



## How Much Atropine is Enough??

Case: A 67 year old with a history of depression was found unresponsive by EMS with an empty bottle of an insecticide at her side. The product contained a concentrated solution of an organophosphate compound. In the ED, her atropine requirements were 130 mg IV (initial atropine boluses up to 10 mg, and 12 X 10 mg subsequent boluses) followed by an infusion at 25-50 mg/hr in the ICU. Pralidoxime, a direct antidote and atropine sparing drug, was administered as soon as possible after her ED presentation in therapeutic and supratherapeutic doses. Her total atropine requirement was 5000 mg!!!! She had a complicated ICU course and suffered a cardiac arrest and died on the 5th hospital day. The acetylcholinesterase level, a reliable marker of organophosphorus poisoning, was approximately 5% of the predicted value and confirmed her ingestion. This extremely low level of acetylcholinesterase enzyme is considered life-threatening.

Atropine sulfate is second-line therapy in patients poisoned with organophosphorus compounds, after intubation and ventilation. Atropine competitively antagonizes acetylcholine (Ach) at muscarinic receptors and hence reverses organophosphate-induced miosis, bronchospasm, secretions, vomiting, diarrhea, diaphoresis and urinary incontinence. Intravenous doses of atropine in excess of those traditionally used in ACLS are recommended and dosing begins at 1-5 mg IV in adults. Subsequent doses of 5-10 mg IV every 2-3 minutes until "drying" of the pulmonary secretions and normalization of the blood gases are recommended. These large doses are necessary to reverse the life-threatening muscarinic effects of the organophosphates.

***DID YOU KNOW THAT..... carbon monoxide poisoning is frequently misdiagnosed as the flu?*** Be on the lookout for patients with symptoms that mimic the flu or food poisoning. Obtain carboxyhemoglobin levels, especially when more than one person in the family or workplace has similar symptoms. Remember to ask about possible sources of carbon monoxide.

**For poisoning emergencies, call 1-800-222-1222.**



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