

Pharma 2

Aff sensory pararecep carotid aortic Blood pres 1 or more recep
Effluent motor + sensory (oblique division)
Aff. neu

→ stretch receptor $\therefore \downarrow$ B.P $\rightarrow$ Atrial $\rightarrow$ Eff stimuli
(pressure receptor in venacava / Lury / Hart)

vaso consh ← stim sympatric ←
 Renal system → renin juxtaglomerum
 (sensation drop in na) → Macula densa
 losity

∴ Macula densa $\xrightarrow{\text{تفقد}}$ Juxta $\rightarrow$ renin

angiot 1

argi- 2

Alasleron

عقلی → Efferant → somatic voluntary جسمانی
 ↓
 Autonomic unvoluntary

diaphragm, intercostal muscle, costal $\leftarrow$ $O_2 \rightarrow N_2$

Detrusor muscle, Heart Dominant $\rightarrow$ Parasymp (rest & digest)

• ν_1/ω , ω , stress $\underline{\epsilon}$ $\rightarrow$ symplectic (light or dlist)

stress Hormon Epinephrin

ما قبله NT → nor epinephr

- symp. Affe v. l. no Brain ab. Periphery - spinal
 pre → post thoracic no

garglia $\rightarrow$ signal in CNS & P.N.S.

cell body & Brain stem

NT e' never ending ACH

parasympathetic

* ACh in cell body $\rightarrow$ synthesis

(preganglionic) end $\rightarrow$ vesicles

* $\rightarrow$ sympathetic norepinephrine synthesis in terminal end
in (post ganglionic)
ganglion via spinal cord

$\rightarrow$ sympathetic nerve enters highly branch (preganglionic)
discharge in Body via nerve

$\rightarrow$ para. nerve via nerve

بعض الاعضاء

- it sends its ganglion Adrenal Medulla

Effector organ ($\rightarrow$ Endocrine)

ACh $\rightarrow$ stimulate A.M. $\rightarrow$ release hormone epinephrine

* tyrosine (precursor) $\rightarrow$ epineph
noreph
Dopamine

$\rightarrow$ parasympathetic $\rightarrow$ 1973 mostly sacral 2, 3, 4

via effector organ or via

sympathetic via spinal cord

$\rightarrow$ pre part

- symp

- para

$\rightarrow$ sympatholytic = parasympathomimetic ?

sympathetic → innervation

chronotropic HRT tachy cardia, cardiac output ↑

↳ (sympath) receptor systemic α_1 stim V.C

receptor skeletal muscle β_2 stim V.D

Blood supply

* → +ve chronotropic HRT, tachycardia, Cardiac output ↑
[inotropic contractility]

V.C

- sweating sympathetic NT ACh sympatho

- β -Blocker sympatholytic

* hypoglycemia → sympath → stress hormone
cortisol

hypogly (β -Blocker) → sweating → tachycardia
pulspitation

↳ sweating & β -Blocker

sweating in hypogly → pulspitation

contraindic → unawareness of hypoglycemia

(isolated)

→ genitalia para symp nitric oxide
ejaculation

No, phosphodiesterase inhibitor, relax smooth M.

(contraction)

⇒ eye ratio Mensch C. myxanth
circul. M. sphinc C. myosis

- sympathetic mylotic mydriasis

— Para sympathy day 11/7 myan

⇒ somatic neuromuscular junction
sweet glands, A. Habulla

ganglionic (symp. para) , effector organ of parasymp
NT [ACh] (post ganglionic)

NT (ACH)

Ach esterase هيدروليز بالتفريغ

1. synapsis & ganglia

+ plasma, liver

sympatho mimetic $\rightarrow$ Ach $\rightarrow$ ^{bind} Ach recep

color رنگ

→ more longer half life more stable @ hydrons

Ach receptor

- **muscarin** : ينجذ (ACh receptor ب more affinity)
جاذبه مسكارينه

⇒ more affinity for Muscarinic

named as Muscarinic recep-

- **Vicinity** or more affinity is required نیاز

so named as neotonic reef

1 (N. H. Junction) ganglia is cell body of postganglionic
2 (A. Medulla) preganglionic is in it.

