

#### SIGNS AND SYMPTOMS OF CHOLINERGIC TOXIDROME

- 1. Miosis/small pin-point pupils
- 2. Excessive sweating
- 3. Respiratory distress: poor air entry, bronchorrhea, bronchospasm/wheeze
- 4. Bradycardia (normal or fast heart rates are also common)
- 5. Hypotension



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Manitoba Poison Contro Centre Anti-Poison du Manitoba

#### NO

If none of these signs present, there is no need for atropine. Continue to monitor patient for these signs.

If signs of cholinergic toxidrome develop, inititate treatment with atropine.

## UNCERTAIN

If uncertain about the type of ingestion, give 1mg (adult) (0.01 mg/kg – pediatric) atropine IV/IM/SO/ETT test dose.

If heart rate increases more than 20-25 beats/min and skin gets flushed, significant cholinergic toxicity unlikely and no further atropine needed.

Continue to monitor

### YES

Indications for atropine following an organophosphate or carbamate pesticide exposure include any of the above signs of a cholinergic toxidrome.

#### ATROPINE DOSING

Start with 2 mg (adult)
(0.02 mg/kg – pediatric)
atropine IV/IM/SQ/ETT bolus.
Then double the dose of atropine
every 3-5 min until improvement in all
4 target end-points of atropinization:

- 1. chest clear on auscultation, no wheeze
- 2. heart rate > 80 beats/min
- 3. systolic blood pressure > 80 mmHg
- 4. dry axillae

Patients should have 2 IVs and receive 500-1000 ml IV fluid bolus. (10-20 mL/kg - pediatric)



Once atropinized, start an infusion of atropine at 10-20% of total atropine dose required to atropinize the patient per hour (maximum 3 mg/hour). Infusion rate may need to be titrated up or down depending on signs of over- or under-atropinization.

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Once atropine treatment has been initiated, pralidoxime treatment can be considered for organophosphate exposures (not for carbamate exposures).



## PRALIDOXIME DOSING

Pralidoxime 30 mg/kg IV over 20 min. Followed by 8 mg/kg/hr continuous IV infusion until clinical recovery.

Titrate according to respiratory effort and muscle strength. May need to continue infusion for days.

# **COMPLICATIONS OF ATROPINE TREATMENT**

Agitation, confusion, delerium, hallucinations
Urinary retention
Bowel ileus
Hyperthermia
Excess tachycardia, may lead to myocardial infarctions

Excess tachycardia, may lead to myocardial infarctions in patients with pre-existing heart disease

\*\*Tachycardia alone is **not** a contraindication for atropine if other signs of cholinergic toxicity are present. Tachycardia due to hypoxia will improve with atropine once chest is clear and oxygenation improves.

#### COMPLICATIONS OF PRALIDOXIME

Tachycardia, laryngospasm, muscle rigidity, vomiting and hypertension have been attributed to rapid administration of pralidoxime.