Drug Therapy Protocols: Furosemide (frusemide)

Policy code	DTP_FRU_0722
Date	July, 2022
Purpose	To ensure a consistent procedural approach to furosemide (frusemide) administration.
Scope	Applies to all Queensland Ambulance Service (QAS) clinical staff.
Health care setting	Pre-hospital assessment and treatment.
Population	Applies to all ages unless specifically mentioned.
Source of funding	Internal – 100%
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Review date	July, 2024
Information security	UNCLASSIFIED – Queensland Government Information Security Classification Framework.
URL	https://ambulance.qld.gov.au/clinical.html

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Furosemide (frusemide)

July, 2022

Drug class

Loop diuretic[1,2]

Pharmacology

Furosemide (frusemide) is a potent loop diuretic that acts by inhibiting sodium and chloride absorption in the ascending Loop of Henle (proximal and distal tubules).[1,2]

Metabolism

The majority of parenteral frusemide is excreted in the urine within 24 hours, the remainder is excreted in the faeces.[1]

Indications

- **Congestive cardiac failure**
- **Fluid overload** (with compromised renal function)
- **Oliguria** (after correction of hypotension and hypovolaemia)

Contraindications

- Allergy AND/OR Adverse Drug Reaction
- Pre-hospital use in acute cardiogenic pulmonary oedema
- Patients less than 12 years of age

Precautions

- Hypotension

Side effects

- Marked diuresis can lead to hypotension
- Potassium loss associated with diuresis may aggravate or potentiate dysrhythmias

Presentation

- Ampoule, 20 mg/2 mL *furosemide* (*frusemide)*

Onset (IV)	Duration (IV)	Half-life
3–5 minutes (peak 30 minutes)	≈ 2 hours (following stat IV dose)	1.5 hours

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Schedule

- S4 (Restricted drugs).

Routes of administration

Intravenous infusion (IV INF) E CCP

Special notes

- Ambulance officers must only administer medications for the listed indications and dosing range. Any consideration for treatment outside the listed scope of practice requires mandatory approval via the *QAS Clinical Consultation and Advice Line*.
- Increased infusion doses may be required in patients with chronic renal impairment and/or who take regular high dose oral furosemide (frusemide).
- All cannulae and IV lines must be flushed thoroughly with sodium chloride 0.9% following each medication administration.

Adult dosages[1–3]

- **Congestive cardiac failure**
- **Fluid overload** (with compromised renal function)
- **Oliguria** (after correction of hypotension and hypovolaemia)

E CCP	**IV INF**	CCP ESoP aeromedical – RSQ Clinical Coordinator consultation and approval required in all situations. Continue furosemide (frusemide) infusions already commenced at hospital, using the same concentration and administration rate already established. This may involve withdrawing previously mixed and labelled solutions from the referring hospital. Should the RSQ Clinical Coordinator request a furosemide (frusemide) infusion be commenced, the following procedure must be undertaken. Commence infusion at **5 mg/hour** (2.5 mL/hour) and increase by **5 mg/hour** (2.5 mL/hour) every **60 minutes** to a maximum dose of **20 mg/hour** (10 mL/hour) until the desired urine output is achieved. ***Syringe preparation:*** *Mix 100 mg (10 mL) of furosemide (frusemide) with 40 mL of sodium chloride 0.9% in a 50 mL syringe to achieve a final concentration of 2 mg/mL. Ensure all syringes are appropriately labelled. Administer via syringe driver.*

Paediatric dosages

Note: QAS officers are **NOT** authorised to administer furosemide (frusemide) to paediatric patients.