

**Chloroquine and hydroxychloroquine can cause rapid onset of life-threatening cardiovascular and neurological toxicity when ingested in overdose.**

## Toxicity / Risk Assessment

Severe toxicity is expected following ingestion of:

- > 5 g of chloroquine

- > 10 g of hydroxychloroquine

Significant toxicity can occur at lower doses

Onset of toxicity occurs within 1-3 hours of ingestion

Onset of toxicity may be precipitous, including cardiac arrest

### Clinical features:

**CVS** – hypotension, QRS & QT prolongation, ST depression,

U waves (hypo K<sup>+</sup>), AV block, ventricular arrhythmias

**Hypokalaemia** – occurs early following overdose. Degree of hypokalaemia is related to severity of toxicity.

Hypokalaemia occurs secondary to intracellular K<sup>+</sup> shift.

**Neurological** – CNS depression, seizures and coma can occur pre-cardiac arrest. Visual disturbances include photophobia, diplopia + blindness following acute OD (visual dysfunction self-resolves as toxicity resolves)

Myopathies and neuropathies have been reported

Deaths usually occur within 12 hours, but delayed deaths up to 48 hours has been reported after large ingestions

## Management *(DISCUSS ALL CASES EARLY WITH CLINICAL TOXICOLOGIST)*

Resus area: clinical instability can occur rapidly. Consider intubation at the earliest sign of deterioration

**Decontamination:** Offer 50 g (1g/kg in children) of activated charcoal up to 2 hours post ingestion if the patient is GCS 15 AND is in an environment where critical care can be provided in case of sudden deterioration. Administer 50 g (1g/kg in children) via a naso-gastric tube in all intubated patients.

### Hypokalaemia

- Aim to maintain K<sup>+</sup> conc. 3.0-3.5 mmol/L (do not overcorrect due to risk of rebound hyper K<sup>+</sup>)

### Hypotension

- IV fluid 20 mL/kg initially. Adrenaline is the inotrope of choice

- Patients with severe toxicity may benefit from high dose diazepam (2 mg /kg IV over 30 minutes followed by 1-2 mg/kg/day for 2-4 days) combined with adrenaline (**discuss with clinical toxicologist**)

### Ventricular arrhythmias

- QT prolongation - correct electrolyte abnormalities (see QT prolongation guideline)

- QRS prolongation – 8.4% Na bicarbonate may be considered, but can exacerbate hypo K<sup>+</sup>

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

**Haemodialysis:** there is no role for extracorporeal elimination techniques as chloroquine has a large VD

**Other:** Consider ECMO in patients with refractory shock

### **Disposition:**

- Patients with evidence of significant clinical toxicity should be admitted to a critical care area

- Clinically well, asymptomatic 6 hours post ingestion + normal ECG = clear for mental health assessment