PESTICIDES

CARBAMATES AND ORGANOPHOSPHATES

NOTES ON PESTICIDES – CARBAMATES AND ORGANOPHOSPHATES

BACKGROUND

Carbamate and organophosphate pesticides are widely used in home gardening and commercial agriculture. A variety of products are available, with widely varying potencies. They inhibit the enzyme cholinesterase, resulting in buildup of excessive acetylcholine. Unlike organophosphates, the inhibition of cholinesterase carbamates is transient and self-limited. Symptoms and signs of exposure to organophosphates or carbamates include hypersalivation, sweating, bronchospasm, abdominal cramps, diarrhea, muscle weakness, small pupils, twitching and seizures. Death is due to respiratory muscle paralysis. Nonspecific symptoms such as upper airway irritation, dizziness, nausea and headache after inhalation exposure may be due to the solvent vehicle (e.g., xylene) and not due to cholinesterase inhibition. Potential toxicity of the solvent vehicle should always be considered (see protocol for petroleum distillates).

INITIAL DECONTAMINATION PROR TO PREHOSPITAL MANAGEMENT:

Decontamination should include flushing the victim with water spray, clothing should be removed and double-bagged and skin flushed for 1 – 2 minutes. Injured eyes should be irrigated.

POTENTIAL FOR SECONDARY CONTAMINATION:

Many carbamates and organophosphates are well-absorbed through intact skin, and thus may pose a serious hazard to rescuers or health care personnel. Simple water washing may be insufficient to remove oily compounds. Wash only contaminated areas with soap and/or shampoo, if possible. Decontaminate victim thoroughly before handling them without protective clothing.

PREHOSPITAL MANAGEMENT AFTER INITIAL DECONTAMINATION:

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FORMS: Liquid (usually in solution with xylene or other organic solvent), solid (wettable powder). May be inhaled in an aerosol form or as a component of smoke.

- Evaluate Airway *
- Oxygen – High Flow/NRM
- Irrigate injured eyes
- Cardiac Monitor **
- Transport

BASE:

Consider: For symptomatic victims:
Atropine 0.5 – 1.0 mg I.V.;
REPEAT 2 – 4 mg. q 3 – 10 min. as needed for severe poisoning.

For Seizures: See Protocol

Ingestion: DO NOT induce vomiting.

* Intubation should be considered if the victim develops severe respiratory distress.

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