Phenytoin

Absorption is slow and erratic, with delayed peak concentrations up to 1-2days. High risk of falls with ataxia.

Toxicity / Risk Assessment

>20 mg/kg: mild GI upset, CNS effects, esp. cerebellar

>100 mg/kg: coma and seizures

Rapid IV injection can cause bradycardia, hypotension, arrhythmia. These are due to propylene glycol diluent

Phenytoin exhibits zero order elimination kinetics:

- accumulation and clinical toxicity is possible following dose changes and introduction of new medications

Clinical features:

Phenytoin concentrations correlate with toxicity:

- >20mg/L (80 µmol/L): nystagmus, GI symptoms
- 30-40mg/L (120-160 µmol/L): ataxia, N+V, bradycardia hyperreflexia, dysarthria, drowsiness, ophthalmoplegia
- > 50mg/L (>200 µmol/L): cerebellar toxicity, coma, seizures,

Hypernatremia

Ataxia poses a significant falls risk

Management

Mainstay is supportive care. Serial phenytoin concentrations every 6 hours

Decontamination:

Activated charcoal to an awake, cooperative patient within 4 hours after acute ingestion

Multi-dose activated charcoal may enhance elimination of phenytoin and should be considered in patients with severe clinical features (please discuss with clinical toxicologist)

Antidotes: Nil available.

Indications for Haemodialysis:

Prolonged coma expected or ataxia in setting of severe toxicity

Refractory seizures

Should NOT be solely based on suspected dose ingested or serum phenytoin concentration

Disposition

- Patients medically clear when symptoms resolving and can walk safely
- Patients with only ataxia/nystagmus can be observed on a ward
- Children with reported ingestion < 20 mg/kg and asymptomatic can be observed at home