200 mg per 5 ml susp; infant 2.5 ml (not to be used in new borns), children 1–5 yr

5 ml, 6-12 year 10 ml (all BD).

160 mg + 800 mg per 3 ml for i.m. injection

12 hourly. (CIPLIN, ORIPRIM-IM)

80 mg + 400 mg per 5 ml for i.v. injection (WK-TRIM, ORIPRIM-IV) 10–15 ml BD.

Cotrimazine (Trimethoprim-Sulfadiazine 1:5)

Trimethoprim Sulfadiazine

90 mg + 410 mg: TRIGLOBE, ULTROX tab and per

10 ml susp.; 2 tab BD for 2 days, then 1 BD.

180 mg + 820 mg: TRIGLOBE FORTE, ULTROX DS tabs.

Quinolones

Nonfluorinated Quinolone Nalidixic acid

2. First generation Fluoroquinolones

Norfloxacin Ofloxacin Ciprofloxacin Pefloxacin

3. Second generation Fluoroquinolones

Lomefloxacin Levofloxacin Sparfloxacin Gatifloxacin

Moxifloxacin

4. Third generation Fluoroquinolones

Gemifloxacin Prulifloxacin

- 1. Nalidixic acid: 0.5-1 g TDS or QID oral; GRAMONEG, WINTOMYLON, URODIC, 0.5 g tab, 0.3 g/5 ml syrup.
- 2. Ciprofloxacin: 250-750 mg BD oral, 100-200 mg i.v. by slow infusion; 0.3% topically in eye; CIFRAN, CIPLOX, CIPROBID, QUINTOR, CIPROLET 250, 500, 750 mg tab, 200 mg/100 ml i.v. infusion, 3 mg/ml eye drops.
- 3. Ofloxacin: 200-400 mg BD oral, 200 mg by slow i.v. infusion; 0.3% topically in eye ZANOCIN, TARIVID, OFLOX 100, 200, 400 mg tab; 200 mg/100 ml i.v. infusion, ZENFLOX also 50 mg/ 5 ml susp., EXOCIN, OFLOX 0.3% eye drops.
- 4. Norfloxacin: 200-400 mg BD oral, 0.3% topically in eye; NORBACTIN, NORFLOX 200, 400, 800 mg tab, 100 mg/ 5 ml susp., 3 mg/ml eye drops. UROFLOX, NORILET 200, 400 mg tab, BACIGYL 400 mg tab, 400 mg/5 ml syr.
- 5. Pefloxacin: 400 mg BD oral, 400 mg i.v. by slow infusion; PELOX 200, 400 mg tab, to be taken with meals; 400 mg/5 ml inj (to be diluted in 100-250 ml of glucose solution but not saline, PERTI 400 mg tab.
- 6. Levofloxacin: 500 mg OD oral, 500 mg by slow i.v. infusion; TAVANIC, GLEVO 250, 500 mg tab, 500 mg/100 ml inj.
- 7. Lomefloxacin: 400 mg OD oral; LOMEF-400, LOMEDON, LOMADAY, LOMIBACT, LOX 400 mg tab, 0.3% eye drops.
- 8. Sparfloxacin: 200-400 mg OD oral; TOROSPAR 200, 400 mg tab, SPARTA, SPARQUIN, SPARDAC 100, 200 mg tab, ZOSPAR, EYPAR 0.3% eye drops.
- 9. Gatifloxacin: 400 mg on 1st day, followed by 200-400 mg OD, oral or i.v. MYGAT 200, 400 mg tab, 400 mg/200 ml inj; GATIQIN 200, 400 mg tab, GAITY 200, 400 mg tab, 400 mg/40 ml inj.
- 10. Moxifloxacin: 400 mg OD oral; MOXIF 400 mg tab, STAXOM 400 mg tab, 400 mg/250 ml i.v. infusion, VIGAMOX, MOXICIP 0.5% eye drops.
- 11. Gemifloxacin: 320 mg OD for 5-7 days; TOPGEM, ZEMI, GEMBAX, GEMETOP 320 mg tab.
- 12. Prulifloxacin: 600 mg OD; ALPRULI, PRULIFACT 600 mg tab.

Beta-Lactam Antibiotics

PENICILLINS

A. Natural Penicillin

Benzyl Penicillin (Penicillin G)

B. Semisynthetic Penicillins

- 1. Acid resistant alternative to penicillin Phenoxymethyl penicillin (Penicillin V).
- 2. Penicillinase resistant penicillins Methicillin, Cloxacillin.
- 3. Extended spectrum penicillins
 - (a) Aminopenicillins: Ampicillin, Bacampicillin, Amoxicillin.
 - (b) Carboxypenicillins: Carbenicillin, Ticarcillin.
 - (c) Ureidopenicillins: Piperacillin, Mezlocillin.

C. **B**-lactamase inhibitors

Clavulanic acid, Sulbactam, Tazobactam

- 1. Sod. penicillin G (crystalline penicillin) injection: 0.5-5 MU i.m./i.v. 6-12 hourly. It is available as dry powder in vials to be dissolved in sterile water at the time of injection; BENZYL PEN 0.5, 1 MU inj.
- 2. Procaine penicillin G inj: 0.5-1 MU i.m. 12-24 hourly as aqueous suspension; PROCAINE PENICILLIN-G 0.5, 1 MU dry powder in vial.
- 3. Fortified procaine penicillin G inj: contains 3 lac U procaine penicillin and 1 lac U sod. penicillin G, FORTIFIED P.P. INI 3+1 lac U vial.
- 4. Benzathine penicillin G: 0.6–2.4 MU i.m. every 2–4 weeks as aqueous suspension.
 - PENIDURE-LA (long acting), LONGACILLIN, PENCOM, 0.6, 1.2, 2.4 MU as dry powder in vial.
- 5. Phenoxymethyl penicillin (Penicillin V): 250–500 mg, infants 60 mg, children 125-250 mg; given 6 hourly, (250 mg = 4 lac U); CRYSTAPEN-V, KAYPEN, 125, 250 mg tab, 125 mg/5 ml dry syr-for reconstitution; PENIVORAL 65, 130 mg tab.

- Cloxacillin: 0.25–0.5 g orally every 6 hours; for severe infections 0.25–1 g may be injected i.m. or i.v.—higher blood levels are produced; KLOX 0.25, 0.5 g cap, 125 mg/3 g dry syr, 0.25, 0.5 g inj; BIOCLOX, CLOCILIN 0.25, 0.5 g cap; 0.25, 0.5 g/vial inj.
- Ampicillin: 0.5–2 g oral/i.m./i.v. depending on severity of infection, every 6 hours; children 25–50 mg/kg/day; AMPILIN, ROSCILLIN, BIOCILIN 250, 500 mg cap; 125, 250 mg/5 ml dry syr; 100 mg/ml pediatric drops; 250, 500 mg and 1.0 g per vial inj.
- 8. Ampicillin + cloxacillin: AMPILOX, DUOCLOX 250 + 250 mg cap, 500+500 mg DS tab, 125+125 mg kid tab and per 5 ml dry syr, 100 mg + 50 mg/ml pediatric syr, 250 mg + 250 mg per vial inj, 500 mg + 500 mg/vial DS inj, 125 mg + 125 mg/vial pediatric inj., 50 mg + 75 mg/vial neonatal inj.
- Bacampicillin: 400–800 mg BD oral; PENGLOBE 200, 400 mg tabs.
- 10. Amoxicillin: 0.25–1 g TDS oral/i.m. AMOXYLIN, NOVAMOX, SYNAMOX 250, 500 mg cap, 125 mg/5 ml dry syr; AMOXIL, MOX 250, 500 mg caps; 125 mg/5 ml dry syr; 250, 500 mg/vial inj. MOXYLONG: Amoxicillin 250 mg + probenecid 500 mg tab (also 500 mg + 500 mg DS tab).
- 11. Amoxicillin + Cloxacillin: NOVACLOX 250 + 250 mg cap, 125 + 125 mg pediatric tab, 125 + 125 mg inj, 250 + 250 mg inj, 500 + 500 mg inj.; 50 + 25 mg neonatal inj.
- 12. Carbenicillin: 1–2 g i.m. or 1–5 g i.v. 4–6 hourly; PYOPEN, CARBELIN 1.0 g, 5.0 g per vial inj.
- 13. Piperacillin: 100-150 mg/kg/day in 3 divided doses (max 16 g/day) i.m. or i.v. The i.v. route is preferred when > 2 g is to be injected.
 - PIPRAPEN 1 g, 2 g vials; PIPRACIL 2 g, 4 g vials for inj; contains 2 mEq Na $^{\circ}$ per g.
- 14. Amoxicillin + clavulanic acid (co-amoxiclav):
 AUGMENTIN, ENHANCIN, AMONATE: Amoxicillin 250 mg +
 clavulanic acid 125 mg tab; 1–2 tab TDS, severe infections 4 tabs
 6 hourly; CLAVAM 250 + 125 mg tab, 500 + 125 mg tab, 875 +
 125 mg tab, 125 mg + 32 mg per 5 ml dry syr.
 Also AUGMENTIN CLAVAM: Amoxicillin 1 g + clavulanic acid

Also AUGMENTIN, CLAVAM: Amoxicillin 1 g + clavulanic acid 0.2 g vial and 0.5 g + 0.1 g vial; inject 1 vial deep i.m. or i.v. 6–8 hourly for severe infections.

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- 15. Ampicillin + Sulbactam: SULBACIN, AMPITUM: Ampicillin 1 g + sulbactam 0.5 g per vial inj; 1–2 vial deep i.m. or i.v. injection 6–8 hourly.
- 16. Sultamicillin tosylate (a complex salt of ampicillin and sulbactam): BETAMPORAL, SULBACIN 375 mg tab.
- 17. Piperacillin + Tazobactam: 4 g + 0.5 g slow i.v. injection every 8 hours; PYBACTUM, TAZACT, TAZOBID, ZOSYN 4 g + 0.5 g per vial inj.

CEPHALOSPORINS

First generation

Parenteral Oral

Cephalothin Cephalexin Cefazolin Cephradine Cefadroxil

Second generation

Parenteral Oral
Cefuroxime Cefaclor

Cefoxitin Cefuroxime axetil

Cefprozil

Third generation

Parenteral Oral Cefotaxime Cefixime

Ceftizoxime Cefpodoxime proxetil

Ceftriaxone Cefdinir Ceftazidime Ceftibuten

Cefoperazone Ceftamet pivoxil

Fourth generation

Parenteral Cefepime Cefpirome

Preparations

- Cefazolin: 0.25 g 8 hourly (mild cases), 1 g 6 hourly (severe cases) i.m. or i.v., ALCIZON, ORIZOLIN 0.25 g, 0.5 g, 1 g per vial ini.
- Cephalexin: 0.25–1 g 6–8 hourly (children 25–100 mg/kg/day). CEPHACILLIN 250, 500 mg cap; SPORIDEX, ALCEPHIN, CEPHAXIN 250, 500 mg cap, 125 mg/5 ml dry syr., 100 mg/ml pediatric drops.

ALCEPHIN-LA: Cephalexin + probenecid (250 + 250 mg and 500 + 500 mg) tabs.

- 3. Cephradine: 0.25–1.0 g 6–12 hourly, oral/i.m./i.v.; CEFLAD 0.25, 0.5, 1.0 g per vial inj.
- 4. Cefadroxil: 0.5–1 g BD. DROXYL 0.5, 1 g tab, 250 mg/5 ml syr; CEFADROX 0.5 g cap, 125 mg/5 ml syr and 250 mg kid tab; KEFLOXIN 0.5 g cap, 0.25 g Distab, 125 mg/5 ml susp.
- 5. Cefoxitin: 1-2 g i.m./i.v. every 6-8 hours.
- 6. Cefuroxime: 0.75–1.5 g i.m. or i.v. 8 hourly, children 30–100 mg/kg/day; CEFOGEN, SUPACEF, FUROXIL 250 mg and 750 mg/vial inj.
- 7. Cefuroxime axetil: 250–500 mg BD oral, children half dose; CEFTUM, SPIZEF 125, 250, 500 mg captab and 125 mg/5 ml susp.
- 8. Cefaclor: 250–500 mg BD, oral; KEFLOR, VERCEF, DISTACLOR 250 mg cap, 125 and 250 mg Distab, 125 mg/5 ml dry syr, 50 mg/ml ped. drops.
- Cefprozil: 500 mg OD-BD (20 mg/kg/day); ORPROZIL 250, 500 mg tabs.
- Cefotaxime: 1–2 g i.m./i.v. 6–12 hourly (children 50–100 mg/kg/day); OMNATAX, ORITAXIM, CLAFORAN 0.25, 0.5, 1.0 g per vial inj.
- 11. Ceftizoxime: 0.5–1 g i.m./i.v. 8 or 12 hourly; CEFIZOX, EPOCELIN 0.5 and 1 g per vial inj.
- 12. Ceftriaxone: Skin/soft tissue/urinary infections: 1–2 g i.v./i.m. per day;

Meningitis: 4 g followed by 2 g i.v. (children 75–100 mg/kg) once daily for 7–10 days.

