Transcript Details

This is a transcript of a continuing medical education (CME) activity. Additional media formats for the activity and full activity details (including sponsor and supporter, disclosures, and instructions for claiming credit) are available by visiting:
https://reachmd.com/programs/cme/beyond-the-iv-pole-introducing-sc-furosemide/68925/

Released: 11/10/2026
Valid until: 11/10/2027
Time needed to complete: 49m

ReachMD
www.reachmd.com
info@reachmd.com
(866) 423-7849

Beyond the IV Pole: Introducing SC Furosemide

Announcer:
You're listening to GLC on ReachMD. This activity is provided by Global Learning Collaborative and is part of our MinuteCE curriculum.

Prior to beginning the activity, please be sure to review the faculty and commercial support disclosure statements as well as the learning objectives.

Craig Beavers, PharmD:
This is CE with GLC, and I'm Dr. Craig Beavers. I'm a cardiovascular clinical pharmacist and researcher and cardiovascular service line leader with Baptist Health System and the University of Kentucky College of Pharmacy. In this episode, I'm exploring why subcutaneous furosemide administration is an important treatment option for congestion. I'll also review the evidence supporting its use and offer practical approaches to dosing and implementation.

Congestion doesn't always require hospitalization. The outpatient pathway currently today or historically is involved where a patient had residual congestion. They may have symptoms worsening, and that alludes to them to come to the clinic. At the clinic, the traditional pathways include increasing oral diuretics, potentially a trip to the emergency department, and/or a hospitalization and IV diuretics, either in the ED or the hospital or in more and more contemporary times, IV diuretics in clinics.

However, over the past several years, there's a potential outpatient subcutaneous therapy that's been available. And why is this important? Well, hospitalizations are costly. They're not always necessary, and many patients just need simple, effective decongestion. However, it's not just that the fact that we have availability in some places to do IV diuretics in the clinic. The challenge there is some patients may live far away, and that can be a struggle. For example, I practice in a rural area. That's a common issue. Oral absorption becomes unreliable as gut edema develops, and you definitely need something beyond oral, and doubling the dose may not be sufficient. And subcutaneous administration offers an outpatient bridge between oral therapy and hospitalization.

So let's talk a little bit about the pharmacologic rationale, why this route of administration is important. Well, with oral furosemide, as we've already alluded to, you have variable absorption and gut wall edema can hinder the absorption and bioavailability, and you get this delayed blunted effect, where on the flip side, subcutaneous furosemide has rapid systemic absorption, a consistent exposure, and an effective natriuresis.

And we'll talk a little bit about this in the data where you see that it's almost 100% or 107% bioequivalent to IV dosing. So you really get over a lot of those humps. You enable treatment outside the hospital, you have rapid onset, reliable absorption, and you bypass the GI tract.

This is one of many studies, but this looks at the newer 80-mg subcutaneous autoinjector looking at it from a bioequivalence process. And this was an open-label, randomized, 2-way crossover PK, or pharmacokinetics, pharmacodynamics study. And as you can see in

© 2026 ReachMD

terms of pharmacokinetics, the bioavailability was 107.3%, and the AUC was equivalent to IV furosemide and had comparable total systemic exposure, which met its primary endpoint.

And the median Tmax was 0.75 hours, so a little bit over half an hour after the subcutaneous dose. And this was all important and critical because these are the parameters that allow for the FDA approval because they're looking for bioequivalence in the device that is used.

In terms of pharmacodynamics, we also see equipotency in terms of efficacy. You see equivalent diuresis and natriuresis with a 12-hour urine output between both arms almost about 4 L. A 12-hour urinary sodium very comparable at 288 vs 273 mmol, and a 12-hour urinary potassium of 55.1 versus 52.6 mEq, with no significant difference between either party or group.

