

SNS COLLEGE OF ALLIED HEALTH SCIENCE
Affiliated to The Tamil Nadu Dr. M.G.R Medical University, Chennai



DEPARTMENT OF PHYSICIAN ASSISTANT

COURSE NAME : PHARMACOLOGY

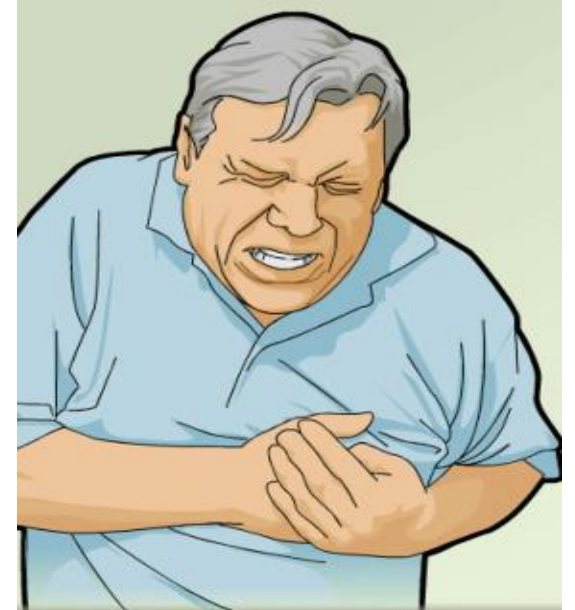
UNIT : CLASSIFICATION OF DRUG ACTING ON HEART