Typhoid: 4 g i.v. daily \times 2 days followed by 2 g/day (children 75 mg/kg) till 2 days after fever subsides.

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OFRAMAX, MONOCEF, MONOTAX 0.25, 0.5, 1.0 g per vial inj. Ceftriaxone 250 mg + Sulbactum 125 mg and 1 g + 500 mg: CEFTICHEK, SUPRAXONE vials for inj.

Ceftriaxone 1 g + Tazobactum 125 mg: EXTACEF-TAZO, FINECEF-T, MONTAZ vials for i.m./i.v. inj.

- 13. Ceftazidime: 0.5–2 g i.m. or i.v. every 8 hr, children 30 mg/kg/day. Resistant typhoid 30 mg/kg/day. FORTUM, CEFAZID, ORZID 0.25, 0.5 and 1 g per vial inj.
- 14. Cefoperazone: 1–3 g i.m./i.v. 12 hourly; MAGNAMYCIN 0.25 g, 1, 2 g inj; CEFOMYCIN, NEGAPLUS 1 g inj. Cefoperazone 500 mg + Sulbactum 500 mg: CEFOBETA, KEFBACTUM, SULCEF vial for inj, also CEFACTUM 1 g + 1 g vial for inj.
- 15. Cefixime: 200–400 mg BD; TOPCEF, ORFIX 100, 200 mg tab/cap, CEFSPAN 100 mg cap, 100 mg/5 ml syr.
- 16. Cefpodoxime proxetil: 200 mg BD (max 800 mg/day); CEFOPROX 100, 200 mg tab, 100 mg/5 ml dry syr; CEPODEM 100, 200 mg tab, 50 mg/5 ml susp.
- 17. Cefdinir: 300 mg BD: SEFDIN, ADCEF 300 mg cap, 125 mg/5 ml susp.
- 18. Ceftibuten: 200 mg BD or 400 mg OD; PROCADAX 400 mg cap, 90 mg/5 ml powder for oral suspension.
- 19. Ceftamet pivoxil: 500 mg TDS oral; ALTAMET 250 mg tab, CEPIME-O 500 mg tab.
- 20. Cefepime: 1–2 g (50 mg/kg) i.v. 8–12 hourly; KEFAGE, CEFICAD, CEPIME 0.5, 1.0 g inj.
- 21. Cefpirome: 1–2 g i.m./i.v. 12 hourly; CEFROM, CEFORTH 1.0 g inj., BACIROM, CEFOR 0.25, 0.5, 1.0 g inj.

MONOBACTAMS

Aztreonam: 0.5–2 g i.m. or i.v. 6–12 hourly; AZENAM, TREZAM 0.5, 1.0, 2.0 g per vial inj.

CARBAPENEMS

Imipenem-cilastatin: 0.5 g i.v. 6 hourly (max 4 g/day).
 IMINEM 250 + 250 mg and 500 + 500 mg/vial inj., LASTINEM 125 + 125 mg, 250 + 250 mg, 500 + 500 mg and 1 g + 1 g per vial inj.

- 2. Meropenem: 0.5–2 g i.v. 8 hourly (10–20 mg/kg every 8 hours); MERONEM, UBPENEM 0.5, 1.0 g per vial inj.
- 3. Faropenem: 200-300 mg TDS oral; FARONEM 100, 200 mg tab.

Aminoglycoside Antibiotics

A. Systemic aminoglycosides

Streptomycin Gentamicin Kanamycin Tobramycin Amikacin Sisomicin Netilmicin

B. Topical aminoglycosides

Neomycin Framycetin

- Streptomycin: Acute infections: 1 g (0.75 g in those above 50 yr age) i.m. (15 mg/kg) BD for 7–10 days.
 Tuberculosis: 1 g or 0.75 g i.m. OD or twice weekly for 30–60 days;
 AMBISTRYN–S 0.75, 1 g dry powder per vial for inj.
- Gentamicin: 3–5 mg/kg/day i.m. in a single dose or divided in 8 hourly doses (dose reduction needed in elderly and in renal insufficiency), 0.1–0.3% topically in eye or on skin. GARAMYCIN, GENTASPORIN, GENTICYN 20, 60, 80, 240 mg per vial inj; also 0.3% eye/ear drops, 0.1% skin cream.
- 3. Kanamycin: 0.5 g i.m. BD-TDS: KANAMYCIN, KANCIN, KANAMAC 0.5, 1 g inj.
- 4. Tobramycin: 3–5 mg/kg day i.m. in 1–3 doses; TOBACIN 20, 60, 80 mg in 2 ml inj. 0.3% eye drops. TOBRANEG 20, 40, 80 mg per 2 ml inj., TOBRABACT 0.3% eye drops.
- Amikacin: 15 mg/kg/day i.m. in 1–3 doses; urinary tract infection 7.5 mg/kg/day; AMICIN, MIKACIN, MIKAJECT 100 mg, 250 mg, 500 mg in 2 ml inj.
- Sisomicin: 3–5 mg/kg/day i.m.; ENSAMYCIN, SISOPTIN 50 mg, 10 mg (pediatric) per ml in 1 ml amps.
- Netilmicin: 4–6 mg/kg/day i.m. in 1–3 doses; NETROMYCIN 10, 25, 50 mg in 1 ml, 200 mg in 2 ml and 300 mg in 3 ml inj., NETICIN 200 mg (2 ml), 300 mg (3 ml) inj.

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- 8. Neomycin: 0.25–1 g QID oral, 0.3–0.5% topical.
 NEOMYCIN SULPHATE 350, 500 mg tab, 0.3% skin oint, 0.5% skin cream, eye oint.
 NEBASULF: Neomycin sulph. 5 mg, bacitracin 250 U, sulfacetamide 60 mg/g oint. and powder for surface application.
 - POLYBIOTIC CREAM: Neomycin sulph. $\overline{5}$ mg, polymyxin 5,000 IU, gramicidin 0.25 mg/g cream.
 - NEOSPORIN: Neomycin 3400 iu, polymyxin B 5000 iu, bacitracin 400 iu/g oint; NEOSPORIN-H: Neomycin 3400 iu, polymyxin B 10000 iu, hydrocortisone 10 mg per ml ear drops.
- 9. Framycetin: 0.5%–1.0% topically in eye or on skin; SOFRAMYCIN, FRAMYGEN 1% skin cream, 0.5% eye drops or oint.

Tetracyclines

- Oxytetracycline: 250–500 mg TDS–QID oral, 500 mg 6–12 hourly by slow i.v. inj; 1–3% by topical application; TERRAMYCIN 250, 500 mg cap, 50 mg/ml in 10 ml vials inj; 3% skin oint, 1% eye/ear oint.
- 2. Tetracycline: 250–500 mg TDS–QID oral; 1–3% topically in eye/ear/on skin; ACHROMYCIN, HOSTACYCLINE, RESTECLIN 250, 500 mg cap, 3% skin oint, 1% eye/ear drops and oint.
- 3. Demeclocycline (Demethylchlortetracycline): 300–600 mg BD oral; LEDERMYCIN 150, 300 mg cap/tab.
- 4. Doxycycline: 200 mg initially followed by 100–200 mg OD oral; TETRADOX, BIODOXI, DOXT, NOVADOX, 100 mg cap.
- Minocycline: 100 mg OD-BD oral; CYANOMYCIN 50, 100 mg caps.

Chloramphenicol

- Chloramphenicol: 250–500 mg 6 hourly oral (max 28 g total in a course), children 25–50 mg/kg/day; 0.5–1% topically in eye, 5–10% topically in ear; rarely 1% on skin;
 CHLOROMYCETIN, ENTEROMYCETIN, PARAXIN, 250 mg, 500 mg cap, 1% eye oint, 0.5% eye drops, 5% ear drops, 1% applicaps, VANMYCETIN 0.4% eye drops, 250 mg opticaps, LYKACETIN 1% skin cream, 10% otic solution.
- Chloramphenicol palmitate (tasteless insoluble ester of chloramphenicol for liquid oral formulation): CHLOROMYCETIN

- PALMITATE, ENTEROMYCETIN, PARAXIN 125 mg/5 ml oral susp.
- 3. Chloramphenicol succinate (soluble ester of chloramphenicol for i.v. injection): ENTEROMYCETIN, CHLOROMYCETIN SUCCINATE, KEMICETINE 1 g/vial inj, PHENIMYCIN 0.25, 0.5, 1.0 g inj.

Macrolide Antibiotics

- Erythromycin: 250–500 mg 6 hourly (max. 4 g/day), children 30– 60 mg/kg/day.
 - (a) Erythromycin (base): ERYSAFE 250 mg tabs, EROMED 333 mg tab, 125 mg/5 ml susp.
 - (b) Erythromycin stearate: ERYTHROCIN 250, 500 mg tab, 100 mg/5 ml susp., 100 mg/ml ped. drops. ETROCIN, ERYSTER 250 mg tab, 100 mg/5 ml dry syr, EMTHRO 250 mg tab, 125 mg/5 ml susp.
 - (c) Erythromycin estolate (lauryl sulfate): ALTHROCIN 250, 500 mg tab, 125 mg kid tab, 125 mg/5 ml and 250 mg/5 ml dry syr, 100 mg/ml ped. drops, E-MYCIN 100, 250 mg tab, 100 mg/5 ml dry syr; ERYC-S 250 mg tab, 125 mg/5 ml dry syr.
 - (d) Erythromycin ethylsuccinate: ERYNATE 100 mg/5 ml dry syr, ERYTHROCIN 100 mg/ml drops, 125 mg/5 ml syr.
- Roxithromycin: 150–300 mg BD 30 min before meals, children 2.5–5 mg/kg BD; ROXID, ROXIBID, RULIDE 150, 300 mg tab, 50 mg kid tab, 50 mg /5 ml liquid; ROXEM 50 mg kid tab, 150 mg tab.
- Clarithromycin: 250 mg BD for 7 days; severe cases 500 mg BD upto 14 days; CLARIBID 250, 500 mg tab, 250 mg/5 ml dry syr; CLARIMAC 250, 500 mg tabs; SYNCLAR 250 mg tab, 125 mg/5 ml dry syr.
- 4. Azithromycin: 500 mg once daily 1 hour before or 2 hours after food (children above 6 month 10 mg/kg) for 3 days is sufficient for most infections; AZITHRAL 250, 500 mg cap and 250 mg per 5 ml dry syr; AZIWOK 250 mg cap, 100 mg kid tab, 100 mg/5 ml and 200 mg/5 ml susp. AZIWIN 100, 250, 500 mg tab, 200 mg/5 ml liq. Also AZITHRAL 500 mg inj. for i.m. use.
- 5. Spiramycin: 3 million units (MU) twice daily oral; ROVAMYCIN 1.5 MU, 3 MU tabs, 0.375 MU/5 ml susp.

Lincosamide Antibiotics

- Lincomycin: 500 mg TDS-QID oral; 600 mg i.m. or by i.v. infusion 6-12 hrly; LINCOCIN 500 mg cap, 600 mg/2 ml inj; LYNX 250, 500 mg cap, 125 mg/5 ml syr, 300 mg/ml inj in 1, 2 ml amp.
- Clindamycin: 150–300 mg QID oral; 200–600 mg i.v. 8 hourly; DALCAP 150 mg cap; CLINCIN 150, 300 mg cap; DALCIN, 150, 300 mg cap, 300 mg/2 ml and 600 mg/4 ml inj.

Aminocyclitol Antibiotic

 Spectinomycin: Gonorrhoea—2 g i.m. single dose (4 g in resistant cases); disseminated gonococcal infection—2 g i.m. BD. MYSPEC, TROBICIN 2 g vial for i.m. inj.

Glycopeptide Antibiotics

- Vancomycin: 125–500 mg oral, 0.5 g 6 hourly or 1.0 g 12 hourly by i.v. infusion over 1 hour; VANCOCIN-CP 150 mg tab, 500 mg/vial inj; VANCOGEN, VANCORID-CP 500 mg/vial inj; VANCOLED 0.5, 1.0 g inj.
- Teicoplanin: 400 mg first day—then 200 mg daily i.v. or i.m.; severe infection 400 mg 12 hourly × 3 doses—then 400 mg daily; TARGOCID, TECOPLAN, TECOCIN 200, 400 mg per vial inj. for reconstitution.

Oxazolidinone

1. Linezolid: 600 mg BD, oral/i.v.; LIZOLID 600 mg tab; LINOX 600 mg tab, 200 mg/100 ml i.v. infusion.

Polypeptide Antibiotics

 Polymyxin B: 5000-10,000 U/g for topical application (1 mg=10,000 U);

NEOSPORIN POWDER: 5000 U with neomycin sulf. 3400 U and bacitracin 400 U per g.

NEOSPORIN EYE DROPS: 5000 U with neomycin sulf. 1700 U and gramicidin 0.25 mg per ml.

