



# **SNS COLLEGE OF ALLIED HEALTH SCIENCES**

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**DEPARTMENT : OPERATION THEATRE AND ANAESTHESIA  
TECHNOLOGY**

**COURSE NAME : PHARMACOLOGY**

**UNIT : ANTISIALAGOGUES**

**TOPICS : ATROPINE, GLYCOPHYRROLATE**



# ANTISIALAGOGUES



- Antisialagogues are medications that reduce salivation or the production of saliva. Two common drugs used as antisialagogues are Atropine and Glycopyrrolate.
- These medications are often employed in various medical settings to manage conditions where reduced salivation is beneficial, such as during surgery or certain medical procedures.



## ATROPINE - MECHANISM OF ACTION



- Atropine is a muscarinic receptor antagonist, meaning it blocks the action of acetylcholine at muscarinic receptors. Acetylcholine is a neurotransmitter that stimulates salivary glands.
- By blocking its action, atropine reduces the stimulation of these glands, leading to decreased salivation.



# PHARMACODYNAMICS



- Salivary Glands: Atropine reduces salivation.
- Heart: Atropine increases heart rate (positive chronotropy) and can also cause mild bronchodilation.
- Pupils: Atropine induces mydriasis (pupil dilation).
- Smooth Muscle: Atropine can cause relaxation of smooth muscle in the gastrointestinal tract and other organs.



# PHARMACOKINETICS



- Absorption: Well-absorbed after oral, intramuscular, or intravenous administration.
- Distribution: Distributes widely in tissues, including the central nervous system.
- Metabolism: Metabolized in the liver.
- Excretion: Excreted in the urine.



## INDICATIONS



- **Pre-anesthetic Medication:** Used to reduce salivary and respiratory secretions before surgery.
- **Organophosphate Poisoning:** Administered as an antidote to counteract the effects of certain insecticides and nerve agents.



## CONTRAINDICATIONS



- Glaucoma: Contraindicated in narrow-angle glaucoma.
- Tachycardia: Caution is needed in patients with tachycardia or other cardiac conditions.



## SIDE EFFECTS



- Dry Mouth: Atropine commonly causes dry mouth.
- Blurred Vision: Atropine induces mydriasis, leading to blurred vision.
- Increased Heart Rate: Atropine may cause tachycardia.





## TECHNICIAN ROLE



- Vital Signs: Regular monitoring of heart rate, blood pressure, and respiratory rate.
- Symptoms of Overdose: Monitoring for signs of overdose, such as confusion and hallucinations.



# GLYCOPHYRROLATE MECHANISM OF ACTION



- Glycopyrrolate is also a muscarinic receptor antagonist, similar to atropine.
- It inhibits acetylcholine's action at muscarinic receptors, leading to decreased salivation.



# PHARMACODYNAMICS



- Salivary Glands: Glycopyrrolate reduces salivation.
- Heart: It can increase heart rate.
- Pupils: Glycopyrrolate induces mydriasis.
- Smooth Muscle: Glycopyrrolate can cause relaxation of smooth muscle.



# PHARMACOKINETICS



- Absorption: Well-absorbed after oral administration.
- Distribution: Binds extensively to plasma proteins.
- Metabolism: Metabolized in the liver.
- Excretion: Excreted in the urine.



## INDICATIONS



- Pre-anesthetic Medication: Used to reduce salivary and respiratory secretions before surgery.
- Sialorrhea (Excessive Drooling): Used to manage conditions with excessive drooling.



## CONTRAINDICATIONS



- Glaucoma: Caution is needed in individuals with narrow-angle glaucoma.
- Gastrointestinal Obstruction: Contraindicated in patients with obstructive diseases of the gastrointestinal tract.



## SIDE EFFECTS



- Dry Mouth: Glycopyrrolate can cause dry mouth.
- Blurred Vision: It may cause blurred vision due to mydriasis.
- Constipation: Glycopyrrolate can lead to constipation.



## TECHNICIAN ROLE



- **Vital Signs:** Regular monitoring of heart rate, blood pressure, and respiratory rate.
- **Gastrointestinal Symptoms:** Monitoring for symptoms of constipation or other gastrointestinal issues.





# ASSESSMENT



- What is the role of Atropine ?
- What is the role of Glycopyrrolate ?