



June 19, 2017

# National Sodium Bicarbonate Shortage

## Toxicological Implications

Due to a possible line contamination in the manufacturing process, Pfizer Canada has recalled two lots of Sodium Bicarbonate Injection (Lots 72119EV & 72120EV, expiry date 12/20/18). It is unknown when this shortage will be resolved. As Sodium Bicarbonate ( $\text{NaHCO}_3$ ) is used in the treatment of the poisoned patient, the Ontario Poison Centre makes the following recommendations when  $\text{NaHCO}_3$  is unavailable.

### 1. Sodium Channel Blockade Overdoses (including TCAs, Type 1A & 1C anti-dysrhythmics, diphenhydramine etc.)

As Sodium-loading is the more important issue, (for overcoming the Sodium Channel blockade), Sodium Acetate 1 mEq/kg over 15-20 minutes may be substituted for a QRS > 100 msec.

In the event that Sodium Acetate is unavailable or not effective, 3% Sodium Chloride (hypertonic saline) could be tried.

Note: 100 mL 3% Sodium Chloride would contain ~ 51.3 mEq Sodium

Usual recommendations for Sodium-loading for prolonged QRS, seizures or dysrhythmias in Sodium Channel overdose patients are 1-2 mEq (1-2mmol)/kg.

The suggestion, then, would be to give 100-200 mL of 3% Sodium Chloride as each bolus (by rapid infusion) to shorten the QRS etc.

There is NO evidence that a  $\text{NaHCO}_3$  infusion is effective as prophylaxis for QRS widening, seizures or dysrhythmias in these overdoses. Bolus therapy only should be used as above.

### 2. Urine alkalinisation for ASA toxicity

Correct volume status to euvolemia with 0.9% Sodium Chloride.

Correct potassium and magnesium as necessary.

Infuse 150 mEq Sodium Acetate diluted to 1L in D5W at 2X maintenance. (ORAL bicarbonate therapy is not rapid enough for alkalinisation in the setting of overdoses.)

Check urine pH q1h.

Note: Failure to alkalinize and/or lack of availability of Sodium Acetate may be an indication for earlier dialysis for moderate/severe ASA toxicity. Please consult the Ontario Poison Centre early to determine appropriate treatment.

### 3. Correction of Acidosis in severe methanol/ethylene glycol toxicity

Bolus Sodium Acetate as described for Sodium Channel Blocking agents is indicated for pH < 7.0. Note that the infusion time of a Sodium Acetate bolus is 15-20 min.

Consider early dialysis.

The Ontario and Manitoba Poison Centres endorse attempts by Hospital Pharmacies and Associations to procure  $\text{NaHCO}_3$  through Special Access from other jurisdictions and/or of sterile compounding.

#### Reference:

Neavyn M, Boyer E, Bird S, Babu KM. Sodium Acetate as a Replacement for Sodium Bicarbonate in Medical Toxicology: a Review. J Med Toxicol (2013) 9:250-254.