- NEOSPORIN-H EAR DROPS: 10,000 U with neomycin sulf. 3400 U and hydrocortisone 10 mg per ml.
- Colistin sulfate: 25–100 mg TDS oral; WALAMYCIN 12.5 mg (25000 i.u.) per 5 ml dry syr, COLISTOP 12.5 mg/5 ml and 25 mg/5 ml dry syr.
- 3. Bacitracin: 250–500 U/g for topical application (IU = 26 μ g); In NEBASULF 250 U/g powder, skin oint, eye oint; in NEOSPORIN 400 U/g powder.
- 4. Tyrothricin: 0.2–0.5 mg/g for topical application TYRODERM: 0.5 mg/g skin cream; PROTHRICIN 0.2 mg/ml topical solution, TYOTOCIN: 0.05% otic solution with benzocaine 1.25% antipyrine 5%, hexylresorcinol 0.1%.

Urinary Antiseptics

- Nitrofurantoin: 50–100 mg 3 to 4 times a day oral; FURADANTIN 50, 100 mg tab, 25 mg/5 ml susp. TRIFURAN 50 mg + trimethoprim 40 mg + deglycyrrhizinised liquorice 200 mg tab.
- 2. Methenamine (Hexamine) mandelate: 1.0 g 3–4 times/day oral; MANDELAMINE 0.5 g, 1.0 g tabs.
- 3. Nalidixic acid: 0.5-1 g TDS-QID oral (See p. 100)

Antitubercular Drugs

First line drugs

- 1. Isoniazid (H)
- 2. Rifampin (R)
- 3. Pyrazinamide (Z)
- 4. Ethambutol (E)
- 5. Streptomycin (S)

Second line drugs

- 1. Thiacetazone (Tzn)
- 2. Paraaminosalicylic acid (PAS)
- 3. Ethionamide (Etm)
- 4. Cycloserine (Cys)

Newer drugs

- 1. Ciprofloxacin
- 2. Ofloxacin
- 3. Clarithromycin
- 4. Azithromycin

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- 5. Kanamycin (Kmc)
- 5. Rifabutin
- 6. Amikacin (Am)
- 7. Capreomycin (Cpr)

- Isoniazid (Isonicotinic acid hydrazide, INH): 300 mg (5 mg/kg) daily or 600 mg (10 mg/kg) thrice weekly oral; ISONEX 100, 300 mg tabs, ISOKIN 100 mg tab, 100 mg per 5 ml liq.
- Rifampin (Rifampicin): 600 mg (10 mg/kg) daily one hour before or two hours after meals or thrice weekly oral; RCIN 150, 300, 450, 600 mg caps, 100 mg/5 ml susp. RIMACTANE, RIMPIN 150, 300, 450 mg caps, 100 mg/5 ml syr; RIFAMYCIN 450 mg cap, ZUCOX 300, 450, 600 mg tabs.
- 3. Pyrazinamide: 1500 mg (25 mg/kg) daily or 2000 mg (35 mg/kg) thrice weekly oral; PYZINA 0.5, 0.75, 1.0 g tabs, 0.3 g kid tab; PZA-CIBA 0.5, 0.75 g tabs, 250 mg/5 ml syr; RIZAP 0.75, 1.0 g tabs.
- 4. Ethambutol: 1000 mg (15 mg/kg) daily or 1600 mg (30 mg/kg) thrice weekly oral; MYCOBUTOL, MYAMBUTOL, COMBUTOL 0.2, 0.4, 0.6, 0.8, 1.0 g tabs.
- Streptomycin: 1000 mg (15 mg/kg) daily or thrice weekly i.m. (reduce dose to 750 mg above 50 yr age and to 500 mg above 65 yr age); AMBISTRYN-S 0.75 g and 1.0 g dry powder per vial for i.m. inj.
- Thiacetazone (Amithiozone): 150 mg OD, children 2.5 mg/kg/day oral (available only in combination with INH).
- 7. Paraaminosalicylic acid (PAS): 10–12 g (200 mg/kg) per day oral in divided doses; SODIUM-PAS 0.5 g tab, 80 g/100 g granules.
- 8. Ethionamide: 0.5–0.75 g (10–15 mg/kg) per day oral; ETHIDE, ETHIOCID, MYOBID 250 mg tab.
- 9. Cycloserine: 250 mg BD, increased if tolerated upto 500 mg BD oral; CYCLORINE, COXERIN, MYSER 250 mg cap.
- Kanamycin: 0.5–1.0 g (15 mg/kg) i.m. daily; KANCIN, KANAMAC 0.5, 1 g inj.

- 11. Amikacin: 1.0 g (15 mg/kg) i.m. daily; AMICIN, MIKACIN, MIKAJECT 250 mg, 500 mg inj.
- 12. Capreomycin: 1.0 g (15 mg/kg) i.m. daily; KAPOCIN 0.5 g, 0.75 g, 1.0 g inj.
- 13. Ciprofloxacin: 750 mg BD oral.
- 14. Ofloxacin: 400 mg BD oral.
- 15. Clarithromycin: 500 mg BD oral
- 16. Azithromycin: 500 mg OD oral.
- 17. Rifabutin: 300 mg/day oral.

Some antitubercular combinations

RIFATER: Rifampin 120 mg, isoniazid 80 mg, pyrazinamide 250 mg tab.

R-CINEX: Rifampin 600 mg, isoniazid 300 mg tab; R-CINEX-Z: Rifampin 225 mg, isoniazid 150 mg, pyrazinamide 750 mg tab. RIMACTAZID, RIFADIN-INH, Rifampin 450 mg, isoniazid 300 mg tab.

MYCONEX 600 and 800; Isoniazid 300 mg, ethambutol 600 mg or 800 mg tab, COMBUNEX Isoniazid 300 mg, ethambutol 800 mg tab.

ARZIDE, ISORIFAM: Rifampin 450 mg, isoniazid 300 mg cap.

BI-TEBEN, ISOZONE: Isoniazid 75 mg, thiacetazone 37.5 mg tab, ISOZONE FORTE—double strength.

UNITHIBEN Isoniazid 75 mg, thiacetazone 37.5 mg tab.

INAPAS: sod PAS 834 mg, isoniazid 25 mg tab; sod PAS 3.34 g \pm isoniazid 100 mg per measure granules.

INABUTOL: Isoniazid 150 mg, ethambutol 400 mg tab; INABUTOL FORTE—double strength.

ISOKIN-300: Isoniazid 300 mg, vit B₆ 10 mg tab.

IPCAZIDE: Isoniazid 100 mg, vit B₆ 5 mg per 5 ml liq.

Antitubercular Combipacks (packs of 1 day's dose)

AKT-4: R 450 mg 1 cap + Z 750 mg 2 tab +

E 800 mg + H 300 mg 1 tab.

AKT-3: R 450 mg 1 cap + E 800 mg + H 300 mg

1 tab.

CX-5: R 450 mg 1 cap + Z 750 mg 2 tab + E 800 mg

+ H 300 mg + pyridoxine 10 mg 1 tab.

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RIFACOM-Z and

RIMACTAZIDE-Z: R 450 mg + H 300 mg 1 tab. + Z 750 mg

2 tab.

RIFACOM-EZ: R 450 mg + H 300 mg 1 tab. + Z 750 mg

2 tab + E 800 mg 1 tab.

(*Note: See* Index for preparations of ciprofloxacin, ofloxacin, clarithromycin and azithromycin).

Antileprotic Drugs

1. Sulfone Dapsone (DDS)

2. Phenazine derivative Clofazimine

3. Antitubercular drugs Rifampin, Ethionamide

4. Other antibiotics Ofloxacin, Minocycline,

Clarithromycin

Preparations

- Dapsone (Diaminodiphenyl sulfone, DDS): 100 mg/day; DAPSONE 25, 50, 100 mg tab.
- Clofazimine: 50 mg daily + 300 mg once a month; CLOFOZINE, HANSEPRAN 50, 100 mg caps.
- 3. Rifampin: 600 mg once a month
- 4. Ethionamide: 250 mg/day oral
- 5. Ofloxacin: 400 mg/day oral
- 6. Minocycline: 100 mg/day oral
- 7. Clarithromycin: 500 mg/day oral.

(Note: See Index for preparations of other drugs).

For erythema nodosum leprosum (type 2)

Thalidomide: 100-300 mg OD at bed time; THAANGIO 100 mg cap, THALODA 50, 100 mg cap.

(For multiple myeloma—200 mg OD; max 800 mg/day)

Antifungal Drugs

1. Antibiotics

- A. *Polyenes:* Amphotericin B, Nystatin, Hamycin, Natamycin (Pimaricin)
- B. Heterocyclic benzofuran: Griseofulvin
- 2. Antimetabolite Flucytosine (5-FC)
- 3. Azoles
 - A. Imidazoles

Topical: Clotrimazole, Econazole, Miconazole, Oxiconazole

Systemic: Ketoconazole

- B. *Triazoles (Systemic):* Fluconazole, Itraconazole, Voriconazole
- 4. Allylamine Terbinafine
- 5. Other topical agents

Tolnaftate, Undecylenic acid, Benzoic acid, Quiniodochlor, Ciclopirox olamine, Butenafine, Sod. thiosulfate.

Preparations

 Amphotericin B: 0.3–0.7 mg/kg daily by slow i.v. infusion over 4–8 hours (Total dose 3–4 g); 0.5 mg intrathecal, 3% topically in ear, 50–100 mg QID oral; FUNGIZONE INTRAVENOUS, MYCOL 50 mg dry powder per vial for i.v. infusion, FUNGIZONE OTIC 3% ear drops.

Liposomal amphotericin B: 3-5 mg/kg/day i.v. infusion; FUNGISOME 10 mg, 25 mg, 50 mg per vial inj.

- Nystatin: 5 lac U 8 hourly oral, 1 lac U nightly for vaginal insertion, 10,000 U/ml for buccal application; 1 lac U per g for application over skin and in the eye; MYCOSTATIN 5 lac U tab, 1 lac U vaginal tab, 1 lac U/g oint, NYSTIN EYE 1 lac U/g ophthalmic oint.
- 3. Hamycin: 2–5 lac U/g for topical application, 4 lac U vaginal application; HAMYCIN, IMPRIMA 5 lac U/g oint, 2 lac U/ml susp for topical use, 4 lac U vaginal ovules.
- 4. Natamycin (Pimaricin): 2% topical application, 25–100 mg vaginal application; NATAMYCIN 2% cream, 25 mg vaginal tab, PIMAFUSIN VAGINAL 100 mg vaginal tab.
- 5. Griseofulvin: 125–250 mg QID oral taken with meals; GRISOVIN-FP, GRISORAL, WALAVIN-FP 250 mg tab.
- 6. Clotrimazole: 1% topical application twice daily, 100 mg intravaginal at bed time: SURFAZ, CLOTRIN, CLODERM 1% lotion, cream, powder; 100 mg vaginal tab. CANDID 1% cream, gel, lotion, powder.
- Econazole: 1% topical application 2–3 times daily, 150 mg intravaginal every night; ECONAZOLE 1% oint, 150 mg vaginal tab; ECODERM 1% cream.
- 8. Miconazole: 2% topical application 2–3 times daily, 100 mg intravaginal nightly; DAKTARIN 2% gel, 2% powder and solution; GYNODAKTARIN 2% vaginal gel; ZOLE 2% oint, lotion, dusting powder and spray, 1% ear drops, 100 mg vaginal ovules.
- 9. Oxiconazole: 1% topical; OXIZON, ZODERM 1% + benzoic acid 0.25% cream and lotion.
- Ketoconazole: 200 mg OD-BD oral, 2% topical application; FUNGICIDE, NIZRAL, FUNAZOLE, KETOVATE 200 mg tab, FUNGINOC, NIZRAL 2% oint, 2% shampoo (for dandruff), KETOVATE 2% cream, DANRUF 2% shampoo, HYPHORAL 2% lotion.
- 11. Fluconazole: For tinea infections, cutaneous and vaginal candidiasis 150 mg oral weekly; for systemic mycosis 200–400 mg daily oral/i.v., for fungal keratitis 0.3% topically in eye; SYSCAN, ZOCON, FORCAN, FLUZON 50, 100, 150, 200 mg caps, 200 mg/100 ml i.v. infusion, SYSCAN 0.3% eye drops.

- Itraconazole: 200 mg OD-BD oral (for systemic mycosis), 200 mg OD oral for vaginal candidiasis and dermatophytosis; SPORANOX, CANDITRAL, ITASPOR, FLUCOVER 100 mg cap.
- 13. Voriconazole: Oral-200 mg BD taken 1 hour before or 1 hour after meal; Intravenous—initially 6 mg/kg 12 hourly 2 doses, then 4 mg/kg 12 hourly. Drug is to be reconstituted and diluted, infused at not more than 3 mg/kg/hr.
 - VFEND 50 mg, 200 mg tabs, 40 mg/ml susp; 200 mg vial for i.v. infusion; FUNGIVOR 200 mg tab.
- 14. Terbinafine: 250 mg OD oral, 1% topical application; LAMISIL, SEBIFIN, DASKIL 250 mg tab, 1% topical cream. EXIFINE 125, 250 mg tabs, 1% cream, TERBIDERM 1% cream.
- Tolnaftate: 1% topical application; TINADERM, TINAVATE 1% lotion, TOLNADERM 1% cream.
- Ciclopirox olamine: 1% topical and vaginal application;
 BATRAFEN 1% cream, 1% topical solution, 1% vaginal cream,
 OLAMIN 1% cream.
- 17. Undecylenic acid: 5–10% topical application; TINEAFAX: Zinc undecenoate 8% zinc naphthenate 8%, mesulphen 8%, methyl salicylate 2.5%, terpineol 2.5% oint.
- 18. Benzoic acid: 5% topical application; RINGCUTTER 5% benzoic acid +3% salicylic acid oint.
- Quiniodochlor: 3–10% topical application; VIOFORM 3% cream, DERMOQUINOL 4%, 8% cream.
- 20. Butenafine: 1% topical; BUTOP, FINTOP 1% cream.
- 21. Sodium thiosulfate: 20% topical application; in KARPIN LOTION 20% lotion.

