



SNS COLLEGE OF ALLIED HEALTH SCIENCE
SNS Kalvi Nagar, Coimbatore - 35
Affiliated to Dr MGR Medical University, Chennai



DEPARTMENT OF OPERATION THEATRE AND ANAESTHESIA TECHNOLOGY - II YEAR

COURSE NAME: PHARMACOLOGY

TOPIC – CARDIOVASCULAR DRUGS

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DEFINITION



Definition: Cardiovascular drugs are agents that affect the function of the heart and blood vessels, used to treat conditions such as hypertension, heart failure, arrhythmias, angina pectoris, thrombosis, and hyperlipidemia. They influence cardiac output, blood pressure, rhythm, and clotting to improve cardiovascular health



CLASSIFICATION



- **Antihypertensives:** Diuretics (e.g., Hydrochlorothiazide), Beta-Blockers (e.g., Metoprolol), ACE Inhibitors (e.g., Lisinopril), ARBs (e.g., Losartan), Calcium Channel Blockers (e.g., Amlodipine).
- **Antiarrhythmics:** Class I (e.g., Lidocaine), Class II (Beta-blockers, e.g., Propranolol), Class III (e.g., Amiodarone), Class IV (e.g., Verapamil).
- **Drugs for Heart Failure (Inotropes):** Digitalis Glycosides (e.g., Digoxin), PDE-3 Inhibitors (e.g., Milrinone).
- **Antianginals:** Nitrates (e.g., Nitroglycerin).
- **Antithrombotics:** Anticoagulants (e.g., Warfarin, Rivaroxaban), Antiplatelets (e.g., Aspirin, Clopidogrel)
- **Lipid-Lowering Agents:** Statins (e.g., Atorvastatin).



RATIONALE FOR CLASSIFICATION

Class/Subclass	Mechanism of Action	Onset	Duration	Adverse Effects
Beta-Blockers (e.g., Metoprolol)	Block beta-adrenergic receptors, reducing heart rate and contractility	1 hour (oral)	12-24 hours	Bradycardia, fatigue, bronchospasm, hypotension
ACE Inhibitors (e.g., Lisinopril)	Inhibit ACE, reducing angiotensin II, vasodilating	1 hour	24 hours	Cough, hyperkalemia, angioedema, hypotension
Calcium Channel Blockers (e.g., Amlodipine)	Block calcium entry, relaxing vascular smooth muscle	3-6 hours	24 hours	Headache, edema, flushing, dizziness
Diuretics (e.g., Hydrochlorothiazide)	Increase urine output, reducing volume	2 hours	12 hours	Electrolyte imbalance, dehydration, hypokalemia
Digitalis Glycosides (e.g., Digoxin)	Inhibit Na/K-ATPase, increasing intracellular calcium	1-2 hours (oral)	36 hours	Arrhythmias, nausea, visual disturbances
Nitrates (e.g., Nitroglycerin)	Release nitric oxide, vasodilating	Immediate IV/sublingual	30 min sublingual	Headache, hypotension, tolerance
Statins (e.g., Atorvastatin)	Inhibit HMG-CoA reductase, reducing cholesterol synthesis	Days to weeks	24 hours	Muscle pain, liver enzyme elevation, rhabdomyolysis
Anticoagulants (e.g., Warfarin)	Inhibit vitamin K-dependent clotting factors	24-72 hours	2-5 days	Bleeding, skin necrosis
Antiplatelets (e.g., Aspirin)	Inhibit cyclooxygenase, reducing platelet aggregation	1 hour	7-10 days (platelet life)	Bleeding, GI upset, ulcer



THANK YOU