Anaesthesiology

Anticholinergic and tranquilizing agents

By

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Pre-anaesthetic agent:

Agent who are usually given to prepare the patient for administration of anesthetic agent.

Uses

- To reduce the amount of general anaesthetic
- To calm the patient so that anesthesia can be administrated without bright and struggling.
- To reduce gastric and intestinal motility and prevent vomiting while the patient is under anesthesia.

Classification of pre anaesthetic agent :

(a)Anticholinergic agent

(b) Tranquilizers or neuroleptics.

(c) Sedative

(d) Opoid analgesic agent / Nacrotic.

Anticholinergic agent

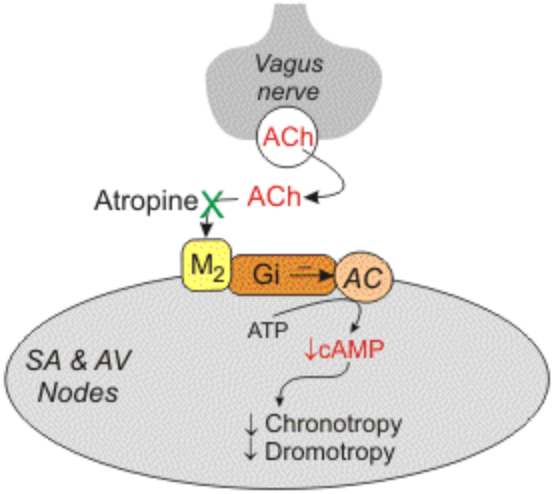
Anticholinergic inhibit parasympathetic nerve impulses by selectivity blocking the binding of the neurotransmitter acetylcholine to its receptor in nerve cells.

Atropine Sulphate

Inhibits the muscarinic action of acetylcholine on structure innervated by post galglionic cholinergic nerve and on smooth muscle which respond to endogens, but not inverted.

Effect of atropine sulphate

1. Cardiovascular system
2. Respiratory system
3. Other physiological function



Abbreviations: ACh, acetylcholine; M2, muscarinic receptor; AC, adenylate cyclase; SA, sinoatrial; AV, atrioventricular

Metabolism :

Dog excretes some part of atropine intact via kidney and remaining part undergoes hepatic metabolism.

Cat metabolizes the majority of the atropine in the liver

Doses:

Cattle = .04 to .06 mg/kg b.w. S/C or I/M

Dog /Cat = .04 mg I/M or S/C

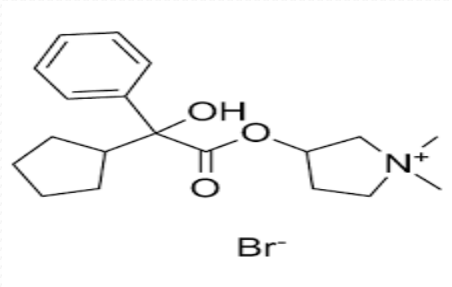
Horse = .02 mg to .05 mg I/M or S/C

Sheep/Goat = .7mg/kg B.W. I/M or S/C

Contraindication **Overdose**

Glycopyrrolate

It is a synthetic quaternary ammonium anticholinergic drug. It is five times more potent than atropine sulphate



Dog = .01 to .02 mg/kg B.W. I/M or S/C

Horse = .0015 to .003 mg/kg B.W I/M or I/C

Tranquilizers

- Primary uses is to relieve anxiety
- As pre-anesthetic sedative
- To restrain the animals during examination or large animals during transport
- To prevent animals from licking would or chewing bandages and splints
- Used as an antiemetic

Tranquilizers commonly used in veterinary practice are

(i)Phenothiazine derivative

(ii) Benzoidiazepines

(iii) Butyrophenone.

Phenothiazine derivatives include:

(i) Chlorpromazine hydrochloride
(ii) Triflupromazine hydrochloride
(iii) Promethazine hydrochloride
(iv) Propiopromazine hydrochloride
(v) Acetyl promazine
(vi) Promazine

Acetyl Promazine is most commonly used phenothiazine derivatives in small animals, horse and wild animals.

All the phenothiazine tranquilizers have same physiological effects on a patient, varying only in potency and duration of action. Duration of action is 3-6 hours, but it may be much longer in patient with hepatic dysfunction