

Sodium bicarbonate is most commonly used in poisoning as part of the management of cardiac sodium channel blockade

Indications

Cardiac sodium channel blockade

Serum alkalinisation is effective in treating TCA and local anaesthetic toxicity (including cocaine).

Other cardiac sodium channel blocking agents include:

Flecainide, propranolol, antipsychotics, lamotrigine, chloroquine, antihistamines. Response to serum alkalinisation is **variable and may be ineffective** for sodium channel blockade caused by these drugs.

Urinary Alkalinisation (discuss with clinical toxicologist)

Enhanced elimination of salicylates, chlorophenoxy Herbicides

Metabolic Acidosis (discuss with clinical toxicologist)

Bridging therapy pending haemodialysis for metformin, toxic alcohols

SODIUM BICARBONATE IS NOT THE TREATMENT FOR QT INTERVAL PROLONGATION

Contraindications (No absolute contraindications)

Caution is advised in pre-existing fluid and electrolyte abnormalities or alkalaemia

Presentation

100 mmol 8.4% sodium bicarbonate in 100 mL vial (1 mmol = 1 mL)

Dose and Administration

Sodium bicarbonate 8.4% should NOT be mixed with crystalloid & should be administered in separate IV line

Serum Alkalinisation (for cardiac sodium channel blockade)

- Sodium bicarbonate 8.4% 1-2 mL/kg (1-2 mmol/kg) IV bolus every 5 minutes aiming for serum pH 7.45-7.55.
- The addition of hyperventilation by mechanical ventilation is required to maintain desired serum pH.
- **Cease administration of sodium bicarbonate if serum pH > 7.55 or [Na⁺] > 155 mmol/L.**
- ***Do NOT exceed a total of 5 ml/kg of 8.4% sodium bicarbonate (5 mmol/kg) to avoid fluid, electrolyte and acid/base adverse effects***
- ***Do NOT use an IV infusion for serum alkalinisation as the initial change of pH is buffered by the respiratory and renal systems. This only alkalinizes the urine.***

Urinary Alkalinisation

(Please refer to separate *Urinary Alkalinisation* guideline)

Metabolic Acidosis

- Sodium bicarbonate 8.4% 1-2 mL/kg (1-2 mmol/kg) IV over 10-15 minutes repeated as necessary aiming for a serum pH > 7.3

Adverse effects:

- Hypokalaemia, hypernatraemia, metabolic alkalosis, fluid overload.
- Extravasation causes local tissue damage.