

Isopropanol produces a potent ethanol-like intoxication, with hypotension, coma and respiratory depression in severe cases. Management is supportive.

Isopropanol is a common ingredient of hand sanitisers, which typically contain concentrations of 60- 70%. Isopropanol is also a common solvent in household and industrial products.

Toxicity / Risk Assessment

- Ingestions > 0.5 mL/kg of 100% isopropanol can cause toxicity
- Children are particularly susceptible
- Rapidly absorbed by ingestion, inhalation or dermal exposure
- Peak concentration is within 30-60 minutes of ingestion
- Completely absorbed following ingestion within 2 hours
- Metabolized to acetone by ADH; eliminated via kidneys & lung
- Toxicity is primarily caused by parent molecule (isopropanol)
- Unlike other toxic alcohols, metabolites cause minimal toxicity

Metabolic effects: ketosis & increased osmolar gap (acetone & isopropanol). A mild acidosis can occur, mainly due to lactate.

Clinical features:

- **GI:** burning throat sensation, nausea, vomiting, gastritis
- **CNS:** initial features similar to ethanol intoxication with severe poisoning leading to coma and respiratory depression
- **CVS:** tachycardia, hypotension from vasodilatation and myocardial depression and shock in severe cases

Management

Mainstay of management is supportive with attention to ABCs

Airway & Breathing:

- Intubate if airway is not protected, or if respiratory depression is present in obtunded patients

Circulation:

- Hypotension usually responds to 10-20 mL / kg IV crystalloid
- In severe cases vasopressors +/- inotropes may be required

Decontamination:

- Due to rapid absorption & lack of adsorption, activated charcoal is **NOT** indicated

Antidotal therapy

- Unlike other toxic alcohols ADH blockade with ethanol or fomepizole is **NOT** indicated
- Toxicity is predominantly due to the parent isopropanol & inhibition of its metabolism may result in prolonged CNS depression, hypotension, and respiratory compromise

Enhanced Elimination: Haemodialysis (HD)

- Although HD increases the elimination of isopropanol and acetone, it is rarely indicated, and should only be considered in severe poisonings non-responsive to response to aggressive supportive care

Disposition

- Asymptomatic patients at 2 hours post ingestion are medically clear for mental health assessment
- Patients with mild CNS depression are managed supportively, and discharged when well