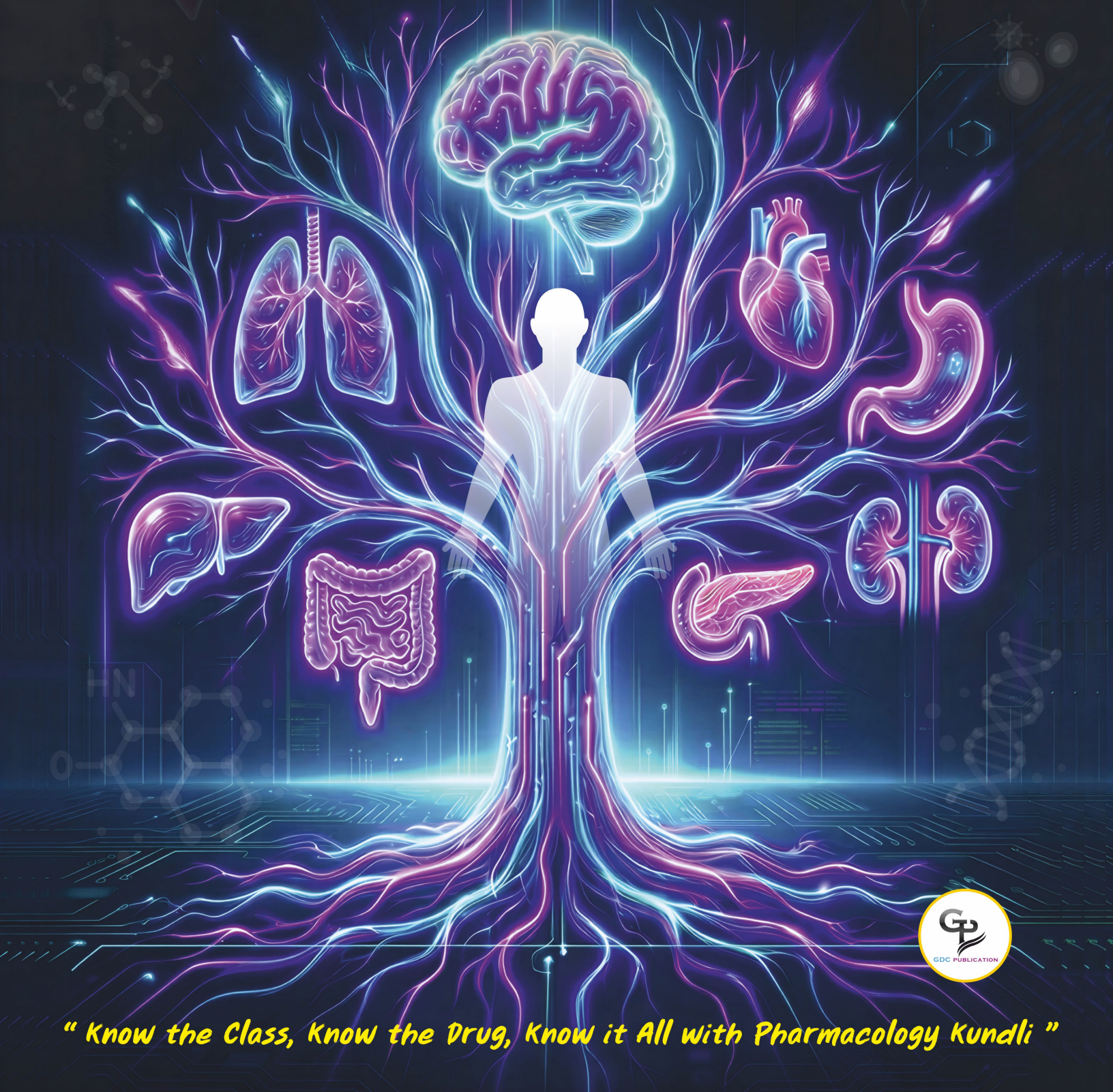


# PHARMACOLOGY

कुण्डली

DRUG CLASSIFICATION SIMPLIFIED



*" Know the Class, Know the Drug, Know it All with Pharmacology Kundli "*

# PHARMACOLOGY



DRUG CLASSIFICATION SIMPLIFIED

**USEFUL BOOK**

*for*

**MBBS, BDS, BAMS, BHMS, PHARMACY,  
NURSING, BPT, BMLT, HEALTHCARE MANAGEMENT,  
MEDICAL & ALLIED SCIENCE STUDENTS**

*by*

**GDC EDITORIAL BOARD**



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## List of Abbreviations

AB	Antibody	DT-DA	Diphtheria-Tetanus Double Antigen
AC	Adenylate Cyclase	DTmp	Deoxythymidine Monophosphate
ACh	Acetylcholine	DUMP	Deoxy Uridine Monophosphate
AChE	Acetylcholinesterase	DVT	Deep Vein Thrombosis
AChT	Acetylcholine Transferase	EACA	Epsilon Amino Caproic Acid
ACTH	Adrenocorticotropic Hormone	ECT	Electroconvulsive Therapy
AD	Alzheimer Disease	ED	Erectile Dysfunction
ACE	Angiotensin Converting Enzyme	EGFR	Epidermal Growth Factor Receptor
Adr	Adrenaline	ELH	Enzyme Linked Hypoiodite
AG	Antigen	Fd	Fluorodeoxyuridylic Acid
AIDS	Acquired Immunodeficiency Syndrome	FdUMP	Fluorodeoxyuridine Monophosphate
ALS	Amyotrophic Lateral Sclerosis	5-FC	5-Flucytosine
AMB	Amphotericin B	5-HT	5-Hydroxytryptamine
AMP	Adenosine Monophosphate	FOC	Force of Contraction
ARBs	Angiotensin Receptor Blockers	FQs	Fluoroquinolones
ATP	Adenosine Triphosphate	GABA	Gamma-Amino Butyric Acid
AV	Atrioventricular	GAT	GABA Transporter
BCG	Bacillus Calmette Guerin	G-CSF	Granulocyte Colony Stimulating Factor
BHP	Benign Hypertrophy of Prostate	G-6-PD	Glucose-6-Phosphate Dehydrogenase
BNP	Brain Natriuretic Peptide	GERD	Gastroesophageal Reflux Disease
BP	Blood Pressure	GFR	Glomerular Filtration Rate
BPH	Benign Prostatic Hyperplasia	GM-CSF	Granulocyte Macrophage Colony Stimulating Factor
BZD	Benzodiazepine	GMP	Guanosine Monophosphate
CA	Catecholamine	GnRH	Gonadotropin Releasing Hormone
cAMP	Cyclic Adenosine Monophosphate (or 3', 5' Cyclic Adenosine Monophosphate)	GTCs	Generalised Tonic Clonic Seizures
CBS	Colloidal Bismuth Sub-citrate	GTP	Guanosine Triphosphate
CCBs	Calcium Channel Blockers	HDL	High-Density Lipoproteins
CDI	Central Diabetes Insipidus	HER	Human Epidermal growth factor Receptor
cGMP	Cyclic Guanosine Monophosphate	HMG-CoA	Hydroxymethyl glutaryl coenzyme A
CHF	Congestive Heart Failure	HOI	Hypoiodous acid
COA	Coenzyme A	HPA axis	Hypothalamic Pituitary Adrenal axis
COMT	Catechol-O-methyl Transferase	HR	Heart Rate
COPD	Chronic Obstructive Pulmonary Disease	IDL	Intermediate-Density Lipoproteins
COX	Cyclooxygenase	IgE	Immunoglobulin E
CrD	Crohn's Disease	IG	Immunoglobulin
CSF	Colony-Stimulating Factor	IL	Interleukin
CTZ	Chemoreceptor Trigger Zone	IOP	Intraocular Pressure
DAB <sub>12</sub>	Deoxyadenosyl Cobalamin	IP <sub>3</sub>	Inositol trisphosphate
DAG	Diacyl Glycerol	IPSP	Inhibitory Postsynaptic Potential
DDS	Diamino Diphenyl Sulfone	IPV	Inactivated Poliomyelitis Vaccine
DHF	Dihydrofolate Reductase	IUCD	Intrauterine Contraceptive Device
DI	Diabetes Insipidus	IV inj.	Intravenous Injection
DIT	Diiodotyrosine	JAK	Janus-kinase
DMA	Dimethoxy Amphetamine	LA	Local Anaesthetics
DMPP	Di-Methyl Phenyl Piperazinium	LDL	Low Density Lipoproteins
DOC	Drug of Choice	LOX	Lipoxygenase
DOTS	Directly Observed Treatment Short Course	LT <sub>1</sub>	Leukotriene-1
DPT	Diphtheria, Pertussis, and Tetanus vaccine	LTC <sub>4</sub>	Leukotriene C4
		LTD <sub>4</sub>	Leukotriene D4