Antiviral Drugs

1. Anti-Herpes virus

Idoxuridine, Acyclovir, Valaciclovir, Famciclovir, Ganciclovir, Foscarnet

2. Anti-Retrovirus

(a) *Nucleoside reverse transcriptase inhibitors (NRTIs):* Zidovudine (AZT), Didanosine, Zalcitabine, Stavudine, Lamivudine, Abacavir, Tenofovir

- (b) *Nonnucleoside reverse transcriptase inhibitors* (*NNRTIs*): Nevirapine, Efavirenz, Delavirdine
- (c) *Protease inhibitors:* Ritonavir, Indinavir, Nelfinavir, Saquinavir, Amprenavir, Lopinavir

3. Anti-Influenza virus

Amantadine, Rimantadine, Oseltamivir, Zanamivir

4. Nonselective Antiviral Drugs

Ribavirin, Lamivudine, Adefovir dipivoxil, Interferon α

- 1. Idoxuridine: 0.1–0.5% topically in eye 1 hourly to 6 hourly; IDURIN 0.1% eye drops, TOXIL 0.1% eye drops and oint.
- Acyclovir: 200 mg 5 times a day oral (15 mg/kg/day), 5–10 mg/kg 8 hourly by slow i.v. infusion, 5% topical application 6 times a day; ZOVIRAX 200 mg tab, 250 mg/vial for i.v. inj; CYCLOVIR 200 mg tab, 5% skin cream; HERPEX 200 mg tab, 3% eye oint, 5% skin cream; OCUVIR 200, 400, 800 mg tab, 3% eye oint, ACIVIR-DT 200, 400, 800 mg tab. ACIVIR EYE 3% oint.
- 3. Valaciclovir: For genital herpes simplex 0.5-1.0 g BD × 10 days, suppressive treatment 0.5 g OD × 6-12 months. For orolabial herpes 2 g BD × 1 day
 For herpes zoster 1 g TDS × 7 days.

 VALCIVIR 0.5 g, 1.0 g tabs.
- 4. Famciclovir: Genital herpes (1st episode) 250 mg TDS × 5 days; recurrent cases 250 mg BD for upto 1 year. Herpes zoster and orolabial herpes 500 mg TDS for 7–10 days. FAMTREX 250, 500 mg tabs.
- Ganciclovir: For treatment and prophylaxis of CMV infections— 5 mg/kg BD initially, followed by OD; GANGUARD 250, 500 mg tabs.
- Zidovudine (Azidothymidine, AZT): Adults 300 mg BD; Children 180 mg/m² (max 200 mg) BD.
 - RETROVIR, ZIDOVIR 100 mg cap 300 mg tab, 50 mg/5 ml syr, ZIDOMAX, ZYDOWIN 100 mg cap, 300 mg tab (to be taken with plenty of water).
- Didanosine: 200 mg BD (for > 60 kg BW), 125 mg BD (< 50 kg BW); 1 hour before or 2 hours after meals; DINEX EC, DD RETRO, VIROSINE DR 250, 400 mg tabs.

- 8. Stavudine: 40 mg BD (> 60 kg BW), 30 mg BD (< 60 kg BW); STAG, STAVIR, VIROSTAV 30, 40 mg caps.
- Lamivudine: For chronic hepatitis B—100 mg OD, For HIV infection—150 mg BD (with other antiretroviral drugs); LAMIVIR 150 mg tab, 150 mg/5 ml soln; LAMIVIR-HBV 100 mg tab; HEPTAVIR, LAMIDAC, LAMUVID 100, 150 mg tabs; DUOVIR, ZIDOLAM: Lamivudine 150 mg + zidovudine 300 mg tab.
- 10. Abacavir: 300 mg BD or 600 mg OD (along with other antiretroviral drugs); ABAMUNE, ABAVIR 300 mg tab.
- 11. Tenofovir: 300 mg OD; TENOF, TENTIDE 300 mg tab.
- 12. Nevirapine: 200 mg/day oral, may be increased later to 400 mg/day; NEVIMUNE, NEVIVIR, NEVIPAN, NEVIRETRO 200 mg tab.
- 13. Efavirenz: 600 mg OD on empty stomach; EFAVIR, VIRANZ 200 mg tab, EVIRENZ 200 mg cap, 600 mg tab.
- 14. Indinavir: 800 mg TDS; INDIVAN, INDIVIR, VIRODIN 400 mg cap.
- 15. Nelfinavir: 750 mg TDS; NELFIN, NELVIR 250 mg tab.
- 16. Ritonavir: 600 mg BD to be taken with meal; RITOVIR 250 mg tab, RITOMUNE, RITOMAX 100 mg cap.
- 17. Saquinavir: 1200 mg TDS oral taken with or just after a meal, 1000 mg BD along with ritonavir 100 mg; SAQUIN 200 mg cap.
- 18. Lopinavir: 400 mg (taken with ritonavir 100 mg) BD with food. RITOMAX-L: Lopinavir 133.3 mg + Ritonavir 33.3 mg cap.
- 19. Amantadine: 100 mg BD, elderly—half dose, children 5 mg/kg/day; AMANTREL, NEAMAN 100 mg tab.
- 20. Rimantadine: 100 mg BD, elderly 100 mg OD, child 5 mg/kg/day; FLUMADINE 100 mg tab, 50 mg/5 ml syr.
- 21. Oseltamivir: therapeutic dose—75 mg BD × 5 days; prophylactic dose—75 mg OD; TAMIFLU 75 mg cap, 12 mg/ml susp, FLUVIR 75 mg cap.
- Zanamivir: therapeutic dose—10 mg BD by inhalation; prophylactic dose—10 mg OD; RELENZA 5 mg blister for inhalation.
- 23. Ribavirin: 200 mg QID (children 10 mg/kg/day); VIRAZIDE, RIBAVIN 100, 200 mg caps, 50 mg/5 ml syr.

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 - 24. Adefovir dipivoxil: 10 mg/day oral; ADESERA, ADFOVIR 10 mg tab.
 - 25. Interferon: 3–10 MU slow i.v. infusion 3 times a week; ALFERON: Interferon α_{2A} 3MU/vial inj. REALFA-2B, SHANFERON, VIRAFERON: Interferon α_{2B} 3MU, 5MU vials for inj.

Some Antiretroviral Combinations

- Lamivudine 150 mg + Zidovudine 300 mg tab (1 tab BD); COMBIVIR, CYTOCOM, DUOVIR, LAMUZID tab.
- 2. Lamivudine 150 mg + Stavudine 30 mg or 40 mg tab (1 tab BD); LAMIVIR-S, LAMOSTAD, VIROLIS tab.
- 3. Lamivudine 150 mg + Zidovudine 300 mg + Nevirapine 200 mg tab (1 tab BD); DUOVIR-N, CYTOCOM-N, NEXIVIR-Z.
- Lamivudine 150 mg + Stavudine 30 mg or 40 mg + Nevirapine 200 mg tab (1 tab BD); LAMOSTAD-N, TROMUNE, VIROLANS.
- 5. Lamivudine 150 mg + Zidovudine 300 mg 2 tab and Efavirenz 600 mg 1 tab kit; CYTOCOM-E kit.

Antimalarial Drugs

- 1. *4-Aminoquinolines* : Chloroquine, Amodiaquine, Piperaquine.
- 2. Quinoline-methanol: Mefloquine.
- 3. Cinchona alkaloid: Quinine, Quinidine.
- 4. Biguanide: Proguanil (Chloroguanide), Chlorproguanil.
- 5. Diaminopyrimidine: Pyrimethamine.
- 6. 8-Aminoquinolines: Primaquine, Bulaquine.
- 7. *Sulfonamides and sulfone*: Sulfadoxine, Sulfamethopyrazine, Dapsone.
- 8. Tetracyclines: Tetracycline, Doxycycline.
- Sesquiterpine lactones: Artesunate, Artemether, Arteether.
- 10. Amino alcohols: Halofantrine, Lumefantrine.
- 11. Mannich base: Pyronaridine
- 12. Naphthoquinone: Atovaquone.

- Chloroquine: For clinical cure: 600 mg (base) followed by 300 mg after 8 hours and 300 mg daily for 2 days (total 1500 mg); total dose (in 3 days) for infants 150 mg, children 1–4 years 200–400 mg, 5–10 years 600–1000 mg.
 - For suppressive prophylaxis: 300 mg weekly.
 - Rarely 10 mg/kg diluted in 5% dextrose and infused i.v. over 8 hrs.
 - Chloroquine phosphate: (250 mg = 150 mg base): RESOCHIN 150 mg (base) tab; CLOQUIN, LARIAGO, NIVAQUIN-P 250 mg tab, 500 mg forte tab, 100 mg (base) per 10 ml oral susp., 40 mg (base)/ml inj in 2 and 5 ml amp, 30 ml vial.
- Amodiaquine: For treatment of acute attack of malaria: 25–35 mg/kg over 3 days; CAMOQUIN 200 mg (as HCl = 150 mg base) tab; BASOQUIN 150 mg (base) per 5 ml susp.
- 3. Piperaquine: 960 mg (16 mg/kg) along with dihydroartemisinin 120 mg (2 mg/kg) daily × 3 days (as ACT combination therapy).
- 4. Mefloquine: For treatment of uncomplicated falciparum malaria: 25 mg/kg split into 2 doses taken on 2 days along with 3 days artesunate (4 mg/kg/day) combination therapy; For prophylaxis: 5 mg/kg (max 250 mg) per week started 2 weeks before entering endemic area; MEFLOTAS, MEFLIAM, CONFAL, FACITAL 250 mg tab to be taken after meals with plenty of water.
- 5. Quinine: For complicated (Cerebral) malaria: 20 mg/kg diluted in 5% glucose and infused i.v. over 4 hours, followed by 10 mg/kg over 8 hours repeated every 8 hours till patient improves (regains consciousness), followed by oral therapy to complete 7 day course. For uncomplicated falciparum malaria: 600 mg (10 mg/kg) TDS oral for 7 days along with doxycycline 100 mg daily for 7 days; QUINARSOL, Q-SET, REZ-Q 100, 300, 600 mg tab, 600 mg/2 ml inj.
- Proguanil (chloroguanide): For malaria prophylaxis: 200 mg daily with chloroquine 300 mg weekly till 4 weeks after exposure; LAVERAN, PROGUNAL 100 mg tab.
- 7. Pyrimethamine-sulfadoxine: For treatment of uncomplicated falciparum malaria: 75 mg + 1500 mg single dose; Sulfadoxine 500 mg + pyrimethamine 25 mg tab: LARIDOX,

RIMODAR, FANCIDAR, MALOCIDE; REZIZ 500 mg + 25 mg tab and per 10 ml susp (adults 3 tab, children 9–14 yr 2 tab, 4–8 yr 1 tab, 1–4 yr ½ tab); REZIZ FORTE 750 mg + 37.5 mg tab. Sulfamethopyrazine 500 mg + pyrimethamine 25 mg tab: METAFIN, MALADEX tab.

Dapsone 100 mg + pyrimethamine 25 mg tab; MALOPRIM tab.

- 8. Tetracycline: For treatment of chloroquine resistant falciparum malaria: 250 mg QID for 7 days combined with quinine or pyrimethamine-sulfadoxine.
- Doxycycline: For treatment of chloroquine resistant falciparum malaria: 100 mg OD combined with quinine or pyrimethaminesulfadoxine.
 - For prophylaxis of chloroquine resistant falciparum malaria in travellers: 100 mg OD (as alternative to mefloquine).
- 10. Primaquine: For radical cure of vivax malaria: 15 mg (children 0.25 mg/kg) daily for 2 weeks along with chloroquine for 3 days; As gametocidal for falciparum malaria 45 mg (0.75 mg/kg) single dose along with chloroquine; PRIMALINE (as phosphate 26 mg = 15 mg base) 7.5, 15 mg tab., PRIMALEX, MALIRID 7.5, 15 mg tabs.
- 11. Artesunate: oral (for uncomplicated falciparum malaria) 100 mg BD (4 mg/kg/day) × 3 days in combination with mefloquine or sulfadoxine-pyrimethamine as ACT.

Parenteral (for severe and complicated falciparum malaria) 2.4 mg/kg i.v. or i.m. repeated after 12 and 24 hours and then once daily for 7 days. Switchover to oral ACT in between whenever patient can take oral medication.

