

Short acting IV acetylcholinesterase inhibitor useful in Rx of anticholinergic delirium. Avoid in patients with seizures or evidence of cardiac toxicity.

**Physostigmine** is the only IV cholinesterase inhibitor that crosses the blood-brain barrier

## Indications

- Patients with anticholinergic delirium, where urinary retention has been excluded, and behavioural disturbance is not controlled with benzodiazepines
- In cases where anticholinergic poisoning is suspected, administration of physostigmine with resolution of delirium may negate the need for further investigations (e.g. including CT brain / lumbar puncture)

## Contraindications

- Seizures occurring as part of presentation
- Heart rate < 60 bpm
- QRS > 120 ms
- Any AV block
- Bronchospasm / history of brittle asthma

## Presentation

- 1 vial of 5 mL = 2mg

## Dose and Administration (discuss use with a clinical toxicologist)

- Administration requires cardiac monitoring and access to full resuscitative care
- 0.5 mg over 10 minutes (child: 0.02 mg/kg up to 0.5 mg)
  - Dilute 2 mg ampoule in 100 mL of normal saline
  - To deliver 0.5 mg over 10 minutes, infuse at 150 mL/ hour for 10 minutes
- Repeat until desired clinical effect is achieved
- Dose can be repeated up to maximum of 2 mg within any 60-minute period
- Further dosing is usually required after 1-2 hours as physostigmine is short-acting

## Therapeutic Endpoint:

- desired clinical effect is achieved i.e. control of behavioural disturbance

## Adverse effects: (usually occur if doses are given too frequently or rapidly)

- Cholinergic toxicity: peripheral muscarinic effects (hypersecretion, **bronchospasm**, **bradycardia**, nausea, vomiting), peripheral nicotinic effects (neuromuscular weakness) and CNS effects (**seizures**)