LTE <sub>4</sub>	Leukotriene E <sub>4</sub>	rt-PA	Recombinant Tissue Plasminogen Activator
MAO	Monoamine Oxidase	RyR	Ryanodine Receptor
MBL	Multibacillary Leprosy	SA	Sinoatrial
MDT	Multi Drug Therapy	SCh	Succinylcholine
MDR TB	Multidrug-Resistant Tuberculosis	SERDs	Selective Estrogen Receptor Down Regulators
MI	Myocardial Infarction	SERM	Selective Estrogen Receptor Modulator
MIT	Monoiodotyrosine	SIADH	Syndrome of Inappropriate Antidiuretic Hormone Secretion
mRNA	Messenger Ribonucleic Acid	SNRI	Serotonin and Noradrenaline Reuptake Inhibitor
MRSA	Methicillin-Resistant <i>Staphylococcus Aureus</i>	SP	Substance P
MS	Melanocyte Stimulation	SR	Sarcoplasmic Reticulum
NA	Noradrenaline	SRS A	Slow Reacting Substance of Anaphylaxis
NE	Norepinephrine	SSRI	Selective Serotonin Reuptake Inhibitors
NIS	Na <sup>+</sup> Iodide Symporter	STAT	Signal Transducer and Activator of Transcription
NMDA	N-methyl-D-aspartate	SU	Sulfonylureas
NO	Nitric Oxide	T <sub>1/2</sub>	Half Life
NSAIDs	Non Steroidal Anti Inflammatory Drugs	T <sub>3</sub>	Triiodothyronine
OMD	Oromandibular Dystonia	T <sub>4</sub>	Thyroxine
OPV	Oral Polio Vaccine	TCA	Tricyclic Antidepressant
ORS	Oral Rehydration Solutions	6-TG	6-Thioguanine
OT	Operation Theatre	Tg	Thyroglobulin
PABA	Para-Aminobenzoic Acid	THFA	Tetrahydrofolic Acid
PAF	Platelet Activating Factor	THR	Threonine
PAR	Protease Activated Receptor	TNF $\alpha$	Tumor Necrosis Factor-alpha
PAS	Paraamino Salicylic Acid	TPA	Tissue Plasminogen Activator
PBL	Paucibacillary Leprosy	TT	Tetanus Toxoid
PBPs	Pencillin Binding Proteins	Ty 21a	Typhoid 21a
PCOD	Polycystic Ovarian Disease	TX	Thromboxane
PCSK-9	Proprotein Convertase Subtilisin / Kexin Type 9	UA	Unstable Angina
PDE	Phosphodiesterase	UC	Ulcerative Colitis
PDE-3	Phosphodiesterase-3	UDP-G	Uridine Diphosphate Glucose
PGs	Prostaglandins	UT	Urea Transporter
PGI	Prostacyclin	UTI	Urinary Tract Infection
PKA	Protein kinase : A	VLDL	Very Low Density Lipoproteins
PPAR $\alpha$	Peroxisome Proliferator-Activated Receptor - Alpha	VMC	Vasomotor Centre
PPIs	Proton Pump Inhibitors	VMAT	Vesicular Monoamine Transporter
PVR	Pulmonary Vascular Resistance	VRSA	Vancomycin-Resistant <i>Staphylococcus aureus</i>
PVP	Polyvinyl Pyrrolidone	vWF	Von Willebrand's Factor
RA	Rheumatoid Arthritis	WBCs	White Blood Cells
RAS	Renin-Angiotensin System	WPW	Wolf Parkinson White Syndrome
RIMAs	Reversible Inhibitors of MAO-A	XRD	Extensively Drug Resistant
RP	Refractory Period	Z	Pyrazinamide
		ZES	Zollinger - Ellison Syndrome

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# DRUGS ACTING ON AUTONOMIC NERVOUS SYSTEM



**SCAN  
ME!**



**FREE**



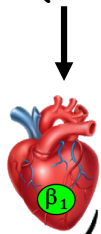
**PHARMACOLOGY  
CLASSIFICATION  
VIDEO LECTURE**

**FOR MORE DETAILS CHECK 2<sup>nd</sup> PAGE OF THIS BOOK**

❑ Pharmacological actions of Adrenaline (Epinephrine)

**Heart**

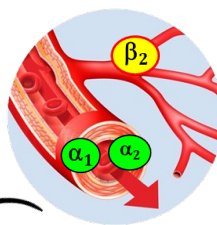
Adrenaline (Adr)



- ↑se HR
- ↑se Force of contraction
- ↑se SA and AV conduction
- ↑se Cardiac output
- ↓se Refractory period of heart

**Blood vessels**

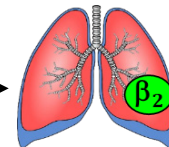
Adrenaline (Adr) ⊕



- Vasoconstriction ( $\alpha_1$  and  $\alpha_2$ ) at skin, mucous and renal.
  - ✓  $\alpha_1$  - Activated by neuronally released NA (junctional).
  - ✓  $\alpha_2$  - Activated by circulating CAS (Extra junctional).
- Vasodilatation ( $\beta_2$ ) at liver and coronaries blood vessels.

**Respiratory system**

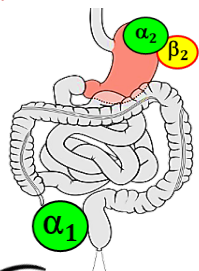
Adrenaline (Adr) ⊕



- Relaxes bronchial muscle (**Bronchodilation**)
- $\beta_2$  receptor agonist and exogenous drug causes bronchodilation

**Gastrointestinal system**

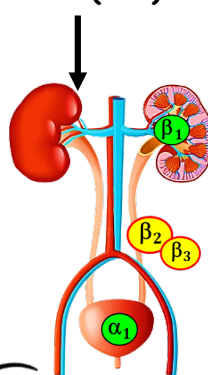
Adrenaline (Adr) ⊕



- Contract anal sphincter ( $\alpha_1$ )
- Relaxes of GI Smooth muscle ( $\alpha_2$  and  $\beta_2$ )
  - ✓  $\alpha_2$  - Indirect action (Presynaptically on cholinergic neurons, ↓se ACh secretion)
  - ✓  $\beta_2$  - Direct action
- ↓se GI tone and motility ( $\alpha_2$ )

**Urinary system**

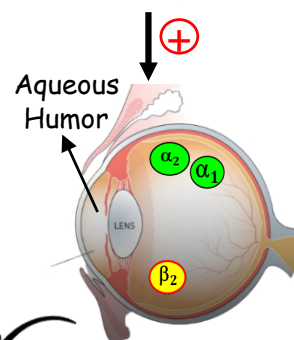
Adrenaline (Adr)



- ↑se Renin release from JG cells ( $\beta_1$ )
- Relaxation of detrusor muscle ( $\beta_2$  and  $\beta_3$ )
- Contraction of Trigone muscle ( $\alpha_1$ )

**Eye**

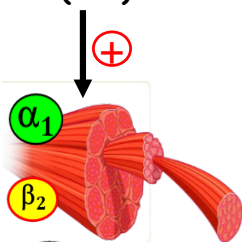
Adrenaline (Adr) ⊕



- $\alpha_1$ 
  - Mydriasis
  - ↓se Aqueous formation
  - ↑se Uveo-Scleral outflow
- $\alpha_2$  → Reduces Aqueous Humor secretion.
- $\beta_2$  → Enhance Secretory activity of ciliary epithelium and Trabecular outflow.

