Medical Xpress

Researchers examine impact of poor functional kidney status

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Picture of Charuhas Thakar, M.D., professor and director of the Kidney CARE program and Silvi Shah M.D., assistant professor in the Division of Nephrology, both at the University of Cincinnati College of Medicine. Credit: Colleen Kelley

A study by researchers at the University of Cincinnati (UC) finds poor

functional kidney status in elderly patients with end stage renal disease (ESRD) is associated with a higher incidence of initiating hemodialysis, increased the risk of central venous catheter use and is an independent predictor of one-year mortality. The study was published in the April 27, 2018 edition of *BMC Nephrology*.

The article, "Functional Status, Pre-Dialysis Health and Clinical Outcomes Among Elderly Dialysis Patients," describes research conducted by Silvi Shah, MD, assistant professor, and Charuhas Thakar, MD, professor and director of the Division of Nephrology, Kidney CARE (Clinical Advancement, Research and Education) Program in the UC College of Medicine, and Anthony Leonard, Ph.D., research associate professor in the Department of Family and Community Medicine.

Researchers studied nearly 50,000 adult ESRD patients who started hemodialysis or peritoneal dialysis between Jan. 1 and Dec. 31, 2008 using data from the United States Renal Data System (USRDS), with linked Medicare data covering at least two years prior to dialysis initiation. A major predictor was poor functional status defined by any of the three co-morbid conditions as specified in Department of Health and Human Services Centers for Medicare and Medicaid Services form 2728—(1) inability to ambulate, (2) inability to transfer or (3) need of assistance with daily activities. Shah says they discovered that elderly patients who have poor functional status have an increased one-year mortality by 48 percent.

Elderly chronic kidney disease patients, meaning those over the age of 60, represent the fastest growing segment of the ESRD patients in the United States. The annual mortality in ESRD patients is roughly 20 percent, and is higher in the first few months after starting on dialysis. Shah says even though early mortality is a significant problem among elderly ESRD patients, it remains underrecognized.

"What this points out is we have to take into account patients' functional status and pre-dialysis health while initiating elderly patients on dialysis," says Shah, the principal investigator of the study. "The information from the present study can influence a health care provider's decision to initiate dialysis, help counsel patients and families, and can facilitate an integrated approach in shared decision-making."

Shah says one of the unique aspects of the study was linking the USRDS database to Medicare claims to determine the pre-dialysis health of incident ESRD patients.

"In the present study, we examined the impact of poor functional status on key clinical outcomes in elderly patients who get initiated on dialysis, after taking into account their pre-dialysis health including pre-dialysis acute hospitalizations, pre-dialysis nephrology care, history of nursing home stays, laboratory data and comorbidities," says Shah.

A secondary outcome examined in the study was the presence of vascular access for dialysis initiation. Shah says it is well known that arteriovenous access is preferred to a central venous catheter. Patients with poor functional status had 21 percent lower odds of initiating hemodialysis with arteriovenous access. Additionally, elderly patients with poor functional status had 39 percent higher odds of being started on hemodialysis as compared to peritoneal dialysis.

"An average patient who initiates dialysis in the United States is over 65 years of age, and has either diabetes or hypertension as a major cause of their kidney disease, along with other comorbid conditions," says Thakar. "The study finds that one out of two patients with poor functional status who initiate dialysis may not make it to the end of their first year. This is a very relevant prognostic indicator, given that dialysis patients experience a reduced quality of life, and may help in informed choices.

"On the other hand, it provides hope that aggressive efforts to improve functional status in potentially reversible situations may allow better outcomes in these patients."

Provided by University of Cincinnati Academic Health Center