

Synthetic catecholamines

① Dobutamine - β_1 stimulator

↓
↑ myocardial contractility * imp
↑ HR
↑ Conduction

Doc → stress echo, Cardiogenic shock.

2) Isoprenaline : act on β_1 β_2 β_3 - stimulation

β_1 → heart rate, Conduction, ~~the~~ Contractility

β_2 → Bronchodilation, Vasodilation

Use :- T/T of Bradycardia

3) DROXIDOPA - Prodg → Nor epinephrine (NA) (active form)
↓
Response.

4 IBOPAMINE - act on D_1 & α_1 → Stimul

D_1 → Vasodilatⁿ in kidney

α_1 - Vasoconstriction

5 FENOLDOPAM: Partial D_1 Receptor Stimulator



Peripheral vasodilation in kidney



↓ B.P

Use :- Given by I/v infusion in hypertensive emergencies

NON-Catecholamines

α agonist

Phenylephrine -

α_1 agonist

Use - Eyes (Mydriasis) - Dg for funduscopy given in the form of eye drop

② Vasocostriction - $\uparrow \uparrow$ B.P

(Pressagent) (L.B)

Use: T/T of hypotension

③ Phenylephrine, MIDODIRINE, METHOXAMINE

All are α_1 agonist \rightarrow \uparrow BP. So used in Hypotension

Phenylephrine is DOC for -

- 1) Hypotension due to spinal anaesthesia
- 2) " " " Aortic dissection
- 3) " " in Pregnancy

MIDODRINE - DOC - Postural hypotension

Nasal Decongestants: $\alpha_1 + \alpha_2 B$ agonist

↓
Vaso Constriction in Nose.

↓
No Running of nose

Oxymetazoline, Xylometazoline - Nasal drops

Pseudoephedrine - oral

Phenylephrine - Nasal drop + oral

Use - Allergic Rhinitis, Common cold, Sinusitis

[Note - Prolonged use of Nasal decongestants

↓
Prolonged vasoconstriction → Ischemia

↓
Anosmia + atrophic Rhinitis

(loss of smelling power)

(5)
 α_2 agonist - Clonidine, α -methyl dopa
 α_2A

↑ on Presynaptic Autoreceptor

↓
↓ Sympathetic discharge

β_2 Agonist:

Salbutamol, Terbutaline → Asthma

II Tocolytics: Catecholamine Relaxant - Ritodrine
Isoxsuprine

Suppress premature labour ←

III Coronary Blood Vessel dilator - OXYFEDRINE

Use in Angina

S.E of β_2 agonist - Hypoglycaemia

Hypokalaemia

Tremors

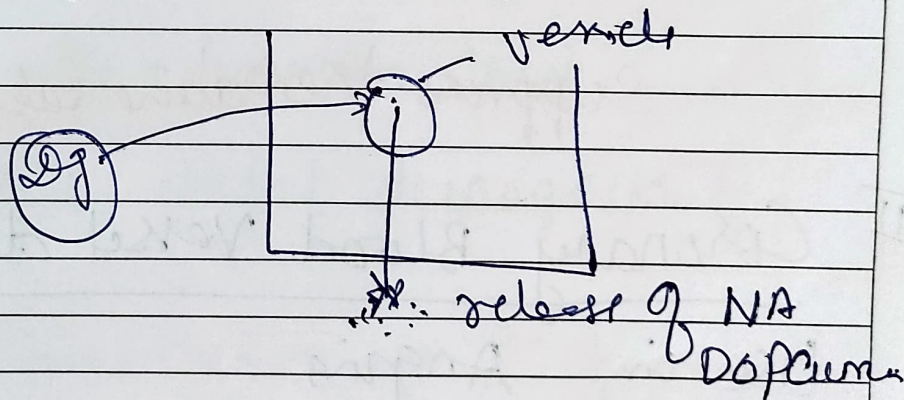
β_3 agonist - MIRABEGRON - Use

in T/T of overactive bladder, relax
detrusor muscle.

② Lipolysis - break down of fat

Indirectly acting adrenergic dgs

They ↑ release of catecholamines (NT) from Nerves by reverse diffusion & displacement.



① MODAFINIL - Used oral, has good CNS penetration & ↓ Sleep

Use: Narcolepsy, Shift workers, obstructive sleep apnea

AMFETAMINE

CNS Stimulant \rightarrow \uparrow Sympathetic Nervous System

Methyl Phenidate

Et- \downarrow Sleep - used for Narcolepsy

\downarrow Appetite - Antiobesity dg

\uparrow attention span \rightarrow Doc for Attention

Deficit Hyperkinetic Disorder (CADHD)

SE: Psychosis, Cardiac arrhythmia

Seizures (high dose), dg of abuse \rightarrow

Cause addiction,

Performance enhancing dg

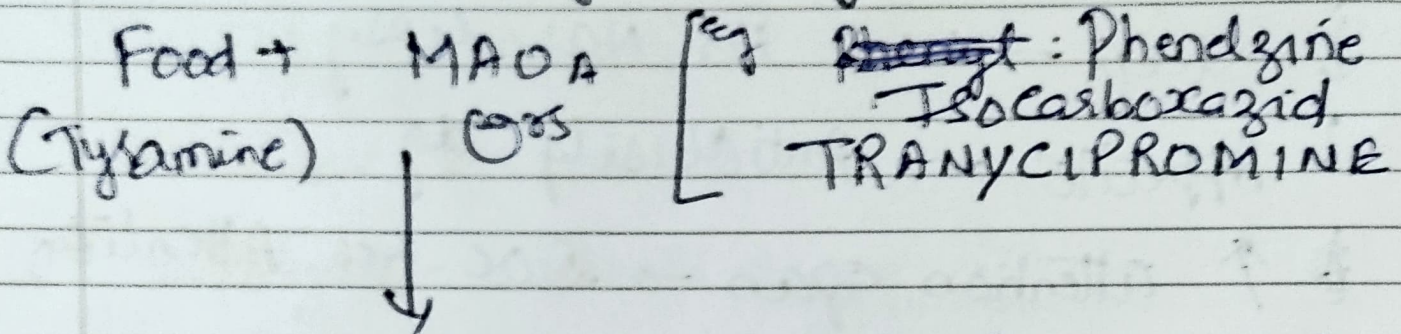
* Amphetamine Poisoning treated by Ammonium chloride

Tyramine - is not a dg, it present in food items like Cheese, wine (Red)

\uparrow Meat

When we eat such food it is not absorbed from GIT

∴ Tyramine degraded by MAOA Enzyme



Tyramine absorbed → ↑ SNS → ↑ BP.

(Hypertensive Crisis)

This incidence is also known as

Cheese Reaction

(TIT) → Phentolamine (α blocker) (DOC)

MIKED Acting

① Mephenteramine - Vasopressor like Phenylephrine

This is approved Anti-obesity dg

② Ephedrine. used in Nasal decongestant. Vasopressor like Phenylephrine

③ Pseudoephedrine → same