**Skeletal muscle**

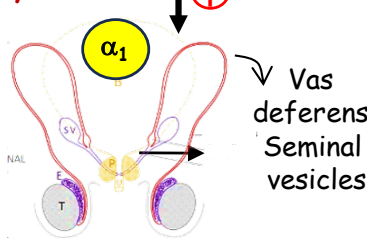
Adrenaline (Adr)



- $\alpha_1$  receptor activation on motor nerve endings ↑se ACh release.
- Tremor on stimulation of  $\beta_2$  receptor.

**Genital system**

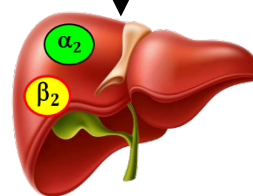
$\alpha$ -Blockers ⊕



- Contractions of vas deferens and seminal vesicles ( $\alpha_1$  blockade).
- $\alpha_1$ -blockers can inhibit ejaculation.
- Causes impotence

**Metabolic actions**

$\alpha$ -Blockers ⊕



- ↓se Insulin secretion from  $\beta$ -cells of Pancreas ( $\alpha_2$ ).
- ↑se Glycogenolysis and Gluconeogenesis ( $\beta_2$ ).
- ↑se Glucagon secretion ( $\beta_2$ ).
- Hyperkalaemia followed by Hypokalaemia ( $\beta_2$ ).

# Chapter 8

## 5-Hydroxytryptamine and its Antagonists

### 5-HYDROXY TRYPTAMINE (5-HT, SEROTONIN) ANTAGONISTS

#### Nonselective Antagonists & Partial Agonists/Antagonists

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



Every Lazy Boy Makes Cool Cookies.

#### 5-HT<sub>2</sub> Antagonists

- Ketanserin
- Ritanserin
- Clozapine
- Risperidone

KRaCk



#### 5-HT<sub>3</sub> Antagonists

- Granisetron
- Palonosetron
- Ondansetron
- Ramosetron
- Tropisetron



Ground rePORT

5-HT is involved in regulation of sleep, cognition, behaviour and mood

### PHARMACOLOGY QUICK RECAP

#### Selective drugs



#### 5-HT<sub>1</sub>

##### 5-HT<sub>1A</sub>

##### Partial agonist

- Buspirone
- Isapirone
- Gepirone

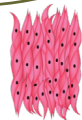
Antianxiety drugs

##### 5-HT<sub>1B/1D</sub>

##### Agonist

- Sumatriptan
- Naratriptan

Treatment of acute migraine



#### 5-HT<sub>2</sub>

##### 5-HT<sub>2A/2C</sub>

##### Antagonists

- Clozapine
- Risperidone

Atypical antipsychotic agents



#### 5-HT<sub>3</sub>

##### Antagonists

- Ondansetron
- Granisetron
- Tropisetron

Antiemetic



#### 5-HT<sub>4</sub>

##### Agonist

- Cisapride
- Mosapride
- Renzapride
- Tegaserod
- Prucalopride

Treatment of gastroesophageal reflux disease (Prokinetic)

#### Non-selective drugs

##### Drugs

##### Mechanism of Action

##### Uses

- **Cyproheptadine:** → 5-HT<sub>2A</sub>, H<sub>1</sub> and muscarinic blocker - ↑ appetite; used for weight gain in children/poor eaters.
- **Methysergide:** → Potent 5-HT<sub>2A/2C</sub> antagonist + 5-HT<sub>1</sub> agonist - Migraine prophylaxis.
- **Ketanserin:** → 5-HT<sub>2A</sub> antagonist + α<sub>1</sub>-blocker - Antihypertensive
- **LSD:** → Agonist at 5-HT<sub>1A</sub>, 5-HT<sub>2A/2C</sub> and 5-HT<sub>5-7</sub> receptors - Powerful hallucinogen
- **Metoclopramide, Prucalopride:** → 5-HT<sub>4</sub> agonists - Prokinetic (↑ gut motility).



- 👉 **Cyproheptadine** - controls GI symptoms in carcinoid & dumping syndrome.
- 👉 **Dexfenfluramine** - appetite suppressant.
- 👉 **Prucalopride** - for chronic constipation when laxatives fail (mainly in women).

#### Raynaud's phenomenon

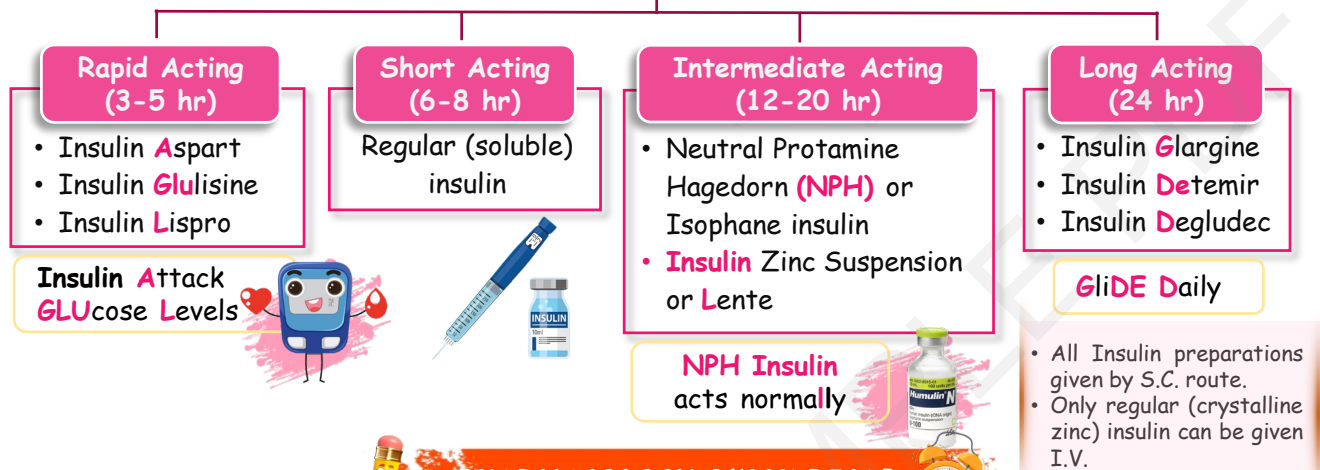
5-HT released from platelets triggers vasospasm of large arteries, causing attacks. Ketanserin can help prevent these episodes.



