

Overdose may cause CNS depression and anticholinergic effects. If tolerated, multi-dose activated charcoal (MDAC) is effective at enhancing CBZ elimination.

Toxicity / Risk Assessment

Symptom onset including coma can be delayed by 8-12 hours

One 400 mg tablet may cause severe toxicity in a child

Predicted toxicity by dose or serum concentration:

Symptoms severity	Dose ingested (mg/kg)	Concentration in umol/L (mg/L)
Mild/none	<20	Up to 85 (20)
Moderate	20-50	85-170 (20-40)
Severe	>50	>170 (>40)

Clinical features:

- **Anticholinergic:** ↑HR, dry mouth and skin, urinary retention, mydriasis, reduced GI motility, ileus
- **CNS:** nystagmus, ataxia, dysarthria, drowsiness, coma with intermittent agitation, seizures
- **CVS:** ↓BP, ↑QRS (Na channel blockade), ventricular arrhythmias
- **GI:** vomiting

Management

Management is primarily supportive; intubation may be required in cases with CNS depression

Decontamination:

Activated Charcoal 50 g (Paediatric: 1g/kg) should be given for ingestion >30 mg/kg in awake patients

Patients with severe toxicity should receive activated charcoal 50 g via NGT post intubation

Hypotension – treat initially with 20 mL/kg IV crystalloid

Wide QRS and Na channel blockade (variable response to 8.4% NaHCO₃)

- Bolus dose – trial 1 mL/kg 8.4% NaHCO₃ solution as slow (2 minutes) IV push
- Do NOT continue to give repeated boluses unless there is a clear response

Seizures – Benzodiazepines: Diazepam 5mg IV every 5 minutes as necessary

Enhanced elimination

- **Multi-dose activated charcoal (MDAC)** (25 g 2-hourly via NGT) increases CBZ elimination, but should not be administered to patients with an ileus (bowel sounds must be present)
- **Extracorporeal elimination:** high flux haemodialysis and charcoal haemoperfusion increase CBZ elimination (haemofiltration / CVVHDF is less effective)

Indications: Prolonged coma, refractory seizures, rising CBZ concentrations or cardiovascular instability

Disposition

- Discharge pending mental health assessment if asymptomatic at 8 hours post ingestion
- Patients with mild toxicity can be managed in the short stay unit or ward environment
- Advise patients not to drive for at least 72 hours post exposure