TOPIC : ANTI ANGINAL DRUGS

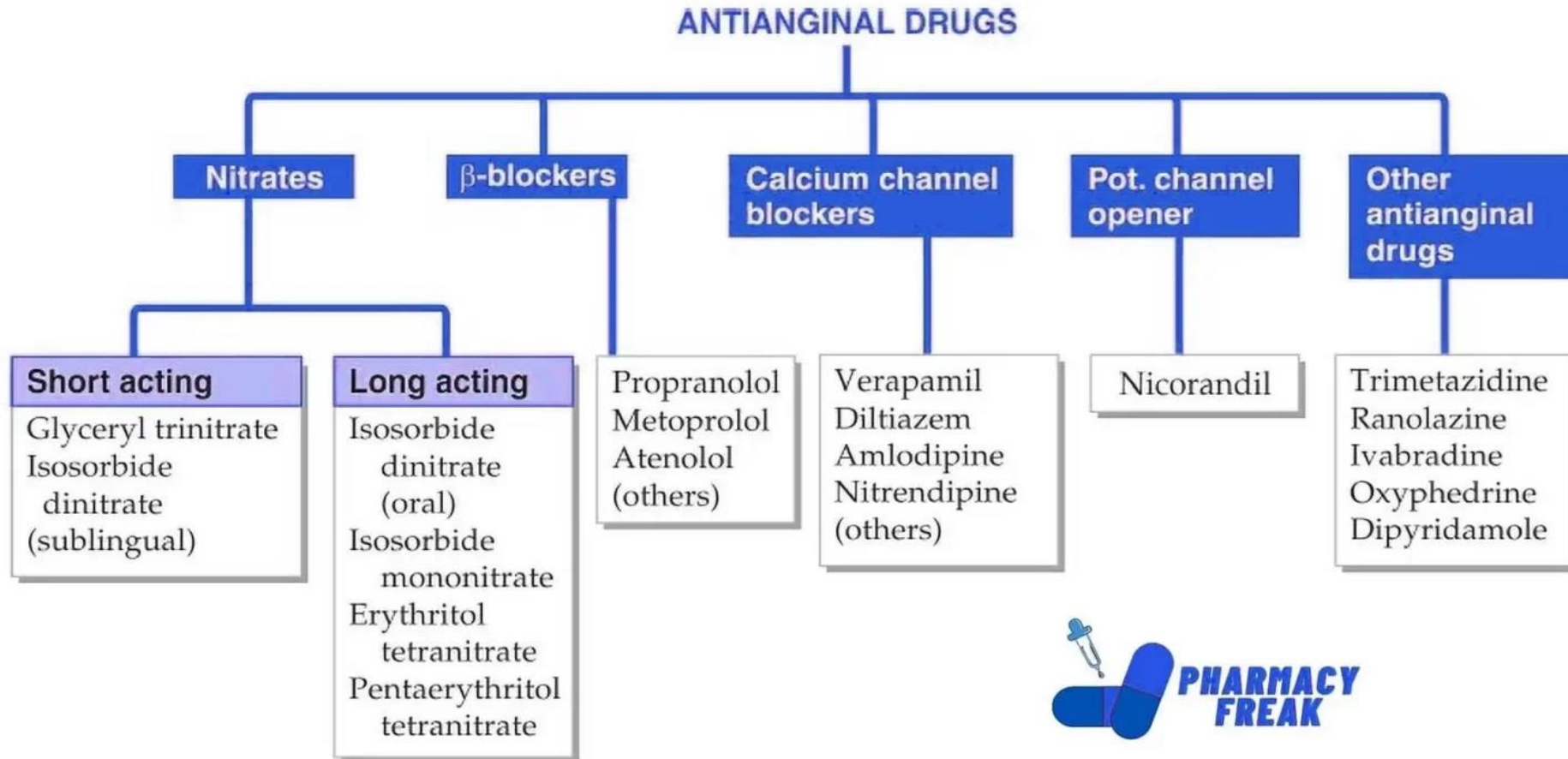
FACULTY NAME : Ms. SINEKA M

INTRODUCTION (Define)

- Anti-anginal drugs relieve symptoms and prevent episodes of **angina pectoris**.
- Their primary goal is to reduce **myocardial oxygen demand or increase oxygen supply** to alleviate pain and prevent ischemia.



CLASSIFICATION



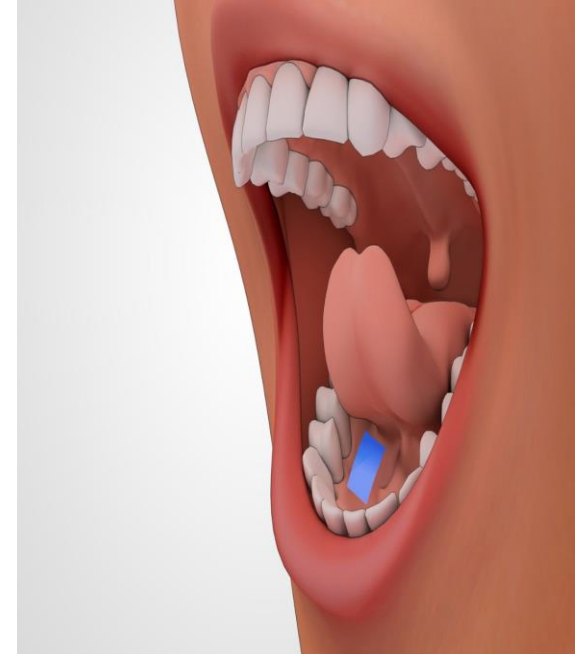
DOSAGE

- ❑ **Atenolol:** 25-100 mg orally once daily
- ❑ **Amlodipine:** 5-10 mg orally once daily
- ❑ **Ranolazine:** 500-1000 mg orally twice daily
- ❑ **Nitroglycerin (Sublingual):** 0.3-0.6 mg every 5 minutes
as needed (max 3 doses)



