SODIUM CHLORIDE 23.4%

Newborn use only

2020

Alert	Osmolarity: Sodium chloride 23.4%: 8010 mOsm/L[1]. High risk of extravasation if administered undiluted. Sodium supplementation is not always appropriate and fluid restriction may be appropriate in the management of hyponatraemia. Treatment should always be tailored to the cause.
Indication	Treatment of hyponatraemia.
Action	
Drug type	Sodium chloride 23.4% contains 234 g/L sodium chloride, equivalent to **4 mmol/mL** of sodium.
Trade name	Sodium chloride 23.4%.
Presentation	Sodium chloride 23.4% – 10 mL vial. Can be used for both IV and oral routes.
Dose	**Severe hyponatraemia < 120 mmol/L or symptomatic hyponatraemia** **IV: CAUTION—CANNOT BE GIVEN UNDILUTED. REFER TO PREPARATION/DILUTION SECTION FOR DETAILS** Infuse sodium chloride at 0.4 mmol/kg/hour until symptoms abate or sodium ≥ 120 mmol/L Then infuse sodium chloride at 0.15 mmol/kg/hour for 48 hours or until desired sodium is achieved Therapeutic goal is to increase sodium by 7 mmol/L/day. **IV supplementation** Start at 2–4 mmol/kg/day and increase as required **Oral supplementation** Start at 2–4 mmol/kg/day (0.5–1 mL/kg/day) and increase as required, divided into 3–12 doses.
Dose adjustment	Therapeutic hypothermia – No information. ECMO – No information. Renal impairment – No information. Hepatic impairment – No information.
Maximum dose	
Total cumulative dose	
Route	IV, PO
Preparation	**IV infusion:** Draw up 5 mL (20 mmol sodium) of 23.4% sodium chloride and add 45 mL of water for injection to make a final volume of 50 mL with a final concentration of 0.4 mmol/mL. Infusion at 1 mL/kg/hour = 0.4 mmol/kg/hour (9.6 mmol/kg/day). **Infusion Strength** | **Prescribed amount** 1 mL/kg/hour = 0.4 mmol/kg/hour | 5 mL of sodium chloride 23.4% and make up to 50 mL of water for injection *1 mL/kg of 0.4 mmol/mL of sodium chloride will raise serum sodium by 0.8 mmol/L.[2] **Oral:** Sodium chloride 23.4% vials or oral preparation supplied by pharmacy.
Administration	**IV:** Infusion only. Must be diluted as above prior to IV infusion. **Oral:** **To be given mixed with feeds**. **Divide the daily oral dose into 3–12 doses, aiming for a small but practical volume**
Monitoring	IV: Local IV site for signs of extravasation. Oral: Signs of gastric irritation. Serum sodium as per clinical team's recommendation.
Contraindications	Oral: Infants who are not any enteral nutrition, acute gastrointestinal illness including ileus, necrotising enterocolitis, intestinal obstruction.
Precautions	Impaired renal function, cardiac insufficiency, pre-existing oedema with sodium retention.
Drug interactions	No information.

Adverse reactions	Hypernatraemia, volume overload, congestive heart failure, respiratory distress. Hyperchloraemia, hypercalciuria. Disseminated intravascular coagulation (DIC) is associated with inadvertent injections of sodium chloride into blood vessels of the uterus or placenta due to hypernatraemic shock. Not reported in infants. Osmotic demyelinating syndrome. Fever IV site: Extravasation, phlebitis, venous thrombosis. Oral: Gastric irritation.
Compatibility	**IV Fluids:** Glucose 5%, glucose 10%, glucose 5% in sodium chloride 0.9%, glucose 5% in sodium chloride 0.45%, sodium chloride 0.9%, sodium chloride 0.45%. Y site: No information.
Incompatibility	**IV Fluids:** Fat emulsion. Y site: No information. Amino Acid solutions – No information.
Stability	Oral solution: Supplied by pharmacy has 7-day expiry from manufacture and 24 hours after opening. Vials: 24-hour expiry after opening
Storage	IV: Store at room temperature, 20–25°C. Oral solution: Refrigerate (2–8°C) Vials: Store at room temperature, 20–25°C, once opened refrigerate vials ((2–8°C)
Excipients	
Special comments	Osmolarity of undiluted hypertonic sodium chloride is > 1000 mOsm/L, posing the risk of extravasation for peripheral IV solutions.[3,4] So, local consensus was to bring the osmolarity of IV preparation to 2.4% sodium chloride that has 0.4 mmol/L of sodium and an estimated osmolality of 855 mOsm/L. Total body water is traditionally calculated as weight x 0.6 in children. Greater total body water content in newborns should be considered and therefore should be calculated as weight x 0.75.[2,5]
Evidence	Refer to full version.
Practice points	Refer to full version.
References	Refer to full version.

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