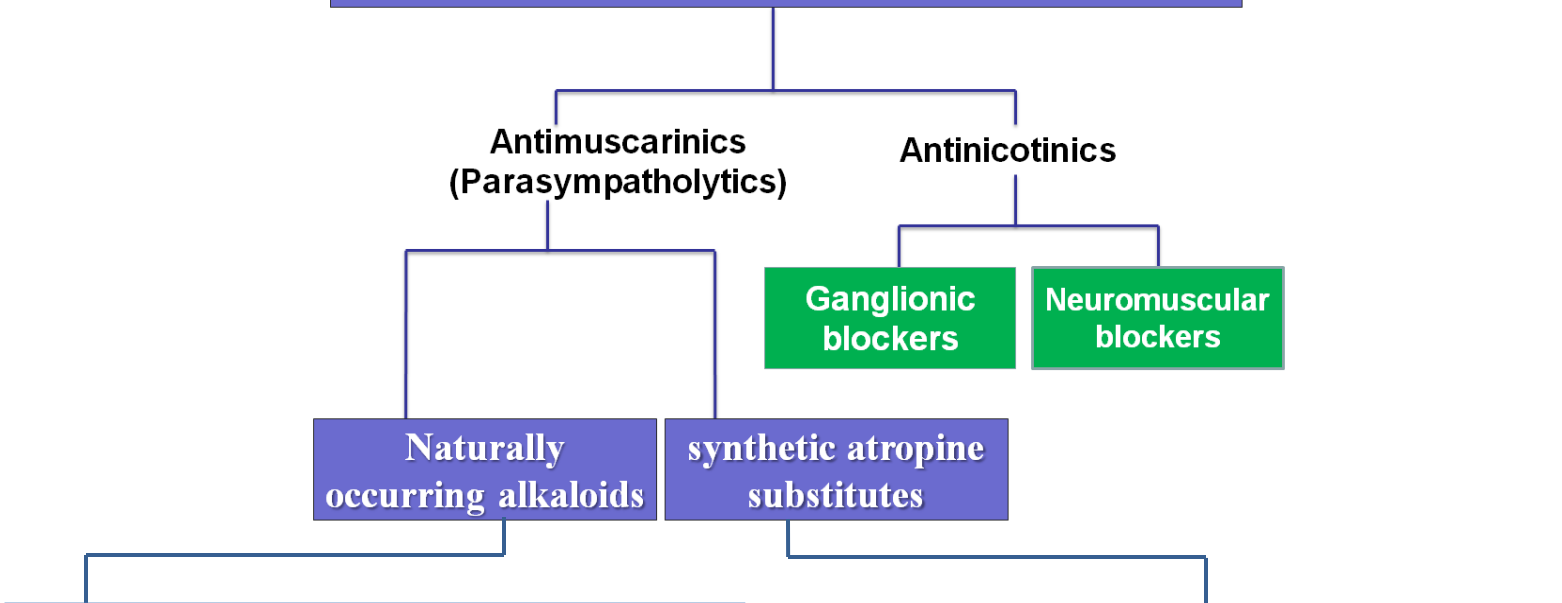


# Anticholinergic drugs



drug	Organ	Uses
<b>Atropine (Hyoscyamine)</b>	CNS	Pre-anesthetic medication, Antispasmodic, cardiac arrest
<b>Scopolamine (Hyoscine)</b>	CNS	Pre-anesthetic medication, Motion sickness, antispasmodic

Esters of tropic acid and tertiary amines

Lipid soluble

Good oral absorption

Good distribution

Cross blood brain barrier (have CNS actions)

Notes that for any lipid soluble it has these 3 characteristic

Drugs	organ	Uses
<b>Benztropine</b>	CNS	Parkinson's disease
<b>Homatropine &amp; Tropicamide</b>	Eye	Fundus examination of eye
<b>Ipratropium</b>	Resp. sys	asthma, COPD, inhalation
<b>Pirenzepine</b>	Stomach	Peptic ulcer
<b>Glycopyrrolate &amp; Buscopan</b>	GIT	Antispasmodics in hypermotility
<b>Oxybutynin &amp; Imipramine</b>	GUT	Urinary urgency, Urinary incontinence

