

## Early Transitions to Home Dialysis Are Rare After Emergency Dialysis

### Survival Varies Among Early Adopters

Very few patients who begin urgent in-center hemodialysis transition to home dialysis early, and the survival of those who do varies by modality, according to research presented at Kidney Week 2019.

Many patients who begin urgent, unplanned hemodialysis in a center may prefer to switch to home dialysis. To learn more about the patients who do make this switch and how it affects their survival, Sonny Nguyen, MD, a resident physician at Harbor University of California–Los Angeles (UCLA) Medical Center, and his colleagues analyzed data from the US Renal Data System on 190,642 patients who started urgent, in-center hemodialysis with a venous catheter, no maturing arteriovenous access, and no prior dialysis referral between 2005 and 2013.

They found that just 3923, or 2%, of these patients transitioned to peritoneal dialysis and 853, or 0.4%, transitioned to home hemodialysis during the first 90 days after initiating dialysis. They also found striking differences in the characteristics between the two groups. Patients who were younger, white, had private insurance, lived in rural areas, or initiated dialysis in a unit with a home peritoneal dialysis program were more likely to make an early transition to home peritoneal dialysis. Those who were older, frailer, from an urban area, or started dialysis at a center with a home hemodialysis program were more likely to make an early transition to home hemodialysis.

“Few patients who have an unplanned start on in-center hemodialysis make an early transition to home dialysis modalities,” Nguyen said. “Our study suggests that initiating such patients in centers that also have home dialysis programs might facilitate these transi-

tions.”

Additionally, patients who made an early transition to home peritoneal dialysis were less likely to die than those who stayed on in-center dialysis. Those who made the early switch to home hemodialysis had a higher risk of death than those who never transitioned to home dialysis. Nguyen suggested the difference in survival in the two groups was likely related to the different characteristics of the two groups.

“Those who transitioned to [peritoneal dialysis] were generally younger and healthier than those who remained on in-center hemodialysis,” Nguyen said. “Conversely, those who switched to home hemodialysis tended to be older and frailer. While we adjusted for these differences in observed characteristics using propensity score matched analyses, it is certainly possible that there is residual confounding by unobserved characteristics.”

For example, one potential confounder is that patients transitioning to home hemodialysis may have used central venous catheters longer than in-center patients, increasing the risk of bloodstream infections. Additionally, some frail, older patients may have been receiving home hemodialysis in nursing homes or with help from a home caregiver.

John Sim, MD, assistant clinical professor at the David Geffen UCLA Medical Center and Kaiser Permanente Los Angeles Medical Center, agreed that the mortality differences in the two groups likely represent “self-selection bias.”

Christopher Chan, MD, director of the Division of Nephrology at the University of Toronto, said the age and frailty of the patients in the home hemodialysis group alone may have explained the survival difference. However, he cautioned that it’s difficult to draw conclusions without specific data on the dose prescribed.

“We need to understand why there is a higher mortality among patients who transitioned to one particular modality,” Chan said. “If it is indeed the dialysis prescription per se, then we need to intervene because that’s not the usual trends in the home dialysis literature.” Chan noted that use of home dialysis in Australia, New Zealand, and the United Kingdom is at least two times higher than in the US and these trends have not been observed in studies in those countries. He noted there may be differences in expertise, the type of patients receiving home dialysis, and the doses in such countries.

Sim said the lower mortality in the peritoneal dialysis group raises interesting questions, for example, whether the home hemodialysis patients were more likely to develop complications related to catheter use and whether the lower infection risk associated with peritoneal dialysis was related to the catheter.

“Usually, peritoneal dialysis patients initiate therapy in an incremental treatment type manner, meaning their transition to peritoneal starts with less dialysis and the dose increases as they continue on peritoneal dialysis,” Sim said. “This approach may lead to less of a shock on the end stage renal disease patients resulting in a smoother transition to dialysis.”

Future studies may help resolve these questions.

“We plan to examine whether there is an increased risk of mortality in patients who transitioned to home hemodialysis when we restrict the cohort to non-institutionalized patients,” Nguyen said. “We also plan to test our theory that patients who transition to home hemodialysis use a catheter longer and are more likely to have infectious complications.” ■

“Early Transitions from In-Center Hemodialysis to Home Dialysis” Oral Abstract 090

## Clinical Research in Nephrology: Trials, Trends, and Tools

By Meaghan Allain

Research in nephrology has been on the rise over the past 5 years and data show that the future is bright for both innovators and people living with kidney diseases. This glimmer of hope was displayed throughout Kidney Week, during which both people living with kidney diseases and kidney health professionals came together to learn and discuss the current and future state of clinical research.

During a session titled Clinical Research in Nephrology: Trials, Trends and Tools, Uptal Patel, Senior Director at Gilead Sciences and nephrologist by training, reviewed a dataset of clinical trials by subspecialty between 1966 and 2002 that displayed nephrology with the lowest proportion of all subspecialties. However, recent data show an increase in quality and quantity of trials in nephrology, including an increase in trials for devices, behavioral interventions, and rare kidney diseases.

As Jamie Dwyer, Director of Vanderbilt University’s Nephrology Clinical Trials Center, stated to the audience of kidney health professionals, there needs to be a shift in the culture of nephrology to focus on research readiness. More research being conducted in the field will assist with shifting to upstream and personalized care for patients living with

kidney diseases.

The following are the four areas to consider when implementing a research-ready culture:

- **Knowledge** – Everyone needs to know the value of research and how to message its importance. Knowing the protocol is key.
- **Processes** – Make processes sensible and clear. Intuitive processes will always succeed.
- **Communication** – Ensure that communication is clear. Follow-up communication with everyone on the care team helps ensure the subject continues participation on the drug/study.
- **Engagement** – Approach and engage with your patients about new studies they can participate in.

Mary Baliker, a healthcare consultant and transplant recipient, noted that it is crucial to consider the patient perspective in any clinical study. It is important to those who are participating in the study that the treatment is significant to them, the study duration and design are feasible, and the outcomes are relevant. By engaging patients early for feedback on study design and communicating data back to patients after studies are complete, this will increase the likelihood of positive experiences associated with participating in

clinical studies and continued participation, Baliker said.

Kidney patient and healthcare organizations are developing programs to support patients and families as well as clinicians, researchers, and the healthcare team as they consider and embrace a culture of research readiness. NephCure Kidney International (NKI) CEO Josh Tarnoff outlined the new NKI program called Kidney Health Gateway. Visit [www.kidneyhealthgateway.com](http://www.kidneyhealthgateway.com) to sign up for alerts and information on clinical trials for nephrotic syndrome.

The Kidney Health Initiative, ASN’s public-private partnership with the US Food and Drug Administration, and its member organizations have also been collaborating to catalyze this change and uptake in clinical research. The perspectives outlined in this Kidney Week session reiterated the changes needed to bring promising therapies to people living with kidney diseases throughout the world. By engaging patients earlier in clinical trial design, embracing a research-ready culture, and implementing infrastructure for more efficient trials, the future of research in nephrology can shine even brighter. ■

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