

TRANSPLANTATION

Use of altruistic nondirected donors in kidney transplant chains maximizes transplant numbers

Use of kidneys from altruistic nondirected donors (NDDs) to initiate kidney transplant chains leads to more transplantations than would be performed if NDDs donated directly to the deceased-donor waiting list (DDWL), say researchers.

Kidney-paired donation (KPD) aims to help patients who have a healthy, willing—but incompatible—donor to receive a transplant. Two or more incompatible pairs are matched with other pairs so that multiple compatible transplantations can be performed. Kidneys donated from NDDs can be used to initiate the chain of matches, but concerns have been raised that use of NDDs in donor chains diverts NDD kidneys away from the DDWL, and that patients may miss out if chains are broken.

Melcher *et al.* hypothesized that starting donor chains with NDDs maximizes the overall benefit of NDD organs for both patients with willing but incompatible donors and patients on the DDWL.

“...starting chains with blood type O NDDs results in more blood type O patients receiving transplants...”

The researchers retrospectively analysed data from transplantations facilitated through the National Kidney Registry in the USA. They found that between February 14, 2008 and December 31, 2011, 77 NDDs started chains that resulted in 373 transplantations. All recipients whose incompatible donor donated a kidney received a kidney. Although seven chains broke prematurely, no chains were broken during the final 15 months of the study.

Concern has been expressed that blood type O patients high on the DDWL are the group most disadvantaged by the chain strategy, as transplant chains are rarely ended to the DDWL with a type O

donor because these donors are ‘universal’ and can often extend the chain further. The authors investigated this issue but found that starting chains with blood type O NDDs results in more blood type O patients receiving transplants than if the NDD had donated directly to patients on the DDWL.

“In conclusion, these 77 NDDs led to 373 transplantations, 296 more than they would have had they donated directly to the DDWL,” say the authors. “While blood type O NDDs are in the highest demand by patients on the DDWL, they also have the greatest influence both on the number of transplantations and the number of blood type O recipients in chains.”

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Original article Melcher, M. L. *et al.* Kidney transplant chains amplify benefit of nondirected donors. *JAMA Surg.* 148, 165–169 (2013)