FALCIGO, FALCYNATE, ARTINATE 50 mg tab, 60 mg/vial inj., LARINATE, ARNATE 50 mg tab;

Artesunate 50 mg + mefloquine 250 mg FALCIGO PLUS tab kit.

12. Artemether: Oral (for uncomplicated falciparum malaria) 80 mg twice daily × 3 days in combination with lumefantrine as ACT (to be taken with fatty meal).

Parenteral (for severe and complicated falciparum malaria) 3.2 mg/kg i.m. on 1st day, followed by 1.6 mg/kg daily for 7 days. Switch-over to 3 day oral ACT in between whenever patient can

take oral medication. PALUTHER, LARITHER, MALITHER, METHILEX 40 mg cap, 80 mg inj (in 1 ml arachis oil).

Artemether 20 mg + lumefantrine 120 mg tab: COARTEM, LUMERAX, COMBITHER tab, adult and child above 35 kg body weight 4 tab BD, child 25-35 kg 3 tab BD, 15-25 kg 2 tab BD, 5-15 kg 1 tab BD, all for 3 days; Artemether 80 mg + lumefantrine 480 mg tab: ARTE PLUS adults 1 tab BD × 3 days.

13. Arteether: (for severe and complicated falciparum malaria) 3.2 mg/kg i.m. on 1st day, followed by 1.6 mg/kg daily for the next 4 days. Switch-over to 3 day oral ACT in between whenever the patient is able to take oral medication. E-MAL, FALCY, RAPITHER 150 mg/2 ml amp.

Antiamoebic Drugs

1. Tissue amoebicides

- (a) For both intestinal and extraintestinal amoebiasis: Nitroimidazoles: Metronidazole, Tinidazole, Secnidazole, Ornidazole, Satranidazole Alkaloids: Emetine, Dehydroemetine
- (b) For extraintestinal amoebiasis only: Chloroquine

2. Luminal amoebicides

- (a) Amide: Diloxanide furoate, Nitazoxanide
- (b) 8-Hydroxyquinolines: Quiniodochlor (Iodochlorohydroxyquin, Clioquinol), Diiodohydroxyquin (Iodoquinol)
- (c) Antibiotics: Tetracyclines

Preparations

1. Metronidazole: For amoebic dysentery and liver abscess—800 mg TDS (children 30–50 mg/kg/day) for 5–10 days oral, or 1 g infused i.v. slowly followed by 0.5 g every 12 hr till oral therapy is instituted; For mild intestinal amoebiasis—400 mg TDS for 5–7 days. For serious anaerobic bacterial infections: 15 mg/kg infused i.v. over 1 hr followed by 7.5 mg/kg every 6 hrs till oral therapy can be instituted with 400–800 mg TDS; FLAGYL, METROGYL, METRON, ARISTOGYL, ALDEZOLE 200, 400 mg tab, 200 mg/5 ml susp. (as benzoyl metronidazole: tasteless);

500 mg/100 ml i.v. infusion; UNIMEZOL 200, 400 mg tabs, 200 mg/5 ml susp.

2. Tinidazole: For *Amoebiasis*: 2g OD for 3 days (children 30-50 mg/kg/day) or 0.6 g BD for 5-10 days.

Trichomoniasis and giardiasis: 2 g single dose or 0.6 g OD for 7 days. For *Anaerobic infections*:

prophylactic—2 g single dose before colorectal surgery; therapeutic—2 g followed by 0.5 g BD for 5 days oral, 0.8 g i.v.

infusion 8–12 hourly. For *H. pylori*: 500 mg BD for 1–2 weeks in triple combination; TINIBA 300, 500, 1000 mg tabs; 800 mg/400 ml i.v. infusion; TRIDAZOLE 300, 500 mg tab; FASIGYN 0.5 g and 1 g tab.

- 3. Secnidazole: 2 g single dose (children 30 mg/kg) for intestinal amoebiasis, giardiasis, trichomonas vaginitis and nonspecific bacterial vaginosis; 1.5 g/day for 5 days in hepatic amoebiasis; SECNIL, SECZOL 0.5, 1.0 g tabs; NOAMEBA-DS 1.0 g tab.
- 4. Ornidazole: 2 g OD oral for 3 days or 0.6 g BD for 5–10 days; 0.5–1.0 g slow i.v. infusion; DAZOLIC 500 mg tab, 500 mg/100 ml vial for i.v. infusion. ORNIDA 500 mg tab, 125 mg/5 ml susp.
- 5. Satranidazole: Amoebiasis: 300 mg BD for 3–5 days, giardiasis and trichomoniasis: 600 mg single dose orally; SATROGYL 300 mg tab.
- 6. Emetine: 60 mg i.m./s.c. OD for not more than 10 days; EMETINE HCL 60 mg/2 ml inj.
- Dehydroemetine: 60–100 mg i.m./s.c. OD for not more than 10 days; DEHYDROEMETINE HCL 30 mg/ml inj 1 and 2 ml amps.
- 8. Chloroquine: 600 mg (base) daily for 2 days followed by 300 mg OD for 2–3 weeks.
- Diloxanide furoate: 500 mg TDS for 5–10 days; children 20 mg/kg/day; FURAMIDE, AMICLINE 0.5 g tab; in TINIBA–DF 250 mg +
 - FURAMIDE, AMICLINE 0.5 g tab; in TINIBA-DF 250 mg + 150 mg tinidazole and TINIBA-DF FORTE 500 mg + 300 mg tabs; in ENTAMIZOLE 250 mg + 200 mg metronidazole and ENTAMIZOLE FORTE 500 mg + 400 mg tabs.
- 10. Nitazoxanide: 500 mg (children 7.5 mg/kg) BD × 3 days. NITACURE, NITCOL, NITARID 200, 500 mg tabs, 100 mg/5 ml dry syrup.

- 11. Quiniodochlor (Iodochlorohydroxyquin, Clioquinol): 250-500 mg TDS;
 - ENTEROQUINOL, QUINOFORM 250 mg tab.
- 12. Diiodohydroxyquin (Iodoquinol): 650 mg TDS; DIODOQUIN 650 mg tab, 210 mg/5 ml susp.
- 13. Tetracycline/Oxytetracycline: 250 mg QID oral.

Drugs for Giardiasis

- 1. Metronidazole: 200 mg TDS (children 15 mg/kg/day) for 7 days or 2 g daily for 3 days.
- 2. Tinidazole/secnidazole: 2 g single dose or 0.6 g daily for 7 days.
- 3. Nitazoxanide: 500 mg (children 7.5 mg/kg) BD × 3 days.
- 4. Quiniodochlor: 250 mg TDS for 7 days.
- 5. Furazolidone: 100 mg TDS for 5-7 days; FUROXONE 100 mg tab, 25 mg/5 ml susp.

Drugs for Trichomoniasis

A. Drugs used orally

- 1. Metronidazole: 400 mg TDS for 7 days or 2 g single dose.
- 2. Tinidazole: 600 mg OD for 7 days or 2 g single dose.
- 3. Secnidazole: 2 g single dose.
- 4. Nimorazole: 2 g single dose; FLOSOGYN 250 mg tab.

B. Drugs used intravaginally

- 1. Diiodohydroxyquin: 200 mg inserted intravaginally at bed time for 1-2 weeks; FLORAQUIN 100 mg vaginal pessaries.
- 2. Quiniodochlor: 200 mg inserted in the vagina every night for 1-3 weeks; GYNOSAN 200 mg vaginal tab.
- 3. Clotrimazole: 100 mg inserted highup in vagina every night for 6-12 days; SURFAZ 100 mg vaginal tab.
- 4. Hamycin: 4–8 lac U intravaginally daily for 15 days; HAMYCIN VAGINAL 4 lac U ovules.

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- 5. Natamycin: 25 mg nightly intravaginal application for 10 days; NATAMYCIN 25 mg vaginal tab.
- 6. Povidone-iodine: 400 mg inserted in the vagina daily at night for 2 weeks; BETADINE VAGINAL 200 mg pessaries.

Drugs for Leishmaniasis

- 1. *Antimonials*: Sodium stibogluconate, Meglumine antimonate
- 2. Diamidine: Pentamidine
- 3. Antifungal drugs: Amphotericin B, Ketoconazole
- 4. Others: Miltefosine, Paromomycin, Allopurinol

Preparations

- Sodium Stibogluconate: 20 mg/kg (max. 850 mg) daily i.m./ i.v. for 20–30 days or more; ABANTE, STIBO 100 mg (antimony)/ ml in 30 ml vials.
- 2. Pentamidine: 4 mg/kg deep i.m. or slow i.v. injection over 1 hour on alternate days for 5–25 weeks till no parasites detected in splenic aspirates (upto 40 injections); PENTAMIDINE 200 mg/vial and 300 mg/vial inj.
- 3. Amphotericin B: 0.5-1.0 mg/kg by slow i.v. infusion daily till 15-20 mg/kg total dose.
- 4. Miltefosine: 100 mg daily for 4 weeks.
- 5. Paromomycin: 10-15 mg/kg/day i.m. × 21 days.
- Allopurinol: 4-12 mg/kg TDS for 3-4 weeks as adjuvant to sodium stibogluconate.

Anthelmintics

- For Roundworm (Ascaris lumbricoides)
 Mebendazole, Albendazole, Pyrantel, Piperazine,
 Levamisole, Ivermectin
- **2. For Hookworm** (Ancylostoma duodenale, Necator americanus)
 - Mebendazole, Albendazole, Pyrantel, Levamisole

- **3. For threadworm** (Enterobius vermicularis) Pyrantel, Mebendazole, Albendazole, Piperazine
- **4. For** *Strongyloides stercoralis* Ivermectin, Albendazole
- **5.** For Whipworm (*Trichuris trichiura*) Mebendazole, Albendazole
- **6.** For Trichinella spiralis Albendazole, Mebendazole
- 7. For Filariasis (Wuchereria bancrofti, Brugia malayi) Diethyl carbamazine, Ivermectin, Albendazole
- 8. For Tapeworms (Taenia solium, T. saginata, Hymenolepis nana)

Praziquantel, Niclosamide, Albendazole

9. For Hydatid disease (Echinococcus granulosus, E. multilocularis)

Albendazole, Mebendazole

- 1. Mebendazole: For round worm, hookworm and Trichuris 100 mg BD for 3 days; for threadworm 100 mg single dose repeated after 2-3 weeks; for Trichinella spiralis 200 mg BD for 4 days; for hydatid disease 200-400 mg BD-TDS for 3-4 weeks; children 1-2 year age 1/2 dose; MEBEX, WORMIN 100 mg chewale tab, 100 mg/5 ml susp, MEBAZOLE 100 mg tab.
- 2. Albendazole: For roundworm, hookworm, threadworm and Trichuris 400 mg single dose (for children 1-2 years 1/2 dose); for tapeworms and strongyloidosis and trichinosis 400 mg daily for 3 days; neurocysticercosis 15 mg/kg daily for 8-15 days (with corticosteroids); hydatid disease 400 mg BD for 4 weeks (upto 3 courses with 2 weeks gap); ZENTEL, ALMINTH, ALBEZOLE 400 mg tab, 200 mg/5 ml susp.
- 3. Pyrantel pamoate: For roundworm, Ancylostoma and threadworm 10 mg/kg single dose, for Necator and strongyloidosis 10 mg/kg daily for 3 days; NEMOCID, ANTIMINTH, EXPENT 250 mg tab, 500 mg/10 ml susp.
- 4. Piperazine: For roundworm infestation 4 g once a day for 2 consecutive days; children 0.75 g/year of age (max. 4 g).

Enterobiasis—50 mg/kg (max. 2 g) once a day for 7 days or 75 mg/kg (max. 4 g) single dose, repeated after 3 weeks.

PĪPERAZINĒ CITRATE; 0.75 g/5 ml elixir in 30 ml, 115 ml bottle; 0.5 g (as phosphate) tablets.

- Levamisole: For roundworm 150 mg (adults), 100 mg (children 20–39 kg body weight), 50 mg (children 10–19 kg weight) single dose, for *Ancylostoma* 2 doses 12 hour apart; DEWORMIS, VERMISOL 50, 150 mg tabs, 50 mg/5 ml syr.
- Diethylcarbamazine citrate: For filariasis 2 mg/kg TDS for 12–21 days, for tropical eosinophilia 2–4 mg/kg TDS for 2–3 weeks; HETRAZAN, BANOCIDE 50, 100 mg tabs, 120 mg/5 ml syr, 50 mg/5 ml pediatric syr.
- 7. Ivermectin: 10–15 mg (0.15–0.2 mg/kg) orally single dose for strongyloidosis, enterobiasis, ascariasis as well as scabies and pediculosis; for filariasis and onchocerciasis 0.2 mg/kg is repeated annually along with albendazole 400 mg; IVERMECTOL, IVERMEC, VERMIN 3, 6 mg tabs, to be taken on empty stomach.
- 8. Niclosamide: For tapeworm (*T. solium, T. saginata*) 2.0 g taken in 2 doses 1 hour apart (children 2–6 years 1.0 g total dose) followed by a saline purge after 2 hours; for *H. nana* 2.0 g repeated daily for 5 days; NICLOSAN 0.5 g tab (to be chewed and swallowed with water).
- 9. Praziquantel: For tapeworm (*T. solium, T. saginata*) 10 mg/kg single dose in the morning; for *H. nana* and *D. latum* 15–25 mg/kg single dose in the morning; for neurocysticercosis 50 mg/kg/day in 3 divided doses for 15 days; for Schistosomiasis 40–75 mg/kg in one day; for other flukes 75 mg/kg in one day for 1–2 days; CYSTICIDE 500 mg tab, DISTOCIDE 600 mg tab.

