

## IS – 22

### Resuscitation and supportive care in severe OP poisoning

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Organophosphate (OP) poisoning is common in developing countries. In severe poisoning, patients may present with respiratory failure or hemodynamic instability. Continuous monitoring enables early recognition of organ dysfunction and appropriate treatment.

The ABC in the critically ill applies to patients presenting with severe poisoning due to OP compounds. In severe poisoning, the airway could be compromised by several factors that include reduced consciousness due to the toxin per se or due to co-ingestions such as alcohol, extrinsic airway obstruction due to excessive secretions, vomitus or foreign body and intrinsic obstruction due to laryngeal edema or laryngeal muscle dysfunction. Type I and Type II respiratory failure may be seen in OP poisoning. Type I failure may be due to V/Q mismatch, shunting or dead space while Type II failure is contributed by central hypoventilation due to neurodepressive effects of the poison, neuromuscular weakness and increased work of breathing with resultant fatigue due to increase in airway resistance and reduction in lung compliance.

In patients with compromised airway or inadequate breathing, control of the airway may be needed. In borderline patients, support of oxygenation, atropinisation and measures to open airway may prevent intubation. Atropine helps by drying respiratory secretions, clearing the airway and improving consciousness and neuromuscular function. If intubation is required, rapid sequence induction is preferred with the use of neuromuscular blocking drugs such as rocuronium rather than succinylcholine. Anesthetist standby may be considered if difficult airway is anticipated.

Cardiovascular manifestations include bradycardia and hypotension. This is managed with fluid resuscitation, rapid atropinisation, preferably within 30-min and judicious use of vasoactive agents if the patient has persistent hypotension.

Supportive measures include the management of complications related to the poison and those related to hospitalization. The former includes intermediate syndrome, organophosphate coma, extrapyramidal manifestations etc. Complications related to hospitalization that include hospital acquired infections and ventilatory related events are managed as per standard protocols.

#### Learning objectives

1. Recognition of a critically ill poisoned patient
2. Factors contributing to compromised airway and breathing in OP poisoning
3. Management of airway, breathing and circulation in OP poisoning
4. Supportive therapy of complications related to the poison and complications related to hospitalization