

CHOLINERGIC DRUGS

1) Define cholinergic Drugs ?

Cholinergic Drug are agent which produce the action similar to those seen by the stimulation of parasympathetic nervous system.

2) Write the enzyme responsible for metabolism of acetylcholine

Pseudo-cholinesterase is the enzymes which is responsible for metabolism of acetylcholine

3) Write the classification of cholinergic drugs?

Classification:

- a) Esters of choline:-eg :carbachol
- b) Synthetic compounds:- eg :furethonium
- c) Cholinomimetic alkaloids:-eg :pilocarpine
- d) Cholinesterase inhibitors :- eg :neostigmine

4) Write the different action of acetylcholine on different organs?

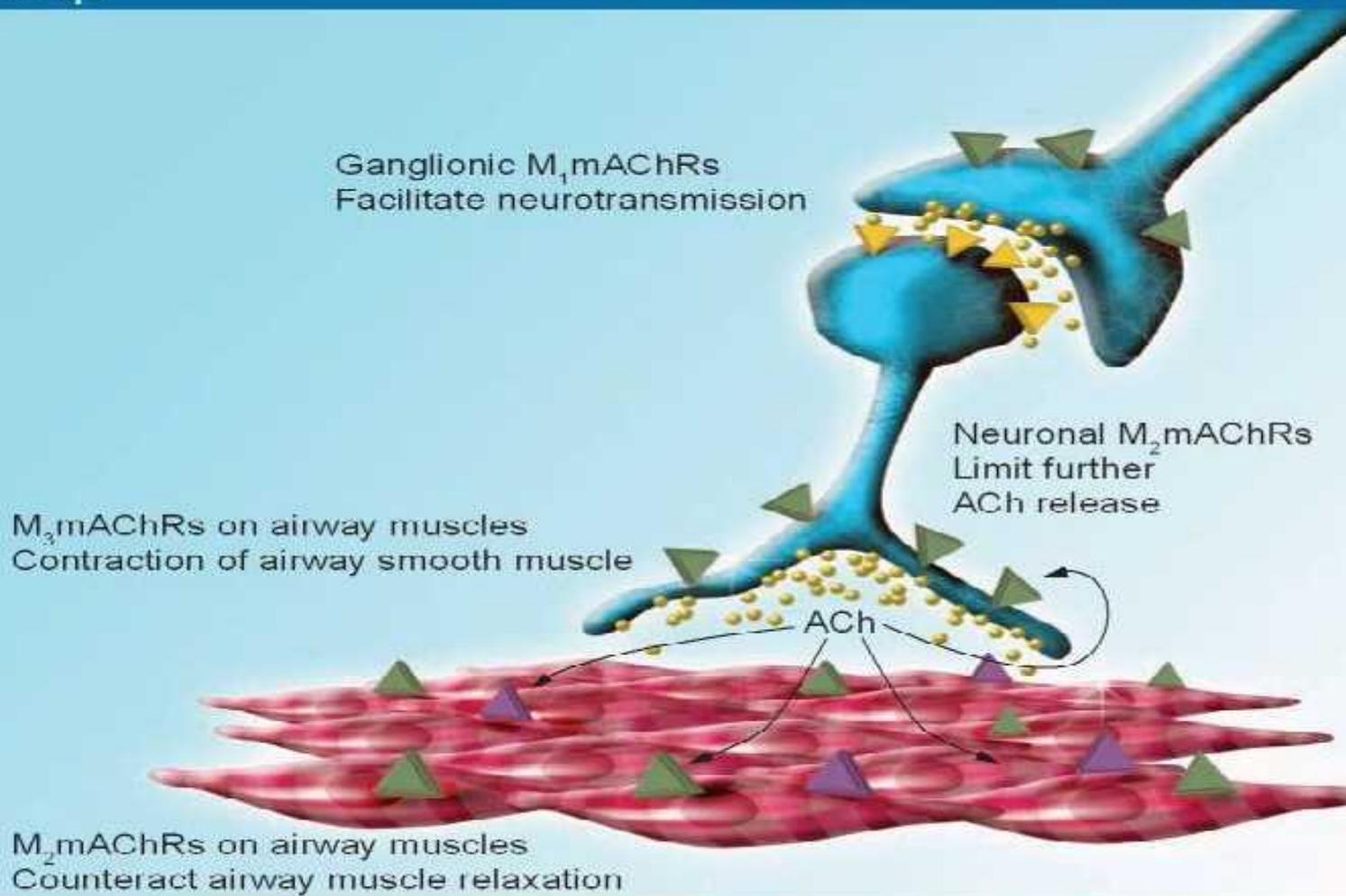
- a) cardiovascular system** :Acetyl choline depresses the S.A node slow down the heart rate and may produce cardiac arrest .
- b) Blood Vessel** :It causes relaxation of vascular smooth muscles and thus dilation of blood vessels occurs the blood pressure falls as a result of decrease total peripheral resistance and decrease cardiac out put .
- C) Other Smooth muscles** :Acetylcholine increase tone of smooth muscles of G.I tract .The sphinctures are relaxed. It contracts smooth muscles of gall bladder and urinary bladder .
- D) Glands and secretion** :acetylcholine G.I salivary pancreatic lachrymal,bronchial and nasopharynaeal secretion the acetylcholine increase sweating due to postganqlionic sympathetic fibres
- e) Eye** :on instillation in the eyes,acetylcholine does not produce any effect because it is not absorbed.But,the injection of acetylcholine in the carotid artery produce constriction of pupil (miosis)
- F)skeletal muscles** : Acetylcholine released as a result of stimulation of somatic nerves or administration at large doses initially induces contraction of skeletal muscles.A very large concentration of acetylcholine at the myoneural junction can produce paralysis of Skeletal muscles.