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Anticancer Drugs (Antineoplastic Drugs)

A. Drugs acting directly on cells (Cytotoxic drugs)

1. *Alkylating agents* Mechlorethamine (Mustine HCl) *Nitrogen mustards* Cyclophosphamide, Ifosfamide,

Chlorambucil, Melphalan.

Ethylenimine Thio-TEPA

Alkyl sulfonate Busulfan

Nitrosoureas Carmustine (BCNU), Lomustine (CCNU),

Triazine Dacarbazine (DTIC)

2. Antimetabolites

Folate antagonist Methotrexate (Mtx)

Purine 6-Mercaptopurine (6-MP), antagonist 6-Thioguanine (6-TG),

Azathioprine, Fludarabine

Pyrimidine 5-Fluorouracil (5-FU), Cytarabine

antagonist (cytosine arabinoside)

3. *Vinca alkaloids* Vincristine (Oncovin), Vinblastine

4. Taxanes Paclitaxel, Docetaxel

5. *Epipodophyllo* Etoposide

toxin Camptothe

6. Camptothecin Topotecan, Irinotecan analogues

7. Antibiotics Actinomycin D (Dactinomycin)

Doxorubicin, Daunorubicin (Rubidomycin), Mitoxantrone Bleomycins, Mitomycin C

8. Miscellaneous Hydroxyurea, Procarbazine,

L-Asparaginase, Cisplatin,

Carboplatin, Imatinib

B. Drugs altering hormonal milieu

Glucocorticoids Prednisolone and others
 Estrogens Fosfestrol, Ethinylestradiol
 Selective estrogen Tamoxifen, Toremifene

3. Selective estrogen Tamoxifen, Toremite receptor modulators

4. Selective estrogen Fulvestrant receptor down regulator

5. Aromatase inhibitors Letrozole, Anastrozole,

Exemestane

6. Antiandrogen Flutamide, Bicalutamide

7. $5-\alpha$ reductase Finasteride, Dutasteride

inhibitors

8. GnRH analogues Naferelin, Triptorelin

9. *Progestins* Hydroxyprogesterone

caproate, etc.

- Mechlorethamine (Mustine HCl): 0.1 mg/kg i.v. daily × 4 days; courses may be repeated at suitable intervals; MUSTINE 10 mg dry powder in vial.
- Cyclophosphamide: 2–3 mg/kg/day oral; 10–15 mg/kg i.v. every 7–10 days, i.m. use also possible; ENDOXAN, CYCLOXAN 50 mg tab; 200, 500, 1000 mg inj.
- Ifosfamide: 10–15 mg/kg i.v.; HOLOXAN, IPAMIDE 1 g vial, HOLOXAN-UROMITEXAN 1 g vial + 3 amps of mesna 200 mg inj.
- 4. Chlorambucil: 4-10 mg (0.1-0.2 mg/kg) oral daily for 3-6 weeks, then 2 mg daily for maintenance; LEUKERAN 2, 5 mg tab.
- 5. Melphalan: 10 mg daily for 7 days or 6 mg/day for 2–3 weeks—4 weeks gap—2 to 4 mg daily for maintenance orally. Also used for regional perfusion in malignant melanoma; ALKERAN 2, 5 mg tab, 50 mg per vial for inj.
- Thio-TEPA: 0.3-0.4 mg/kg i.v. at 1-4 week intervals; THIOTEPA 15 mg per vial inj.
- Busulfan: 2-6 mg/day (0.06 mg/kg/day) orally; MYLERAN, BUSUPHAN 2 mg tab.

- 8. Lomustine (CCNU): 100–130 mg/m² BSA single oral dose every 6 weeks; LOMUSTINE 40, 100 mg cap.
- Dacarbazine (DTIC): 3.5 mg/kg/day i.v. for 10 days, repeat after 4 weeks; DACARIN 100, 200, 500 mg inj; DACARZINE 200 mg/vial inj.
- 10. Methotrexate: 15–30 mg/day for 5 days orally or 20–40 mg/m² body surface area (BSA) i.m./i.v. twice weekly, maintenance therapy 2.5–15 mg/day; NEOTREXATE 2.5 mg tab, 50 mg/2 ml inj; BIOTREXATE 2.5 mg tab, 5, 15, 50 mg/vial inj.
- 11. 6-Mercaptopurine: 2.5 mg/kg/day orally, half dose for maintenance; PURINETHOL, EMPURINE 50 mg tab.
- 12. 6-Thioguanine: 100–200 mg/m²/day oral for 5–20 days; 6–TG 40 mg tab.
- 13. Azathioprine: 3–5 mg/kg/day oral, maintenance 1–2 mg/kg/day; IMURAN, TRANSIMUNE, AZOPRINE 50 mg tab.
- 14. Fludarabine: 25 mg/m² BSA daily for 5 days every 28 days by i.v. infusion. FLUDARA 50 mg/vial inj.
- 15. Fluorouracil (5-FU): 1 g orally on alternate days (6 doses) then 1 g weekly or 12 mg/kg/day i.v. for 4 days—6 mg/kg i.v. on alternate days; FLURACIL, FIVE FLURO 250 mg cap, 250 mg/5 ml for i.v. inj, also 1% topical solution.
- Cytarabine: 1.5–3 mg/kg i.v. BD for 5–10 days (also by continuous i.v. infusion); CYTARABIN, CYTROSAR, CYTABIN 100, 500, 1000 mg inj.
- Vincristine (Oncovin): 1.5–2 mg/m² BSA i.v. weekly;
 VINCRISTIN, CYTOCRISTIN 1 mg/vial inj.
- 18. Vinblastine: 0.1–0.15 mg/kg i.v. weekly × 3 doses; VINBLASTIN, CYTOBLASTIN 10 mg/vial inj.
- 19. Paclitaxel: 175 mg/m² by i.v. infusion over 3 hr, repeated every 3 weeks; INTAXEL, PAXTAL 30 mg in 5 ml cremophor emulsion (polyoxyethylated castor oil + alcohol + water) per vial.
- 20. Docetaxel: 100 mg/m² i.v. over 1 hr; repeat at 3 weeks, DAXOTEL 20 mg, 80 mg inj.
- 21. Etoposide: 50–100 mg/m²/day i.v. or oral for 5 days; PELTASOL 100 mg in 5 ml inj., LASTET 25, 50, 100 mg cap, 100 mg/5 ml inj, ETOCID 50 mg cap, 100 mg/5 ml inj.

- 22. Topotecan: 1.5 mg/m² i.v. over 30 min daily for 5 days; TOPOTEL 2.5 mg and 4.0 mg inj.
- 23. Irinotecan: 125 mg/m² i.v. over 90 min, weekly for 4 weeks, IRINOTEL 40 mg (2 ml), 100 mg (5 ml) inj.
- 24. Actinomycin D (Dactinomycin): 15 μg/kg i.v. daily for 5 days; DACMOZEN 0.5 mg/vial inj.
- Daunorubicin (Rubidomycin): 30–60 mg/m² BSA i.v. daily for 3 days, repeat weekly.
 DAUNOCIN, DAUNOMYCIN 20 mg/vial inj.
- Doxorubicin: 60–75 mg/m² BSA slow i.v. injection every 3 weeks; ADRIAMYCIN, DOXORUBICIN, ONCODRIA 10 mg, 50 mg per vial inj.
- 27. Mitoxantrone: 14 mg/m² single i.v. dose, repeat at 3 weeks; ONCOTRON 20 mg/10 ml inj.
- 28. Bleomycin: 30 mg twice weekly i.v. or i.m. (total dose 300–400 mg); BLEOCIN, ONCOBLEO 15 mg inj.
- Mitomycin C: 10 mg/m² BSA, infused i.v. in one day or divided in 5 and infused over 5 days; MITOMYCIN-C 2, 10 mg inj.
- 30. Hydroxyurea: 20–30 mg/kg daily or 80 mg/kg twice weekly oral; CYTODROX, HYDAB 500 mg cap.
- 31. Procarbazine: 100–300 mg daily oral, 1–2 mg/kg/day for maintenance therapy.
- 32. L-Asparaginase: 50–200 KU/kg i.v. daily for 2–4 weeks; LEUNASE 10,000 KU per vial inj.
- 33. Cisplatin: 50–100 mg/m² BSA by slow i.v. infusion every 3–4 weeks; CISPLATIN, CISPLAT, PLATINEX 10 mg/10 ml, 50 mg/50 ml vial.
- 34. Carboplatin: 400 mg/m² as an i.v. infusion over 15–60 min, to be repeated only after 4 weeks; ONCOCARBIN 150 mg inj, KEMOCARB 150, 450 mg/vial inj.
- 35. Imatinib: 400 mg/day with meal; for accelerated phase of CML 600-800 mg/day; IMATIB-α, SHANTINIB, GLEE-VEC 100 mg cap.

(*Note: See* Index for preparations of hormones and hormone antagonists)

Miscellaneous Drugs

Immunosuppressants

- 1. *Calcineurin inhibitors (Specific T-cell inhibitors)*Cyclosporine (Ciclosporin), Tacrolimus
- 2. Antiproliferative drugs (Cytotoxic drugs)

Azathioprine, Cyclophosphamide, Methotrexate, Chlorambucil, Mycophenolate mofetil (MMF), Sirolimus

Glucocorticoids

Prednisolone and others

4. Antibodies

Muromonab CD3, Antithymocyte globulin (ATG), Rho(D) immuneglobulin

Preparations

 Cyclosporine: 10-15 mg/kg/day with milk or fruit juice till 1-2 weeks after transplantation, gradually reduced to maintenance dose of 2-6 mg/kg/day. Therapy may be started with 3-5 mg/kg i.v. infusion.

IMUSPORIN 25, 50, 100 mg soft gelatin cap; microemulsion formulation SANDIMMUN NEORAL, PANIMUN BIORAL 25, 50, 100 mg caps; SANDIMMUN, PANIMUN 100 mg/ml inj in 1 ml, 5 ml, 50 ml vials dispersed in cremaphor emulsion to be diluted and infused i.v. over 4–6 hours.

- 2. Tacrolimus: 0.05–0.1 mg/kg 12 hourly oral (for renal transplantation) 0.1-0.2 mg/kg (for liver transplantation); PANGRAF, TACROMUS 1 mg, 5 mg caps.
- 3. Azathioprine: Initially 3–5 mg/kg/day oral, followed by 1–2 mg/kg/day for maintenance.

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- 4. Cyclophosphamide: 10–15 mg/kg i.v., 2–3 mg/kg/day oral.
- Methotrexate: Initially 15–30 mg/day oral, 2.5–15 mg/day for maintenance.
- 6. Chlorambucil: 2–10 mg/day oral.
- Mycophenolate mofetil: 1 g oral twice daily; CELLMUNE, MYCEPT, MYCOFIT 250, 500 mg tab/cap.
- Sirolimus: Initially 1 mg/m² BSA/day followed by lower maintenance doses titrated by response; RAPACAN 1 mg tab.
- 9. Antithymocyte globulin: LYMPHOGLOBULIN (equine) 100 mg/vial inj.; 10 mg/kg/day i.v.; THYMOGLOBULIN (rabbit) 25 mg/vial inj.; 1.5–2.5 mg/kg/day. ATG 100 mg inj; 200 mg i.v./day.
- Rho (D) immuneglobulin: 250–350 μg i.m. of freez dried preparation.
 RHIGGAL 100, 350 μg vial, RHESUMAN, RHOGAM 300 μg/vial ini.

(*Note: See* Index for preparations of other drugs).

Chelating Agents

- 1. Dimercaprol (British Antilewisite, BAL): 5 mg/kg, followed by 2–3 mg/kg every 4–8 hours for 2 days and then once daily for 10 days injected i.m.; BAL INJ 100 mg/2 ml in arachis oil inj.
- 2. Dimercaptosuccinic acid (Succimer)
- 3. Calcium disodium edetate (Ca Na₂ EDTA): 1 g diluted in 200–300 ml saline and infused i.v. over 1 hour twice daily for 3–5 days, to be repeated after a week.
- 4. Calcium disodium DTPA
- 5. Penicillamine: 0.5–1 g daily in divided doses 1 hour before or 2 hour after meals to avoid chelation of dietary metals. ARTAMIN, CILAMIN 250 mg cap, ARTIN 150, 250 mg cap.
- 6. Desferrioxamine: For acute iron poisoning: 0.5–1 g (50 mg/kg) i.m. 4–12 hourly as required or 10–15 mg/kg/hour (max 75 mg/kg in one day) i.v. infusion; for transfusion siderosis in thalassemia patients 0.5–1 g/day i.m.; DESFERAL 0.5 g/vial inj.
- Deferiprone: 50–100 mg/kg oral daily in 2–4 divided doses;
 KELFER 250, 500 mg caps.

