

CAFFEINE CITRATE

ACTION and USES

This agent is used in the management of apnoea of prematurity, bronchopulmonary dysplasia and to wean infants off assisted ventilation. Baby born weighing $\leq 1250\text{g}$ will usually be started at birth even if on a ventilator. Baby's $\geq 1251\text{g}$ but < 34 weeks will be started at medical discretion for apnoea but if > 34 weeks at the consultant's discretion

DOSAGE

Caffeine injection is labeled as caffeine citrate and caffeine (base). NB **20mg** of caffeine citrate is equivalent to **10mg** of caffeine (base). The doses in this monograph are for caffeine citrate. Prescribe as caffeine citrate. Please do all prescribing and calculating using CAFFEINE CITRATE.

IV/ORAL:

Loading dose:	20mg/kg/dose (round to nearest whole number)
Standard maintenance dose:	5mg/kg/dose every 24 hours (round to whole number preferably round up)
Double dose maintenance:	10mg/kg/dose every 24 hour (Consultant decision) (round to a whole number preferably round down)

Weekly review needed for double dose maintenance and wean to standard dose when clinically appropriate.

If given for apnoea of prematurity, review and stop where clinically appropriate at 34 weeks corrected gestational age.

Maintenance dose should be prescribed at 12noon, 12- 36 hours after loading dose. Check date and time of loading dose before administration of first maintenance dose.

The oral route is preferable and should be used whenever possible.

ADMINISTRATION

Loading or double maintenance dose: short IV infusion over 30 minutes

Standard maintenance dose: IV bolus over 3 minutes

RECONSTITUTION

Caffeine citrate is available as ready diluted solution containing 20mg/ml in 1ml ampoules for IV or oral use. Purple filter straws should be used to draw up oral doses into oral syringes.

Ampoules may be shared for ORAL use ONLY providing that the doses are to be administered at the same time and will be given immediately. Doses from a shared ampoule must be prepared on a trolley or in an area designated for medicine preparation. The open ampoule should not be moved from one baby's allocated cot space to another. A new filter needle and oral syringe must be used for each patient. The doses must be administered immediately and remainder of ampoule discarded.

INCOMPATIBILITIES

Guidelines for medicine administration - Lothian Neonatal Service

Prepared by: Caroline O'Hare

Checked by: Christine Filion-Murphy

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Aciclovir and furosemide. Do not mix or dilute with drugs or dilutes without checking compatibility.

COMPATIBILITIES

Sodium chloride 0.9%, glucose 5% and heparin.

There is no stability data on the compatibility of caffeine with glucose 10%. The risk of using glucose 10% when there is stability information for glucose 5% is thought to be extremely low.

<https://medusa.wales.nhs.uk/docs/G5percent%20vs%20G10percent%20SBAR.pdf>[pdf](#)

STORAGE

Discard opened ampoules immediately after use.

MONITORING

Routine plasma drug level monitoring is not necessary unless to confirm safety and efficacy.

Rapid administration of IV caffeine (loading dose) may rarely cause hypotension and therefore should be given over 30 minutes. High serum drug level (> 200 micromol/L) may be associated with jitteriness. Dose related side effects include hypertension, tachycardia, irritability, restlessness, hypoglycaemia, hyperglycaemia, fluid and electrolyte imbalance and gastro-oesophageal reflux. Phenytoin and phenobarbital may reduce effectiveness by increasing its metabolism. Extravasation is likely to cause tissue damage as the pH is less than 5.