Manual	Parenteral Drug Manual	**PARENTERAL DRUG**
Section	**Drug List - S**	
Author	DRUG USE EVALUATION PHARMACIST - FT	
Approved by	**Pharmacy and Therapeutics Committee**	
References		
Date	**O:** 01/06/2003 **R:** **November, 2014**	**Version Number:** 4

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SODIUM CHLORIDE 3%

GENERIC NAME: **SODIUM CHLORIDE 3%**	**CLASSIFICATION:** Electrolyte
OTHER NAMES:	**FORMULARY:** Yes

Indications

Treatment of Hyponatremia (euvolemic and hypervolemic). *** Not to be used for patients with a sodium serum concentration of 120 mmol/L or greater.**

Administration

- Infuse in a large vein to reduce venous irritation and avoid extravasation.
- General recommended rate of replacement = 0.5 mmol/L per hour, but the rate of replacement may range from 0.5-2 mmol/L per hour initially depending on the clinical situation (especially the initial 2-3 hours of replacement), however the conversion rate of replacement should not exceed 10 mmol/L in the first 24 hours and less than 18 mmol/L in the first 48 hours. **See under Dosage**.

Potential Administration Hazards

- Localized reactions, such as pain, venous thrombosis or phlebitis.
- Headache, dizziness, hypertension, restlessness, weakness.
- Somnolence and confusion progression to convulsions, coma, respiratory failure and death may occur if serum sodium correction is too rapid (osmotic demyelination)

Dosage

- In patients with moderate to severe symptoms, a faster rate of correction is usually the initial goal (e.g., 50 to 80 mL/h of sodium chloride 3% solution to achieve correction of 1 to 1.5 mmol/L per hour for two or three hours), followed by resumption of a slower rate of correction. Other authors have suggested an initial rate of 1-2 mL/kg/h until symptoms resolve.

- **The serum sodium concentration should be raised by less than 10 mmol/L in the first 24 hours and less than 18 mmol/L in the first 48 hours.**

To calculate the amount of sodium required and the rate of infusion, using the following formulas:

These calculations are based upon an estimate of total body water and do not take into account potentially important urinary and extra-renal water losses, which will also raise the plasma sodium concentration. As a result, **serial monitoring is essential to make certain that the desired effect is achieved.**

1) Na deficit in mmol (amount required) = (Targeted Na serum level in mmol/L – Patient's Na serum level in mmol/L) x (total body water in liters)

   Note: Targeted Na serum level is usually approximately 120 mmol/L

   Where total body water in Liters = (0.6) x (body weight in kg) for males
   = (0.5) x (body weight in kg) for females

2) Total volume of 3% sodium chloride required to reach targeted level in mL = Na deficit in mmol ÷ 0.513 mmol/mL

3) Rate of infusion in mmol/hour (using an e.g. 0.5 mmol/L per hour rate) = (0.5 mmol/L per hour) x (total body water in liters)

4) Rate of infusion in mL/hour of 3% sodium chloride = (rate of infusion in mmol/hour) ÷ (0.513 mmol/mL*)

3% sodium chloride solution of replacement can be continued until serum sodium is 130 mmol/L or neurologic symptoms improve. Remainder of the deficit can be replaced over several days.

Compatibility, Stability

None applicable to this Parenteral Drug

Miscellaneous

- Sodium deficits are only approximations and must be evaluated through careful monitoring of the patient's serum osmolality, serum sodium, and clinical response
- The source of the Hyponatremia should also be treated simultaneously.
- Fluids needs should be calculated with maintenance or replacement fluid requirements.
- *3% sodium chloride in water contains 0.513 mmol/mL of sodium

Routes Recommended In Literature			Who May Give @ HRH						
			MD	RN	Specialty RN				
					Paeds & NICU	ER	CCU/ICU/PACU	L & D	Other Areas
SC		No							
IM		No							
IV	push	No							
	inter. Infusion	No							
	cont. infusion	Yes	✓	✓					
HRH REFERENCE POLICIES:									

Reviewed in Consultation with

References

The Ottawa Hospital, Parenteral Drug Therapy Manual (34, 39, 40, 92) HRH *39, *40, *41, *42, *43, *70

History

HRH: Previous versions of this document currently not in PPM may be archived in the hospitals G. Drive. Contact the Policy and Procedure Coordinator for further details.