

Neonatal Drug Guideline

FRUSEMIDE

DESCRIPTION AND INDICATION FOR USE

Frusemide is a potent diuretic with a rapid onset of action. It can be used to treat acute episodes of fluid overload as seen in infants with chronic lung disease or oliguria or frusemide may be used to treat electrolyte disturbances (eg: hyperkalaemia).

DOSE

IV, IM, PO: 0.5 to 2 mg/kg/dose every 12 – 24 hours (every 24 hrs if CA < 37 weeks)

Dose may be increased in resistant cases and in renal impairment eg: anuric/oliguric renal failure may require doses of 3 mg/kg or higher to establish urine output. Oral doses can be increased to 6 mg/kg/dose in resistant cases.

IV CONTINUOUS INFUSION: 0.1-1 mg/kg/hour

RECONSTITUTION/DILUTION

Ampoule = 20 mg in 2 mL (10 mg/mL)

IV Bolus: Withdraw exact dose and administer undiluted

IV Infusion: Withdraw required dose and make up to ordered volume of infusion solution

IM: Withdraw exact dose and administer undiluted
(**only if no IV access and oral route unavailable**)

ROUTE AND METHOD OF ADMINISTRATION

IV Bolus: Give slowly at a rate of 0.05 mg/kg/minute (ie: 20 minutes for a 1 mg/kg dose) via syringe pump

IV Infusion: Give as a continuous infusion via syringe pump

COMPATIBILITY INFORMATION

Please contact your ward pharmacist for information on drugs or fluids not appearing in the table below. Medications that are not routinely used in the Special Care Nursery have not been included in this table and may be incompatible.

	Compatible	Incompatible
Fluids	Glucose 5%*, Glucose 10%*, Sodium chloride 0.9%	
Drugs	Aminophylline, Benzylpenicillin, Calcium gluconate, Digoxin, Heparin, Ranitidine, Sodium bicarbonate	Dobutamine, Gentamicin, Midazolam

* Frusemide may precipitate at low pH, use caution when mixing with glucose solutions due to variable pH.

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SIDE EFFECTS

- Fluid and electrolyte disturbances: hypokalaemia, hypocalcaemia, hypomagnesaemia, hypochloraemia metabolic alkalosis
- Dehydration, hypovolaemia, hypotension
- Injection site reactions: thrombophlebitis
- Ototoxicity: risk is increased with renal impairment, high doses, rapid IV administration & use of other ototoxic medications
- Chronic therapy: nephrocalcinosis, osteopenia

SPECIAL PRECAUTIONS

- Correct severe hypokalaemia, hyponatraemia, hypovolaemia or hypotension prior to commencing
- Caution in infants with jaundice or with conditions that might induce hyperbilirubinaemia or kernicterus (e.g. Rhesus incompatibility, familial nonhaemolytic jaundice) because of frusemide's *in vitro* potential to displace bilirubin from albumin
- Caution in patients with acidosis
- If used long term, monitor potassium & consider potassium supplementation or the addition of a potassium-sparing diuretic

CONTRAINDICATIONS

- hypercalciuria
- Complete renal shut down
- Known hypersensitivity to frusemide or sulfonamides

DRUG INTERACTIONS

Amphotericin, Corticosteroids (eg: dexamethasone):

May enhance hypokalaemia

Digoxin:

Hypokalaemia or hypomagnesaemia may predispose to digoxin toxicity

Gentamicin:

May enhance ototoxicity

Indomethacin:

May reduce antihypertensive effect of diuretic and in patients with dehydration or pre-existing hypovolaemia may precipitate acute renal failure

NURSING RESPONSIBILITIES

- Observations/Monitoring
 - Monitor fluid intake and output
- Protect from light during storage and do not use if solution is yellow in colour
- If administering as a continuous infusion – ensure infusion solution is changed every 24 hours