

NO

Date

Ach \rightarrow parasympathetic

* Nicotinic + Muscarinic receptor differences

* Nicotinic (ionotropic) direct open ion channel upon binding

Ach $\left(\begin{matrix} N \\ M \end{matrix} \right) \left(\begin{matrix} N \\ N \end{matrix} \right)$

* Muscarinic receptor (metabotropic) work through signals pathway. Slower + prolonged effect

* Muscarinic stimulates cardiovascular system

\downarrow stroke volume + \downarrow cardiac output

chronotropic - heartbeat, Inotropic contraction of muscle

dromotropic - conductivity \downarrow properties of heart

\downarrow Arterial blood pressure ABP

M3; smooth muscle + secretory gland (stimulation)

NO \uparrow \uparrow \downarrow \downarrow IOP

IOP Intra-ocular pressure: is the fluid pressure of the eye

* Ach is the responsible for parasympathetic response

* Ach stimulate Nicotinic receptor

* Cholinomimetics is similar to Ach. Direct Acting

Δ Choline Esters

Bethanecho, Carbachol, Methacholine

degradation + Longer duration

Δ Natural Alkaloid \circ - Pilocarpine - Eye

* Bethanechole: Nicotinic receptor

good Muscarinic receptor

Prokinetic agent :- promote movements

Urination + defecation

paralytic ileus: partial / complete blockage of the intestines

* Carbachol: Nicotinic receptor

Muscarinic receptor

Miotic agent :- constrictor of the pupil

↓ Intra ocular pressure during glaucoma

* Pilocarpine = Eye Myosis result, انقباض

Natural Alkaloid

topically in glaucoma

↓ IOP + to treat :-

Angle closure glaucoma :- disease angle of eye become blocked

Open angle glaucoma :- disease angle of eye is open but the main pathway of drainage of aqueous humor out of eye (The trabecular Meshwork) is blocked

Mechanism of action: Improve outflow of AH

+ open fluid pathway
stimulate salivation + sweating (لُعَاب + العرق)

summary of Direct Cholinomimetics

- Stimulate defecation + Urination after Surgery

Bethanechol

- To treat Glaucoma

Pilocarpine + Carbachol

topically

- Pilocarpine To treat sensation of oral dryness (Xerostomia)
orally of Sjogren's syndrome

Δ Adverse effects of Direct Cholinomimetics

Flushing: widening of capillary of involved skin

Hypotension

+ excessive sweating + salivation

Abdominal colic + diarrhoea
عسر

Bronchospasm

- Accommodation Dysfunction: eye focusing problem...

[Pilocarpine + Carbachol]