Guidelines for Use of Sodium Bicarbonate

Recommended Neonatal Dose, Route, and Interval

- **Dosage based on base deficit:**
  
  $\text{HCO}_3$ needed (mEq) = $0.3 \times \text{Wt (kg)} \times \text{base deficit (mEq/L)}$
  
  Administer half of calculated dose, and then assess need for remainder

- **Usual dosage:** 1-2mEq/kg of the 4.2% concentration over at least 30 minutes

- **Recommended dilution:** 0.25 mEq/ml

- **Maximum concentration:** 0.5 mEq/ml

Indications

- To correct severe and persistent metabolic acidosis.
- To correct bicarbonate deficit due to renal or GI losses.
- Sodium bicarbonate is not a recommended therapy in neonatal resuscitation guidelines

Possible Adverse Reactions

- Local tissue necrosis if extravasated.
- Intravascular hemolysis due to rapid increase in osmolarity.
- Hypercarbia, hypocalcemia, and hypernatremia

CONTRAINDICATIONS/PRECAUTIONS:

- Hypersensitivity to sodium bicarbonate injection
- Alkalosis, hypocalcemia, hypernatremia, or excessive chloride losses
- Inadequate ventilation during CPR
- Rapid injection with undiluted bicarbonate may lead to intracranial hemorrhage.
- Use with caution in patients with CHF or renal insufficiency.
- Give slow IV infusion at a rate of 0.5-1 mEq/kg/hr (1-2ml/kg/hr)

Nursing Implications

- Flush line well when administering any other drug into the same IV site, particularly with calcium or phosphate preparations.
- Monitor blood gases, serum calcium and electrolytes
- Give oral dose with the nearest feed.

Solution Compatibility: D5W, D10W, and normal saline; Multiple incompatibilities – check for compatibility prior to administering anything with sodium bicarbonate.

References:
1. Neofax 2010
2. Reviewed/Revised: 02/2011 by