



MedicCast Extra



Tip of the Week Transcript:

from: [Episode 141 of the MedicCast](#)

LASIX (Furosemide)

Note: ALWAYS follow your own protocols and medical direction. The information presented here is for general information review only and not meant to take the place of your local guidelines.

Today's Med of the Week, we are going to look at Lasix or furosemide. Furosemide is a medication that is a diuretic. It is operating in the body by acting on the kidneys allowing them to excrete more fluid rather than less fluid. It does this by inhibiting renal sodium reabsorption and that means basically if you think about it and remember about what you were told about concentrations and solutions, remember that water follows salt. So when the kidneys do not reabsorb salt, when this medication goes in there and inhibits that reabsorption, then the water stays on the other side of the membrane and goes down into the bladder and so you have patients that are going to need to pee a lot when you give Lasix, so be prepared for that about a half-hour or forty-five minutes down the road. It also causes vasodilation especially in pulmonary veins and this allows

for these patients to have some decreased blood pressure inside the respiratory system and so you end up having a little better reabsorption of fluid if you have pulmonary edema going on.

Pharmacokinetics

Pharmacokinetics of this medication, generally you are going to have onset of the vasodilation in about five minutes after administration of an IV dose and you will see diuretic effects beginning to take effect after about ten minutes or so, and that is the beginning of those effects. So they are going to take longer to have their full peak effect.

Indications

You are going to give this medication in indications of signs of pulmonary edema, acute pulmonary edema, congestive heart failure, also edema related to ongoing kidney and liver disease. So if you have patients that are retaining a lot of fluid and they have kidney or liver disease, you could give this medication as well. Of course, that is going to require medical consultation but you have that at the back of your mind. Just remember, if you have kidney failure, in other words, your kidneys are not working at all, this Lasix is not going to do anything for you. There are going to need to be other ways to get rid of your edema and that usually involves dialysis.

Contraindications

Contraindications, first of all, known hypersensitivity to the drug, if you are allergic to it then you do not want to take this drug. Also known allergies to sulfonamides, dehydrated patients, we do not want to give a dehydrated patient and further dehydrate them, so we do not give diuretics to patients who have dehydration; anybody who is pregnant and patients exhibiting signs and symptoms of an electrolyte imbalance—primarily hypokalemia—and that is because this is not a potassium-sparing diuretic. This diuretic will actually cause the body to lose potassium along with the fluid, so you need to make sure that you do not have signs of electrolyte imbalance that is going on. Also, again, pregnancy, fluid balance is very important in pregnancy. Women who are pregnant have a much larger fluid volume and they need that larger fluid volume to maintain homeostasis for both the mother and the child. Do not take that away from them and so you would not give this medication in those situations.

Side Effects

Adverse effects, of course first of all, dehydration can occur over long-term, decreased circulatory blood volume, decreased cardiac output, also again loss of electrolytes, and this is especially significant for patient's magnesium and potassium levels. So if you are in a longer-term care situation, you might want to be checking your labs if you have a situation where you have access to them. Also you may have some short-term hypotension at least in the early effects due to decreased cardiac output as you see that decreased venous hypertension coming out of the lungs back to the heart that can cause decreased output on the other side. Also you can see vasoconstriction in patients with chronic heart failure, so this is something to keep an eye on. A lot of patients take Lasix in oral form on a regular basis in low-dose just to constantly diurese themselves, but you may be called upon to give larger doses, find out what their oral dose is because if you are low-dose is the same as their already-taken oral dose, it may not have much of an effect, you may have to go immediately to a higher dose, so you need to talk to medical control about that. When you give this medication, you want to make sure you are keeping an eye on the patient's hydration levels, on their hypovolemia issues, hypotension, also hypokalemia. All of these things can happen and you need to really pay attention to the patient's vital signs while giving this med.

Dosing and Routes of Administration

It is going to be administered IV, and that dosage is 0.5 to 1.0 mg per kilogram slow IV push and the pediatric dose is 1.0 mg per kilogram IV/IO, and that would be in Maryland, up to a maximum dose for pediatric patients of 50 mg.

So that is a look at Lasix, a quick and easy look at a medication that, at least in Maryland, we are not giving so much in the field for our CHF patients. We are really leaning more heavily on antihypertensives like nitroglycerin and going on to interventions like CPAP which is really having a very positive effect in helping push to fluids out of the lungs in CHF patients.

Links

Med of the Week — Lasix

- [Medline Plus on Pulmonary Edema](#)
- [Medline Plus on Hypertension](#)
- [eMedicine article on Heart Failure with Lasix Dosing recommendations](#)
- [Medline Plus Links page for CHF](#)
- [Medline Plus encyclopedia on CHF](#)
- [MD medical protocols \(includes a section under Respiratory Distress on recognizing differences between CHF and COPD\)](#)