# Chapter 18

## Insulin, Oral Antidiabetic Drugs and Glucagon

### INSULIN PREPARATION



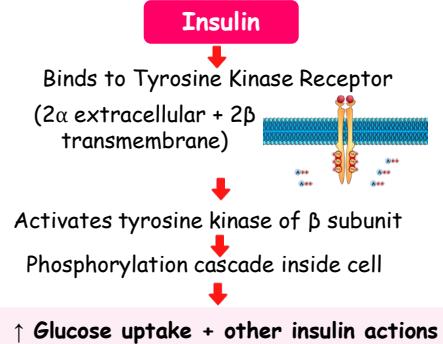
### PHARMACOLOGY QUICK RECAP

#### Insulin

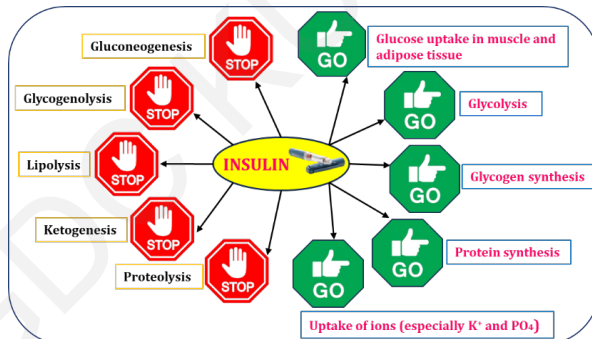
- Insulin discovered by **Banting and Best**
- There are **51 amino acids** in an insulin molecule and MW about 6000.
  - Chain A** - has **21 amino acids**
  - Chain B** - has **30 amino acids**
- Chain A and B are connected by **disulphide bridge**.
- Half life of insulin - **4-6 min**



#### Mechanism of Action of Insulin



#### Actions of Insulin



#### Blood Glucose Levels: Normal Vs Diabetic

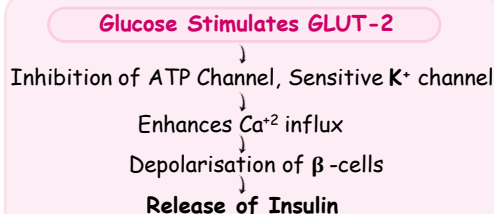
Conditions	Normal	Diabetic
Fasting glucose	70-110 mg/dl	≥ 126 mg/dl
Postprandial glucose	> 140 mg/dl	> 200 mg/dl

Most common complication of Insulin therapy is

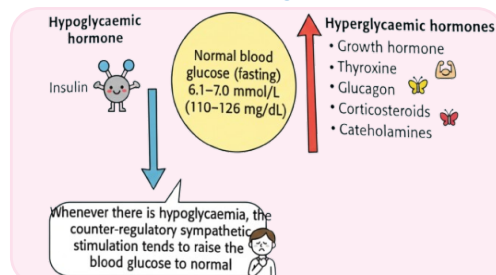
- Hypoglycemia
- Lipodystrophy
- Edema

#### Regulation of Insulin Secretion

##### Chemical Regulation



##### Hormonal Regulation

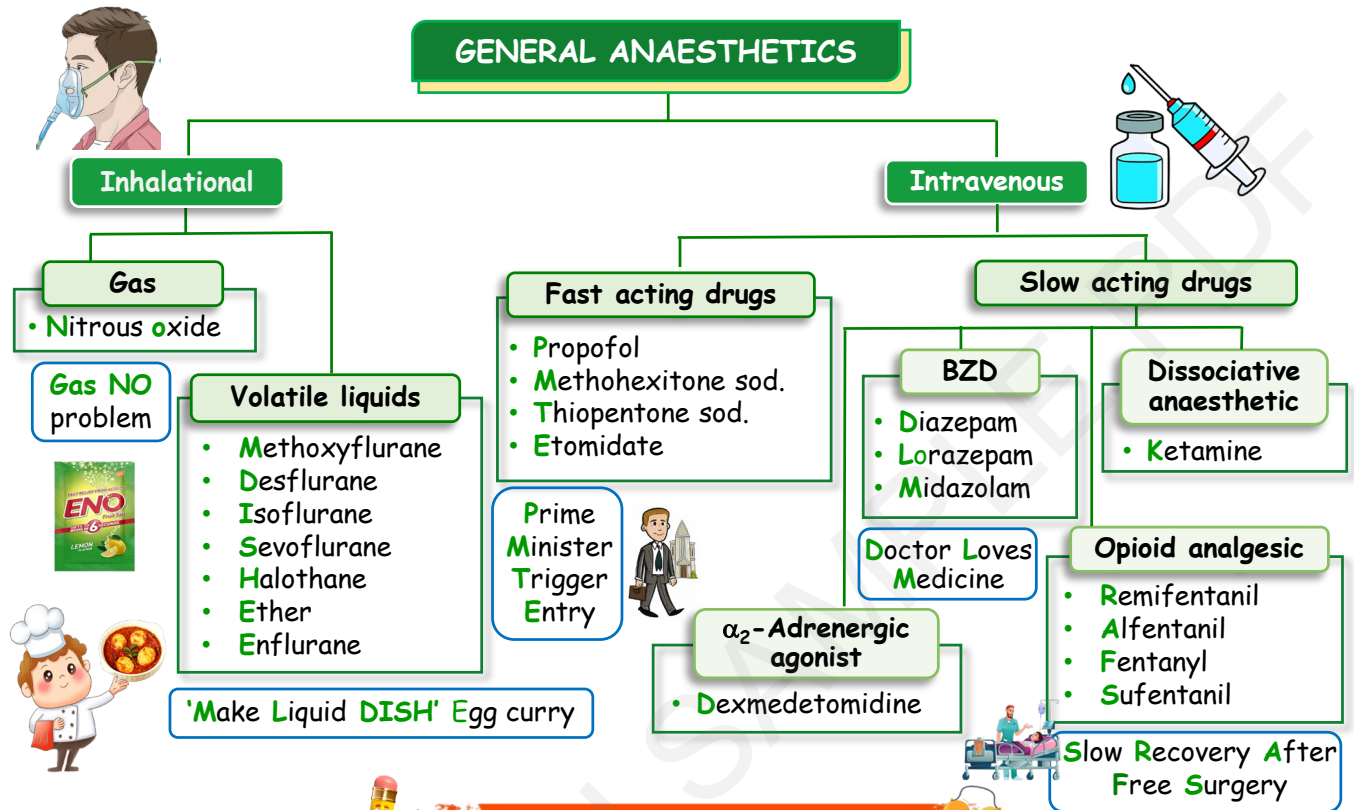


##### Neural Regulation

**$\beta_2$  Stimulation & vagal stimulation** - Increases insulin release.

**$\alpha_2$  Stimulation** - Decrease insulin release.

DRUGS ACTING ON CENTRAL NERVOUS SYSTEM



## PHARMACOLOGY QUICK RECAP

### Properties

#### □ HALOTHANE

- H** - Hyperthermia (Malignant hyperthermia)
- A** - Arrhythmias (Sensitize heart to adrenaline)
- L** - Liver toxic
- O** - Orthostatic hypotension
- T** - Tocolytic,
- H** - Heart (Decreases cardiac output)
- A** - Agent of choice in Asthma (Bronchodilator)
- N** - Non-explosive, Non analgesic
- C** - Children (Safe in children)

#### □ KETAMINE

- K** - Kids (IV anesthetic of choice in children's)
- E** - Euphoria
- T** - Dissociative anesthesia
- A** - Analgesic
- M** - Meals
- I** - Increase all pressure (BP, IOP, ICT)
- N** - NMDA antagonist
- E** - Excellent for asthmatics

#### □ Adverse Effect

- Respiratory Depression (Enflurane)
  - All anesthetics Reduce cardiac output except Desflurane and Isoflurane
  - Hepatotoxicity (Halothane, Chloroform)
  - Hyperglycemia (Ether, Chloroform)
  - Megaloblastic anemia
  - Aplastic anemia
  - Diffusion hypoxia
- Caused by N<sub>2</sub>O

**Inhalational anesthetics can precipitate seizure**

**S** - Sevoflurane  
**E** - Enflurane  
**I** - Isoflurane  
**ZURE**

#### Contraindication

- Enflurane → Epilepsy
- Halothane → Labour (Post partum haemorrhage)

