Furosemide (Frusemide)

(Dimazon (c,d), Frusecare, Frusedale (c,d), Libeo (d), Frusol*) POM-V, POM

- **Client Information Leaflet:** Frusol syrup
- **Formulations**

Injectable: 50 mg/ml solution. Oral: 10 mg, 20 mg, 40 mg tablets; 20 mg/5 ml, 40 mg/5 ml, 50 mg/5 ml sugar-free solutions.

- **Action**

Loop diuretic, inhibiting the $Na^+/K^+/Cl^-$cotransporter in the thick ascending limb of the loop of Henle. The net effect is a loss of sodium, potassium, chloride and water in the urine. It also increases excretion of calcium, magnesium and hydrogen as well as renal blood flow and glomerular filtration rate. Transient venodilation may occur following i.v. administration and, in some species, bronchodilation may occur; the exact mechanism for both is unclear.

More +

- **Use**
    - Management of acute and chronic CHF. The use of diuretic monotherapy for the chronic management of heart failure due to mild regurgitation or dilated cardiomyopathy in dogs is not recommended, as patients receiving concomitant therapy with pimobendan and ACE inhibitors (and spironolactone in dogs with mitral regurgitation) have a better clinical outcome.
    - Treatment of hypercalcaemia.
    - Promotion of diuresis in acute renal failure (questionable efficacy).

Use with caution in patients with severe electrolyte depletion, hepatic failure and diabetes mellitus. Evidence for efficacy in non-cardiogenic pulmonary oedema is lacking.

- **DOSES**
    - **Dogs, Cats**
        - Acute, life-threatening CHF: 1–2 mg/kg i.v., i.m. q0.5–4h prn, based on improvement in respiratory rate and effort. Once clinical signs improve, increase dosing interval to q4–12h, monitor urea, creatinine and electrolytes, and start oral therapy once tolerated. Use lower end of dose range for cats and monitor response. Ensure no pleural effusion present.
        - Chronic CHF: 1–5 mg/kg p.o. q6–12h. Typical maintenance doses for mild to moderate CHF are 1–2 mg/kg p.o. q8–24h (dogs) and 1–2 mg/kg p.o. q12–48h (cats). The goal is to use the lowest dose of furosemide that effectively controls clinical signs. Doses in excess of 12 mg/kg/day are unlikely to be beneficial and warrant the addition of a different class of diuretic (e.g. thiazide) or transfer to alternative diuretic (e.g. torasemide) to control refractory failure. In patients with

ascites, use of s.c. instead of p.o. furosemide can have a marked clinical benefit due to improved bioavailability.

- Hypercalcaemia: hydrate before therapy. Give 2–4 mg/kg i.v., s.c., p.o. q8–24h. Maintain hydration status and electrolyte balance with normal saline and added KCl. Furosemide generally reduces serum calcium levels by 0.5–1.5 mmol/l.
- Acute renal failure/oliguria: Replace fluid deficit and subsequently closely monitor fluid input and output. Give furosemide at 2 mg/kg i.v. If no diuresis within 1 hour, repeat dose at 2–4 mg/kg i.v. (and again if no response at 2 hours). Alternatively, bolus dose with 1–2 mg/kg i.v. followed by CRI at 0.1–2 mg/kg/h.