

**Inorganic mercury salts are highly toxic. Ingestion may lead to airway / upper GI corrosive injury, GI haemorrhage, circulatory collapse and multi-organ failure.**

## Toxicity / Risk Assessment

Inorganic Hg primarily exists as monovalent or divalent salts, which include mercuric oxide + mercuric chloride

Historically, inorganic Hg salts were used in various products including topical antiseptics, skin-lightening creams, diuretics, and tattoo dyes. Mercuric oxide remains a common component of car batteries

Mercuric chloride is highly toxic. An ingested dose of > 30 mg/kg is potentially fatal

Repeated dermal exposure to creams containing Hg may produce chronic Hg toxicity

### Clinical features:

#### **Acute toxicity following ingestion**

- Airway swelling / upper GI corrosive injury
- Abdominal pain, haematemesis, bloody diarrhoea
- Rhabdomyolysis, renal injury, multi-organ failure

#### **Chronic toxicity (repeated dermal / oral exposure)**

- Neurological - tremor, neuropathy, deafness, emotional lability, insomnia, cognitive decline, tunnel vision
- Other – renal injury, hypersalivation, acrodynia (pink discoloration of digits), desquamating rash

## Management

Intubation to secure the airway may be required following ingestions producing corrosive injury

Acute exposures may produce significant fluid loss and haemorrhage requiring aggressive resuscitation

**Decontamination:** Activated charcoal binds poorly and should not be administered in cases where corrosive injury is suspected

- Removal of inorganic Hg salts via endoscopy should be considered in large ingestions where radio-opaque material is visible on AXR. This also allows assessment of corrosive injury.

**Investigations:** (see separate “*Mercury Investigations*” guideline)

- Whole blood Hg concentration obtained within hours of suspected exposure may confirm exposure, but may overestimate body burden (raised blood concentration prior to redistribution)
- Serial 24-hour urine analysis may inform the response to chelation therapy

### **Chelation therapy: (please discuss with a clinical toxicologist)**

- Chelation therapy should be considered following large acute exposures, or in cases with clinical features of Hg poisoning and a whole blood Hg concentration suggestive of a large body burden
- DMPS is preferred in acute symptomatic exposures and should be commenced within 24 hours
- DMSA may be utilised in chronic poisoning and as a step-down treatment in cases of acute poisoning

**Enhanced elimination:** Haemodialysis does not increase elimination of Hg to a clinically significant degree

- Renal replacement therapy may be indicated in patients with Hg induced renal failure

### **Disposition:**

- The majority of patients with chronic inorganic Hg poisoning can be managed in an outpatient setting
- Patients with severe toxicity should be admitted to a ward or critical care environment