Neonatal Medication Guideline

Clinical Guideline

Potassium Chloride

Policy developed by: SA Maternal, Neonatal & Gynaecology Community of Practice
Approved SA Health Safety & Quality Strategic Governance Committee on: 6 October 2017
Next review due: 6 October 2020

Summary The purpose of this guideline is to guide nursing, midwifery, medical and pharmacy staff in the dosing and administration of potassium chloride

Keywords Potassium chloride, potassium, neonatal medication guideline, electrolyte, hypoklaemia, hyperkalemia, arrhythmia, ECG

Policy history
Is this a new policy? **N**
Does this policy amend or update an existing policy? **Y v3.0**
Does this policy replace an existing policy? **N**
If so, which policies?

Applies to
All SA Health Portfolio
All Department for Health and Ageing Divisions
All Health Networks
CALHN, SALHN, NALHN, CHSALHN, WCHN, SAAS

Staff impact All Clinical, Medical, Midwifery, Nursing, Students, Allied Health, Emergency, Mental Health, Pathology, Pharmacy

PDS reference CG055

Version control and change history

Version	Date from	Date to	Amendment
1.0	November 2012	March 2014	Original version
2.0	March 2014	12 Aug 2014	Update to titles
3.0	12 Aug 2014	6 Oct 2017	Complete review
4.0	6 October 2017	Current	

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South Australian Neonatal Medication Guidelines

potassium chloride

100mg(1.33mmol)/mL 10% oral mixture, 75mg(1mmol)/mL 7.5% injection

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 can be rapidly fatal.

Premixed bags with added potassium and sodium are commercially available and generally avoid the need to prepare solutions at the bed-side using concentrated potassium chloride ampoules.

USE PRE-MIXED BAGS WHERE POSSIBLE

Intravenous potassium chloride ampoules should be restricted to the pharmacy department or intensive care areas and should only be considered where the standard premixed potassium solutions are unable to meet the clinical need of the patient

Synonyms

KCl is **NOT** an acceptable abbreviation in South Australian Hospitals

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Dose and Indications

Hypokalaemia

Always prescribe as millimol (mmol) of elemental potassium

Oral replacement is the preferred route for correcting any potassium deficit

Oral

1 to 2mmol/kg/day (up to 4mmol/kg/day has been used)

Daily dose can be given in divided doses or mixed with the daily feed volume, depending on the unit specific procedures

Intravenous infusion

2 to 4mmol/kg/day

Correct deficits slowly and reassess plasma potassium levels at regular intervals

For acute treatment of symptomatic hypokalaemia start at 0.5mmol/kg over 1 hour, then re-assess.

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

Preparation and Administration

Oral

The 10% oral solution contains 100mg (1.33mmol)/mL potassium

Oral Dose	1mmol	2mmol	4mmol	6mmol	8mmol	10mmol
Volume	0.75mL	1.5mL	3mL	4.5mL	6mL	7.5mL

Give oral doses with feeds to minimise gastric irritation.

Intravenous infusion

ALWAYS use pre-mixed standard strength potassium solutions where possible.

Commercial solutions include:

- 10% glucose with 0.225% (or 0.038 mmol/mL) sodium and 10mmol (0.02mmol/mL) potassium (500mL bags)

Peripheral administration

Maximum concentration: 40mmol per 1000mL (i.e. dilute to 1mmol/25ml)

Maximum rate: 0.2mmol/kg/hour

A higher rate of 0.5mmol/kg/hour may be used in exceptional circumstances if there is severe potassium depletion with Consultant advice.

Central administration

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Maximum concentration: 80mmol per 1000mL (i.e. dilute to 2mmol/25ml).

Maximum rate: Rates higher than 0.5mmol/kg/hour must be administered via a central line

In exceptional circumstances more concentrated Potassium solutions up to 1mmol/mL may be used with full cardiac monitoring via a central line when run with other IV fluids.

CAUTION

- **Always** dilute potassium ampoules prior to intravenous administration.
- Following addition of potassium chloride to the infusion solution, the solution **must be inverted at least 10 times** to ensure potassium chloride is thoroughly mixed throughout the solution.
- **Unshaken bags are prone to layering of added concentrate and are extremely hazardous.**
- **Always** control infusion with a syringe/IV pump
- **Never flush**
- **Never administer as a bolus**
- Concentrated solutions or rapid administration can cause thrombophlebitis and pain at injection site

Compatible Fluids

Sodium chloride 0.9%, Glucose 5%, glucose 10% and glucose/sodium chloride solutions

Adverse Effects

Common

Oral: Vomiting, diarrhoea, abdominal pain

Intravenous: Thrombophlebitis, pain, necrosis at injection site

Symptoms of hyperkalaemia (large doses or rapid IV administration) include hypotonia, flaccid paralysis, cold skin, grey pallor, hypotension, cardiac arrhythmias (heart block, peaked T waves) and asystole

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Monitoring

- Observe intravenous site closely for signs of extravasation when using concentrated solutions.
- Continuous ECG monitoring is mandatory when administering potassium by the intravenous route in neonates.
- Plasma potassium levels should be measured regularly with frequency determined by the clinical situation.

Version control and change history

PDS reference: OCE use only

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