#### Propofol is use for :

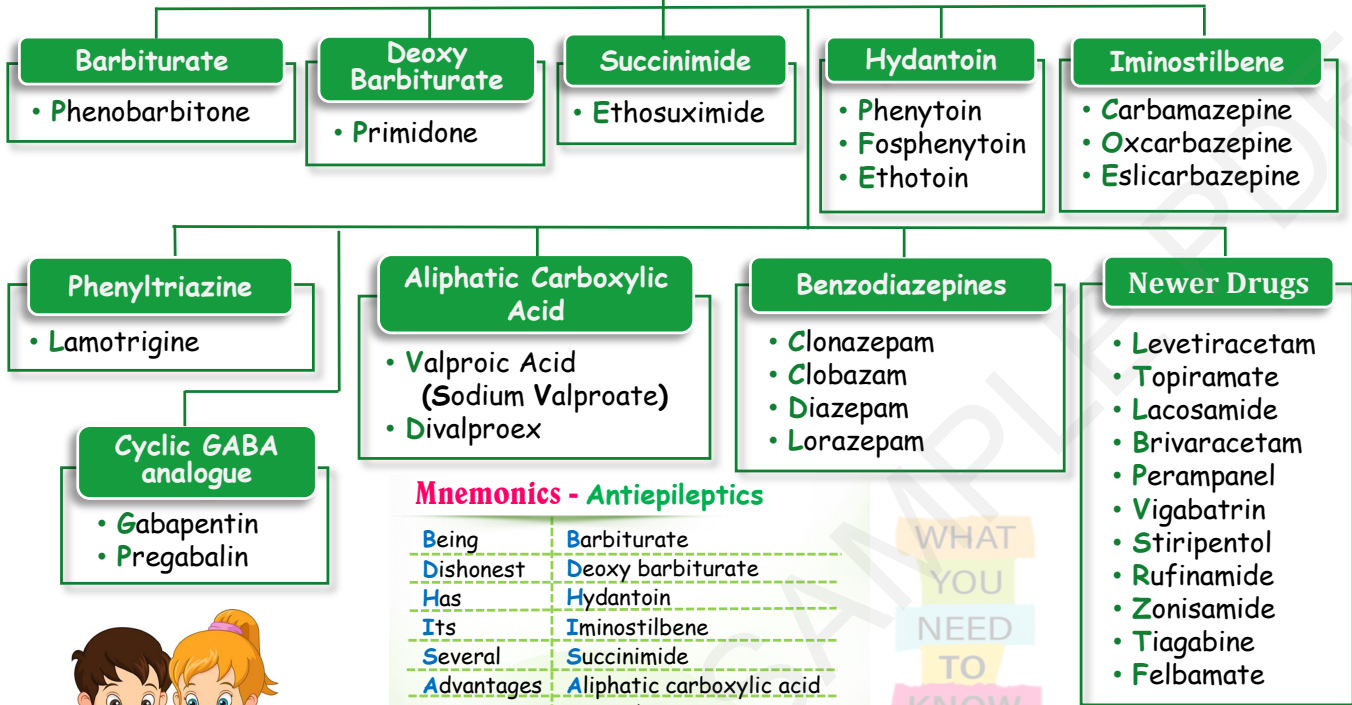
- Day care surgery
  - Intravenous anesthesia
  - Sedation in ICU
  - Malignant Hyperthermia
- DISH**

- Ketamine** → Blocks excitatory NMDA receptors
- Fentanyl** → Highly potent opioid
- Highly inflammable Drugs** - Ether
- Non- inflammable Drugs** - Halothane, Isoflurane, Desflurane, Sevoflurane
- Desflurane** → No Nephrotoxicity high
- Isoflurane** → DOC for neurosurgery and cardiac surgery, Coronary steal phenomenon
- Sevoflurane** → DOC for induction in children
- Desflurane, Isoflurane** → Irritate respiratory passage

# Chapter 30

# Antiepileptic Drugs

## ANTIEPILEPTIC DRUGS



### Mnemonics - Antiepileptics

Being	Barbiturate
Dishonest	Deoxy barbiturate
Has	Hydantoin
Its	Iminostilbene
Several	Succinimide
Advantages	Aliphatic carboxylic acid
But	Benzodiazepine
Never	Newer drugs
Proves	Phenyl triazine
Correct	Cyclic GABA analogue

WHAT YOU NEED TO KNOW



## PHARMACOLOGY QUICK RECAP

DRUGS ACTING ON CENTRAL NERVOUS SYSTEM

### Mechanism of Action

#### Prolongation of Na<sup>+</sup> channel inactivation

- Phenytoin
- Carbamazepine
- Lamotrigine
- Valproate
- Topiramate
- Zonisamide
- Lacosamide

#### Inhibition of excitatory glutamatergic synapse

- Phenobarbitone
- Phenytoin
- Lamotrigine
- Topiramate
- Valproate
- Lacosamide
- Levetiracetam

(Binds to Synaptic Vesicular Protein SV2A)

#### Facilitation of GABA mediated Cl<sup>-</sup> channel opening

- Barbiturate
- Benzodiazepine
- Vigabatrin
- Valproate
- Gabapentin
- Tiagabine

#### Inhibition of 'T' type Ca<sup>2+</sup> current

- Ethosuximide
- Valproate
- Zonisamide
- Trimethadione

\*CRMP- Collapsin Response Mediator Protein

### VI GABA TR IN

Visual field defect (Adverse Effect)  
 GABA transaminase (Mechanism of Action)  
 Inhibition

