

Kidney News

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Does Living Donor Age Matter in Kidney Transplantation?

Recent study results should encourage more donor paired exchanges

By Tracy Hampton



Across the globe, numerous kidney transplant candidates and donors are linking up in often complicated ways to facilitate more transplants through exchange programs, or swaps. The largest swap so far, which was orchestrated by the National Kidney Registry (NKR) and involved 60 lives and 30 kidneys, was described recently in *The New York Times* (http://www.nytimes.com/2012/02/19/health/lives-forever-linked-through-kidney-transplant-chain-124.html?_r=2). Also, in early February the NKR announced that it had facilitated its 400th exchange transplant. These efforts by the NKR and other programs could not come at a better time. Nearly 90,000 people in the United States are waiting for a kidney transplant, and

many will die before a suitable organ becomes available. The shortage is expected to worsen.

Such living donor chains and simpler closed-loop paired exchanges, which involve two pairs of donors and recipients, assume that kidneys from living donors are of comparable quality and anticipated longevity. But how true is this assumption? Potential recipients often wonder, will the kidney received from a stranger—particularly an older one—be as good as a kidney donated by a loved one?

“In a proposed kidney paired donation match, if an old donor–recipient pair is matched to a young donor–recipient pair, the young recipient may feel disadvantaged and may not be will-

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Antiplatelet Therapy in Patients with Chronic Kidney Disease: Is It Safe?

By Tracy Hampton

Antiplatelet therapy that inhibits blood clotting can be life-saving for individuals at high risk for cardiovascular disease or stroke. At first glance, this should apply to patients with chronic kidney disease (CKD), who are more likely to die of cardiovascular disease than of any other cause.

But nonatherosclerotic conditions such as cardiac failure, sudden cardiac death, and arrhythmia are more common causes of cardiovascular events in individuals with CKD than in the general population, and the bleeding risk of antiplatelet agents may be greater among people with CKD because of

impaired hemostasis.

Investigators recently published a review in the *Annals of Internal Medicine* on the benefits and harms of antiplatelet agents in these patients, focusing on cardiovascular events, mortality, and bleeding.

“Until now, data from studies done in the general population were extrapolated to people with chronic kidney disease,” said senior author Giovanni Strippoli, MD, PhD, who holds titles at the school of public health at the University of Sydney in Australia, the Mario Negri Sud Consortium in Italy,

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Living Donor Age

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ing to trade with an older donor,” said Paolo Ferrari, MD, director of Australia’s national registry for paired kidney exchanges. “Refusal to participate in an exchange could break the chain of potential matches identified after a match run and could limit the success of a kidney paired donation program.”

A recent study by John Gill, MD, and his colleagues, of the University of British Columbia, in Vancouver, Canada, that appears in the *Clinical Journal*

of the American Society of Nephrology investigates this issue. The researchers analyzed the survival of kidneys from donors of different age groups that were transplanted into recipients of different age groups. Their study included data from all adult kidney transplants from living donors that were performed in the United States from January 1988 to December 2003, with follow-up through September 2007.

Age not an issue

The investigators found that except for recipients aged 18 to 39, who benefited the most when they received kidneys

from donors aged 18 to 39, donor age between 18 and 64 had a minimal effect on the survival of transplanted kidneys. Specifically, the researchers noted a difference of only 1 to 2 years in allograft half-life, with no graded association, among different donor age groups.

“These findings show that in contrast to deceased donor transplantation, the age of a living donor has little impact on transplant survival,” Gill said. “This information should help increase participation and efficiency of living donor paired exchange programs because it alleviates patient concerns about receiving a kidney from an older aged living do-

nor that currently limits acceptance of a proposed transplant in paired exchange programs.”

More experience is needed to determine the outcome of transplants from living donors aged 65 and older relative to younger living donors, Gill said.

In addition to expanding participation in exchange programs by blood group and tissue-incompatible donor-recipient pairs, the results may also encourage participation of more compatible donor-recipient pairs. Finally, the information should prompt exchange programs to reexamine any matching algorithms that emphasize donor-recipient age matching.

“This study’s observation supports data from the Australian registry, where 13.8 percent of live donors were aged 60 years or older, showing that live donor-recipient age difference does not impact graft or patient survival,” said Ferrari, who was not involved with the study by Gill and his associates. Those findings were published by Ferrari and his colleagues in 2011 in *Nephrology Dialysis Transplantation*.

“Taken together, these findings of the two registry data are of major relevance for policy and decision making in kidney paired donation,” Ferrari said. They reinforce the view that it is acceptable to ignore donor-donor or donor-recipient age differences as a scoring parameter in ranking match combinations.”

