

Neonatal Medication Guideline

Clinical Guideline

Caffeine Citrate

Policy developed by: SA Maternal & Neonatal Clinical Community of Practice

Approved by

Safety & Quality Strategic Governance Committee on: 28 April 2017

Next review due: 30 April 2020

Summary The purpose of the Caffeine Citrate Neonatal Medication Guideline is to guide nursing, medical and pharmacy staff in the dosing and administration of caffeine citrate

Keywords Caffeine citrate, neonatal medication guideline, caffeine, apnoea, neonatal apnoea, tachycardia, agitation, clinical guideline, Caffeine Citrate Neonatal Medication Guideline

Policy history Is this a new policy? **N**
Does this policy amend or update an existing policy? **Y v1.0**
Does this policy replace an existing policy? **N**
If so, which policies?

Applies to All Health Networks
CALHN, SALHN, NALHN, CHSALHN, WCHN

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

PDS reference CG016

Version control and change history

Version	Date from	Date to	Amendment
1.0	November 2012	April 2017	Original version
2.0	28 April 2017	Current	Complete review

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caffeine citrate

40mg/2mL injection, 20mg/mL oral solution

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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

Dose and Indications

All doses must be prescribed as caffeine citrate.

1mg of caffeine is equivalent to 2mg caffeine citrate

Neonatal Apnoea

Facilitation of Extubation

Intravenous, Oral

Loading Dose

Loading dose 20mg/kg. A loading dose of up to 80mg/kg has been used.

Maintenance Dose

5 to 10mg/kg/dose every 24 hours, commencing 24 hours after the loading dose

Maintenance doses of up to 20mg/kg have been used.

Preparation and Administration

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South Australian Maternal, Neonatal & Gynaecology Clinical Reference Group

Last Revised:

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Contact:

South Australian Neonatal Medication Guidelines Workgroup at:

Health:NeoMed@sa.gov.au



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40mg/2mL injection, 20mg/mL oral solution

Intravenous

To ensure clear orders ALWAYS prescribe dose as milligrams of caffeine citrate. The intravenous injection contains 20mg/mL caffeine citrate

Dose	5mg	10mg	15mg	20mg	25mg
Volume	0.25mL	0.5mL	0.75mL	1mL	1.25mL

Administer intravenous loading doses as an infusion over at least 30 minutes.

Administer intravenous maintenance doses as a bolus injection over at least 3 minutes.

Intravenous doses may be given undiluted, or diluted with compatible fluid for ease of administration.

Oral

To ensure clear orders ALWAYS prescribe dose as milligrams of caffeine citrate. The oral solution contains 20mg/mL caffeine citrate.

Dose	5mg	10mg	15mg	20mg	25mg
Volume	0.25mL	0.5mL	0.75mL	1mL	1.25mL

Give with feeds to minimise gastrointestinal irritation.

Compatible Fluids

Glucose 5%, glucose 10%

Adverse Effects

Common

Diuresis, tachycardia, agitation

Rare

Hypertonia, severe hyperglycaemia, heart failure and seizures

No obvious cardiovascular, neurologic toxicity has been observed at plasma caffeine concentrations below 50microg/mL

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Monitoring

- > Monitor heart-rate. Withhold dose and notify prescriber if the heart rate exceeds 180 beats/minute
- > Cardio respiratory monitoring of all neonates is required for 3 to 5 days after caffeine citrate therapy has been ceased
- > If neonate is not on a monitor at the time of ceasing the medication, then cardio respiratory monitoring must be performed from 24 hours after the last dose of caffeine citrate
- > Caffeine citrate should be dosed according to clinical response. Caffeine citrate has a wide therapeutic range and therefore therapeutic drug monitoring is not usually recommended. Therapeutic response has been achieved at around 10-35microg/mL.

Practice Points

- > Caffeine half-life and clearance vary linearly with postnatal age. When caffeine is used for older infants the frequency of administration should be increased: refer to Paediatric Dosing Guidelines

Reference

1. Gray PH, Flenady VJ, Charles BG, Steer PA on behalf of the Caffeine Collaborative Study Group. Caffeine citrate for very preterm infants: Effects on development, temperament and behaviour. Journal of Paediatrics and Child Health 2011;47: 167-172
2. Steer et al. High dose caffeine citrate for extubation of preterm infants: a randomised controlled trial. Arch Dis Child Fetal Neonatal Ed 2004 Nov; 89(6): 499-503

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