Pralidoxime (2-PAM)

Acetylcholinesterase (AChE) reactivator used in organophosphorus (OP) poisoning. PLEASE DISCUSS ALL OP EXPOSURES WITH A CLINICAL TOXICOLOGIST.

Indications

- Organophosphate poisoning:
  Following initial resuscitation AND adequate atropinisation (see OP guideline)
- Warfare agents blocking acetylcholinesterase (AChE) activity ("nerve agents")
- 2-PAM is not indicated in the management of carbamate toxicity

Note: Antidote Variability:

- The effectiveness of 2-PAM varies with the type of OP + whether irreversible OP-AChE has occurred (ageing)
- Dimethyl OPs (e.g., fenthion, dimethoate, malathion)
  - *2-PAM is most effective within 3-4 hours exposure*
- Diethyl OPs (e.g., chlorpyrifos, diazinon, parathion)
  - *2-PAM may be effective up to 48 hours post exposure*

Contraindications

- Previous hypersensitivity to pralidoxime

Pregnancy

- Safety not defined
- 2-PAM should not be with-held if clinically indicated

Presentation - 500 mg in 20 mL solution

Dose and Administration (NOT all patients exposed to an OP will benefit from administration of 2-PAM. Please discuss all OP exposures with a clinical toxicologist)

Administer in resuscitation room with full monitoring

Adult loading dose: 1 gram over 15 minutes

- Add 1 gram of pralidoxime solution (2 x 20 mL vials) to a 100 mL bag of 0.9% sodium chloride.
- Infuse over 15 minutes

Adult infusion dose: 250 mg per hour

- Remove 120 mL from 500 mL bag of 0.9% sodium chloride
- Add 3 grams of pralidoxime (6 x 20 mL vials)
- Infuse at 42 mL/hour for 12 hours (500 mL over 12 hours)

Paediatric: 15 mg/kg (up to 1 grams) over 15 minutes, followed by infusion 10mg/kg/hour (max: 250mg/hour). Optimal duration of therapy is unknown. Should be reviewed after 12 hours.

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

- Nausea, vomiting, dizziness and blurred vision possible but usually mild
- Rapid administration may produce hypertension, laryngospasm and muscle rigidity
- Transient elevations in liver function tests

Therapeutic Endpoint:

- Dependent on type of OP, and clinical response to treatment. Generally continued until symptoms have resolved with no signs of clinical toxicity at least 12-24 hours post last atropine dose.