Atropine

Atropine is a muscarinic antagonist medication, used in ophthalmic applications, organophosphate overdose, and in cases of bradycardia. Side effects of atropine administration include skin flushing, increased temperature, dry mouth, cycloplegia and disorientation in the elderly.



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Indications

Blocks DUMBBeLSS
Blocking Dumbbells
Atropine is used as an antidote in cholinergic poisoning, or organophosphate poisoning, acting by blocking acetylcholine action at muscarinic receptors. Atropine reverses DUMBBeLSS symptoms, which are diarrhea, urination, miosis, bradycardia, bronchoconstriction, lacrimation, salivation, and sweating. It should be noted that atropine does not block the CNS excitation (the E in DUMBBELSS), and this is mediated by nicotinic receptors, while atropine blocks muscarinic receptors.

Bradycardia
Snail-heart
Atropine blocks the action of the vagus nerve, which acts to decrease heart rate in the parasympathetic system of the heart. Thus, it works to increase heart rate in cases of bradycardia. Atropine is also warranted for use in heart block.

Side Effects

Skin Flushing
Flashlight
This drug has the side effect of skin flushing, which occurs because atropine blocks M-receptors on sweat glands. Resultingly, anhydrosis occurs, leading to hyperthermia. This causes reflex vasodilation in skin (flushing) in order to cool off. The mnemonic "red as a beet" is sometimes used to describe this effect.

Increased Temperature
Up-arrow Thermometer
As a result of decreased sweating with atropine administration, patients describe increased body temperature. This occurs because atropine blocks M-receptors in sweat glands. The mnemonic "hot as a hare" is often used to describe this side effect.

Dry Mouth
Cotton Mouth
As this drug decreases parasympathetic secretions, patients can complain of dry mouth. This can be remembered with the mnemonic "dry as a bone."

Cycloplegia
Eye-paralyzed
Cycloplegia, or paralysis of the accomodation reflex, is a possible side effect in patients administered atropine. This takes place because the drug inhibits ciliary contraction, and adequate refraction cannot take place. This can be remembered by the mnemonic "blind as a bat."

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Disorientation

Disoriented-map

As this drug crosses the blood-brain barrier, it can potentially cause disorientation or hallucinations in patients--particularly elderly ones. This can be recalled with the mnemonic "mad as a hatter."

Mydriasis

Meter-eyes

Atropine is used as a mydriatic, as it dilates the pupils and is utilized in ophtalmic procedures. This occurs because the medication blocks acetylcholine's actions on circular pupillary sphincter contraction. Atropine is also used to induce cycloplegia in patients with malignant glaucoma, though it is contraindicated in narrow-angle glaucoma.

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