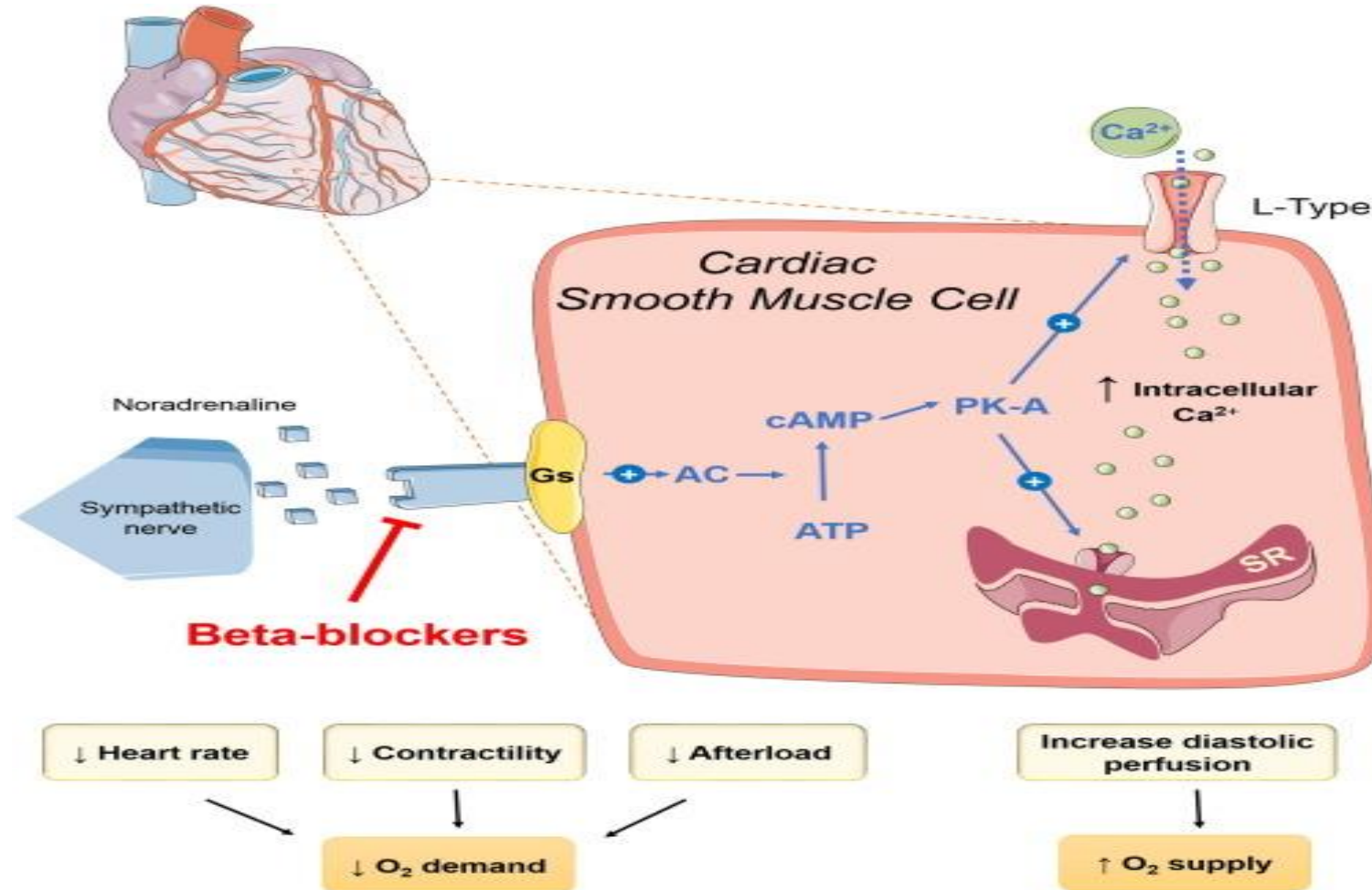
ROUTE

- **Oral:** tablets, capsules, extended-release forms
- **Sublingual:** Nitroglycerin tablets or sprays
- **Transdermal:** Nitroglycerin patches
- **Intravenous:** Beta-blockers and calcium channel blockers



MECHANISM OF ACTION

- **Nitrates:** release nitric oxide causing vasodilation and reducing preload
- **Beta-blockers:** decrease heart rate, contractility, and myocardial oxygen demand
- **Calcium channel blockers:** inhibit calcium influx reducing contractility and causing vasodilation
- **Potassium channel openers:** increase potassium efflux leading to vasodilation
- **Ranolazine:** inhibits late sodium current reducing sodium-dependent calcium influx

