



SNS COLLEGE OF ALLIED HEALTH SCIENCE
SNS Kalvi Nagar, Coimbatore - 35
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DEPARTMENT OF OPERATION THEATRE AND ANAESTHESIA TECHNOLOGY - II YEAR

COURSE NAME: PHARMACOLOGY

TOPIC - Antisialogogues

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Antisialogogues



Antisialogogues

Definition

Antisialogogues are pharmacological agents that reduce or inhibit salivary secretions. They are commonly used in anesthesia to decrease saliva and respiratory secretions, facilitating airway management and reducing the risk of aspiration during surgical procedures.



Antisialogogues



Mechanism of Action

Antisialogogues primarily act as anticholinergic agents, blocking the action of acetylcholine at muscarinic receptors in the parasympathetic nervous system.

Key Antisialogogues

Atropine

Glycopyrrolate



Antisialogogues



Pharmacodynamics

Reduction of Secretions: Inhibits salivary and bronchial secretions by blocking muscarinic receptors in salivary glands and respiratory mucosa.

Vagolytic Effect: Increases heart rate by inhibiting vagal stimulation of the heart (useful in preventing bradycardia during anesthesia).

Broncho dilation: Relaxes bronchial smooth muscles, improving airway patency.

Central Nervous System Effects: Atropine may cause CNS stimulation at higher doses, while glycopyrrolate does not cross the blood-brain barrier, minimizing CNS effects.



Antisialagogues



Pharmacokinetics

Drug	Onset of Action	Duration of Action	Metabolism	Excretion	Distribution
Atropine	5–10 min (IV)	4–6 hours	Hepatic	Urine	crosses the blood-brain barrier
Glycopyrrolat	2–5 min (IV)	3–7 hours	Minimal hepatic	Urine	does not crosses the blood-brain barrier



Antisialogogues



Adverse Effects (Common)

- Dry mouth
- Blurred vision (due to cycloplegia)
- Tachycardia
- Constipation
- Urinary retention

Atropine: CNS effects like confusion, agitation, or delirium (especially in elderly patients).

- Hyperthermia (due to reduced sweating).

Glycopyrrolate: Less likely to cause CNS effects but may still cause tachycardia or urinary retention.



Antisialogogues



Contraindications

- Glaucoma (narrow-angle)
- Myasthenia gravis
- Obstructive uropathy or gastrointestinal obstruction



Antisialogogues



Drug Interactions

Anticholinergic Synergism: Concurrent use with other anticholinergics (e.g., antihistamines, tricyclic antidepressants) may enhance side effects like dry mouth or constipation.

Antiarrhythmics: Atropine may counteract the effects of beta-blockers used to control heart rate.

Opioids: May potentiate constipation when used with opioids like morphine.

Ketamine: Atropine may increase the risk of tachycardia when combined with ketamine.



Antisialogogues



Role of Anesthesia Technologist

- Monitor for proper drug dilution and dosage (e.g., atropine 0.01–0.02 mg/kg IV/IM; glycopyrrolate 0.004–0.01 mg/kg IV/IM).
- Observe for adverse effects like tachycardia or dry mouth during surgery.
- Ensure availability of emergency drugs and equipment to manage complications like bradycardia or anaphylaxis.



Antisialogogues



Parameter	Atropine	Glycopyrrolate
Class	Anticholinergic (natural alkaloid)	Synthetic anticholinergic
CNS Effects	Crosses blood-brain barrier	Does not cross blood-brain barrier
Onset of Action	5–10 min	2–5 min
Duration of Action	4–6 hours	3–7 hours
Primary Use	Reduce secretions, prevent bradycardia	Reduce secretions, less vagolytic effect
Adverse Effects	Tachycardia, dry mouth, CNS effects	Tachycardia, dry mouth, urinary retention
Contraindications	Glaucoma, myasthenia gravis	Glaucoma, obstructive uropathy



THANK YOU



From Question Papers

Pharmacological actions, contraindications, and uses of Atropine (April 2024, Q.P. Code: 801136, Write notes on, 5 marks).

Toxicity of Atropine (August 2015, Q.P. Code: 801111, Write notes on, 5 marks).

Pre-anesthetic rationale of Atropine (March 2021, Q.P. Code: 801111, Short answers, 3 marks).

Glycopyrrolate (April 2024, Q.P. Code: 801136, Short answers, 3 marks).

Write a note on Antisialagogues (August 2016, Q.P. Code: 801111, Write notes on, 5 marks).