

## Management Guidelines of Organophosphorus Poisoning in Emergency Department

Resuscitation, decontamination, early use of specific antidote, close observation and good supportive care form the basis of management of Organophosphorus (OP) pesticide poisoning.

**Decontamination:** Decontamination of the body by washing with soap and water is to be thorough and complete. A repeat stomach wash in every case is recommended to remove residual OP. Remove all clothing, hair accessories and place them in appropriate waste bags. Gastric lavages is indicated once patient is stabilized, calm enough to give consent and in unconscious intubated patient, which is recommended to be repeated after 2-3 hrs. Though it has been recommended only to be carried out within 1-2 hours of ingestion of OP elsewhere it has been started even after 12 hrs of ingestion and repeated thrice at an interval of 4 hrs.

**Antidote:** Atropine is the only life saving antidote and is to be started along with decontamination. The dose of atropine recommended to be low (1-2 mg) so as to cater for milder cases and then rapidly escalated (doubled each time) to achieve atropinization quite fast. An atropine infusion titrated to achieve atropinization is an alternate protocol.

**Atropine toxicity:** Confusion, agitation, hyperthermia, ileus, tachycardia etc. would suggest over atropinization which would necessitate discontinuation of the atropine infusion, followed by frequent observation. Hyperthermia is a serious complication in hot wards which needs prevention. Clearance of chest of secretions and maintenance of blood pressure has been given more importance in the target point than size of pupil and heart rate.

### Target end points for atropine therapy:

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| Normal chest auscultation, no wheezing, |
| No longer pin point pupil,              |
| Axillar dryness,                        |
| Heart rate > 80 beats/min,              |
| Systolic blood pressure >80 mm Hg       |

**Glycopyrolate:** Is recommended when there is copious secretion as an adjunct to atropine or when features of atropine toxicity like delirium etc. are confused with CNS effects of poison or when atropine is not available. Diphenhydramine can be an alternate centrally acting anticholinergic agent if atropine is not available.

**Magnesium Therapy:** Magnesium therapy in addition to atropine and oximes has been found to benefit. The mechanism appears to be inhibition of AChE and OP antagonism.

**Cholinesterase Reactivators:** WHO guidelines recommended giving a 30 mg/kg loading dose of Pralidoxime over 10-20 min followed by a continuous infusion of 8-10 mg/kg/hr until clinical recovery or seven days have elapsed whichever is later.

**Furosemide:** It is recommended if pulmonary edema persists, even after full atropinization.

**Active charcoal:** Though there is no evidence that either single dose or multiple dose regimens of active charcoal will result in benefit yet a dose of charcoal (50 gm) can be left in the stomach.

**Sedation:** Sedate the agitated patient with Diazepam 10 mg IV slowly which can be repeated up to 30-40 mg/24 hrs.

### Patients with the following criteria may need ventilator support:

History of intake of large dose, copious secretions, disturbed level of consciousness, signs of hypoventilation or respiratory obstruction by secretions.

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## Treatment Protocol for OP Poisoned Patient

