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# Ultrafiltration unlocks a better life

## Procedure restores Warsaw heart patient's energy

Michael Schroeder | The Journal Gazette

Her shoes simply didn't fit.

"The only shoes I could get on were my sneakers, and I couldn't even get them tied," said Darlene Robinson, 74, of Warsaw.

She could also squeeze into Velcro orthotic shoes but only after pulling out the padding, an uncomfortable proposition to say the least.

Robinson had built up a resistance to diuretics, medications meant to stem water retention, a common symptom for those with congestive heart failure. She had gained 20 pounds in water, 2.5 gallons as her husband calculated, much of it in her legs and feet.

"I was really tired all the time," Robinson said.

For those with a weaker heart, excess fluid can accumulate in the lungs, liver and extremities, affecting organ function and leading to shortness of breath. The shortness of breath became so pronounced that Robinson found herself sitting up at night to breathe, sometimes sleeping in a recliner.

Robinson has a history of heart problems dating to junior high school. She's undergone two open-heart operations at Lutheran Hospital. She's on her third pacemaker and will likely get her fourth this year.

"But the crowning blow was water retention," said Al Robinson, her husband of 55 years.

It exacerbated her health issues, made it nearly impossible to do even basic tasks such as cooking and cleaning. The Robinsons found themselves eating a lot of frozen dinners, which are high in salt, adding to the salt and water that had accumulated in her body.

Today, however, things look considerably better for Darlene Robinson.

In an interview with Darlene and Al Robinson at Lutheran Hospital, she smiled often and said much of her energy has returned. She's not running marathons, but she walks some and has energy to do work around the house, a major change from how she was.

She owes the change to a procedure she underwent in March called Aquapheresis. The procedure uses the Aquadex FlexFlow, a machine that removes excess salt and water.

The Aquadex FlexFlow is made by privately held CHF Solutions Inc., and Lutheran Hospital is the only facility outside of Indianapolis that has it. CHF Solutions has offices in Minnesota and New York City.

The machine has been used to treat 10 patients at Lutheran, all but one with fluid overload related to congestive heart failure (the first patient suffered from kidney failure).

Dr. Mark A. Jones, of Heart Center Medical Group, a cardiologist associated with Lutheran Hospital, expects the use of "ultrafiltration" – the generic term for the process – to expand locally. The therapy takes from 24 to 72 hours to administer and is available only on an inpatient basis.



Samuel Hoffman | The Journal Gazette

Household chores are easier for Darlene Robinson after the Aquapheresis procedure.



Dean Musser Jr. | The Journal Gazette

Darlene and Al Robinson, who have been married 55 years, live in Warsaw.

Robinson's procedure took three attempts on successive days. The first two attempts lasted four to five hours before the machine's filter plugged, the couple said. After that, the machine ran constantly for 21 hours. Darlene Robinson's hospital stay, including nights before and after the procedure, lasted nearly a week, but she was happy with the results.

Lutheran officials say future procedures might be offered on an outpatient basis.

A cardiologist with ties to Parkview Health said the hospital is actively exploring adding the treatment option, which he likened to a sort of slow dialysis.

Dr. Mark O'Shaughnessy, of Fort Wayne Cardiology, who helps oversee Parkview's congestive heart failure unit, said many in his group are certified to use the therapy. O'Shaughnessy said the procedure has some advantages over medication but added that it's less convenient compared with taking medications at home.

Recent studies suggest that ultrafiltration is useful in removing excess fluid while maintaining kidney function.

Overuse of diuretics can lead to kidney failure, among other side effects, Jones said. Even today, Darlene Robinson takes diuretics to flush excess water and salt from her system, and her kidney function must be monitored.

But for patients who qualify for ultrafiltration, the hospital readmission rate is substantially lower than for those who continue with traditional diuretic treatment, said Jones, Lutheran Hospital's medical director of heart transplant, ventricular assist devices, congestive heart failure and cardiac rehab.

Ultrafiltration is touted by the hospital and machine-maker CHF Solutions as a way to reduce health care costs for the patient and the overall health care system.

Congestive heart failure affects about 5 million Americans and is responsible for more than 1 million hospitalizations annually. The estimated economic burden of heart failure care exceeds \$28 billion in the United States, CHF Solutions says on its Web site. Because of prolonged hospitalizations and high readmission rates, many hospitals often lose more than \$1,000 for each heart failure admission.

The hospital declined to provide an average cost, including associated expenses, because of the limited number of procedures done. Lutheran charges for daily hospital stay and testing that can vary by patient, spokeswoman Lizette Downey said. She added there is no billing code for the procedure.

The average four-day stay is shorter by a day, however, than for a traditional diuretic IV therapy, Downey said. The cost for supplies and disposable medications associated with running the Aquadex FlexFlow machine is about \$900. Lutheran is absorbing some cost up front, anticipating related long-term savings for the hospital and patient, she said.

The Robinsons said their hospital bill was \$15,441, of which they paid \$1,000, with the rest covered by Medicare. It was unclear how this might compare with the cost of other Aquapheresis procedures done at Lutheran.

In addition to other projected cost savings, Carolyn Bellamy-Abel, vice president of patient financial services at Lutheran Health Network, said in a statement that "it is projected that the readmission percentage drops by 50 percent allowing much more potential savings for the patient and the insurance companies."

For Darlene Robinson, she is feeling better.

Her husband was trying to pitch in around the house before the procedure. But he said Darlene has a specific way that she likes to do things and he apparently didn't always do them just so. Darlene laughed, adding that it is just easier to do things herself.

The couple moved into a single-level condo last August. With a smaller home and more energy after her ultrafiltration procedure, Darlene finds housework much more manageable.

She has noticed some water retention in her ankles and feet since the procedure. "But it's nothing," she said, compared with how swollen her legs and feet were before. "It's not nearly as bad."

And, of course, her shoes fit just fine, even tied.

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