Information on Intravenous Administration	Name of Medication SODIUM CHLORIDE 3%
Other Names: Hypertonic saline 3%, NaCl 3%	**Therapeutic Classification:** Electrolyte solution

I.V. ADMINISTRATION	IV PUSH	INTERMITTENT INFUSION	CONTINUOUS INFUSION
AUTHORIZATION:			All patient care units
PREREQUISITES:			
Cardiac Monitoring			
BP Monitoring			
Oxygen Monitoring			
Ventilator Support			
Central Line			
Infusion Pump			Yes
Independent Double Check			Yes
Comments			Max. rate See below Return unused bags to Pharmacy

AVAILABILITY: Sodium chloride 3% - 250 mL, premixed bag

****NOTE: SODIUM CHLORIDE 3% is THREE times more concentrated than Normal Saline.**
Each mL contains 30 mg sodium chloride equivalent to sodium 0.5 mmol and chloride 0.5 mmol

PREPARATION:

a) **Reconstitution**
   - not applicable

b) **Dilution**
   - not applicable

STABILITY:

- Premixed bags are stable at room temperature (until manufacturer's expiry date).
- Compatible with commonly used IV solutions
- Do not mix with other medications

USUAL DOSAGE:

- No consensus exists as to the optimal rate of correction of severe hyponatremia.

Individual rate of correction based on repeated assessment of clinical and laboratory data.

- Excessive sodium loading should be avoided in patients with severe renal impairment.
- the following formula can be used to calculate sodium deficit:
- sodium deficit (mmol) = (desired - current serum sodium in mmol/L) x (total body water in L) (0.6 L/kg for male & 0.5 L/kg for female) x patient's weight in kg
- using NaCl 3% for replacement, administer one-third to one-half the calculated sodium deficit over the first 8-12 hours at rate of 25-50 mL/hour, not to exceed a maximum rate of 100 mL/hour. **There should be no attempt to normalize serum sodium levels in the first 24 hours.**
- monitor serum sodium and electrolytes, input and output, and vital signs closely to assess need for additional sodium chloride 3% (every 1-4 hours initially)
- continue treatment until a serum sodium of 120-125 mmol/L or neurologic symptoms improve; remainder of deficit can be replaced over several days
- once serum sodium greater than 120-125 mmol/L, use NaCl 0.9% (normal saline) to correct the additional deficit over 3-5 days
- a loop diuretic (e.g. furosemide) may be added to prevent sodium overload and enhance free-water excretion

ADMINISTRATION:

a) Direct Injection:
- Not applicable

b) Minibag
- Not applicable

c) Continuous Infusion:
- Maximum rate of 100 mL/hr.
- Infuse into a large vein to reduce venous irritation and avoid extravasations.
- **Must be given with IV infusion pump**

ADVERSE EFFECTS:

- Thrombophlebitis. Local pain and venous irritation with rapid infusion.
- Electrolyte, volume and acid-base disturbances
- Due to sodium excess – edema, pulmonary edema, hypertension, hyperchloremic acidosis, deep respiration, disorientation, nausea, weakness and potassium loss.
- A too rapid correction of sodium deficit can result in osmotic demyelination syndrome with resultant severe brain injury and potentially death

NURSING IMPLICATIONS:

- Must be given with infusion pump.
- Central infusion is preferred because 3% sodium chloride is very hypertonic.
- If peripheral infusion is necessary:
  - a large vein with good blood flow is preferred
  - take care to avoid extravasation
  - monitor IV site for redness, swelling or tenderness, and ask patient to report any pain
  - if signs or symptoms occur, notify physician, stop infusion, consider a site change
- BP and HR; baseline, then every 30 minutes during infusion until stable.

- Fluid balance, serum electrolyte concentrations (sodium, potassium, bicarbonate, chloride, magnesium) and acid-base balance should be monitored closely
- Use with caution in patients with congestive heart failure, liver cirrhosis, severe renal failure, urinary tract obstruction, or in patients receiving drugs that can cause sodium retention, such as corticosteroids.
- Sodium chloride 3% contains 513 mmol/L each of sodium and chloride.
- **RETURN ALL UNUSED BAGS TO PHARMACY**

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Revised: March 1, 2009