

LETTER TO THE EDITORS

Facilitators to national kidney paired donation program

doi:10.1111/tri.12078

Sirs,

We read with great interest the report by Ferrari P, *et al.* [1] Recent study results are valuable for encouraging participation of kidney paired donation (KPD) pairs and transplant centers in national KPD program [1–7]. We believe that with some additions scientific value and contribution of the article may result into wider implementation of KPD.

The commonest cause of donor rejection is ABO incompatibility which eliminates up to one-third of the potential living donor (LD) pool. KPD is rapidly expanding for facilitating LD renal transplantation (RTx) for patients who are incompatible with their healthy, willing LD. The findings of two registries (Australian registry and US renal data system) regarding impact of LD age in outcome of RTx are of major relevance for policy and decision-making in KPD. 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. However, more experience is needed to determine the outcome of transplants from LD aged ≥ 65 years to younger patients [2, 3]. To examine the impact of increased cold ischemia time (CIT) in LDRTx, 1-year serum creatinine (SCr), delayed graft function, acute rejection (AR), and allograft survival (AS) were analyzed in 38 467 patients by 2 h CIT groups (0–2, 2–4, 4–6, and 6–8 h) using data from the United Network for Organ Sharing/Organ Procurement and Transplantation Network. Prolonged CIT did not result into inferior SCr, increased AR, or compromised AS in any group with >2 h CIT compared with the 0–2 h CIT. Comparable long-term outcome for these grafts suggests that transport of LD organs may be feasible instead of transporting the donor where $CIT \leq 8$ h. KPD can be extended from single-center two-way ‘swaps’ to multicenter KPD chains in which LD organs could be shipped without compromising outcome [4]. The recent study showed similar graft and patient survival, rejections, SCr, glomerular filtration rates of KPD versus LRDRTx over 2 years post transplantation [5]. There was strong support for KPD in a US study, in which attitudes regarding participation in KPD were assessed [6]. The policy makers did not discuss as to

how willing incompatible potential donors can participate in donor-exchanges. In one study the incompatible kidney donor candidates’ showed more willingness for KPD versus list exchanges [7]. Extrapolating these levels of willingness nationally; 1–11% increase in living donation rates yearly may be possible if donor-exchange programs were available nationwide [7]. Comparatively short waiting time in KPD [1] will save the cost of maintenance dialysis and associated morbidity and mortality. The constraints in operating an effective maintenance dialysis program leave RTx as the only viable option for patients with ESRD in developing countries like India. In view of cost and concern regarding risk of infection and outcome of ABO incompatible RTx/desensitization protocols in resource limited developing country where deceased donor and ABO incompatible transplantation may not be practiced/available at all transplant centers, KPD is a more viable legal option [8–12].

In developing countries like India, human leukocyte antigen-matched KPD would result in less immunosuppression and less expenses, lower infective morbidity, and better survival [8]. This finding is relevant in the context of wider participation from compatible spousal donors. KPD should increase donor pool to prevent commercial transplantation [13–15]. With research on donor-exchange programs in its infancy, additional research is still needed to determine optimal management of expenses and timing of donor evaluation and concern regarding long waiting time and increased cost in national KPD program [16].

Vivek B. Kute,¹ Aruna V. Vanikar,² Pankaj R. Shah,¹
Manoj R. Gumber,¹ Himanshu V. Patel,¹ Pranjal R. Modi³
and Hargovind L. Trivedi^{1*}

*1 Department of Nephrology and Clinical Transplantation,
Institute of Kidney Diseases and Research Center,
Dr. HL Trivedi Institute of Transplantation Sciences
(IKDRC-ITS), Ahmedabad, India*

*2 Department of Pathology, Laboratory Medicine,
Transfusion Services and Immunohematology, IKDRC-ITS,
Ahmedabad, India*

3 Department of Urology and Clinical Transplantation,
IKDRC-ITS, Ahmedabad, India
e-mail: drvivekkute@rediffmail.com

*All authors are affiliated with IKDRC-ITS Ahmedabad, India.

Conflict of interest

None.

Funding

None.

References

- Ferrari P, Fidler S, Woodroffe C, Tassone G, D'Orsogna L. Comparison of time on the deceased donor kidney waitlist versus time on the kidney paired donation registry in the Australian program. *Transpl Int* 2012; **25**: 1026.
- Chang P, Gill J, Dong J, *et al*. Living donor age and kidney allograft half-life: implications for living donor paired exchange programs. *Clin J Am Soc Nephrol* 2012; **7**: 835. doi: 10.2215/CJN.09990911. Epub 2012 Mar 22.
- Ferrari P, Lim W, Dent H, McDonald SP. Effect of donor-recipient age difference on graft function and survival in live-donor kidney transplantation. *Nephrol Dial Transplant* 2011; **26**: 702. doi: 10.1093/ndt/gfq383. Epub 2010 Jul 1.
- Simpkins CE, Montgomery RA, Hawxby AM, *et al*. Cold ischemia time and allograft outcomes in live donor renal transplantation: is live donor organ transport feasible? *Am J Transplant* 2007; **7**: 99.
- Tuncer M, Tekin S, Yüçetin L, Şengül A, Demirbas A. Comparison of paired exchange kidney transplantations with living related kidney transplantations. *Transplant Proc* 2012; **44**: 1626. doi: 10.1016/j.transproceed.2012.05.045.
- Segev DL, Powe NR, Troll MU, Wang NY, Montgomery RA, Boulware LE. Willingness of the United States general public to participate in kidney paired donation. *Clin Transplant* 2012; **26**: 714. doi: 10.1111/j.1399-0012.2012.01596.x. Epub 2012 Mar 8.
- Waterman AD, Schenk EA, Barrett AC, *et al*. Incompatible kidney donor candidates' willingness to participate in donor-exchange and non-directed donation. *Am J Transplant* 2006; **6**: 1631.
- Basu G, Daniel D, Rajagopal A, Neelakantan N, John GT. A model for human leukocyte antigen-matched donor-swap transplantation in India. *Transplantation* 2008; **85**: 687. doi: 10.1097/TP.0b013e318163827e.
- Chugh KS. Five decades of Indian nephrology: a personal journey. *Am J Kidney Dis* 2009; **54**: 753. Epub 2009 Sep 2.
- Abraham G, John GT, Sunil S, *et al*. Evolution of renal transplantation in India over the last four decades. *NDT Plus* 2010; **3**: 203.
- Vanikar AV, Trivedi HL. Stem cell transplantation in living donor renal transplantation for minimization of immunosuppression. *Transplantation* 2012; **94**: 845. doi: 10.1097/TP.0b013e3182664000.
- Agarwal SK, Srivastava RK, Gupta S, Tripathi S. Evolution of the transplantation of human organ act and law in India. *Transplantation* 2012; **94**: 110.
- Kute VB, Gumber MR, Patel HV, *et al*. Outcome of kidney paired donation transplantation to increase donor pool and to prevent commercial transplantation: a single-center experience from a developing country. *Int Urol Nephrol* 2012; DOI: 10.1007/s11255-012-0323-9.
- Segev DL. Innovative strategies in living donor kidney transplantation. *Nat Rev Nephrol* 2012; **8**: 332. doi: 10.1038/nrneph.2012.82.
- Segev DL, Kucirka LM, Gentry SE, Montgomery RA. Utilization and outcomes of kidney paired donation in the United States. *Transplantation* 2008; **86**: 502. doi: 10.1097/TP.0b013e3181812f85.
- Pondrom S. Will the national paired donation program take off? *Am J Transplant* 2011; **11**: 2543. doi: 10.1111/j.1600-6143.2011.03883.x.