Salicylate (Aspirin, Methyl salicylate, Choline salicylate)

Initial management includes fluid replacement +oral activated charcoal. Urinary alkalinisation is indicated in patients with significant clinical symptoms.

Toxicity / Risk Assessment

- Toxicity is dose-dependent. Delayed absorption may occur with enteric-coated formulation or gastric bezoar formation

- 1 mg of methyl salicylate is equivalent to 1.5 mg aspirin (1 mL Oil of Wintergreen contains approx. 1400mg aspirin)

- 1 mg of choline salicylate is equivalent to 0.75 mg aspirin

DOSE OF ASPIRIN

150-300 mg/kg: tinnitus, nausea, vomiting, resp. alkalosis

300-500 mg/kg: additional metabolic acidosis with mixed acid-base disturbance, multi-organ failure

>500 mg/kg: potentially lethal

Clinical features:

- **GI**: nausea, vomiting, haemorrhagic gastritis
- **Metabolic**: primary respiratory alkalosis followed by metabolic acidosis, ↓glucose, electrolyte disturbance
- **CNS**: tinnitus, restlessness, seizures, cerebral oedema
- **Other**: hyperthermia, APO, renal failure

Chronic salicylate toxicity *is uncommon – occurs in ingestions > 100 mg/kg/day, usually in the elderly or when repeatedly applying topical salicylate creams*

Management

Fluid resuscitation + urinary alkalinisation are important initial interventions for symptomatic patients

Decontamination: Activated charcoal 50 g (1 g / kg in children) should be given for any acute ingestion >150 mg/kg once vomiting is controlled or airway secured. Repeat dose, 25g 2 hourly, until decreasing serum salicylate concentration.

Salicylate concentration *correlates poorly with toxicity BUT serial concentrations (4 hourly) will guide ongoing treatment. Repeat serum salicylate concentration 4 hourly to document falling concentration.*

Airway management - Avoid intubation if possible. If required, ensure adequate fluid resuscitation and pre-treat with 1-2 mL/kg 8.4% $NaHCO_3$ IV bolus. Hyperventilate post intubation to pre-intubation RR.

Fluid (crystalloid) - replace losses and maintain urine output 1-2 mL/kg/hr

Urinary Alkalinisation - See separate 'Urinary Alkalinisation' guideline

Indication: Symptomatic patient with any acid-base disturbance

Haemodialysis Indications: (*discuss with Clinical Toxicologist*)

- Severe toxicity - Any of: CNS disturbance, renal failure, severe acidemia, pulmonary oedema OR
- Rising serum salicylate concentration despite decontamination and urinary alkalinisation OR
- Salicylate concentration >7.2 mmol/L (1000 mg/L) OR > 6.5 mmol/L (900 mg/L) with renal failure

Disposition

- HDU/ICU with expected severe toxicity or multi-organ involvement
- Continue treatment until clinical features + acid-base disturbances resolve + ↓salicylate concentration
- Symptomatic patients, ingestion >150 mg/kg or deliberate self-harm: observation for at least 6 hours