## Pharmacological effects of atropine:

CNS		CVS		Eye	
1- Sedation 2- <b>Antiemetic</b> effect (block vomiting center) 3- <b>antiparkinsonian</b> effect (block basal ganglia).  <b>Toxic dose:</b> Hyperthermia – excitement hallucination.		1- <b>Tachycardia</b> (increase in heart rate) 2- ↑ AV conduction ( + ve dromotropic effect) <b>Therapeutic dose:</b> ↓ <b>Vasodilatation</b> induced by cholinomimetics.  <b>Toxic dose:</b> Cutaneous vasodilatation → <b>(atropine flush)</b> .		1- Passive <b>mydriasis</b> Due to paralysis of circular muscle 2- <b>Cycloplegia</b> (loss of near accommodation) due to paralysis of ciliary muscle. 3- Loss of light reflex. 4- increase I.O.P thus, <b>worsen glaucoma</b> . 5- ↓ Lacrimal secretion → <b>sandy eye</b>	
Respiratory system	Secretions	GIT	Urinary tract		
1- Relaxation of bronchial muscles ( <b>bronchodilator</b> )  2- ↓ <b>Bronchial secretion</b> → ↑ viscosity	↓ Salivary secretion → ( <b>Dry mouth</b> ). ↓ Sweating → Dry skin → Fever in infants and children. ↓ Bronchial secretion → ↑ <b>Viscosity</b> ↓ Lacrimal secretion → <b>Sandy eye</b> ↓ gastric Acid (used for Peptic Ulcer )	1- Relaxation of smooth muscles. 2- ↓ GIT motility → <b>Antispasmodic</b> effect. 3- ↑ Sphincter contractions 4- <b>Constipation</b>	1- Relaxation of smooth muscles of urinary bladder. 2- Sphincter contraction. 3- <b>Urinary retention</b> .		

Adverse effect of antimuscarinics	organ	Contraindication
Blurred vision – Mydriasis	Eye	Glaucoma
Tachycardia - Atropine flush	CVS	Tachycardia
Urinary retention	GUT	Prostate hypertrophy in old patients
Constipation, paralytic ileus	GIT	Constipation, paralytic ileus, intestinal obstruction
Dryness of mouth , Sandy eye Increased body temperature.	Secretion	-----
Sedation, hallucination, excitation (Toxic dose).	CNS	Children - <i>in case of atropine</i> -

Treatment of atropine-like toxicity:	Antidote
<ul style="list-style-type: none"> <li>Gastric lavage.</li> <li>Anticonvulsant.</li> <li>Cooling blanket.</li> </ul>	Physostigmine ( iv slowly ).

**In comparison to atropine , Scopolamine (Hyoscine) :**

- Has shorter duration of action
- Has more CNS depressant action
- Antiemetics action in motion sickness
- Can produce amnesia. ( blocking short-term memory )
- Less CVS effect
- Produces sedation , but in higher doses it can produce excitation

**Remember**

- **Antimuscarinics** are parasympatholytics ( opposite of muscarinic effects )
- **Antimuscarinics** are reversible competitive blockade of muscarinic receptor.
- **Atropine** is a prototype , it has high affinity for muscarinic receptors .
- **Atropine** acts both centrally and peripherally, and blocks all muscarinic receptors.
- **Atropine** used as an antidote for cholinergic agonist ( agonist treats antagonist and vice versa )
- **Tertiary amines** are lipid soluble & have CNS effect .
- **Quaternary amines** are water soluble , thus has no CNS effect.
- **Ipratropium** open up airways and reduce mucous production in patients suffering from asthma

Any drug has wider effect usually not clinically used

بالتوفيق جميعًا..  
وهذا العمل مجرد ملخص وليس مرجع :"  
همسة.. دعوة بظهر الغيب تكفي عن جزيل الشكر