Locally Acting Drugs on Skin and Mucous Membranes

A. Demulcents

- 1. Gum Acacia: as 2–4% pseudosolution in water.
- 2. Gum Tragacanth: as 2–4% pseudosolution in water.
- 3. Glycyrrhiza: as glycyrrhiza dry extract 1–2 g or liquid extract 2-4 ml in lozenges and mixtures.
- 4. Methylcellulose: 0.5% in nose drops and contact lens solution; CADILOSE 0.5% drops in 10 ml bottle.
- 5. Propylene glycol: 50% in water.
- 6. Glycerine: 10-50% in water.

B. Emollients

- 1. Vegetable oils: Olive oil, Arachis oil, Sesame oil, Cocoa butter
- 2. Animal products: Wool fat, Lard, Bees wax, Spermaceti
- 3. Petroleum products: Paraffin wax (soft/hard), Liquid paraffin

C. Adsorbants and Protectives

- 1. Dermal protectives: Magnesium stearate, Zinc stearate, Talc, Calamine, Zinc oxide, Bentonite, Starch, Boric acid, Aloe-vera gel
- 2. Occlusive protectives: Polyvinyl polymer, Feracrylum, Dimethicone, Sucralfate

Preparations

CALADRYL: Calamine 8% diphenhydramine 1%, Camphor 0.1% lotion. CALAK, CALMIS (Calamine lotion): Calamine 15%, zinc oxide 5%, bentonite 3%, sodium citrate 0.5%, liquified phenol 0.5%, glycerin 5% lotion.

CALACREME 5% cream, CALAMINOL: 5% emulsion,

ALOVIT: Aloe extract 10%, Vit E 0.5% cream. ALOEDERM: Aloe juice 10%, vit E acetate 0.2%, sesame oil 2% cream.

JULA: Aloe vera juice gel 50% gel.

LUBRIDERM-SF: Dimethicone 4%, vit E acetate 1%, vegetable oil 2%, propylene glycol 10% cream.

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HEALEX SPRAY: Polyvinyl polymer 2.5% + benzocaine 0.36% as aerosol wound dressing.

SEPGARD GEL: Feracrylum 1% gel, to be applied as a thin film on the abrasion/wound.

SILENT-SF: White soft paraffin 2.5%, dimethicone 0.5% cream.

BARRIER-SF: Dimethicone 15%, vita E acetate 0.18% cream.

PEPSIGARD LIGHT GEL: Sucralfate 10% gel.

RELISPRAY: Wintergreen oil (methyl salicylate) 20%, clove oil 1%, Menthol 4%, Nilgiri oil 6%, Camphor 10%, Cinnamon oil 0.5%, terpentine oil 10% spray

D. Astringents

1. Vegetable astringents

Tannic acid: as glycerine of tannic acid 25% Tannins: as tincture catechu, tea leaf infusion

2. Alcohols

Ethanol, Methanol, Propanol

3. Mineral astringents

Alum, Aluminium hydroxychloride, Zinc oxide, Zirconyl hydroxychloride

E. Counterirritants

1. Volatile oils

Turpentine oil, Eucalyptus oil, Clove oil

2. Stearoptenes

Camphor, Thymol, Menthol

3. Other counterirritants

Mustard seeds (as mustard plaster), Capsicum, Canthridin, Methylsalicylate, Alcohol

Preparations

ALGIPAN: Capsicum oleoresin 0.1%, histamine 0.1%, methyl nicotinate 1%, glycol salicylate 5% cream.

ARJET SPRAY: Methyl salicylate 875 mg, menthol 1.6 g, camphor 1.5 g, benzyl nicotinate 20 mg, squalance 250 mg, glycol salicylate 875 mg per 50 ml spray.

EUTHERIA: Eucalyptol 7.2%, menthol 4.7%, methylsalicylate 11.25% balm.

MEDICREME: Methylsalicylate 8%, menthol 2%, adrenaline 0.03%, mephenesin 2.5%, chlorpheniramine 0.2%, cream.

RELAXYL: Capsicum oleoresin 0.05%, mephenesin 10% methyl nicotinate 1% ointment.

VICKS VAPORUB: Menthol 2.8%, camphor 5.25%, thymol 0.1% turpentine oil 5.5% ointment.

IODEX: Methylsalicylate 5%, iodine 4% nonstaining ointment.

AMRUTANJAN: Eucalyptus oil 17%, camphor 10%, thymol 1%, menthol 4.5%, methylsalicylate 7% ointment.

CAPSIGYL-D: Capsaicin 0.075%, methyl salicylate 20% menthol 10%, camphor 5%, eucalyptus oil 5%, diclofenac 1% gel.

F. Keratolytics and Caustics

Salicylic acid, Resorcinol, Podophyllum resin, Silver nitrate, Phenol, Trichloracetic acid, Glacial acetic acid

Preparations

CORNAC: Salicylic acid 16.5% liquid.

CORN CAP: Salicylic acid 40% ointment in adhesive tape.

FOOT POWDER: Salicylic acid 2% dusting powder.

WHITFIELD-SF: Salicylic acid 3% benzoic acid 6% oint.

PODOWART: Podophyllum renin 20% paint.

CONDYLINE: Podophyllotoxin 0.5% solution.

G. Antiseborrheics

Selenium sulfide, Zinc pyrithione, Sulfur, Resorcinol, Coal tar, Ketoconazole, Clotrimazole, Topical corticosteroids

Preparations

SELSUN: Slenium sulfide 2.5% susp.

SELDRUFF PLUS: Selenium sulfide 2.5%, clotrimazole 1% susp.

SCALPE: Zinc pyrithione 1%, ketoconazole 2% shampoo.

KETOVATE, NIZRAL: Ketoconazole 2% cream, 2% shampoo.

CANDID-TV SUSP: Selenium disulfide 2.5%, clotrimazole 1% susp.

H. Melanizing agents

 Psoralen: 10–20 mg (0.3–0.6 mg/kg) orally followed 2 hours later by 15–30 min of exposure to sunlight/UV light; 0.25–1% local application on vitiliginous lesion followed by 1 min (initially) exposure to sunlight; exposure time is increased gradually as

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tolerated; MANADERM 10 mg tab, 1% oint, PSORLINE 5 mg tab, 0.25% solution, 0.25% oint.

- Methoxsalen: MACSORALEN 10 mg tab, 1% solution, MELANOCYL 10 mg tab, 0.75% solution, 0.75% with paraminobenzoic acid 2% oint. Use similar to psoralen.
- 3. Trioxsalen: NEOSORALEN 5, 25 mg tabs, 0.2% lotion. Use similar to psoralen.

I. Demelanizing agents

- 1. Hydroquinone: 2–6% topical application; EUKROMA 4% cream, MELALITE: Hydroquinone 2% with glycerylester of PABA 2.8% cream, BRITE: hydroquinone 4%, glyceryl PABA 2.8% cream.
- 2. Monobenzone: 5–20% topical application; BENOQUIN 20% oint.
- Azelaic acid: 10–20% topical application; AZIDERM 10%, 20% cream.

J. Sunscreens

1. Chemical sunscreens

Para-aminobenzoic acid (PABA): 5–10% topical application; PABALAK 5% solution, PARAMINOL 10% cream.

Oxybenzone: 2–6% topical application.

Octyl methoxy cinnamate: 5% topical application;

EUKROMA-SG: Oxybenzone 3%, Octyl methoxycinnamate 5%, hydroquinone 2% cream.

SUNSHIELD: Octyl methoxycinnamae 5%, Vit E 0.25% lotion.

2. Physical sunscreens

Petroleum jelly (heavy), Titanium dioxide, Zinc oxide, Calamine

MELASCREEN: Titanium dioxide, Zinc oxide, Octyl methoxycinnamate, benzophenone, avobenzone lotion/cream.

K. Drugs for Psoriasis

- 1. Topical corticosteroids: (see p. 37)
- Calcipotriol: 0.005% topical application on the lesions only; DAIVONEX 0.005% oint.
- 3. Tazarotene: 0.05-0.1% topical application daily in the evening; LATEZ 0.05% gel, 0.1% cream, TAZRET 0.05%, 0.1% cream.

- 4. Coaltar: 1-6% topical application;
 - EXTAR: Coaltar 6%, Salicylic acid 3%, Sulfur ppt 3% oint. TARSYL: Coaltar 1%, Salicylic acid 3% lotion, IONAX-T coalter 4.25%, salicylic acid 2% scalp lotion.
- Acitretin: 0.5-0.75 mg/kg/day oral; ACITRIN, ACETEC 10, 25 mg tabs.
- 6. Psoralen-ultraviolet A (PUVA) therapy
- 7. Immunosuppressants: Methotrexate, Etanercept

L. Drugs for Acne vulgaris

1. Topical therapy

Benzoyl peroxide: 2.5–10% topical application; PERSOL, PERNOX, BENZAC-AC 2.5% and 5% gel; in PERSOL FORTE 10% cream with sulfur ppt. 5%.

Tretinoin (Retinoic acid, all trans vitamin A acid): 0.025%–0.05% topical application; EUDYNA 0.05% cream, RETINO-A 0.025% and 0.05% cream.

Adapalene: 0.1% topical application once daily at bed time; ADAFERIN, ADAPEN, ACLENE 0.1% gel.

Azelaic acid: 10–20% topical application; AZIDERM 10%, 20% cream.

Erythromycin: 2–4% topical application; ACNEDERM 2% lotion and oint; ERYTOP 3% lotion and cream; ACNESOL 4% gel, 2% lotion, ACNELAC-Z 4% lotion and gel with zinc acetate 2%.

Clindamycin: 1% topical application; CLINDAC-A, CLINCIN 1% gel.

Nadifloxacin: 1% topical application; NADIBACT, NADOXIN 1% topical cream

2. Systemic therapy

Antibiotics: Tetracycline, Minocycline, Erythromycin *Retinoid*: Isotretinoin (13-cis retinoic acid) 0.5-1 mg/kg/day; ISOTRETIN 10, 20 mg cap, IRET 20 mg cap.

Antiseptics and Disinfectants

1. Phenol derivatives:

Phenol, Cresol, Hexylresorcinol, Chloroxylenol, Hexachlorophene.

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2. Oxidizing agents:

Pot. permangnate, Hydrogen peroxide, Benzoyl peroxide.

3. Halogens:

Iodine, Iodophores, Chlorine, Chlorophores.

4. Biguanide

Chlorhexidine.

5. *Quaternary ammonium (Cationic)*; Cetrimide, Benzalkonium chloride (Zephiran), Dequalinium chloride.

6. Soaps:

of Sod. and Pot.

7. Alcohols:

Ethanol, Isopropanol.

8. Aldehydes:

Formaldehyde, Glutaraldehyde.

9. Acids:

Boric acid, Acetic acid.

10. Metallic salts:

Merbromin, Silver nitrate, Silver sulfadiazine, Mild silver protein, Zinc sulfate, Calamine, Zinc oxide.

11. Dyes:

Gentian violet, Brilliant green, Acriflavine, Proflavine.

12. Furan derivative

Nitrofurazone.

Preparations

1. Phenol: 1–5%

2. Cresol: 0.5–4%; LYSOL 50% emulsion of cresol.

- Chloroxylenol: 0.5–5%; DETTOL 4.8% solution, 0.8% cream, 0.8% soap, 1.4% lubricating obstetric cream, DETTOLIN 1% mouthwash
- 4. Hexachlorophene: 0.2–3.0% in soaps, dusting powder, etc.
- 5. Potassium permangnate: as 1:4000–1:10,000 aqueous solution (Condy's lotion).

- 6. Hydrogen peroxide: 10-30%
- 7. Iodine: 2% as Tincture iodine (alcoholic solution), 1.25% in Mandel's throat paint; IODEX 4% nonstaining oint.
- 8. Povidone iodine: 1-10%;

BETADINE 5% solution, 5% ointment, 7.5% scrub solution, 200 mg vaginal pessary; PIODIN 10% solution, 10% cream, 1% mouth wash; RANVIDONE AEROSOL 5% spray with freon propellant.

- 9. Chlorine: 0.2–0.4 parts per million (ppm).
- 10. Chlorinated lime: BLEACHING POWDER (30% chlorine).
- 11. Sodium hypochlorite: 4-6% solution.
- 12. Chlorhexidine: 0.1–1.5% solution; CHLODIN, HEXIL, REXIDIN, FLUDENT-CH 0.2% mouth wash.
- 13. Cetrimide: 0.5–3% solution.

CETAVLON CONCENTRATE: Cetrimide 20%

SAVLON LIQUID ANTISEPTIC: Chlorhexidine gluconate 1.5% + Cetrimide 3%.

SAVLON/CETAVLEX CREAM: Chlorhexidine HCl 0.1% + Cetrimide 0.5%.

SAVLON HOSPITAL CONCENTRATE: Chlorhexidine gluconate 7.5% + Cetrimide 15%.