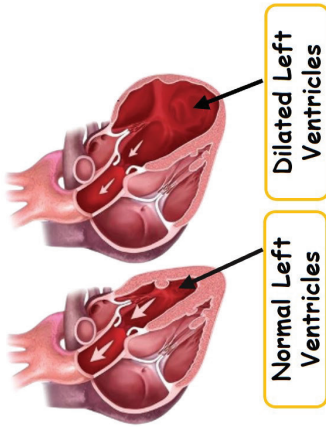
### FELBAMATE

Block NMDA receptor  
 Side Effect  
 Aplastic anemia and hepatitis

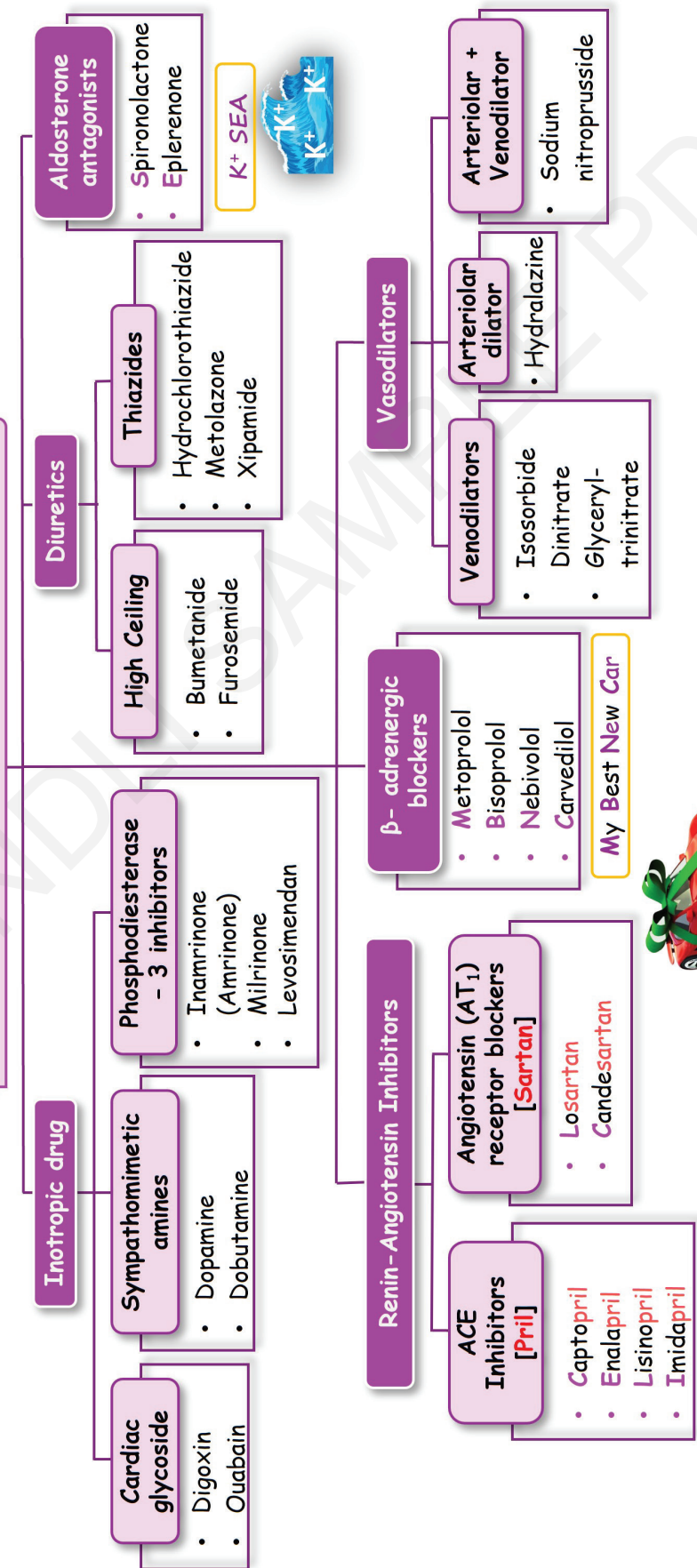


# Chapter 40

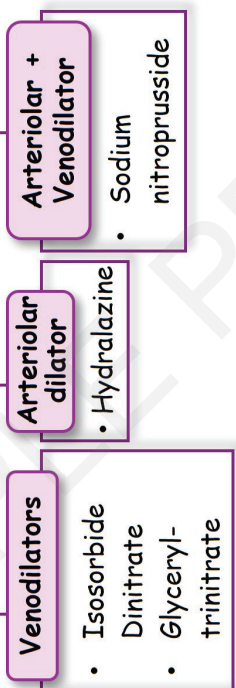
# Drugs for Congestive Heart Failure



## DRUGS FOR CONGESTIVE HEART FAILURE

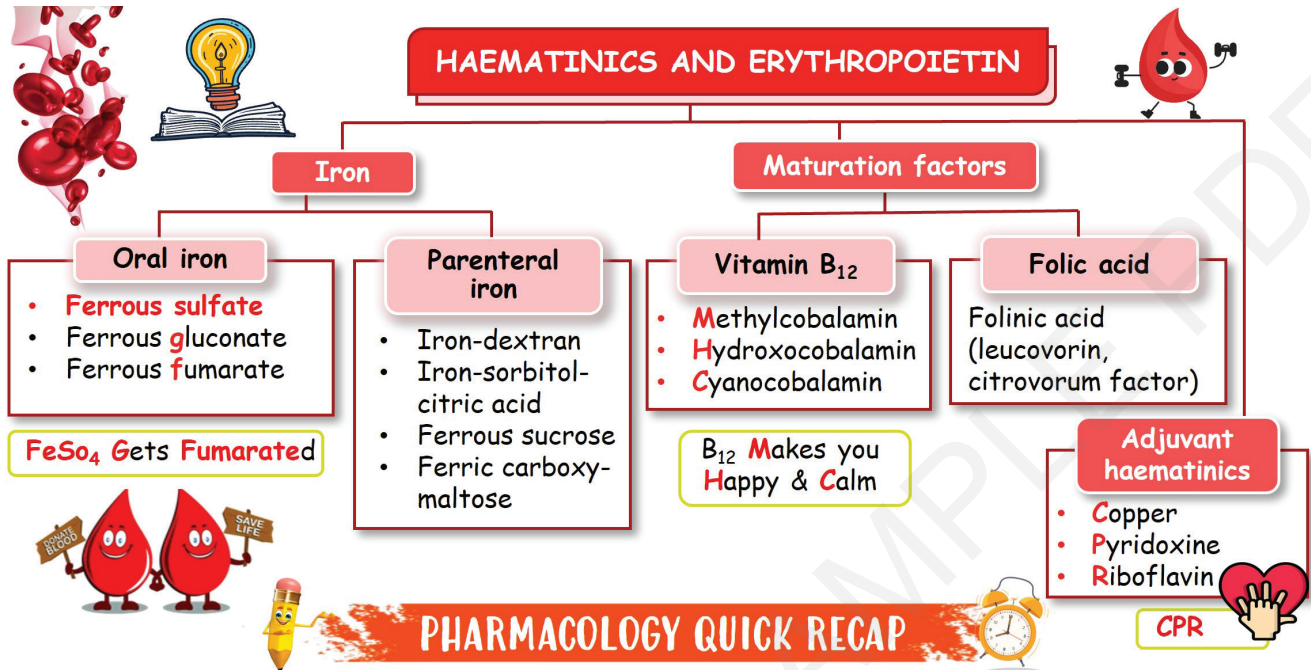


### Vasodilators



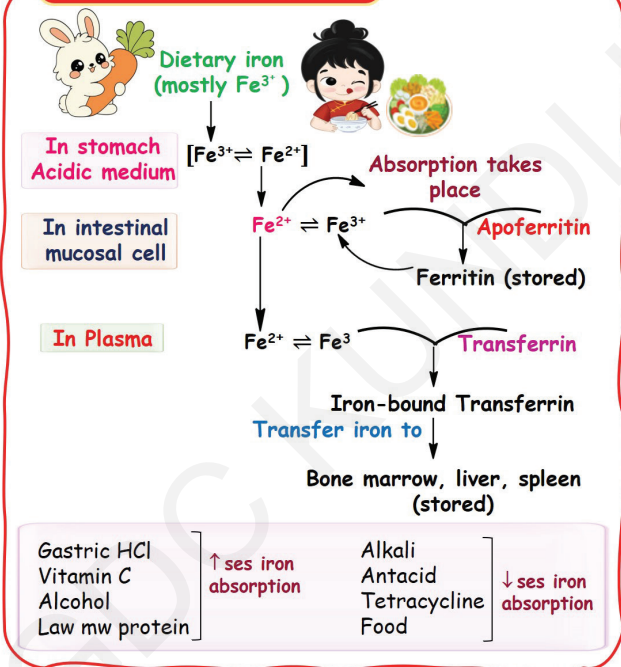
# Chapter 45

## Haematinics and Erythropoietin



### PHARMACOLOGY QUICK RECAP

#### Mechanism of Action



#### Adverse Effect

##### Oral iron

- **C** - Constipation
- **D** - Diarrhoea
- **M** - Metallic taste
- **S** - Staining of teeth

##### Parenteral iron

- **A** - Anaphylactic reaction
- **P** - Pain at injection site
- **P** - Pigmentation of skin

#### Uses

##### Vitamin B<sub>12</sub> (Cyanocobalamin)

- Used in **Pernicious anaemia**.
- Essential for neuronal haemopoiesis
- Vitamin B<sub>12</sub> acts as a coenzyme in certain metabolic pathways.

