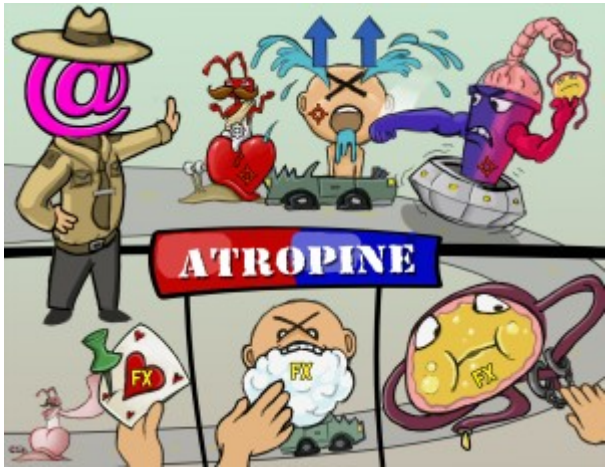
Atropine

Atropine is a muscarinic antagonist that works by creating a competitive blockade of the muscarinic receptors. At a high dose, atropine also blocks nicotinic receptors. Atropine reverses the effects of muscarinic activation and mainly influences the smooth muscles, exocrine glands, eye, and heart.



PLAY PICMONIC

Mechanism of Action

Muscarinic Antagonist
Mustache Ant-toga
Atropine does not have its own direct effect, but rather functions by blocking the effect of muscarinic activation. Activated muscarinic receptors generally are responsible for decreasing the heart rate, increasing secretion production, and contracting the smooth muscles. Atropine has the opposite effect of activated muscarinic receptors.

Indications

Bradycardia
Snail-heart
Atropine can be effective in treating bradycardia and is often used in the event of a cardiac arrest as it results in an increase in heart rate. Cardiac muscarinic receptors, when active, are responsible for decreasing the heart rate. By blocking this action, atropine increases the heart rate.

Increased Exocrine Secretions
Up-arrow XO Gland Secretions
Atropine is indicated for patients with increased exocrine secretions, as it reduces secretion production of the sweat glands, salivary glands, bronchial glands, and acid-secreting cells of the stomach by blocking muscarinic effects.

Smooth Muscle Spasms
Smoothie Muscle Spaceship
Atropine relaxes the bronchi, decreases motility of the gastrointestinal tract, and decreases the tone of the urinary bladder. This occurs as a result of inactivation of the muscarinic receptors.

Side Effects

Tachycardia
Tac-heart-card
Atropine blocks that activation of muscarinic receptors which reduces the influence of the parasympathetic nervous system on the heart; therefore, the heart rate can continue to increase without the nervous system being able to regulate the heart rate. This can result in tachycardia.

Dry Mouth
Cotton-mouth
Atropine blocks the ability of the salivary glands to produce secretions which can result in dry mouth and difficulty swallowing. This can be a desirable side effect for preoperative patients in reducing oral secretions.

Urinary Retention
Urine Retained in bladder
By blocking muscarinic actions, atropine decreases the tone of the urinary bladder resulting in hesitancy in voiding or urinary retention.