

RX

Drug Name: Furosemide

Trade Name: Lasix

Class:

Sulfonamide-type loop diuretic

Mechanism of Action:

Inhibits reabsorption of sodium and chloride in the ascending limb of the loop of Henle, resulting in an increased excretion of sodium, chloride, & water.

Increases renal excretion of potassium, hydrogen, calcium, magnesium, bicarbonate, ammonium, and phosphate.

It also causes decreased peripheral vascular resistance and increased peripheral venous capacitance, resulting in a subsequent decrease in left ventricular filling pressure (preload).

Indications:

- Pulmonary edema
- CHF
- Hypertensive Crisis

Contraindications:

- Hypovolemia / Dehydration
- Severe preexisting electrolyte imbalance (Hypokalemia)
- Hypersensitivity to sulfonamides

Precautions:

Diabetes mellitus (*may worsen control*)

Renal disease

Hepatic Disease

Anuria (*listed as a contraindication in one source*)

Pregnancy (C) (*no well-controlled studies, possible fetal abnormalities*)

May cause electrolyte imbalances

Dosage:

Adults:

CHF/Pulmonary edema: Slow IV/IM 20-80 mg, may increase to up to twice the patient's daily dose of oral furosemide.

HTN CRISIS: (Medical Control Order) 20-80 mg slow IV push (each 20 mg over 1-2 minutes), usual dose 40mg

Pediatrics: (Not part of ACEMSS SWO's)

0.5-1 mg/kg IV/IM (some texts reference a dosing range of 1-2 mg/kg)

Max of 6mg/kg/day

Onset:

5 min, peak at 10-20 minutes

Duration:

6-8 hrs

Side Effects:

Transient or permanent
loss of hearing

Tinnitus

Hypovolemia

Hypotension

Hypokalemia (+ other
electrolyte
imbalances)

Hyperglycemia

Hyperuricemia

Weakness

Dizziness

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Interactions:

Incompatible with any drug in syringe
Additive effects--antihypertensives, nitrates, other diuretics

PEARLS:

*The secret to avoiding transient/permanent deafness or tinnitus when administering furosemide is to administer it **SLOWLY!** "Ototoxicity increased proportionately as the rate of infusion of parenteral furosemide increased from 4 mg/min (no ototoxicity), to 5.6 mg/min (no ototoxicity), to 25 mg/min (9/15 patients developed reversible hearing loss), to 67 mg/min (10/10 patients developed tinnitus and deafness that persisted for 90 minutes)." DeVito JM, Vance JR. Furosemide-associated ototoxicity. Clin Pharm 1983;2:507—9.*

When administering the medication to a pregnant patient, the benefits must outweigh the risks (life or limb situation)

In the prehospital setting, furosemide should be administered IV if at all possible.

The initial effects from increased venous capacitance should be seen within about 5 minutes. Diuresis will begin within 15-30 minutes after administration.

Per ACEMSS SWO you may double the patient's normal PO dose.