

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<sup>+</sup>] > 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.