GENERIC NAME: ATROPINE SULFATE
BRAND NAME: Atropine
CLASS: parasympatholytic, antimuscarinic, anticholinergic, parasympathetic antagonist, parasympathetic blocker

Mechanism of Action:

Pharmacological: Competitive antagonist of acetylcholine at muscarinic receptor sites (smooth muscle and glands, blocking parasympathetic response and allowing sympathetic response to take over).

Clinical:
CV: Increased heart rate (positive chronotropic effect); increased conduction velocity; increased force of contraction (slight).
Resp: Decreased mucous production; increased bronchial smooth muscle relaxation (bronchodilation).
GI: Decreased GI secretion and motility.
GU: Decreased urinary bladder tone.
Misc: Mydriasis (pupillary dilation); decreased sweat production.

Indications and Field Use:

Symptomatic bradycardia (sinus, junctional, and AV blocks causing significant hypotension, ventricular ectopy, chest pain, altered level of consciousness, etc.), monitored patient only.
Asystole (after epinephrine), monitored patient only.
PEA with actual or relative bradycardia (after epinephrine), monitored patient only.
Acetylcholinesterase inhibitor poisoning (organophosphate, cholinergic poisoning). Bronchospasm, refractory (second or third line), in conjunction with albuterol or isoetherine.

Contraindications:

Glaucoma, acute narrow angle (relative contraindication for patient with symptomatic bradycardia)

Adverse Reactions:

Major: Tachydysrhythmias; ventricular irritability; exacerbation/initiation of angina; acute narrow angle glaucoma; agitation to delirium.
Minor: Dry mouth/mucous membranes; urinary retention; decreased sweating/increased body temperature.

NOTES ON ADMINISTRATION
**Incompatibilities/Drug Interactions:**

Sodium bicarbonate (relative)

**Adult Dosage:**

**Symptomatic Bradycardia:** 0.5-1.0 mg rapid IV push or via ET every 3-5 minutes to a total dose of 3 mg if symptoms profound (0.03-0.04 mg/kg).

**Asystole or PEA with bradycardia:** 1.0 mg rapid IV push or via ET every 3-5 minutes to a total dose of 3 mg.

**Cholinergic or organophosphate poisoning:** 2.0-5.0 mg IV, may repeat in 5 minutes. Max dose is unlimited.

**Bronchospasm:** 1.0 mg SVN prepared by using 2.5 ml of 0.4 mg/ml solution out of 8 mg/20 ml vial (may add 0.5 ml NS to make 3 ml inhalation treatment, 2.5 ml is adequate) administered with a mouth piece, O₂ mask, or in-line with a ventilatory device; may repeat in 30 minutes or according to medical control preference.

**Pediatric Dosage:**

**Symptomatic Bradycardia only:** 0.02 mg/kg (minimum of 0.1 mg) IV push (after epinephrine). May repeat only one time.

Maximum single doses: Child 0.5 mg; Adolescent 1 mg.

**Bronchospasm:** 0.5 mg SVN prepared by using 1.25 ml of 0.4 mg/ml solution out of 8 mg/20 ml vial, may add 1.25-1.75 ml NS to make 2.5-3 ml inhalation treatment (2.5 ml is adequate). Administer with a mouth piece, O₂ mask or in-line with a ventilatory device. May repeat in 30 minutes or according to medical control preference.

**Routes of Administration:**

IV, ET, SVN

**Onset of Action:**

1 minute

**Peak Effects:**

2-5 minutes

**Duration of Action:**

2 hours

**Dosage Forms/Packaging:**

1 mg/10 ml Prefilled syringes and 8 mg/20 ml multi-dose vial
Arizona Drug Box Supply Range:

PARAMEDIC and QUALIFIED IEMT:  3 - 4 (1 mg/10 ml) prefilled syringes,  
                                     1 - 2 (8 mg/20 ml, 0.4 mg/ml) multidose vial  

INTERMEDIATE:  1 - 2 (8 mg/20 ml, 0.4 mg/ml) multidose vial

Special Notes:

> Administering too small doses or administering too slowly may result in paradoxical bardycardia.
> Signs and symptoms of cholinergic/organophosphate poisoning: excess salivation, lacrimation, urination, defecation (SLUD), bardycardia; coma.
> Signs and symptoms of poisoning/overdose of atropine-like drugs: dry mouth; thirst; hot, dry, flushed skin; fever; palpitations, restlessness; excitement; delirium.
> Hint: patient that describes their glaucoma as painful, probably has acute narrow angle glaucoma.