Alert

Indication
Volume expansion
Replacement of fluid and electrolyte losses e.g. excessive gastric losses
Partial exchange transfusion for polycythaemia
Maintenance of vascular catheter patency

Action
Sodium and chloride are the major cation and anion respectively of extracellular fluid. The main functions are regulation of osmotic pressure and water balance in the extracellular fluid. Sodium also affects conductivity of nerves and muscles, and active transport of glucose and amino acids.

Drug Type
Electrolyte

Trade Name
Sodium chloride 0.9% Injection. Contains 0.15 mmol of sodium and chloride per mL.

Presentation

Dosage/Interval
Volume expansion:
10–20 mL/kg
Maintaining catheter patency:
Capped/IV Cannula 0.5 mL 6 hourly
IV infusion: 0.5–1.0 mL/hour
Partial exchange transfusion for polycythaemia:
Volume exchanged (mL) = Blood volume (mL) x (Hct observed - Hct desired)

Hct observed
(Blood volume = 70–90 mL/kg for term and 85–110 mL/kg for preterm infants. Volume may be higher in growth restricted infants. Refer to www.nicutools.org to calculate volume for partial exchange transfusion)

Route
Intravenous, intra-arterial

Maximum Dose

Preparation/Dilution

Administration
Volume expansion: Rate of infusion is titrated to clinical need/response.
Catheter patency: IV bolus/infusion
Partial exchange: Recommend isovolaemic exchange over at least 30 minutes. Refer to local hospital policy for detailed procedure.

Monitoring
Monitor blood pressure, heart rate, urine output, electrolytes, haematocrit

Contraindications
Severe renal impairment with oliguria or anuria
Use with caution in patients with moderate renal impairment, congestive heart failure, peripheral or pulmonary oedema

Precautions

Drug Interactions

Adverse Reactions
Hypernatraemia (symptoms include irritability, muscle twitching, seizures, hypertension, tachycardia, fluid accumulation)
Hyperchloraemic acidosis
Peripheral oedema
Fluid overload.

Compatibility
Glucose solutions.
See individual drugs for compatibilities

Incompatibility
See individual drugs for incompatibilities

Stability

Storage
Store below 30 degrees Celsius.
Discard unused portion of ampoule after use.

Special Comments
Sodium chloride 0.9% (normal saline) contains 0.15 mmol of sodium per mL and is isotonic i.e. given a constant infusion of 1 mL/hour, a baby will get 3.6 mmol of Na per day.

Evidence summary

References

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NMF Consensus Group
Sodium chloride 0.9%
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