New Donor Chains Could Change Approach to Paired Donation

By Eric Seaborg

A new approach aimed at turning one altruistic kidney donation into a never-ending chain could be the next step in increasing the number of transplanted kidneys, a recent report in the New England Journal of Medicine proposes. The new system is called a nonsimultaneous, extended, altruistic donor (NEAD) chain.

“Before this article, everybody in the field of kidney transplantation thought that we had to do everything simultaneously,” said lead author Michael Rees, MD, PhD, professor of urology at the University of Toledo and medical director of the Alliance for Paired Donation (APD). “All kidney paired donation transplants had to happen simultaneously because of that great harm that would happen if somebody cheated and somebody was permanently harmed by the loss of their donor.”

The insight behind the innovation is that starting a chain with an altruistic donor—someone who volunteers a kidney with no strings attached—fundamentally changes the ethical consequences of a potential donor reneging down the line. Critics, however, contend that the paper downplays these consequences and that the approach widens the gap between patients with incompatible donors and those without.

Pre-Dialysis Care Varies by Patient, Center, and Region

Links to First-Year Mortality Warrant Quality Improvement Initiatives

By Timothy O’Brien

For patients with advanced chronic kidney disease (CKD), how much does getting recommended pre-dialysis care affect outcomes? Quite a bit—not only for the individual patient, but also at the level of the dialysis center, according to a study in the May Journal of the American Society of Nephrology.

Based on analysis of U.S. ESRD Network data, the study identified geographic “clusters” where patients are particularly unlikely to receive recommended pre-dialysis care. “Our observations suggest that pre-ESRD care may not vary randomly across communities and that less than optimal care aggregates within some treatment centers, and these centers tend to aggregate geographically,” said lead author William McClellan, MD, of Emory University School of Medicine in Atlanta. “This suggests that assistance to improve pre-ESRD care might be profitably targeted to these treatment centers and the health systems they serve.”

Better pre-dialysis care, better one-year survival

McClellan and his colleagues analyzed data on more than 30,000 patients starting hemodialysis therapy and identified geographic clusters where patients were significantly less likely to receive recommended care. Patients in these clusters had lower one-year survival rates.

Continued on page 3
Pre-Dialysis Care

Continued from page 1

The findings echo reports on the Canadian experience with advanced CKD, according to Yee, MD, head of the division of nephrology and hypertension at Henry Ford Hospital in Detroit. “If clinical practice guidelines and recommendations are attained before the advent of dialytic care is needed, it is an important part of current recommendations for the care of patients with CKD. The final analysis included 28,135 patients, mean age 62.8 years. Fifty-four percent were male and 56 percent white; 44 percent had diabetes.

Just over half of the patients—51.3 percent—received at least six months of pre-dialysis care from a nephrologist. Older patients, women, patients with diabetes as their primary cause of ESRD, and those with comorbid coronary atherosclerosis were more likely to receive recommended care. Factors associated with reduced rates of pre-dialysis care included female sex, Medicare or Medicaid insurance, and nursing home residence.

By several measures, patients receiving recommended care were in better shape for starting dialysis—including the presence of an AVF in 84.5 percent of cases. Patients receiving at least six months of nephrologist care were fitted with an AVF at four times the rate of those not receiving such care. They were also more likely to have been treated with an erythropoiesis-stimulating agent (ESA), to have received dietary counseling, and to have hemoglobin and albumin levels within the recommended range, compared with those who did not receive such care.

All of these advantages translated into a reduced risk of death during the first year on dialysis. One-year survival was 81.4 percent for patients receiving recommended pre-dialysis care, compared to 79.3 percent for those who did not receive recommended care. On adjusted analysis, the odds of survival were 50 percent higher for patients receiving recommended care. Once other factors—including AVF, hemoglobin and albumin levels, ESA use, body mass index, and dietary counseling—were taken into account, the effect weakened. However, the odds of survival were still 31 percent higher for patients receiving six months of nephrologist care.

“Ours is one of the largest studies to show a theme or correlation between pre-dialysis care and outcomes,” McClellan said. “It has the additional advantage of being population-based, including all hemodialysis patients in the population at risk. The findings echo reports on the Canadian experience with advanced CKD, according to Yee, MD, head of the division of nephrology and hypertension at Henry Ford Hospital in Detroit. ‘If clinical practice guidelines and recommendations are attained before the advent of dialytic care, the improvement conferred by earlier care is borne out,’ said Yee. ‘Patients whose health is relatively better, do better.’

Variations by center, with clusters of low-quality care

The data came from 1641 dialysis centers, which showed ‘substantial variation’ in the percentage of patients receiving recommended pre-dialysis care. On average, just under half of patients starting care at a particular center had received recommended care, with a 25th to 75th percentile range of 33 to 64 percent.

Centers at the lower end of the range had fewer patients meeting recommendations for laboratory levels, nutrition and other factors. They also had the highest one-year mortality rate: 19.6 percent, compared to 16.1 percent at centers with high rates of recommended pre-ESRD care. The centers with high levels of pre-dialysis care had a 15 percent relative reduction in mortality.

When center-level data from four southern and southeastern ESRD Network regions were plotted on a map, a surprising picture emerged: a “significant circular cluster” of low pre-dialysis care centers in Alabama and Mississippi. One center’s circle “appeared to be connected by a circle with the Mississippi River corridor from New Orleans up to Memphis, the other edge comprising most of the state of Alabama,” according to the study report. In the center of the circle was a conspicuous “hole,” in which there were no centers with high rates of pre-dialysis care.

