

End-stage kidney disease study seeks to delay dialysis

September 1 2017, by Kathy Whitney

Vanderbilt University Medical Center (VUMC) is studying the safety of a possible treatment for diabetic kidney disease that would delay or prevent the need for kidney replacement such as dialysis.

Physicians from the Division of Nephrology and the Department of Radiology and Radiological Sciences are collaborating in a Phase 2 study of Neo Kidney Augment (NKA), which uses a patient's own [kidney cells](#) obtained during a biopsy to regenerate new kidney cells.

"We are using someone's own kidney cells to try to treat the most common cause of people developing end-stage kidney disease in our country and needing dialysis," said principal investigator Anna Burgner, M.D., a nephrologist in the Department of Medicine.

Burgner performs a [kidney biopsy](#) under ultrasound guidance to harvest the cells and then sends them to inRegen for processing. The purified cells are then returned to VUMC, at which time Peter Bream Jr., M.D., using a percutaneous, CT-guided technique, injects them back into the patient. Bream has completed one successful injection, making VUMC the first among the study cohort of four institutions to do so.

"Originally, in Sweden, the procedure was done through laparoscopic injection of the [kidney cells](#) as opposed to doing it percutaneously," said Bream, associate professor of Radiology and Radiological Sciences.

"They were unable to show a tremendous benefit doing it laparoscopically because there were so many complications from the

surgery. These are not healthy patients to start with and they didn't tolerate the surgery very well.

"By doing this with a percutaneous, minimally invasive technique, we are able to do away with that compounding factor and really see if this will work."

When Vanderbilt receives the cells from inRegen they are warmed and must be implanted in the patient within an hour.

"Once injected, we hope they regenerate healthy kidney tissue," Burgner said. "We are treating patients before they are on dialysis. Our hope is that NKA will keep them off dialysis longer or keep them from ever needing it or a [kidney transplant](#)."

Diabetes is the leading cause of kidney disease, and about one out of four adults with diabetes has [kidney disease](#), according to the National Institute of Diabetes and Digestive and Kidney Diseases. The study is being conducted at the Nephrology Clinical Trials Center.

Provided by Vanderbilt University

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