SYNTHETIC CATECHOLAMINES

① DOBUTAMINE : β_1 ⊕

↓

↑ MYOCARDIAL CONTRACTILITY

↑ HR
↑ CONDUCTION
↑ CONTRACTILITY

- DOC → CARDIOGENIC SHOCK (β_1⊕)
- DOC → STRESS ECHO

② ISOPRENALINE : β_1 , β_2 , β_3 ⊕

- β_1 ↓ : C +, D +, I +
- β_2 ↓ : ·VD, ·Bronchodilation

: used in T/t of BRADYCARDIA

③ DROXIDOPA : PRODRUG ⟶ NOR-EPINEPHRINE (Active form)

④ IBOPAMINE : D_1 , α_1 ⊕ .

⑤ FENOLDEPAM : partial D_1 ⊕ → Peripheral VD
↓
↓ B·P
: Given by i/v infusion in Hypertensive Emergencies.

NON- CATECHOLAMINES

① α_1 USES : i) EYES (MYDRIASIS) → DRUG FOR FUNDOSCOPY
⇓
(DOC) PHENYLEPHRINE
↓ eye drops
α_1⊕

ii) VASOCONSTRICTION → ↑B·P
(PRESSOR AGENT) ∴ T/t : HYPOTENSION

- PHENYLEPHRINE
- MIDODRINE
- METHOXAMINE

} α_1⊕

(DOC) PHENYLEPHRINE { HYPOTENSION d/t SPINAL ANAESTHESIA
" " AORTIC DISSECTION
" IN PREGNANCY

(DOC) MIDODRINE → POSTURAL HYPOTENSION

iii) NASAL DECONGESTANTS → α_1 ⊕ α_{2B} ⊕

↓

VC in NOSE

OXYMETAZOLINE, XYLOMETAZOLINE } NASAL DROPS

PSEUDOEPHEDRINE } ORAL

PHENYLEPHRINE } NASAL DROPS + ORAL

→ Used in Allergic Rhinitis, Common Cold, Sinusitis.

ON PROLONGED USE OF NASAL DECONGESTANTS

↓

PROLONGED VC

↓

ISCHAEMIA ✓

↓

ATROPHIC RHINITIS + ANOSMIA → k/a RHINITIS MEDICAMENTOSA

② α_2 USES : α_{2A} ⊕ → PRESYNAPTIC AUTORECEPTOR

↓

↓es SYMPATHETIC DISCHARGE

↓

DRUGS - • CLONIDINE
• α-METHYL DOPA

③ β_2 USES :

(i) BRONCHODIALATORS - (T/t : ASTHMA)
- SALBUTAMOL ✓
- TERBUTALINE ✓

(ii) TOCOLYTICS - (UTERINE RELAXANTS)
- RITODRINE
- ISOXSUPRINE

↓
Suppress PREMATURE LABOUR

(iii) CORONARY BV DILATOR - OXYFEDRINE
(T/t : ANGINA)

→ S/E of β_2⊕ = (i) HYPERGLYCEMIA

(ii) HYPOKALEMIA

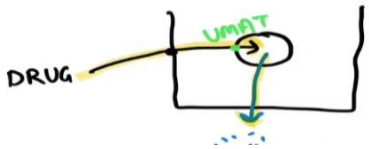
(iii) TREMORS

④ β_3 USES : i) MIRABEGRON : T/t: OVERACTIVE BLADDER ✓

↓
β_3⊕ → Relax Detrusor

INDIRECTLY ACTING ADRENERGIC DRUGS

↑ RELEASE OF CATECHOLAMINES FROM NERVES BY REVERSE DIFFUSION & DISPLACEMENT



1) MODAFINIL : ORAL
: GOOD CNS PENETRATION
↓
↓es SLEEP

- NARCOLEPSY
- SHIFT WORKERS
- OBSTRUCTIVE SLEEP APNEA

} DOC MODAFINIL

2) AMFETAMINES : CNS STIMULANT ⟶ ↑ SNS

: Effects - ↓ SLEEP → T/t NARCOLEPSY
↓ APPETITE ∴ ANTIOBESITY DRUG
↑ ATTENTION SPAN

DOC ATTENTION DEFICIT HYPERKINETIC DISORDER (ADHD)

e.g. METHYL PHENIDATE

: S/E → i) PSYCHOSIS ✓
ii) CARDIAC ARRYTHMIAS
iii) SEIZURES (high dose)
iv) DRUG OF ABUSE /ADDICTION
v) PERFORMANCE ENHANCING DRUG

: AMFETAMINE POISONING → DOC AMMONIUM CHLORIDE

3) **TYRAMINE** : NOT A DRUG

: PRESENT IN FOOD ITEMS : CHEESE
MEAT
RED WINE

↓

WHEN WE EAT FOOD, it is not absorbed from GIT

↓

DEGRADED BY MAO-A ENZYME

: FOOD (TYRAMINE) + MAO-A INHIBITORS → eg. PHENELZINE
• ISOCARBOXAZID
• TRANYCIPROMINE

↓

TYRAMINE ABSORBED

↓

↑SNS : ↑B.P (Hypertensive crisis)

↓

k/a CHEESE REACTION

↓

T/t : DOC PHENTOLAMINE (α-BLOCKER)

MIXED ACTING

1. MEPHENTERMINE : VASOPRESSOR Like PHENYLEPHRINE
   : APPROVED ANTI-OBESITY DRUG

2. EPHEDRINE : NASAL-DECONGESTANT
   : VASOPRESSOR Like PHENYLEPHRINE

↓

↓

PSEUDOEPHEDRINE