Many potential contributors to center and regional variations

So what to make of this cluster of low-quality pre-ESRD care? “For as yet undetermined reasons, some geographic areas and their medical communities manage stage 4 CKD less successfully than others,” said McClellan. “It is possible that factors not directly related to the medical communities per se may contribute to this variation. In looking at potential risk factors for these outcomes, we are interested in socioeconomic factors, population density (rural/urban), access to medical care and similar factors.”

“This very interesting paper shows the prevalence of health-care disparities in pre-ESRD care,” said Cleveland Clinic nephrologist Sankar Navaneethan, MD. Navaneethan was lead author of a recent review on factors associated with late referral in CKD (BMJ Nephrology 2008; 9:3). The results showed that lack of communication between primary care physicians and nephrologists was a significant contributor to late referral, along with older age, minority status, lower education, and multiple comorbidities.

“The treatment center variation might be attributable to several causes. Insurance or socioeconomic status, availability of nephrologists in the vicinity, and the CKD knowledge of referring physicians could all play a significant role,” Navaneethan said. “More work is needed to see if eGFR reporting in these areas might have contributed to the better pre-ESRD care in some but not in others. This would help to clarify if the lack of knowledge of referring physicians contributed to this variation.”

While morbidity and mortality are obviously crucial, the center-level differences could affect other outcomes as well, according to Nancy Kunzer, PhD, director of the rehabilitation/quality of life special studies center of the U.S. Renal Data System (USRDS) and Emory University in Atlanta.

“Treatment center differences in patterns of care have been shown to be associated with differences in dialysis patient-rated health status and employment levels,” Kunzer said. “Identifying clinic and/or regional differences in patterns of patient activity levels and nutritional status—as assessed for example in the USRDS’s recent Comprehensive Dialysis Study—would also be informative. Of course, many patient-level variables that cannot be controlled in these observation studies are likely to influence patient outcomes.”

“This is an extremely important study that identifies significant variation in pre-ESRD care from community to community,” said Neil Pode, MD, James F. Fries Professor of Medicine and University Distinguished Service Professor of Medicine, Epidemiology and Health Policy and Management at the Johns Hopkins Medical Institutions. “It suggests that where a person with chronic kidney disease lives and receives care can have a profound effect on their health outcome. We need to better understand why these variations occur in order to improve care.”

Maps may help target areas for quality improvement

Would maps of pre-dialysis care in other U.S. ESRD Network regions show similar clusters? “In the absence of data, that’s a tough question,” said McClellan. “The southeastern United States is characterized by a unique, intense clustering of poverty—the clustering may be a characteristic of the region.” He pointed to a recent study applying spatial analytic techniques to the Community Health Status Indicators database, which showed a striking “contiguous poverty divide” between the northern and southern United States. (See http://www.cdc.gov/pcd/issues/2007/07_0091.htm.)

“Mapping of geographic variations in patient characteristics and outcomes may point to locations where racial and/or ethnic disparities are elevated,” Kunzer said. “And, as a recent NEJM editorial suggests, identification and analysis of regional variations and associated outcomes might provide some lessons about ways to slow the growth of health-care costs.” (N Engl J Med 2009; 360:849-852.)

Meanwhile, the results identify specific regions that might benefit from focused efforts to improve care for advanced CKD. “Our primary observations are the non-random distribution of the less-than-recommended pre-ESRD care among treatment centers and geographic regions,” according to McClellan. “This may identify opportunities to target quality improvement interventions to improve stage 4 CKD care.”

Some projects targeting regional variations in CKD care are already underway. “Information on center-to-center variations and geographic clustering were applied to identify medical communities for a population-based CKD quality improvement pilot project being conducted by CMS in one of the Network states,” said McClellan. “In addition, the CMS is piloting an intervention to improve CKD care among type 2 diabetes in 10 states. If successful, this pilot could serve as the basis for targeted interventions during future Medicare QIO and ESRD Network scopes of work.”

Meanwhile, nephrologists and other professionals must work to realize the benefits of recommended pre-ESRD care. “Earlier chronic kidney disease care must occur, in order to achieve the outcomes associated with reduction in mortality,” Yee said. “The time threshold for this to occur is at least six months before the initiation of renal replacement therapy. All of us must do better.”

Disclosure: McClellan is a clinical consultant for the Georgia Medical Care Foundation, a Medicare quality improvement organization, which is participating in the Centers for Medicare & Medicaid Services pilot.

New Online: Discuss and Debate Hot Topics in Nephrology

The American Society of Nephrology is pleased to introduce the ASN Kidney News Discuss and Debate readers’ forum, a moderated web page that will link to articles of interest. This month’s forum will be on the articles:

“New Kidney Allocation Policy: God Squad Resurrection…”

“...Or Allocating a Scarce Medical Resource?”

The articles appear on pages 14-15 in our special section, “Transplantation: Issues and Controversies.” The forum will be open for comment from May 18 to June 3. We welcome and invite your comment on this important topic.

This is a moderated forum. All comments submitted must be reviewed and approved before appearing. Please review carefully the Guidelines for Posting. By commenting, you agree that you have read and will abide by these guidelines!

We look forward to receiving feedback on these articles.

May 2009  |  ASN Kidney News  |  5