South Australian Neonatal Medication Guidelines

Sodium chloride

0.45%, 0.9% & 23.4% intravenous, 20% oral solution*

Note:

This guideline provides advice of a general nature. This statewide guideline has been prepared to promote and facilitate standardisation and consistency of practice, using a multidisciplinary approach. The guideline is based on a review of published evidence and expert opinion.

Information in this statewide guideline is current at the time of publication.

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Health practitioners in the South Australian public health sector are expected to review specific details of each patient and professionally assess the applicability of the relevant guideline to that clinical situation.

If for good clinical reasons, a decision is made to depart from the guideline, the responsible clinician must document in the patient's medical record, the decision made, by whom, and detailed reasons for the departure from the guideline.

This statewide guideline does not address all the elements of clinical practice and assumes that the individual clinicians are responsible for discussing care with consumers in an environment that is culturally appropriate and which enables respectful confidential discussion. This includes:

- The use of interpreter services where necessary,
- Advising consumers of their choice and ensuring informed consent is obtained,
- Providing care within scope of practice, meeting all legislative requirements and maintaining standards of professional conduct, and
- Documenting all care in accordance with mandatory and local requirements

This is a High Risk Medication ⚠

An overdose of intravenous concentrated sodium chloride can be fatal.

Dose and Indications

Sodium supplementation

Intravenous Infusion, Oral

Dose should be expressed in mmol of sodium.

2 to 4mmol/kg per day

Higher doses up to 6mmol/kg per day may be needed for severe depletion

Adjust the dose according to clinical requirements for sodium. Higher doses may be required in very premature infants because of significant renal loss of electrolytes.

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Preparation and Administration

Intravenous Infusion

0.45% sodium chloride contains 0.08mmol/mL of sodium

0.9% sodium chloride contains 0.15mmol/mL of sodium

23.4% sodium chloride contains 4mmol/mL of sodium

DO NOT ADMINISTER UNDILUTED HYPERTONIC SODIUM CHLORIDE 23.4% INTRAVENOUSLY. THIS SHOULD ONLY BE USED AS AN ADDITIVE FOR INFUSION SOLUTIONS

Use pre-mix bags where possible.

Oral

The oral solution contains 20% (3.4mmol/mL) sodium chloride.

Dose	1mmol	2mmol	4mmol	6mmol	8mmol	10mmol
Volume	0.3mL	0.6mL	1.2mL	1.8mL	2.4mL	3mL

Give with feeds to minimise gastric irritation

* 20% (3.4mmol/mL) oral solution is not commercially available however is manufactured by Women's & Children's Health Network Pharmacy

The intravenous preparation, sodium chloride 23.4% (4mmol/mL), may be administered orally. Give mixed with enteral feed.

Compatible Fluids

Glucose 5%, glucose 10%

Adverse Effects

Adverse effects not generally noticed at therapeutic doses.

Oral sodium chloride has been associated vomiting and diarrhoea.

Large doses, rapid intravenous administration or dehydration may result in hypernatraemia.

Concentrated intravenous sodium chloride has been associated with thrombophlebitis and pain at injection side.

A large chloride intake may result in the loss of bicarbonate leading to metabolic acidosis or hypokalaemia.

Monitoring

- Regular electrolytes, particularly sodium
- Renal function

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Practice Points

- The term 'normal saline' should not be used to describe 0.9% sodium chloride. In accordance with the SA Health 'Spell it out' standard, chemical names (e.g. NaCl) should also be avoided. The composition is the preferred nomenclature, for example *0.9% sodium chloride*.
- Use cautiously in states where there is a potential for increased sodium or water retention such as:
  - moderate renal impairment
  - congestive heart failure
  - peripheral or pulmonary oedema
  - corticosteroid therapy

Document Ownership & History

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28/07/20	V2.2	Chair, SA Maternal, Neonatal and Gynaecology Community of Practice	Change in strength of high concentrated injection solution
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05/2015	V2	SA Health Safety and Quality Strategic Governance Committee	High risk notification included
11/2012	V1	SA Maternal & Neonatal Clinical Network	Original SA Maternal & Neonatal Clinical Network approved version