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Researchers examine racial and gender disparities in dialysis patients

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University of Cincinnati (UC) researchers are examining racial and gender disparities in dialysis patients as well as the impact of poor functional status and pre-dialysis hospitalizations on elderly dialysis patients. Silvi Shah, MD, assistant professor in the Division of Nephrology, Kidney CARE Program at the UC College of Medicine, presented this research at the American Society of Nephrology meetings in New Orleans, Oct. 31-Nov. 5.

The research team presented four separate studies, all based on data from the United States Renal Data System (USRDS), the largest database for patients with end stage renal disease (ESRD). Three of the four studies accounted for elderly patient pre-dialysis health status, while the fourth examined racial and gender disparities and the type of vascular access in hemodialysis patients.

"One in every four ESRD patients who gets started on dialysis is over 75 years of age," says Shah. "With increasing age, they have increasing frailty and higher prevalence of comorbidities, including congestive heart failure, hypertension and diabetes. In addition, acute hospitalizations are frequent in elderly patients with chronic kidney disease. The question at times becomes if they should be offered dialysis or be given more conservative treatment—no dialysis, just medical management."

The poster presentation, "Impact of Pre-Dialysis Hospitalizations on Outcomes Among Elderly Dialysis Patients" showed that pre-dialysis

hospitalization is common and is associated with a higher risk of one-year mortality in elderly dialysis patients. The research analyzed data of more than 231,000 adult dialysis patients from 2007 through 2011. The data showed that 88 percent of the elderly patients had at least one acute care hospitalization, while 66 percent of them had two or more hospitalizations in the two years prior to the initiation of dialysis.

Pre-dialysis cardiovascular related hospitalization was associated with 48 percent higher risk of mortality, pre-dialysis infection related hospitalization was associated with 41 percent higher risk of mortality and a history of both cardiovascular and infection related hospitalization was associated with 83 percent higher risk of mortality. The researchers concluded that pre-ESRD hospitalization is very common and should be considered while comparing mortality as an indicator of quality of dialysis care.

Another key factor in the risk of one-year mortality of ESRD patients is functional status, as reflected in the presentation "Impact of Poor Functional Status on Outcomes Among Elderly Dialysis Patients." Poor functional status is defined as the inability to walk, the inability to move and/or needing assistance with daily activities. This research examined data on almost 50,000 dialysis patients in 2008, finding that poor functional status is associated with a 48 percent higher risk of one-year mortality.

"Physicians usually do not consider pre-dialysis health status like pre-dialysis hospitalizations or absence of nephrology care when they start elderly patients on dialysis," says Shah. The researchers found that patients with poor functional status have increased one-year mortality after adjusting for pre-dialysis health status and should be assessed for conservative treatment options instead of dialysis.

"Dialysis care, including one year mortality, continues to be under a

microscope for quality, and payment for performance by Medicare," says Charuhas Thakar, MD, professor and director of the Division of Nephrology Kidney CARE program. "It is important that we leverage the advantage of large linked data sets like the USRDS and Medicare to learn about how pre-dialysis health status and disparities continue to impact post-dialysis care."

"We are fortunate to have developed teams with analytical expertise so as to mine such data, and learn ways to improve quality and efficiency of dialysis care," says Thakar, who serves as a mentor and a senior investigator on this project.

The study "Racial and Gender Disparities in Long Term Clinical Outcomes Among Elderly Dialysis Patients" is unique in that, according to Shah, previous studies looking at race and gender disparities in patients at the start of dialysis treatment haven't taken into account pre-dialysis health status.

"What we wanted to see in this study is if there is any difference across race and gender when we consider the pre-dialysis health status," says Shah. "What it tells us is blacks, Hispanics and Asians are less likely than whites to die within one year of initiating dialysis when we take into account pre-dialysis health status. Females were also less likely than males to die within one year of initiating dialysis. We have to further investigate why this is happening. It could be process of care factors or possibly genetics."

Race and gender were also examined as factors in the "Racial and Gender Disparities-Type of Vascular Access in Hemodialysis Patients" research presented. In treatment of dialysis patients, arteriovenous (AV) access is preferred over central venous catheters because of a reduced risk of infection. This study of almost 98,000 dialysis patients in 2008 found females are 17 percent less likely than males to initiate

hemodialysis with AV access in adjusted analyses and in terms of race, Hispanics are 12 percent less likely to use AV access for first outpatient hemodialysis in adjusted analyses.

The data showed that despite receiving less pre-dialysis nephrology care, blacks are 7 percent more likely than whites to use AV access for first outpatient hemodialysis in adjusted analyses. The research team concluded that further investigation of biological and process of care factors is warranted to reduce these disparities.

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