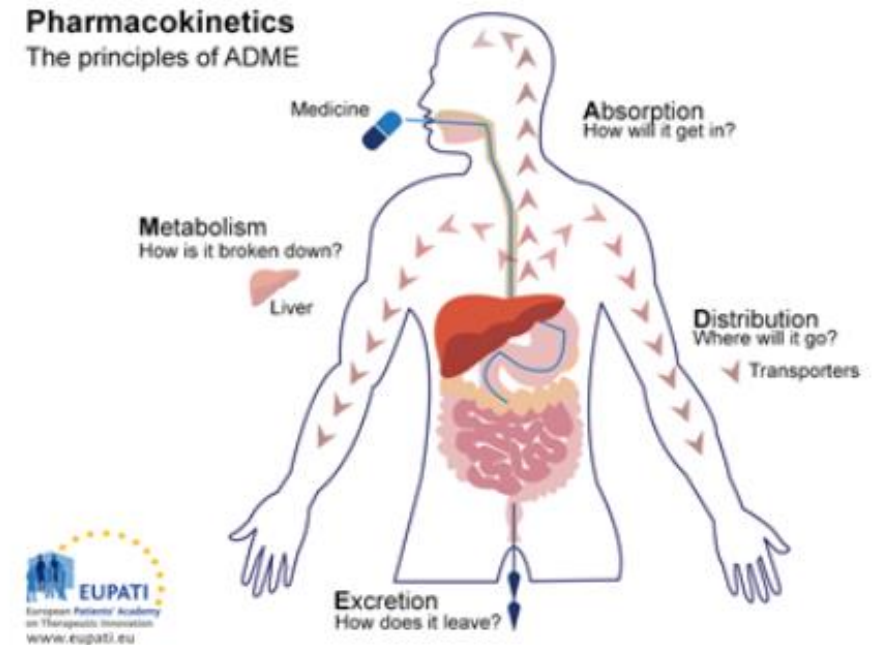


PHARMACODYNAMICS

DRUG CLASS	MAIN ACTION	EFFECT ON HEART
Nitrates	Venous/arterial vasodilation	↓ Preload/afterload
Beta-blockers	↓ Heart rate, ↓ contractility	↓ O ₂ demand, ↓ BP
Calcium channel blockers	Vasodilation, ↓ contractility	↓ Afterload, ↓ O ₂ demand
Potassium channel openers	Vasodilation	↓ Workload
Ranolazine	↓ Sodium-dependent Ca influx	↓ Wall tension, ↓ O ₂ demand

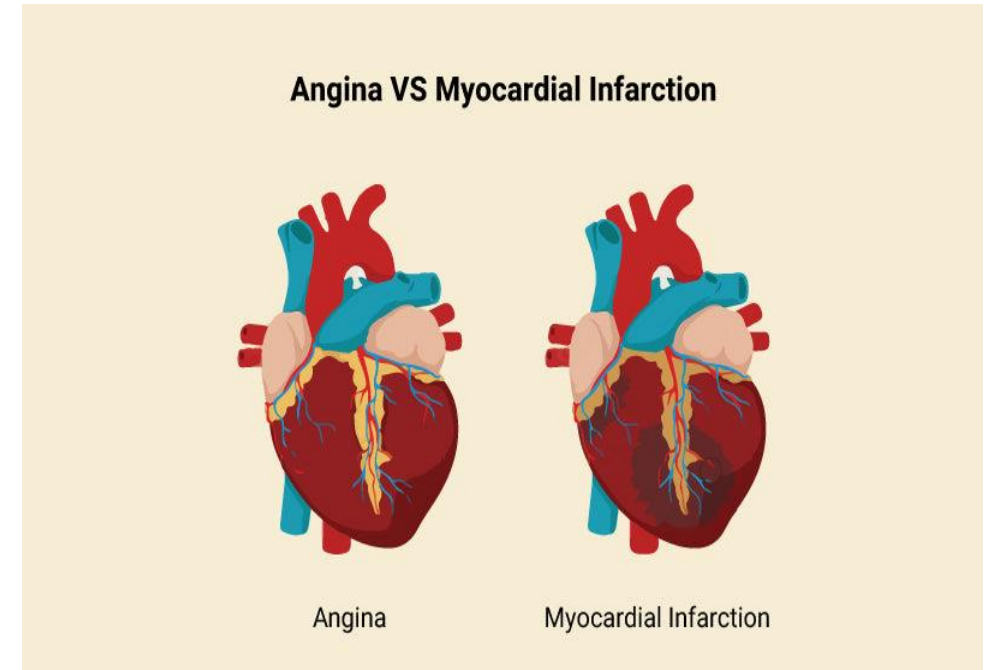
PHARMACOKINETICS

- ❑ **Absorption:** Variable
- ❑ **Distribution:** Wide distribution
- ❑ **Metabolism:** Hepatic metabolism
- ❑ **Elimination:** Renal excretion



