

TAB 4 U



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2nd
Edition

A Concise Manual of **PHARMACOLOGY**



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Femitha Rose

Foreword
MI Elsy



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Drugs Affecting Renin-Angiotensin System

■ ANGIOTENSIN CONVERTING ENZYME-INHIBITORS

- ♦ Captopril
- ♦ Enalapril
- ♦ Lisinopril
- ♦ Fosinopril
- ♦ Ramipril—Also inhibits local RAS

MOA:

- It inhibits formation of AT II
- Promote formation of bradykinin

Uses:

- Hypertension
- Congestive heart failure (CHF)
- Left ventricular hypertrophy (LVH)
- Acute myocardial infarction (AMI)
- Diabetic nephropathy
- Scleroderma crisis

S/E:

- Hypotension
- Hyperkalemia
- Cough, dysgeusia, rash
- Urticaria
- Angioedema
- Granulocytopenia

■ ANGIOTENSIN RECEPTOR BLOCKER

- ♦ Losartan
- ♦ Telmisartan (**Telmurix**: Telmisartan 40 mg + Chlorthalidone 6.25 mg/12.5 mg)
- ♦ Candesartan (**Olright**)
- ♦ Valsartan
- ♦ Irbesartan

MOA: ARB's competitively block AT II at A₁ receptor

Uses:

- Hypertension
- CHF
- Myocardial infarction (MI)
- Diabetic nephropathy (DN)

S/E:

- Hypotension
- Hyperkalemia
- Fetopathic effect

Cardiac Glycosides and Drugs for Heart Failure

CARDIAC GLYCOSIDES (CG)

Digitalis purpurea

Digitoxin

Digitalis lanata leaf

Digoxin

MOA: CG bind to extracellular face of $\text{Na}^+ \text{K}^+$ ATPase of myocardium-accumulation of Na^+ intracellularly. This indirectly result in intracellular Ca^{2+} accumulation and effective FOC.

Uses:

1. CHF

2. Cardiac arrhythmias

Atrial fibrillation

Atrial flutter

Paroxysmal supraventricular
tachycardia (PSVT)

Side effects:

Low Margin of Safety

Extracardiac: Anorexia, nausea, vomiting, abdominal pain, restlessness and disorientation

Cardiac: Arrhythmia, partial to complete AV block and severe bradycardia

Section 4 Cardiovascular Drugs**■ DRUGS FOR CONGESTIVE HEART FAILURE**

- ◆ Inotropic agents
 - Digoxin
 - Dobutamine
 - Dopamine
 - Milrinone
- ◆ Diuretics
 - Furosemide
 - Thiazide
 - Chlorthalidone
- ◆ Aldosterone antagonists
 - Spironolactone
- ◆ β -adrenergic blockers
 - Metoprolol
 - Bisoprolol
 - Carvedilol
- ◆ Vasodilators
 - Venodilators
 - Glyceryl trinitrate (GTN)
 - Isosorbide dinitrate
 - Arteriolar dilator
 - Hydralazine
 - Arteriolar + Venodilator
 - Sodium nitroprusside
- ◆ Renin-angiotensin inhibitors
 - ACE inhibitors
 - Enalapril
 - Ramipril
 - Angiotensin-receptor blockers
 - Losartan
 - Candesartan

Precautions and Contraindications of Cardiac Glycosides

- ◆ Hypokalemia
- ◆ Elderly, renal and hepatic failure
- ◆ Myocardial infarction
- ◆ Thyrotoxicosis
- ◆ Myxedema

- ♦ Ventricular tachycardia
- ♦ Partial AV block
- ♦ Acute myocarditis
- ♦ Wolff-parkinson-white syndrome

DOC for reducing mortality in CHF—spironolactone.

DOC for inotropic effect—dobutamine.

DOC for CHF 1st line—ACE inhibitors.

DOC for rapid diuresis—loop diuretics.

Antiarrhythmic Drugs

■ CLASSIFICATION

1.	Class I	1. Procainamide Disopyramide
		2. Lignocaine MOA suppression of automaticity in ectopic foci
		3. Propafenone flecainide
2.	Class II	Propranolol Esmolol
3.	Class III	Agent widening AP—action potential Amiodarone
4.	Class IV	Calcium channel blockers Verapamil Diltiazem

Section 4 Cardiovascular Drugs

Class 1

<i>MOA:</i>	Membrane Stabilizing agent	- Open state Na^+ channel blocker - Also delay recovery - Suppress AV conduction
<i>Use:</i>	VT, VF	
<i>S/E:</i>	50% patients develop antinuclear antibody 20% patients develop systemic lupus Erythematosus (SLE)	

Class II

<i>MOA:</i>	Antiadrenergic agents—suppress adrenergic-mediated ectopic activity
<i>Use:</i>	Treating sinus tachycardia Atrial and nodal escape

■ AMIODARONE

AMIODARONE

Antiarrhythmic

Multiple action—block K^+ , Na^+ , Ca^{2+} channel and β -receptor

Iodine containing

Orally active

Duration of action is very long (3–8 weeks)

APD and ERP increases, conduction decreases, depress ectopic

Resistant atrial fibrillation (AF), VT and recurrent VF are uses

On IV injection myocardial depression and BP fall on prolonged use causes fibrosis of lung.

Neuropathy

Eye corneal micro deposits may occur

Inhibits T_4 – T_3 conversion

■ LIGNOCAINE

LIGNOCAINE

Local anesthetic

Inactive orally so...

Given IV for antiarrhythmic action

Na^+ channel blocking which occur...

Only in inactive state of Na^+ channels

CNS S/E like convulsion

Action last only 15 min due to rapid redistribution

Inhibit Purkinje fibers and ventricle but...

No effect on AVN and SAN so...

Effective only in ventricular arrhythmia

DOC for ventricular tachycardia—lidocaine

DOC for ventricular fibrillation—lidocaine

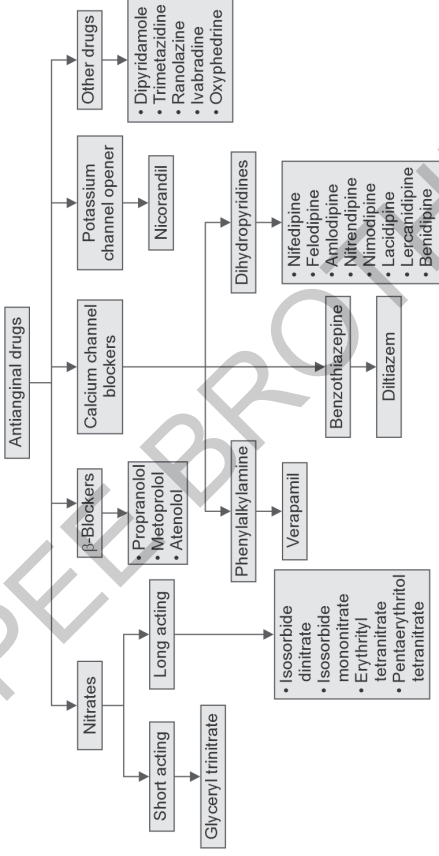
DOC for sick sinus syndrome—theophylline

DOC for intraoperative arrhythmias—esmolol

DOC for PSVT—adenosine

DOC for maintenance of sinus rhythm—amiodarone

DOC for resistant recurrent AF—flecainide



TAB 4 U

A Concise Manual of Pharmacology

Salient Features

- Provides learning fundamentals of pharmacology.
- Comprises more than 100 mnemonics.
- Important classification charts provided.
- Encompasses chapter-wise classifications, mechanism of action, uses and side effects of each class.
- Vast amount of information can be revised in a short span of time.

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