##### Folic Acid

- Used in **Megaloblastic anaemia**
- Pregnancy (to prevent neural tube defects)
- **Methotrexate toxicity**: Folinic acid (active form of folic acid)

#### Antidote Iron Poisoning

- **Acute (DOC)**: Desferrioxamine (IM)
- **Chronic**: Deferiprone (Oral)

👉 Vit. B<sub>12</sub> Coenzyme Forms- Methylcobalamin (methyl B<sub>12</sub>)



👉 Total amount of iron in an adult person is about 2.5 to 5 gm.

👉 If the cause of megaloblastic anemia is unknown, never give folic acid alone combine it with Vit. B<sub>12</sub> to avoid worsening B<sub>12</sub> deficiency neuropathy.

#### ❑ Hematopoietic Growth Factors

- For **RBC**: Erythropoietin-Epoetin  $\alpha, \beta$ , Darbepoetin  $\alpha$ , Peginesatide.
- For **WBC**: **G-CSF**-Filgrastim, Pegfilgrastim, Lenograstim. **GM-CSF**-Sargramostim, Molgramostim.
- For **Platelets**: **Thrombopoetin and Interleukins (IL)-11**-Oprelvekin, Romiplastim, Eltrombopag.

#### ❑ Colony Stimulating Factors

- CSFs also 'Growth Factors' are Glycoproteins that bind to JAK/STAT type of receptors.

# Chapter 51

## General Considerations

### CLASSIFICATION OF ANTIMICROBIAL AGENTS

On the basis of:

- a) Type of Action                      b) Spectrum of Activity                      c) Mechanism of Action

#### According to their Type of Action

Bacteriostatic	Bacteriocidal
<p><b>Mnemonic - Static Causes Non Total or Non Complete Elimination Through Metabolism</b></p> <ul style="list-style-type: none"> <li>Sulphonamide</li> <li>Chloramphenicol</li> <li>Nitrofurantoin</li> <li>Tetracycline</li> <li>Oxazolidinon</li> <li>Novobiocin</li> <li>Clindamycin</li> <li>Ethambutol</li> <li>Trimethoprim</li> <li>Macrolides</li> </ul>	<p><b>Mnemonic - I M Bacteriocidal Because, A Very Quite Person is Rarely protected by COP</b></p> <ul style="list-style-type: none"> <li>Isoniazid</li> <li>Metronidazole</li> <li>Beta-lactam antibiotics</li> <li>Bacitracin</li> <li>Aminoglycosides</li> <li>Vancomycin</li> <li>Quinolones</li> <li>Pyrazinamide</li> <li>Rifampicin</li> <li>Polymyxin B</li> <li>Polypeptide antibiotics</li> <li>Cotrimoxazole</li> <li>Cephalosporins</li> </ul>
<p>Static drugs may act as Cidal e.g. Erythromycin and Nitrofurantoin</p>	<p>Cidal Drug may act as Static e.g. Cotrimoxazole and Streptomycin</p>

#### Facts To Remember

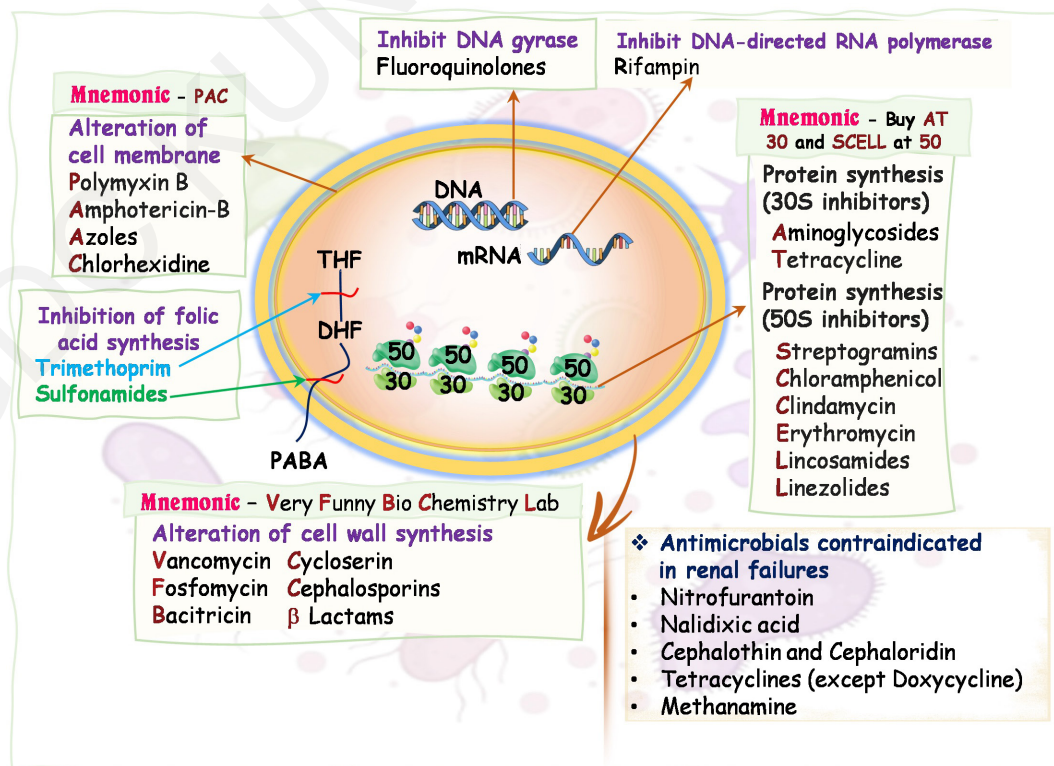
- All cell wall synthesis inhibitors and Drug acting on cell membrane are **Bacteriocidal**
- All Protein synthesis inhibitors are Bacteriostatic: except **Aminoglycosides and Streptogramins**
- All first line antitubercular drugs are Bacteriocidal; except **Ethambutol** that is **Bacteriostatic**.



#### According to their Spectrum of activity

- Narrow Spectrum Antibiotic - Penicillin-G, Aminoglycoside
- Broad spectrum Antibiotics - Tetracycline, Chloramphenicol