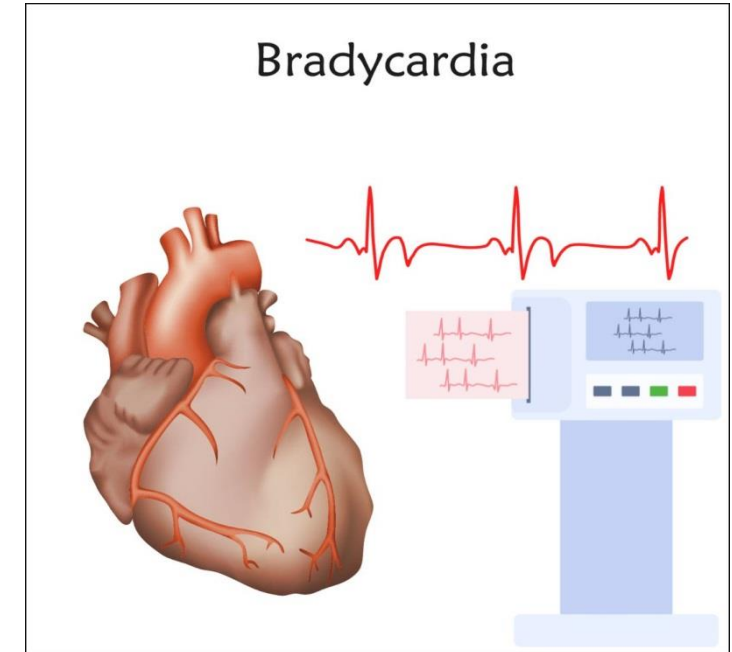
INDICATIONS (Empathy)

- ✓ Angina pectoris
- ✓ Myocardial infarction
- ✓ Coronary artery disease
- ✓ Hypertension
- ✓ Heart failure



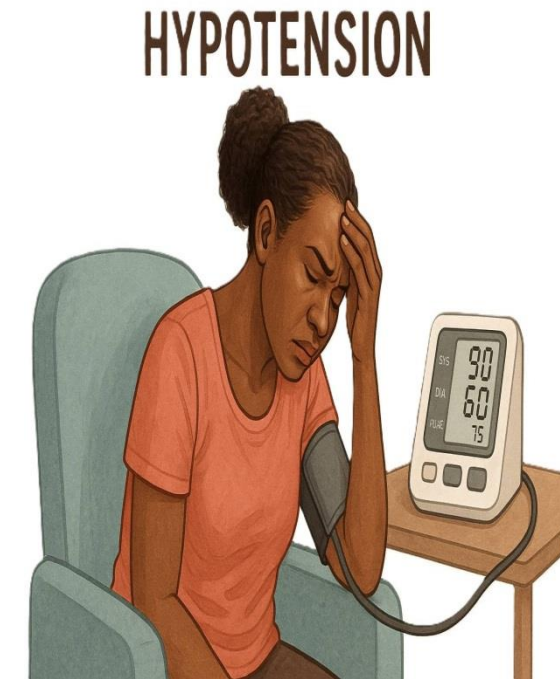
CONTRAINDICATIONS

- ☐ Severe bradycardia
- ☐ Severe hypotension
- ☐ Heart block
- ☐ Asthma
- ☐ Pregnancy/lactation
- ☐ Severe hepatic or renal impairment



ADVERSE EFFECTS

- **Nitrates:** headache, hypotension
- **Beta-blockers:** bradycardia, hypotension, bronchospasm
- **Calcium channel blockers:** hypotension, edema
- **Potassium channel openers:** hypotension, headache, dizziness
- **Ranolazine:** constipation, dizziness, nausea