2 (A. Hedulla) (pregant no iot)

3 (sweet gland)

pregant in 2015

Muscle rec. ~ high dose ~
stim or Block → nicotinic rec.

selectivity

→ Nicotin stimulates complet Paralysis
nicotin toxicity ~ Atropin

→ ACh ~ -ve chronotropic

SA node pacemaker

ACh conduction ~ SA node ~ ↓ HR

→ Blood vessels

U.D. hypotension

Parasymp it self is not present in B.V

rec. ~ U.D. hypotension

→ Retrost muscle stim

D. sphenic cont

B. Musch relax

sympath

(← D. sphenic ~ symp)

(Parasymp ~
sympath)

Sympathus mymils

relax

D. Musch.

Anti Muscarinic

relax

over flow

~

cholinergic agonist

contraction

~ B Blocker

α Blocker

(urine contin)
~

nicotinic / somatic

↳ ACh for ion channel / ACh receptor

↳ secondary messengers inol triphosphate (IP₃)

(50 100 1000)

ACh (CoA)

Cholin + ACholil

(ester)

half like lipid (قريب)

Cholin (ester) (linkage) (Acetyl)

more stable

Break down

esterase (plasma, synapse, liver)

↳ Direct ACh

Bethanechol: parasympathetic mimetics of ACh
contraction of Detrusor muscle (41)

↳ over flow urine

Atony in D.M

↳ side effect ACh secretion

↑ secretion, diarrhea,

↑ sweating, diaphoresis?

SE Atropin block

locally in D.M block

(41)

↳ Blood vessels → VD → hypotension → After
tachy cardiac ← Heart ← sympathetic
↳ reflex tachy cardiac risk hypotension

Brady cardiac

→ (transmission drug)
 → Pilocarpine Drug of choice in Emergency
 glaucoma → Close, closer angle
 → open angle

myosis
 ciliary body contraction → increase intraocular pressure
 release of aqueous humor
 immediate relief & ↓ IOP

→ Indirect - Acting Cholinergic Agonists:
AChE esterase (enzyme)
 تثبيط

{ so ACh endogenous itself is stimulated }
 concentration increases
 no inhibition for esterase

① Genetic destruction of ACh
myasthenia gravis (enzyme) [myopathetic paralysis]
 muscle weakness

for ACh receptor → multiple receptor

② IACA → reversible Edrophonium, Neostigmine,
 → irreversible organophosphorus poisoning
 Echothiophate

(pseudo cholinesterase deficiency) enzyme + inhibitor

Edrophonium (reversible)

Diagnosis to myasthenia gravis

test dos → is in MG
↓
↑ is in MG

(أنت في MG إذا زاد الجرعة)

Physostigmine more liposoluble

cross BBB in minim CNS

Atropin → Periph
↓
Ceph

halsonates, Atropin is toxic

Periph Ceph → physostigmine
↓
competition between ACh & Atropin

* (reuptake inhibitor Antidote of Atropin)

is what is overdose

Heart Brachycardia → is ACh ↑ in Parasymp

(SA node) Heart

endogenous ACh

- Neostigmine → over dose NMJB → (Acute resp syn)
Anesthesia + prolonged period

skeletal muscle (neuro muscle joint Blocker) → competitive & ACh
↓
uncomp

↓ Anesthesia

nicotinic receptor

* Long term (NMJB) ^{use} accumulated in synaptic cleft

Antagonizing $\leftarrow$ Mechanism ventral $\leftarrow$ Neostigmine

Pyridostigmine (reducer $\rightarrow$ طويلاً / طويلاً / طويلاً)

(mysisin gran $\rightarrow$ 4h $\rightarrow$ 4h $\rightarrow$ 4h)

هذا المرض قد ما يعرفه حق receptor $\rightarrow$ فشل

(receptor $\rightarrow$ receptor) $\rightarrow$ فشل

(peripheral)

galantamine, Tacrine, donepezil, rivastigmine

centrally $\rightarrow$ Ach as NT

Ach $\rightarrow$ Alshar

prognosis

complete memory loss

MMS / SCAG $\rightarrow$ بقيت فيه قد يكون

(enestroment)

disable $\rightarrow$ قادر على العمل

sever $\rightarrow$ severe

(Mild to Moderate) $\rightarrow$ Mild to Moderate

(NMDA) Memantine $\rightarrow$ severe

severe $\rightarrow$ severe ! ولكن بدوا (تزيد من شدة)

(reversible $\rightarrow$ reversible)

→ irreversible - Echthiophate
phospho relation (covalent bond)

ACh → peristalsis, diarrhea, ↑ secretion
pulmonary edema

الخصائص

① Block of ACh - Atropin

(myosis, Abd. pain, sweating)

Brady cardia

(↓ HR) 1mg Atropin

↳ target (most imp.) (complet dries sweating)

dry skin + HR

Axillary

pulmonary edema → intubation.

→ very lipid lipophilic (skin)

(lipophilic + deposit in fat)

enzyme

(covalent bond) parlioxime
(in receptors & ph. bond) (reversible)

aging

→ fastest (Alkalin group)

②

Atropin → parlioxime
ACh receptor Antidote

phosphorus

receptor

(reversible)

halosination is inhibition of Atropine "inhibition"
inhibition of ATP (as ATP inhibition ATP)

- Agry culture more toxic