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Jerry Yee
Henry Ford Health, JYEE1@hfhs.org

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EDITORIAL

Living Kidney Donation: More Than Two to Tango

In this issue of *Advances of Chronic Kidney Disease*, our Guest Editors Davis, Patel, and Samaniego-Picota have carefully elicited from their contributors the essentials of kidney donor health issues. Their tenet that potential recipients should all be offered living kidney donation is both powerful and provocative. In an ideal world, they are certainly right, and the respective authors in this issue must right-size this proposal within the constraints of our real-world health care, juxtaposing the various forces and constraints of finances, culture, and technology.

Recently, the press recounted a most extreme form of altruistic living kidney donation, a "pass-along" kidney transplantation at Northwestern University. A sister donated her kidney to her brother who had incurred ESRD from focal and segmental glomerulosclerosis. Unfortunately, the allograft developed rapid recurrence of disease, with heavy proteinuria within days of implantation. The organ was failing by all measures, and consequently, the patient, his family, and transplant team charted a new course for the sister's kidney. After 2 weeks, the organ was removed and successfully retransplanted to a nonfamilial recipient, who currently is doing well.

Living kidney donation (LD) is alive and well. It better be because the number of deceased donors is dwindling, and this trend may continue. LD offers superior outcomes compared with outcomes from standard criteria donor or extended criteria donor (ECD) kidneys, and the magnitude of graft survival with LD increases with time compared with standard criteria donor and ECD. Notably, the mortality risk after ECD kidney transplantation is superseded by stasis on the waiting list. Moreover, despite that nearly 13,600 kidney transplants were performed in 2009 (Scientific Registry of Transplantation Registry Report 2010), the national and your waiting list continues to grow.[1]

Actors Haley Joel Osment, Helen Hunt, and Kevin Spacey popularized the term "pay it forward" in their eponymous 2000 film, and this altruistic strategy has recently been adopted in the kidney transplantation community. There has been creative intensification of LD programs through paired kidney exchange (PKE), altruistic donation, altruistic donor chains, and list exchange programs. These programs amplify standard direct donation programs and break through barriers to transplantation, including immunological ones of ABO incompatibility and human leukocyte antigen sensitization of allograft recipients.[2]

Although there has been much written about this multiplicative strategy, it was first successfully conducted in South Korea 2 decades ago.[3] There are several strategies within this rubric that optimize recipient organ allocation and seemingly nontransplantable individuals, namely, those with high panel–reactive antibody levels, may now be transplanted. However, defined structure and organization is required to implement donor chains. An excellent example of such organization is embodied by the National Kidney Registry. Founded in 2008, the Registry has initiated 84 donor chains, with only 8 broken chains, and facilitated 434 kidney transplantations. Today, at least 7 other organizations have the specific mission of increasing PKE. Notably, at least 3 nephrologists have participated in LD transplantation: 2 in altruistic manner and 1 to their spouse through PKE.

Problem solved? Hardly. Tremendous challenges remain for those who desire and await kidney transplantation. From the living donor standpoint, coercion, ethics, and psychological issues must be circumvented early on, after biological acceptability of the kidney is documented. Informed consent is a difficult issue as is the donor's comprehension of what he/she will go through before, during, and after surgery. Equally so is the donor's knowledge of the potential fate of his/her donated organ. Does the donor realize that he/she may be a Centers for Disease Control and Prevention high-risk

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(CDCHR) donor (intravenous drug user, hemophiliac, prostitution history, high-risk sexual activity, exposure to human immunodeficiency virus, and jail sentencing.)? Will potential recipients "pass" on these potential allografts and acknowledge that there is no guarantee that there will ever be another donor? Clearly, whether CDCHR donors will serve as a significant addition to the donor pool remains a question the answer to which is highly anticipated. Notably, an observational study conducted within the past decade disclosed that the median CDCHR allograft survival was equivalent to that of non-CDCHR organs, 2 years after transplantation.[4] Discarding of CDCHR organs represents significant wastage. However, the serial antibody testing of potential CDCHR donors for human immunodeficiency virus, hepatitis B virus, and hepatitis C virus must be strictly complied with to ensure the safety of recipients, particularly because these viruses may escape detection in their respective "window" periods. In this vein, nucleic acid testing for these virions may provide superior outcomes.

The best method to improve living kidney donation is to expand the number of living donors. At present, obese (body mass index >30 kg/m^2), older, and hypertensive kidney donors are on the rise. From 2005 to 2008, the incidence of obese donors increased from 14% to 19.5% and the frequency of hypertensive donors from 0% to 2%. These new additions to the donor pool will undoubtedly increase; however, the single best method to increase the number of donors is autodonation, with state-driven mandates to force donation in the event of tragic unanticipated deaths of previously healthy individuals. Irrespective of the amount of ABO incompatibility and immunological sensitization, the mathematical consequence of increasing the pool of living donors is a reduction in those requiring an allograft. This is contraposed by other societies and cultures such as the Japanese, where religious and cultural issues deem kidney donation, living or deceased, as unacceptable. Should such beliefs be modified and should this be an objective of any transplantation organization? Also, would greater acceptance of living donation reduce "rogue" monetized transplantations that continue to occur legally in Iran?

Clearly, it takes a village to satisfy the enlarging recipient pool, and the strategy of kidney paired donation has an amplifying "pay it forward strategy." However, it will take more than two to tango, and tremendous efforts are required in the areas of desensitization, immunosuppression, and donor pool expansion. The public must know that the majority of donors reflect positively on their experience and that kidney donation does not automatically confer disease susceptibility to the remaining kidney. It is not a "loss" of an organ but a "gain" of life for the recipient. Remember, there are nearly 91,000 patients with ESRD waiting impatiently for a donor, and you could be that donor.

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Jerry Yee, MD
Editor-in-Chief

References

1. 2010 OPTN/SRTR Annual Report: Transplant Data 2000-2009. Available at: http://www.srtr.org/annual_reports/2010/. Accessed May 05, 2012.
2. Ferrari P, de Klerk M. Paired kidney donations to expand the living donor pool. *J Nephrol.* 2009;22:699-707.
3. Huh KH, Kim MS, Ju MK, et al. Exchange living-donor kidney transplantation: merits and limitations. *Transplantation.* 2008;86:430-435.
4. Duan KI, Englesbe MJ, Volk ML. Centers for Disease Control 'high-risk' donors and kidney utilization. *Am J Transplant.* 2010;10:416-420.

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