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## STANDARD OPERATING PROCEDURE

### **Diagnosis and Management of Organophosphate (OP) Poisoning**

Special Region (1)  
Union of Myanmar

**Version:** 1.0

**Effective Date:** 31 March 2026

**Review Date:** 31 March 2028

**Applies to:** ER, Medical Wards, ICU

# 1. Purpose

To provide a rapid, standardized, and life-saving approach for the diagnosis and management of organophosphate poisoning, ensuring:

- Early recognition of cholinergic crisis
- Prompt antidote administration
- Prevention of respiratory failure
- Safe decontamination of patients and staff

# 2. Definition

Organophosphate poisoning is a life-threatening toxic exposure caused by inhibition of acetylcholinesterase, leading to accumulation of acetylcholine at synapses.

# 3. Pathophysiology

Organophosphate inhibits acetylcholinesterase → increased acetylcholine → overstimulation of muscarinic, nicotinic, and CNS receptors.

# 4. Clinical Features

**Muscarinic:** diarrhea, urination, miosis, bronchorrhea, bronchospasm, emesis, lacrimation, salivation

**Nicotinic:** fasciculations, weakness, paralysis

**CNS:** confusion, seizures, coma

## Mnemonic: SLUDGE

- **S** – Salivation
- **L** – Lacrimation
- **U** – Urination
- **D** – Defecation
- **G** – GI upset

- E – Emesis

## 5. Severity

- **Mild:** miosis, mild secretions
- **Moderate:** bronchospasm, weakness
- **Severe:** respiratory failure, coma

## 6. Initial Management

ABCDE approach, decontamination, staff protection.

## 7. Antidote

Antidotes are atropine and pralidoxime.

### Atropinization Protocol

#### SUSPECTED OP POISONING

↓

#### ASSESS CLINICAL FEATURES

SLUDGE (Salivation, Lacrimation, Urination, Diarrhea, GI upset, Emesis)

+ Bronchorrhea, Bronchospasm, Bradycardia

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#### CONFIRM CHOLINERGIC CRISIS (CLINICAL DIAGNOSIS)

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#### START ATROPINIZATION IMMEDIATELY

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**INITIAL ATROPINE: 1–3 mg IV bolus**

↓

**REASSESS EVERY 5 MINUTES**

↓

**IF SECRETIONS PERSIST → DOUBLE DOSE EACH 5 MIN**

(1 → 2 → 4 → 8 → 16 mg...)

↓

**TARGET ENDPOINT = "CLEAR CHEST"**

No bronchorrhea

No bronchospasm

Adequate oxygenation

HR > 80/min

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**Start maintenance infusion of atropine**

## **Tapering Atropine (Maintenance Infusion)**

If there is atropinization or atropine toxicity features develop, reduce infusion by **10–20%** every **4–6 hours**.

## **Features of Atropine Toxicity**

**Mnemonic: Hot, Dry, Fast, Mad**

- Hot → Fever
- Dry → Dry mouth, dry skin
- Fast → Tachycardia
- Mad → Delirium / agitation

**Additional Clinical Signs:**

- Absent bowel sounds (ileus)
- Urinary retention
- Flushing
- Mydriasis (not reliable alone)

## 8. Airway

Intubate if GCS  $\leq 8$ , respiratory failure, severe secretions.

## 9. Investigations

Clinical diagnosis primary, labs supportive only.

## 10. Complications

- Respiratory failure
- Intermediate syndrome (24–96 hours after exposure)
- Delayed neuropathy (1 week after exposure)

### **Intermediate Syndrome (occurs in 10–40% organophosphate poisoning)**

- Proximal muscles weakness
- Neck muscle weakness
- Respiratory muscles weakness
- Cranial involvement
- Reflexes changes (reduced or absent deep tendon reflexes)

### **Management of Intermediate Syndrome**

- Respiratory support (MOST IMPORTANT)
- Early intubation if needed
- Continue supportive care
- Atropine has no role at this point

## 11. Monitoring

- Continuous respiratory and vital monitoring

## 12. Discharge

Stable, no atropine needs, normal mental status.

## 13. References

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