- Dequalinium chloride: 0.25–1.0%; DEQUADIN 0.25 mg lozenges.
- 15. Ethanol: 70–90%
- 16. Isopropanol: 70–90%
- 17. Formaldehyde: 4% as diluted FORMALIN (37%)
- 18. Glutaraldehyde: 2%
- 19. Boric acid: 4% solution in warm water, 30% in Boroglycerine paint, BOROCIDE 10% oint, BOROSPIRIT 10% ear drops.
- 20. Acetic acid: 1-5%
- 21. Merbromin: 2%, MERCUROCHROME 2% solution.
- 22. Silver nitrate: 1%
- 23. Zinc sulfate: 1–4%; ZINCO-SULFA 0.1% eye drops, THIOSOL 2.5% lotion, THIOSOL FORTE 4% lotion.
- 24. Gentian violet: 0.5-1.0%
- 25. Acriflavine: 0.1–1%; ACRINOL 0.1% cream.
- 26. Nitrofurazone: 0.2–1.0%; FURACIN 0.2% cream, soluble oint, powder.

Ectoparasiticides

- Permethrin: For scabies: PERMITE, OMITE, NOMITE 5% cream; apply all over the body except face and head; wash after 8–12 hours; SCABERID 5% cream, 1% soap; SCABPER 5% lotion. For head lice: PERLICE, KERALICE 1% cream rinse, SCALTIX 1% lotion; massage about 30 g into the scalp, washoff after 10 min.
- 2. Lindane (Gamma benzene hexachloride, BHC):

 For pediculosis: apply to scalp and hair (taking care not to enter eyes),
 leave for 12–24 hr. (a shower cap may be used for long hair) and then
 wash off. If lice are still present repeat treatment after 1 week.
 For scabies: the lotion/cream is rubbed over the body (below neck)
 and a scrub bath taken 12–24 hr later. Single treatment suffices in
 most patients; can be repeated after a week;
 GAB 1% lotion, ointment; GAMADERM, SCABOMA 1% lotion;
 GAMASCAB 1% lotion, cream; ASCABIOL 1% emulsion with
 cetrimide 0.1%.
- Benzyl benzoate: Apply 25% emulsion/ointment all over body (except face and neck) after a clinsing bath. Apply 2nd coat next day and wash off 24 hour later; DERMIN 25% lotion; SCABINDON 25% oint with DDT 1% and benzocaine 2%, BENZYLBENZOATE APPLICATION 25% lotion.
- 4. Crotamiton: Apply 10% lotion/cream twice at 24 hour interval and wash off the next day; CROTORAX 10% cream and lotion.
- 5. Sulfur: Apply 10% ointment daily for 3 days followed by soapwater bath on 4th day.
- 6. Dicophane (DDT): Apply 1–2% lotion/ointment all over except face, wash off next day; in SCABINDON 1% ointment with benzylbenzoate 25% and benzocaine 2%.
- 7. Ivermectin: 12 mg (0.2 mg/kg) oral single dose for scabies, head and body lice; IVERMECTOL, AVERTOL, IVERIN 3, 6 mg tabs, to be taken on empty stomach.

Vaccines

Bacterial vaccines

Killed (Inactivated)

Typhoid-paratyphoid (TAB)

Vi Typhoid polysaccharide

Cholera

Live attenuated

Bacillus Calmette-Guérin (BCG) Typhoid-Ty 21a Whooping cough (Pertussis) Meningococcal Haemophilus influenzae type b Plague

Viral vaccines

Killed (Inactivated)

Poliomyelitis inactivated

(IPV, Salk)

Rabies (Chick embryo

cell, PCEV)

Rabies (Human diploid cell,

HDCV)

Rabies (Vero cell, PVRV)

Influenza

Hepatitis B

Hepatitis A

Toxoids

Tetanus (fluid/adsorbed) Diphtheria (adsorbed)

Combined vaccines

Double antigen (DT-DA)
Triple antigen (DPT)
Measles, mumps, rubella (MMR)

Preparations

- Typhoid: Paratyphoid A, B (TAB vaccine): 0.5 ml s.c.
 2-3 injections at 2-4 week intervals.
- Vi Typhoid polysaccharide vaccine: 0.5 ml s.c./i.m. once, may be repeated after 3 years;

VACTYPH, TYPHIM Vi, TYPHIVAX 0.025 mg in 0.5 ml inj.

3. Typhoid: Ty 21a oral vaccine: 3 caps taken in 3 doses on alternate days in between meals; TYPHORAL *S. typhi* strain Ty21A 10° organism per cap.

Live attenuated

Poliomyelitis oral live

(OPV, Sabin)

Mumps (live attenuated) Measles (live attenuated)

Rubella (live attenuated) Varicella (live attenuated)

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- 4. Cholera vaccine: 0.5 ml s.c./i.m., repeat 1 ml after 4 weeks.
- 5. Whooping cough (pertussis) vaccine: 0.25–0.5 ml s.c./ i.m. 3 doses at 4 week intervals in infants and children below 5 years age.
- Meningococcal A & C vaccine: 0.5 ml s.c./i.m. single dose; MENINGOCOCCAL A & C, MENCEVAX A & C 0.5 ml amp, 5 ml vial.
- 7. Haemophilus influenzae type B (Hib) vaccine: 0.5 mli.m. 2 doses at 8 weeks gap for children over 1 year, infants 2–12 month 3 doses; VAXEM HIB, HIB-TITER 0.5 ml and 5.0 ml vial.
- 8. Bacillus Calmette-Guérin (BCG) vaccine: 0.05 ml (neonate) 0.1 ml (older infants and children) intracutaneous injection in deltoid region.
- 9. Oral poliovirus vaccine (OPV, Sabin vaccine): 0.5 ml directly in the mouth at birth, and at 6, 10, 14 weeks, booster dose at 15–18 month and at school entry.
- 10. Inactivated poliomyelitis vaccine (IPV, Salk vaccine): 1 mls.c.3 injections at 4–6 week intervals and then 6–12 months later, booster doses every 5 years.
- 11. Purified chick embryo cell vaccine (PCEV): 2.5 IU/ml inj; 0.1 ml intradermal (i.d.) over deltoid of both arms on days 0, 3, 7 and over one arm only on days 28 and 90 (total 8 injections) for post exposure prophylaxis of rabies; for primary prophylaxis 3 doses of 0.1 ml i.d. on days 0, 7 and 28; RABIPUR 1 ml inj.
- 12. Human diploid cell vaccine (HDCV): 2.5 i.u./ml inj; 0.2 ml i.d. over both deltoids on days 0, 3 and 7 and over one only on days 28 and 90 (total 8 injections), for post exposure prophylaxis of rabies; for primary prophylaxis 3 doses of 0.1 ml each i.d. on days 0, 7 and 28; MERIEUX HDC 2.5 IU inj.
- 13. Purified vero cell rabies vaccine (PVRV): 2.5 i.u./ml inj; 0.2 ml i.d. over both deltoids on days 0, 3 and 7 and over one only on days 28 and 90 (total 8 injections) for post exposure prophylaxis of rabies; for primary prophylaxis 3 doses of 0.1 ml each i.d. on days 0, 7 and 28; VERORAB 1 ml inj; VEROVAX-R 0.5 ml inj.
- Influenza virus vaccine: 0.25 ml (6 month-3 year age), 0.5 ml (> 3 year age) i.m. 2 injections 1-2 months apart; VAXIGRIP 0.5 ml prefilled syringe.
- Hepatitis B vaccine: 1 ml i.m. in deltoid muscle at 0, 1, 6 months (children < 10 yr 0.5 ml injection in the thigh); ENGERIX-B, ENIVAC-HB 1 ml (single dose) and 10 ml (multiple dose) vials.

- Hepatitis A vaccine: 0.5 ml i.m. single dose, may be repeated after 6 months; AVAXIM 0.5 ml prefilled syringe, HAVRIX 0.5 ml, 1.0 ml inj.
- 17. Measles vaccine live attenuated: 1000 TCID₅₀ s.c. single dose; ROUVAX, RIMEVAX, M-VAC 1000 TCID₅₀/vial inj.
- Rubella vaccine: 1000 TCID₅₀ i.m./s.c. single dose; R-VAC 1000 TCID₅₀ in 0.5 ml inj.
- Measles-Mumps-Rubella (MMR) vaccine: 0.5 ml i.m./ deep s.c. single dose; TRIMOVAX lyophilized measles 1000 TCID₅₀ of Schwarz strain, mumps 5000 TCID₅₀ and rubella 1000 TCID₅₀ per unit dose (0.5 ml) vial.
 TRESIVAC lyophilized measles 5000 TCID₅₀ of Edmonston

TRESIVAC lyophilized measles 5000 TCID $_{50}$ of Edmonston Zagreb strain, mumps 5000 TCID $_{50}$ and rubella 4000 TCID $_{50}$ per unit dose (0.5 ml) vial.

- Varicella vaccine: 0.5 ml s.c. single dose for children 1–12 years, and 2 doses 6–10 weeks apart in those >12 years. VARILRIX, OKAVAX 0.5 ml inj.
- Tetanus toxoid: 0.5 ml i.m. (also s.c.) 2 doses 4–6 weeks apart for primary immunization, booster dose every 10 years, or after a risky wound; TETANUS TOXOID ADSORBED 0.5 ml amp, 5.0 ml vial.
- 22. Diphtheria toxoid: 0.5 ml i.m. 2–3 injections 4–6 weeks apart in children below 6 years, booster doses after 1 year and at school entry.
- 23. Double antigen (Diphtheria-Tetanus toxoids): 0.5 ml i.m. 2–3 injections 4–8 weeks apart; DUAL ANTIGEN 0.5 ml amp, 5 ml vial.
- 24. Triple antigen (Diphtheria-Pertussis-Tetanus, DPT): 0.5 ml i.m. 2–3 injections 4–8 weeks apart between 3–9 months age, booster dose at 18 months age; TRIPVAC 0.5 ml amp, 10 ml multidose vial.

Antisera and Immuneglobulins

Antisera (from Horse)

Tetanus antitoxin (ATS) Gas gangrene antitoxin (AGS) Diphtheria antitoxin (ADS) Antirabies serum (ARS) Antisnake venom polyvalent

Immuneglobulins (Human)

Normal human gamma globulin Rho (D)immuneglobulin Tetanus immuneglobulin Rabies immuneglobulin Hepatitis-B immuneglobulin

Preparations

- Tetanus antitoxin (ATS): Prophylactic 1500–3000 IU, i.m. or s.c.; therapeutic 50,000–100,000 IU part i.v. and rest i.m.; TETANUS ANTITOXIN 750 IU, 1500 IU, 5000 IU, 10,000 IU, 20,000 IU, and 50,000 IU in 1–10 ml ampoules.
 TETANUS IMMUNE SERUM (enzyme refined, equine) 10,000 and 20,000 IU vials.
- 2. Gasgangrene antitoxin (AGS): Prophylactic 10,000 IU; therapeutic 30,000–75,000 IU s.c./i.m./i.v.; AGGS 10,000 IU amp.
- 3. Diphtheria antitoxin (ADS): 20,000–40,000 IU i.m. or i.v. for pharyngeal/laryngeal disease of upto 48 hour duration. Higher dose (upto 100,000 IU may be needed). DIPHTHERIA ANTITOXIN 10,000 IU in 10 ml amp.
- 4. Antirabies serum (ARS): 40 IU/kg infiltrated round the bite wound; IMORAB 1000 IU/5 ml inj.
- 5. Antisnake venom polyvalent: 20 ml i.v. repeated 1–6 hourly till symptoms of envenomation disappear (total upto 300 ml); ANTISNAKE VENOM SERUM POLYVALENT, ASVS lyophilized vial to be reconstituted with 10 ml distilled water; each ml reconstituted serum neutralizes 0.6 mg cobra, 0.6 mg Russel's viper, 0.45 mg of saw scaled viper and 0.45 mg of Krait venoms.
- Normal human gamma globulin: 0.02–1.0 ml/kg i.m.; GAMMALIN, GLOBUNAL, Sii GAMMA GLOBULIN, GAMAFINE 10%, 16.5% injection in 1, 2 ml amps; for i.v. use sii IVGG, ZY-IVGG 0.1–0.4 g/kg/day; 0.5, 1.0, 2.5 g vials.
- 7. Rho (D) immuneglobulin: (See p. 134)
- 8. Tetanus immuneglobulin: Prophylactic 250–500 IU, therapeutic 3000–6000 IU i.m. and/or 250–500 IU intrathecal; Sii TIG 250 IU (liquid), 500 IU (lyophilized), TETNAL 250 IU/2 ml inj., TETAGAM 250 IU/ml inj.

- Rabies immuneglobulin (HRIG): 20 IU/kg infiltrated round the bite on the day of exposure, excess injected i.m.; BERIRAB-P 300 IU/2 ml and 750 IU/5 ml inj; RABGLOB 300 IU/2 ml inj.
- Hepatitis B immuneglobulin: 1000–2000 IU (adults), 32–48 IU/kg (children) to be administered within 7 days of exposure; HEPAGLOB 100 IU (0.5 ml) 200 IU (1 ml) per vial for i.m. inj.

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