5) Write the mechanism of action of acetylcholine on muscarinic receptor ?

- ➔ **Muscarinic receptor:** a) Acetylcholine released from the postganglionic parasympathetic nerve ending or actions resulting from exogenously administered Ach on the organ that possess M receptors are termed as muscarinic receptor. They are blocked by atropine.
- b) They are five sub types of muscarinic receptors M₁, M₂, M₃, M₄, M₅.
- c) muscarinic receptors with M₁ sensitivity are found in the CNS and ganglia whereas M₂ sites exist in the heart and M₃ in the smooth muscle of GIT.
- d) M₁&M₃ receptors activate protein that is responsible for stimulation of phospholipase c activity and M₂ receptor interact with distinct group of G protein with resultant inhibition of adenylyl cyclase and activation of K⁺ channels.

• 6) Write the treatment of Organophosphate Poisoning?

- Treatment of organophosphate poisoning:
- 1) Gastric lavage: By activated charcoal and induce emesis by warm saline
- 2) Renal clearance :By forced diuresis or haemodialysis
- 3) Artificial respiration
- 4) Injection nerves by I.V route to restore cardiovascular function
- 5) selective antidote :Atropine 1mq other antidotes are cholinesterase reactivators like pralidoxime and diacetylmonoxime.
- 6) Injection of atropine sulphate (2mq) by I.V route
- 7) injection of pralidoxime(1mq) by I.V route.



ANTI-CHOLINERGIC DRUGS

1) Define Anti-cholinergic drugs?

- Anticholinergic drugs are those drugs which block the action of acetylcholine. They are muscarinic receptors blockers.

2) Write the uses of atropine ?

- a) As mydriatic
- b) As in bronchial asthma
- c) As antispasmodic
- d) As preanaesthetic medication
- e) It decrease GI secretion by acting as antiemetic .



3) Write the action of atropine on different organs ?

- a) Heart : Atropine block muscarinic receptor present on S.A node it does not cause significant effect on B.P but block effect of acetylcholine.
- b) Eye : It causes mydriasis .Thus be suffers from photophobia, the phenomenon is known as paralysis of accommodation.
- c) smooth muscles : All smooth muscles are relax by atropine.It cause bronchial dilation decrease in peristaltic movement and relaxation of urinary bladder and uterine muscle.
- d) Glands : It decrease the secretion like sweats, salivary, bronchial, lacrymal skin and eye becomes dry.

4) Write the treatment of belladonna poisoning ?

- a) Gastric Levage –with tannic acid
- b) cold sponging with ice bag
- c) intra venous fluid therapy
- d) artificial respiration