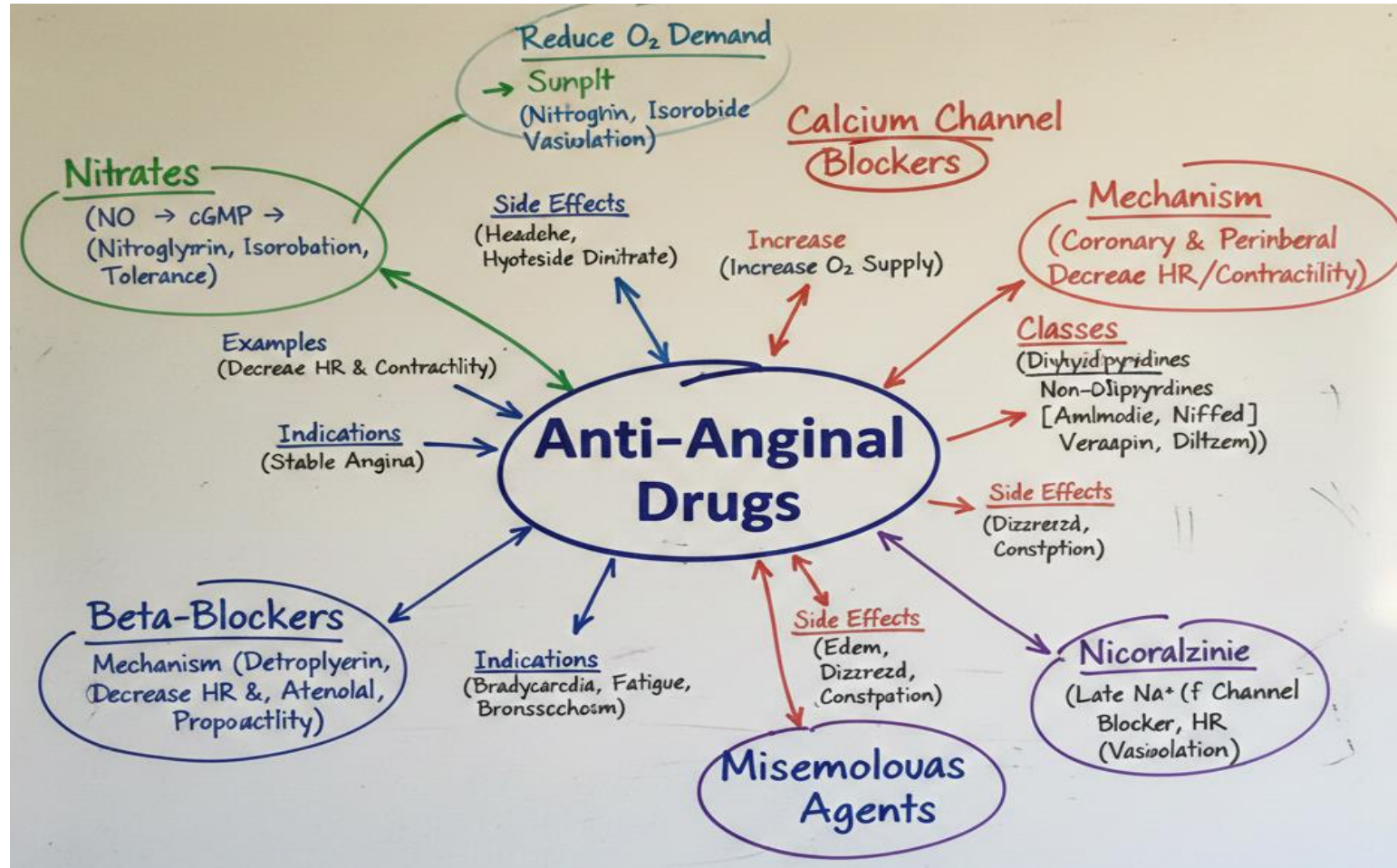


PHYSICIAN ASSISTANT ROLE (Test)

- Patient assessment
- Drug selection and prescription
- Monitoring and follow-up
- Patient education
- Emergency response



SUMMARY



References

- Medical Pharmacology – Padmaja Udayakumar
- <https://cvpharmacology.com/angina/antianginal>
- <https://www.thecardiologyadvisor.com/ddi/antianginal-drugs/>
- [https://tmedweb.tulane.edu/pharmwiki/doku.php/antianginal drugs](https://tmedweb.tulane.edu/pharmwiki/doku.php/antianginal_drugs)