Weighing options

Gill and his team also juxtaposed their results against the probabilities that wait-listed patients would receive a kidney from a deceased donor and their risk of being excluded from transplantation during the study because of death or permanent removal from the wait-list.

The probability of deceased donor transplantation after 3 years of wait-listing ranged from 21 percent to 66 percent depending on patients’ blood type and antibody levels, whereas the probability of being excluded from transplantation ranged from 6 percent to 27 percent by age, race, and type of kidney disease. Gill noted that when patients consider these probabilities, many will likely find that participating in living donor paired exchanges—and possibly receiving a kidney from an older donor—is a better option than continuing to wait for a deceased donor transplant.

Yet the study included relatively few living donors aged 60 and older, the authors said, noting that there may be certain patient subgroups who tolerate dialysis relatively well, so that waiting while they continue to receive dialysis would be a reasonable consideration. Also, they were unable to evaluate the effect of other important donor factors that may affect transplant survival and confound the results, including predonation kidney function, donor blood pressure, and diabetes in the donor.

The authors stressed that their find-

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ings should not be interpreted as a dismissal of the importance of living donor age on transplant outcomes. Most recipient age groups with living donors between 40 and 64 had a small but statistically significant increased risk of allograft loss compared with those whose living donors were 18 to 39 years old, and in all recipient age groups, the greatest donor age-associated risk of allograft loss was among recipients from living donors aged 65 and older. This increased risk of allograft failure with older donor age is consistent with results from a recent single-center *American Journal of Transplantation* publication from the Mayo Clinic that showed an association between living donor age and the risk of death-censored graft loss. That study did not show an association between living donor age and patient death.

Although questions still remain about the comparable quality of different do-

nors' organs, the results shown by Gill and his team provide valuable information to transplant candidates and potential donors who are weighing their options. ●

Study co-authors include Peter Chang, MD, Jagbir Gill, MD, James Dong, Caren Rose, Howard Yan, MD, David Landsberg, MD (University of British Columbia, in Vancouver, Canada); and Edward Cole, MD (University of Toronto, in Canada).

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The article "Living donor age and kidney allograft half-life: implications for living donor paired exchange programs," appeared online at <http://cjasn.asnjournals.org/> in March 2012, doi: 10.2215/CJN.09990911.

Paired Donations Increase Scrutiny of Issues

Kidneys are the most commonly transplanted organ, and now with the advent of transplant chains that use several sets of matched pairs, the numbers of these logistically challenging operations are poised to rise to levels unanticipated only a few years ago. At the same time, increased scrutiny of chain transplants, which rely on living donors, is emerging from all corners of the industry.

A recent conference of national and regional kidney transplant partners represented a first attempt to agree on the direction of their field. Insurers and representatives from several registries and the large federally run United Network for Organ Sharing (UNOS) also attended. UNOS manages the national transplant waiting list and maintains the database that has all organ transplant data, from every transplant that happens in the United States.

Held in late March in Herndon, VA, the Consensus Conference on Kidney Paired Donation had an ambitious goal—to seek consensus among the 70 participants on ways to increase the volume of transplants that involve kidney paired donation (KPD). The genesis of the conference was the idea that KPD is the most effective approach to recruit a substantial pool of high-quality kidneys from healthy living donors. These donors would not have volunteered otherwise because their kidneys weren't a compatible match for their family member or loved one. Despite the need and opportunities for this type of donation, KPD remains an often unused option.

An announcement from the University of California, San Francisco—where the conference's lead organizer Sandy Feng, MD, PhD, is a transplant surgeon—described the first consensus meeting and noted that "the emergence of multiple KPD programs with diverse approaches and processes attests to a lack of consensus as to how to maximize the benefit and minimize the risk of KPD."

While the participants expressed a desire for a unified registry that would provide a centralized system for storing and accessing data about donors and recipients, they ultimately could not agree over how this unifying effort would take place, according to Kevin Sack, who reported on the conference for *The New York Times*.

One mathematician from the U.S. Naval Academy, Sommer Gentry, who had been working on donation models, wanted to eliminate barriers to a national registry. "With two pools of 100, you get fewer opportunities than with one pool of 200," to match donors to recipients.

Sack noted that Feng was concerned that unifying all of the current registries into one system might stifle the innovations used by successful registries like the National Kidney Registry. "Maybe we can have different operations with common allocation methods and principles, [without complete unification of systems]," Feng said. ●

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