

## **Stem Cells May Stave Off Transplant Rejection**

By Laura Unger – [lungar@courier-journal.com](mailto:lungar@courier-journal.com)

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Two years ago, doctors gave Robert Waddell a choice – a kidney transplant or years of dialysis. The 43-year-old Louisville father of four, whose kidneys were enlarged from polycystic kidney disease, chose the transplant. But he feared the possible side effects of a lifetime of anti-rejection drugs, including infection and cancer. So he joined an experimental study that would allow him to taper off and eventually stop using those drugs.

The study, a collaboration between the University of Louisville and Northwestern University in Chicago, uses specially processed stem cells from a donor to help establish a “twin” immune system in the recipient that lets the body recognize a donated organ as its own.

Dr. Joseph Leventhal, Director of the Living Donor Renal Transplant Program at Northwestern, is working with UofL’s Dr. Suzanne Ildstad on the study. They treated their first patient last year and ultimately hope to recruit up to 30 kidney transplant recipients. “The results are very promising,” Leventhal said. If they hold up, “it looks like this would be a safe, better approach for the large majority of people. ... It would radically transform transplants by eliminating the need for immunosuppressive drugs.”



To be eligible for the study, patients can have various kidney diseases, but can’t have an infection such as HIV. They must also have a suitable living donor – although the person doesn’t need to be perfectly matched.

Waddell’s donor wasn’t even a family member. He got his new right kidney from Hugh Haydon, a friend and fellow parishioner at Our Lady of Lourdes Catholic Church.

Haydon, 50 said he considered his friend’s medical predicament and what it would mean to Wadell and his family if he didn’t get a new kidney. Then he offered his. “It was a privilege to do it,” said Haydon, who lives in Louisville but runs Kentucky BioProcessing in Owensboro.

Haydon said the stem-cell harvest, done at Northwestern in Chicago, was the hardest part. He recalled getting a central line in an artery in his neck and being hooked to a machine for about eight hours.

His bone-marrow cells were then processed in Louisville to bring out “facilitating cells” that researchers believe help transplants succeed. In traditional organ transplants, recipients face a significant danger of graft-versus-host disease, in which cells in the transplant see the recipient as foreign.

Waddell, a finance manager at Brown-Forman, said the roughest part for him was the pre-transplant “conditioning,” which included chemotherapy and radiation.

“Going through it was a lot worse than I expected,” he said. The kidney transplant, along with the transplant of Haydon’s stem cells, took place at Northwestern Memorial Hospital in Chicago in May. Waddell recalled feeling great immediately afterward, then getting nauseas and losing weight as the effects of the chemo lingered. But when those effects faded, he said, “I would just walk around and say, ‘I feel good.’”

Waddell has had three-month and six-month checkups at Northwestern and is awaiting an annual checkup in the spring. He also gets monthly tests at Jewish Hospital Medical Center East, which are sent to Leventhal to see if his donor’s cells are co-existing with his own.

So far, they are. He has tapered his anti-rejection drugs from two to one and hopes to soon get the go-ahead to stop them. He said he hopes his new kidney lasts for life – something doctors aim to achieve through this procedure. Today, Leventhal said, organs last about 20 years.

“I didn’t know for sure if it would work,” Waddell said. If the study is successful, “it definitely is going to be the wave of the future. Based on my results, I believe it.”

Report Laura Ungar can be reached at (502) 582-7190