

# New treatment option shown for heart failure fluid overload

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Shweta Bansal, M.D., a nephrologist at UT Health San Antonio, coauthored a

study showing high-dose spironolactone effectively and safely treated fluid overload in heart failure patients who were not responding to other diuretics. Credit: UT Health San Antonio

Higher doses of spironolactone, a diuretic (water pill), can prevent the need for dialysis in selected heart failure patients, a UT Health San Antonio study found. The aggressive approach relieved fluid overload safely and effectively in patients who were not responding to conventional diuretics.

The findings are in the journal *Annals of Internal Medicine*. UT Health San Antonio kidney and cardiovascular specialists conducted a pilot study in 19 patients to show that the higher doses of [spironolactone](#), which prevents reabsorption of excess salt in the kidneys and maintains [potassium levels](#), could be used safely in these very-ill patients, who admit to the hospital with heart failure exacerbation and don't respond to conventional diuretics.

Spironolactone is usually given to these types of patients in doses of 25-50 milligrams. In this study, the dose was increased to 100 and, at some administrations, even 200 milligrams.

## Symptoms

"Heart failure patients come into our care with excessive fluid (salt plus water) on their body, making them short of breath, unable to walk and unable to lie flat," said Shweta Bansal, M.D., associate professor in the Division of Nephrology at UT Health San Antonio. "They are miserable because of shortness of breath and distension in their abdomen and legs."

Generally the treatment is a low-salt diet and diuretics. Furosemide

(brand name Lasix) is one of the frequently used medications. When patients are admitted to the hospital, they are monitored on this regimen and usually improve.

But about 15% to 20% of patients do not get better, Dr. Bansal said. They continue to have fluid overload.

"The reason is they get resistant to the commonly used [loop diuretics](#), and a very high aldosterone level is one of the main reasons for this resistance," she said.

## **Targeting a different mechanism**

Kidneys are made up of millions of tiny tubules called nephrons. Nephrons consist of four main segments, including a part called the loop of Henle, where 20% to 25% of salt reabsorption happens. Loop diuretics target this section.

Spironolactone inhibits the action of aldosterone, a hormone that makes the kidney excrete too much potassium and retain salt in the distal segment, another part of nephrons.

## **'Significant improvement'**

Study participants who didn't respond to standard therapy were given high-dose spironolactone and monitored for urine output and breathing. "Most of them had a dramatic increase in their urine output and significant improvement in their shortness of breath," Dr. Bansal said. "We think some patients could avoid needing dialysis if treated in this manner."

**More information:** Shweta Bansal et al, High-Dose Spironolactone

When Patients With Acute Decompensated Heart Failure Are Resistant to Loop Diuretics: A Pilot Study, *Annals of Internal Medicine* (2019).  
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