When should we consider subcutaneous furosemide? Well, with the clinical decision pathway, as we just talked about, as that patient comes in with worsening congestion, they're not hypotensive, we don't have clear evidence of cardiogenic shock, and we clearly don't need immediate needs for hospitalization. And we know that they've had inadequate response maybe to oral therapy or we suspect that they would have inadequate response. That's when you should consider subcutaneous furosemide.

I also often think about it in patients who are maybe not fully or adequately diuresed upon discharge and need that additional dose or those patients that have other logistical challenges. And so when you look at practical considerations, you do want to think about patient selection, who would be able to use and administer it, educating and what is the caregiver capability, are they able to do home administration, and when is their planned transition back to oral therapy or have you done that?

And like most diuretic therapy, it's not any different than the IV therapy. You're going to monitor weight, symptoms, blood pressure, renal function, and electrolytes. And of caution, just be reminded, this is not necessarily needed for chronic maintenance therapy at this juncture.

So how do you use subcutaneous furosemide in practice? In terms of practical dosing with the new autoinjector, it's a single autoinjected dose that's delivering 80 mg of subcutaneous furosemide. That subcutaneous abdominal injection goes within the first 10 seconds. And like a lot of injections that are in the abdominal area, you're going to rotate injection site to prevent bruising or development of pockets.

Or in the outpatient, you'll use this by training the patient or the caregiver to administer this. And this is distinct. There used to be an autoinjector. There was an autoinjector version of this product that did 30 mg over 1 hour and then 12.5 mg for 4 hours.

However, this 80-mg dose once provides ability for the dose to be given and provide that access almost like an IV dose, but just the onset's at 0.75 hours or a little bit over half an hour. So when do you do this with this practical dosing? If you have worsening congestion and it develops, you administer that 80 mg once, and you monitor the response over several hours, like you would do with intravenous dose, so over the next 2 to 4 hours.

In terms of safety profiles, what we observed is more commonly that you would see, like you see with a lot of subcutaneous injections, local injection site reactions like pain, erythema, or bruising, and they were pretty mild.

And again, you'll rotate the injection site to prevent this from happening regularly. And injection site pain scores were similar to IV access across all time points, and the systemic adverse events were very comparable to IV furosemide, which you see with that product. And most treatment-emergent adverse effects were mild, and there was no need to discontinue the therapy due to adverse events.

And again, not to belabor this, but remind you're going to monitor volume status, electrolytes, renal function, blood pressure, exactly the same things you would do with IV diuretics. And again, you're going to follow congestion status and determine when you put oral therapy on and monitor electrolytes over the several days or follow up like you would do with intravenous diuretics.

Let's go through 5 clinical takeaways from this presentation.

One, congestion management increasingly extends beyond the hospital setting. So now that we have these alternative agents, we can really think about how we can reduce readmissions for health systems, which is a plus, and also think about improving patients' quality of lives because they don't have to go to the hospital or even to a clinic to receive IV diuresis.

© 2026 ReachMD

Number 2, subcutaneous furosemide provides IV equivalent systemic exposure with reliable bioavailability, so it is almost similar to giving an intravenous dose.

Number 3 is the ReadyFlow, the newer device, that it delivers a fixed 80-mg subcutaneous dose in approximately 10 seconds, simplifying the outpatient administration process and is very similar to administering other subcutaneous products.

Four, implementation requires patient selection, laboratory monitoring, and transition plans back to oral therapy, and you need to work to individualize with the patient and the caregiver on how to do this.

And number 5, subcutaneous furosemide fills the gap between escalating oral diuretics and hospitalization and can really be an important tool in care management.

With that, I thank you for your time and interest and hope you learn more between this and the other amazing modules about how you can incorporate subcutaneous furosemide into your practice and optimize your patient care.

Announcer:
You have been listening to GLC on ReachMD. This activity is provided by Global Learning Collaborative and is part of our MinuteCE curriculum.

To receive your free CE credit, or to download this activity, go to ReachMD.com/CME. Thank you for listening.

© 2026 ReachMD