ADRENERGIC RECEPTOR ANTAGONIST

Adrenergic Receptor Antagonist

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α blockers

Non selective

(blocks both α_1 and α_2)

Reversible

Phentolamine

Irrversible

Phenoxyben-zamine

Selective

α_1 blocker

Prazosin

Terazosin

Doxazosin

Tamsulosin

β blockers

α_2 blocker

Yohimbine

α + β blockers

Pharmacological actions

- CVS.

a) – Blockade of α_1 receptors on peripheral vasculature
- Vasodilatation of arteries and veins
- Decrease in P.R and venous return (preload) to the heart
- Decease in P.R ⟶ B.P
- Decrease Afterload + Preload on heart

b) Tachycardia

- Blockade of presynaptic α_2 A ®
- Baroreceptor reflex –
- ↑ Sympthetic discharge
- Activation of β_1 receptors on heart

c) Postural Hypotension

d) Dale's vasomotor reversal

- EYE
- Miosis – blocks α_1 receptor
- **Intestinal motility- ▼ ed**
- **Urinary outflow**

α_1 receptor – bladder sphincter

↓

Relaxation

↓

resistance to flow of urine

Uses of α blockers

- **Pheochromocytoma**

Tumor of adrenal medulla
Excessive synthesis of catecholamine

↓

Hypertension

△ **- urinary VMA**

Phenoxybenzamine + β blocker

↓

In inoperable tumor
1-2 wks. prior and during operation

- Hypertension –Selective α_1 **blocker.**

  Prazosin

  Terazosin – 12 hrs.

  Doxazosin -20 hrs.

  ↓LDL con. ↑HDL

- **Congestive cardiac failure**

  selective α_1 blocker

- **Benign hypertrophy of prostate**

  urinary obstruction

size of prostate ↑ **tone of smooth muscle of bladder neck, triagone**

Prostatic urethra

Blockade of α_1 ® - relaxation of bladder Sphincter- ↓ing resistance to urine outflow – Complete emptying of bladder

Tamsulosin-Selective α_1 A blockers

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No CVS side effects

Adverse effects

- Postural hypotension – 1st dose effect
- Reflex tachycardia – less with selective α_1 blockers
- Nasal stuffiness
- Nat + H_2O retention