

AKI not a good sign for patients with diabetes, researcher says

November 5 2015

When acute kidney injury (AKI) occurs in people with diabetes, the rate of renal function loss is twice that of their non-AKI counterparts, says a University of Cincinnati (UC) researcher.

"Diabetes is the major contributor to the growing burden of end-stage [renal disease](#)," says Charuhas Thakar, MD, professor and director of the Division of Nephrology and Hypertension at the UC College of Medicine. "Acute kidney injury is a common problem among [diabetic patients](#) who require admissions to hospitals. Approximately one-third of patients who develop AKI also have diabetes mellitus."

Thakar says he present research about AKI and its predictive role in people with diabetes at the American Society of Nephrology's Kidney Week activities schedule Nov. 3-7, 2015, in San Diego. He along with a team of researchers have looked at a cohort of about 3,700 patients with Type 2 diabetes longitudinally followed for a five-year period to determine AKI's impact.

AKI is a rapid loss of kidney function, which is common in hospitalized patients. It has many causes that include low blood volume, exposure to substances or interventions harmful to the kidney and obstruction of the urinary tract.

"The average age of a diabetic patient who starts dialysis in the United States is about 67 years old," says Thakar. "In a simplified way, if someone starts with a 100 percent [renal function](#) and has diabetes, the

study finds that the overall rate of loss of renal function is approximately 2.5 percent per year. However, those who suffered AKI lost renal function at a rate of about 5 percent per year.

"This translates into a profound impact for the patient," says Thakar. "This would put the patient closer to dialysis within half as much time compared to if they had not experienced AKI.

Thakar's research also found that the rate of loss of renal function accelerates in the period after AKI compared to the period before the diagnosis. "In those subjects with available data, we found that the pre-AKI rate of loss of renal function was 2.9 ml/min/year where as it went to 6.7 ml/min/year in the period following AKI," says Thakar. This is the closest evidence yet, that an AKI episode not only increases the risk of [chronic kidney disease](#), but also accelerates the rate of loss of renal function."

Other researchers participating in the study led by Thakar include: Anthony Leonard, PhD and Karthikeyan Meganathan, both associated with the UC Department of Family and Community Medicine, and Vernon Shane Pankratz, PhD, from University of New Mexico.

"The implications of this finding are very important to both patients and the health care system," says Thakar. "From a patient standpoint, there is an imminent need to develop novel strategies to reduce the progression to end-stage renal disease in diabetic patients, particularly those with AKI. Also, diabetic patients who develop AKI in the hospital need more careful monitoring after they are released from the hospital.

"As a health care system, we need to identify patients who are likely to progress faster to end-stage renal disease," says Thakar. "Transition to end-stage renal disease is associated with high morbidity and costs, and requires careful planning and multi-disciplinary care. We need to be pro-

active in our approaches to plan end-stage renal disease care in diabetic patients who have experienced AKI."

Thakar says the study has limitations. "This is an observational study from a single center and could have potential unmeasured confounders." The study also does not take into effect changes in certain clinical parameters that may occur over time and may not be captured in electronic medical records.

Provided by University of Cincinnati Academic Health Center

Citation: AKI not a good sign for patients with diabetes, researcher says (2015, November 5) retrieved 26 April 2024 from

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