

Hazardous Materials Medical Response Team Procedures

Organophosphate Poisoning

FORMS: Liquids, solids (dusts, wettable powders) and aerosols.

ROUTES OF EXPOSURE: Skin and eye, inhalation, ingestion, skin absorption

SIGNS AND SYMPTOMS:

- Cardiovascular:** Bradycardia, ventricular arrhythmias, A-V blocks and hypotension
- Respiratory:** Respiratory failure, prominent wheezing, acute pulmonary edema, bronchial secretions, dyspnea and tightness of the chest.
- Gastrointestinal:** Nausea/vomiting/diarrhea, abdominal cramps, excessive salivation, urination and defecation.
- Eye:** Lacrimation, blurred vision and constricted pupils.
- Skin:** Pale, cyanotic skin with excessive diaphoresis.
- Other:** SLUDGE (salivation, lacrimation, urination, defecation, G.I. pain and emesis) syndrome.

Procedure:

Pre-Radio Contact

1. Follow General HazMat Treatment Protocol.
2. If ingested, administer Activated Charcoal 30-100 gm as a suspension in 1 cup of water.
3. Oral tracheal or nasal tracheal intubation is indicated in the unconscious or respiratory arrest patient.
4. Start IV NS TKO. Use fluid resuscitation cautiously to treat hypotension if signs of hypotension are present. **WATCH FOR SIGNS OF PULMONARY EDEMA!**

In general, cardiac dysrhythmias and seizures can be corrected with atropine therapy. **Follow dysrhythmia and seizure protocols.**

Lasix is not effective in treating pulmonary edema!

DO NOT TREAT IF ASYMPTOMATIC!

Organophosphate Poisoning

In general, Atropine therapy is indicated if one or more of the following signs are present:

- Altered mental status or seizures
- Nausea/vomiting/diarrhea or abdominal cramps
- Pupillary constriction
- Salivation
- Diaphoresis
- Respiratory distress, wheezing, pulmonary edema
- Significant arrhythmia (particularly bradycardia)
- Other medical conditions may cause these symptoms and should be ruled out first.

Pre-Radio Contact

Orders to Expect

In the symptomatic patient with significant exposure administer treatment in the following order:

1. Atropine:

Adult test dose: 2-4 mg IV push or IM

Child test dose: 0.05 mg/kg IV push or IM

Initial dosing should be given as soon as possible.

An initial IM dose may speed time to treatment.

Pralidoxime (2-PAM)

Adult: 1 to 2 gm slow IV (200 mg/min) over 15 minutes.

Child: 20 to 40 mg/kg (4ml/kg/min)

If there is no improvement the treatment can be repeated within one hour if symptomatic.

If no effect (which helps confirm the diagnosis) the dose may be doubled q10 minutes until SLUDGE symptoms are relieved. The goal of Atropine therapy is to clear bronchial spasms. **There is no max. dose in Organophosphate Poisoning.**

Pupillary dilation is an early response and can't be used to guide therapy. Tachycardia is not a contraindication to Atropine therapy and may actually lessen as the hypoxia resolves with drying up of the secretions and clearing of the bronchospasm. The patient must be observed carefully for ventricular arrhythmias secondary to hypoxia, especially when administering atropine. In massive organophosphate overdoses huge amounts of atropine may be needed.

Other:

Seizures are generally relieved after atropinization. If not, follow Seizure Protocol.

SPECIAL CONSIDERATIONS:

In cases of skin absorption atropine may not reverse respiratory paralysis. Do not give aminophylline, theophylline, morphine, furosemide or succinylcholine.