

Poisoning causes GI effects & dose-related systemic toxicity. Management consists of aggressive decontamination, supportive care +/- desferrioxamine.

Toxicity / Risk Assessment

Predicted by amount of elemental Fe ingested

- <60 mg/kg: asymptomatic or minor GI symptoms
- 60-120 mg/kg: systemic toxicity anticipated
- >120 mg/kg: potentially lethal

Strongest Fe preparation has 105 mg elemental Fe per tablet

Clinical features:

Direct corrosive GI effects: early onset, usually within

2-6 hours:

- Vomiting (prominent early), diarrhea, abdominal pain
- Haematemesis, PR bleeding
- Potential for significant fluid loss

(Initial GI effects may resolve before systemic effects occur)

Systemic features: onset from 6-24 hours onwards

- Disruption of cellular metabolism → High anion gap metabolic acidosis (lactate), shock, acute renal failure
- Acute hepatic failure: jaundice, coma, coagulopathy

Chronic sequelae: GI strictures

Management

Replacement of fluid loss and maintenance of fluid hydration is crucial

Decontamination: (NO role for activated charcoal)

AXR can confirm ingestion & monitor decontamination (-ve AXR doesn't exclude potential toxicity)

Consider **Whole Bowel Irrigation (WBI)** in ingestions > 60 mg/kg with opacities confirmed on AXR – discuss with a Clinical Toxicologist

Endoscopic removal may be considered in potentially fatal cases (>120 mg/kg)

Chelation

Serum Fe concentration at 4-6 hour post ingestion can guide use of the antidote **desferrioxamine**.

Total Iron Binding Capacity has no role in the assessment of the Fe-poisoned patient.

Indications for chelation with desferrioxamine: (discuss with a Clinical Toxicologist)

- Significant systemic toxicity (GI haemorrhage, shock, lactic acidosis, altered mental status)
- Peak serum Fe concentration >90 umol/L (500 ug/dL) even if asymptomatic

(peak serum Fe occurs 4-6 hours post ingestion of immediate release preparation and 8 hours post ingestion of sustained release preparation)

Disposition

- Discharge pending mental health assessment (deliberate self-harm) if no significant vomiting or other symptoms have occurred by 6 hours + peak Fe concentration < 60 umol/L or falling
- All other patients can be discharged when: asymptomatic, normal acid-base status, falling Fe conc.
- HDU/ICU required for established systemic toxicity and those requiring desferrioxamine