

caffeine citrate

40mg/2mL injection, 20 mg/mL mixture

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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 40mg/kg has been used to facilitate extubation

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 and may be recommended by a Consultant

Preparation and Administration

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 mixture contains 20mg/mL caffeine citrate.

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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%, sodium chloride 0.9%

Adverse Effects

Common

Gastric irritation, diuresis

Infrequent

Tachycardia, agitation

Rare

Hypertonia, severe hyperglycaemia, heart failure

No obvious cardiovascular, neurologic or gastrointestinal toxicity has been observed at plasma caffeine concentrations below 50mg/L

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 35mg/L.

Practice Points

- > To prevent gastric irritation, it is recommended that oral caffeine only commence once the neonate has achieved more than 50% of its recommended oral feed intake. However, a lower percentage may be recommended by the Consultant

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- > 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

- > 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

Version control and change history

PDS reference: OCE use only

Version	Date from	Date to	Amendment
1.0	November 2012	current	Original version