#### According to basis of Mechanism of action



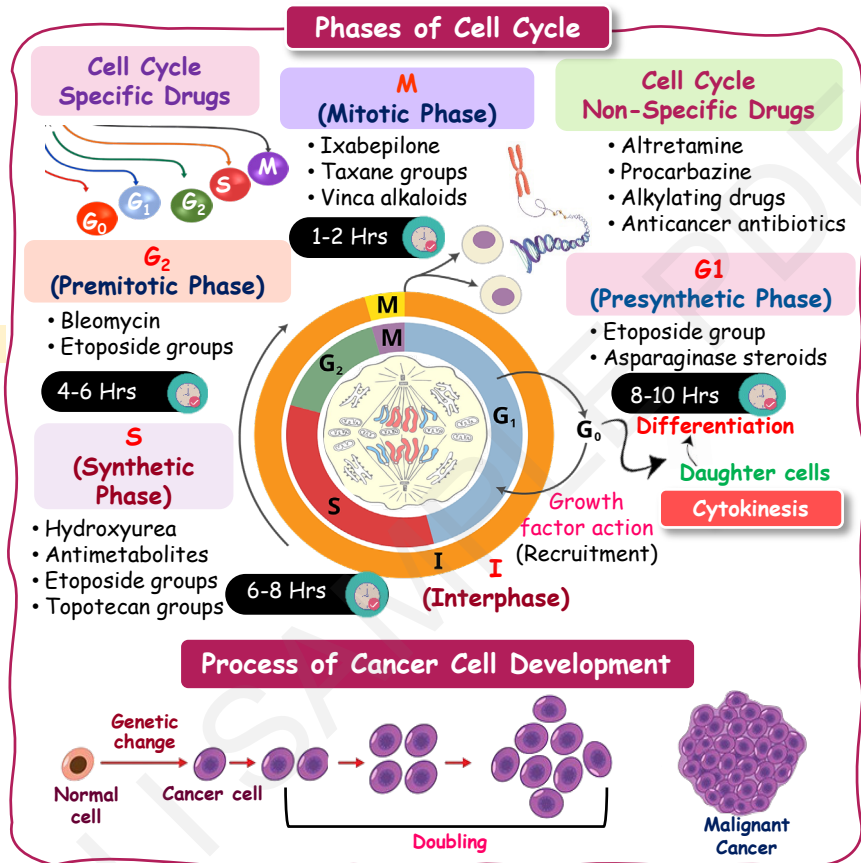
# Chapter 64

# Anticancer Drugs

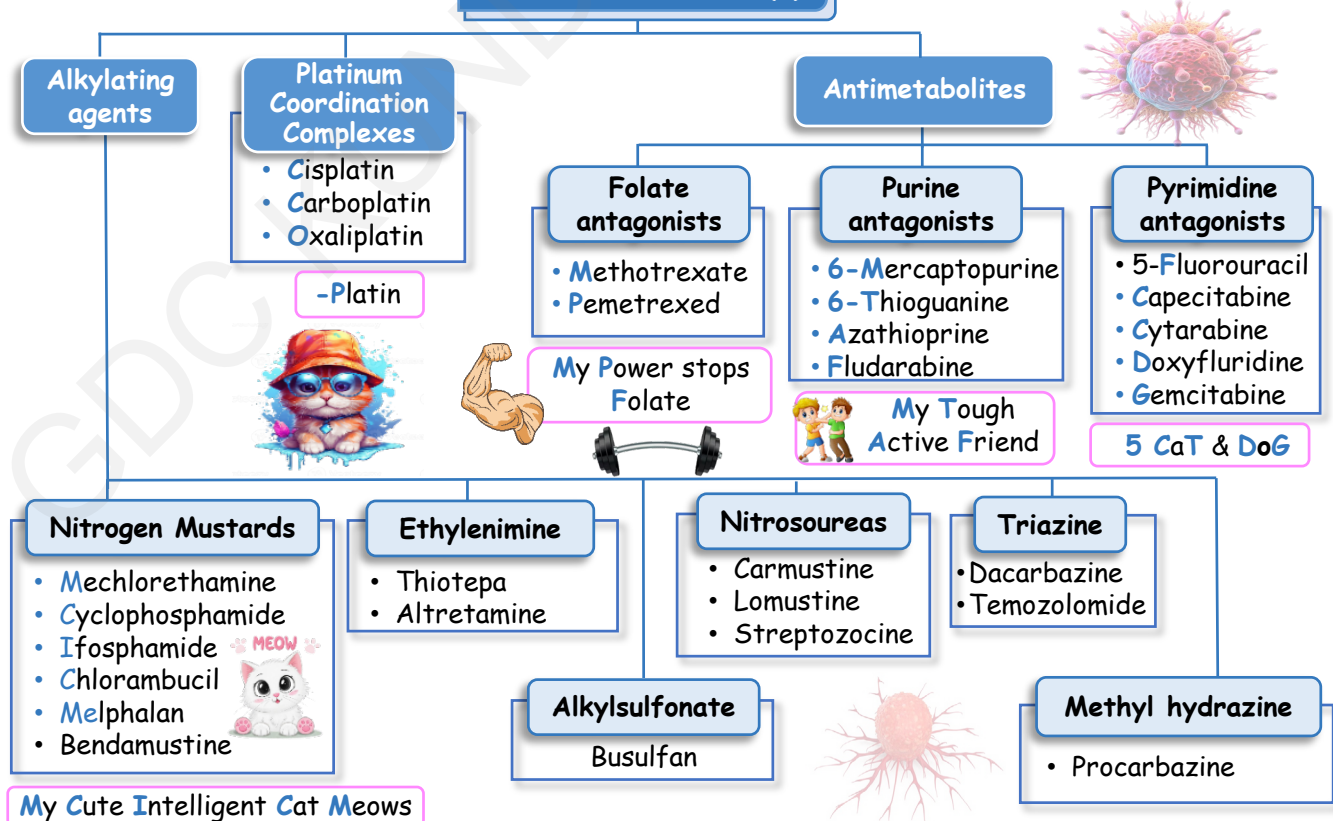
- Cancer is a disease of cells characterized by progressive, persistent, abnormal, purposeless and uncontrolled proliferation of tissue.
- Cancer cells produce **Oncoproteins** in the absence of growth factor or external stimuli.

### Types of Cancer based on origin

- **Carcinoma** - Carcinomas are abnormal cells that divide without control.
- **Sarcoma** - Cancer that begins in Bone, Cartilage, Fat, Muscle, Blood vessels, or other connective tissues.
- **Leukaemia** - Cancer that starts in blood-forming tissue such as the bone marrow.
- **Lymphoma and Myeloma** - Cancers that begin in the cells of the immune system.



### CYTOTOXIC DRUGS (1)



## DRUG OF CHOICE FOR A CONDITION/DISEASE

S. NO.	CONDITION / DISEASE	DRUG OF CHOICE
1.	Atropine Poisoning	Physostigmine
2.	Acute Pulmonary Edema	Furosemide (Loop diuretic)
3.	Anaesthetic in Shock	Ketamine
4.	Anaphylactic Shock	Adrenaline
5.	Benzodiazepine Poisoning	Flumazenil
6.	Chemotherapy induced Vomiting	5-HT <sub>3</sub> antagonists (Ondansetron)
7.	Cyanide Poisoning	Nitrates
8.	Cardiogenic Shock	Dobutamine > Dopamine
9.	Cerebral Edema	Mannitol
10.	Cerebral Malaria	Quinine
11.	Diagnosis of Myasthenia gravis	Edrophonium
12.	Drug induced Parkinsonism	Central Anticholinergics
13.	Erectile dysfunction	Phosphodiesterase-5-inhibitors (Sildenafil)
14.	Fibrinolytic Overdose	EACA (Aminocaproic acid)
15.	Hypertensive Emergencies	Sodium Nitroprusside
16.	Hypertension in Pregnancy	Methyldopa
17.	Hypertensive Emergencies in Pregnancy	Hydralazine
18.	Heparin Overdose	Protamine Sulfate
19.	Insomnia	Benzodiazepine
20.	Jet-lag syndrome	Melatonin
21.	• Myasthenia gravis • Cobra bite	Anticholinesterase (Neostigmine)
22.	Migraine Treatment	5-HT <sub>1D/1B</sub> agonist (sumatriptan)
23.	Muscle Relaxant for Day Care	Mivacurium
24.	Muscle relaxant for Endotracheal Intubation	Succinylcholine
25.	Malignant Hyperthermia	Dantrolene
26.	Mania	Lithium
27.	Motion Sickness	Scopolamine (Hyoscine)
28.	Mountain Sickness	Acetazolamide
29.	Pulmonary Hypertension	Bosentan
30.	Organophosphate Poisoning	Atropine
31.	Open angle Glaucoma	Beta-blockers
32.	Opioid Withdrawal	Methadone
33.	Oral Anticoagulant Overdose	Vitamin K
34.	Obsessive-Compulsive Disorder	Fluoxetine
35.	Patent Ductus Arteriosus	Indomethacin
36.	Paracetamol (Acetaminophen) Poisoning	N-Acetylcysteine
37.	Postpartum Hemorrhage	Oxytocin
38.	PSVT	Adenosine
39.	Thyrotoxicosis in Pregnancy	Propylthiouracil
40.	Vertigo	Cinnarizine

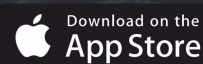


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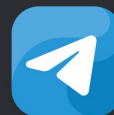
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