

Large ingestions of concentrated preparations of glyphosate can cause significant toxicity with cardiovascular collapse and multi-organ failure

Toxicity / Risk Assessment

Toxicity is dose-related (dependent on concentration and volume ingested)

Concentrated solutions (>10%): toxicity more likely (e.g., 360 g/L, 490 g/L, 570 g/L solutions)

'Ready to use' solutions (typically <10%): volume of <50 ml likely to cause mild GI symptoms only

Clinical features:

*Following ingestion of a **concentrated** solution:*

- **<100 ml:** mild to moderate GI symptoms
- **100-300 ml:** corrosive injury, airway burn, metabolic acidosis, AKI, hyperkalaemia (may occur in absence of renal failure due to potassium salts within formulation), hepatotoxicity, hypotension
- **>300 ml:** shock, multi-organ failure, coma, death

Poor prognostic markers: tachycardia, renal failure, abnormal CXR, metabolic acidosis

Dermal exposure is not associated with acute toxicity, but may cause skin irritation and contact dermatitis

Management

Care is primarily supportive

Evaluate the airway and consider early intubation following large exposures

Large ingestions may produce early upper airway injury and swelling necessitating early intubation

Decontamination: Activated charcoal is NOT indicated

Hypotension

Fluid: Initially load with 10-20 mL/kg IV crystalloid

Hypotension unresponsive to intravenous fluid requires inotrope or vasopressor support, guided by echocardiogram

Haemodialysis

Haemodialysis may be indicated for patients with renal injury or severe acid/base derangements

Haemodialysis is not indicated solely for the purpose of enhancing toxin elimination

Disposition

- Ingestion of >50ml or deliberate self-poisonings of any concentrated solution OR symptomatic at 6 hours post ingestion: admit for 24 hours. Discharge if clinically well with normal renal function.
- Ingestion <50 ml of any concentration who are asymptomatic 6 hours post ingestion: discharge pending mental health assessment