

Living-related renal transplantation in Hong Kong

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Renal transplantation is the best treatment for end-stage renal disease, as it allows optimum rehabilitation with better survival than haemodialysis or peritoneal dialysis: in 2016, the annual mortality rate per 100 patient-years in Hong Kong was 1.88 for patients who received a renal transplant, 17.89 for patients on peritoneal dialysis, and 18.89 for those on haemodialysis.¹ With a global shortage of cadaveric organs, living-related kidney donation has become an important alternative, especially in countries with a low cadaveric organ donation rate such as Japan. In Hong Kong, living-related kidney transplants account for an average of 14.8% of all renal transplants performed over the past 10 years.¹ In this issue of the *Hong Kong Medical Journal*, the

characteristics and clinical outcomes of living renal donors in Hong Kong are reported.²

Compared with a cadaveric kidney transplant, a living-related kidney transplant has a higher graft survival rate: the 10-year graft survival rate was 70% for cadaveric and 81% for living kidney transplant, and the 20-year graft survival rate was 44% for cadaveric and 61% for living kidney transplant.¹ This is due to multiple factors that include matching for the most suitable donor, and elective surgery to minimise stress to the donor and cold ischaemic time of the kidney. According to the Hospital Authority Renal Registry, in 2016 the half-life of a cadaveric kidney transplant was 18 years, whereas that for a living kidney transplant was 30 years.¹ Living-related

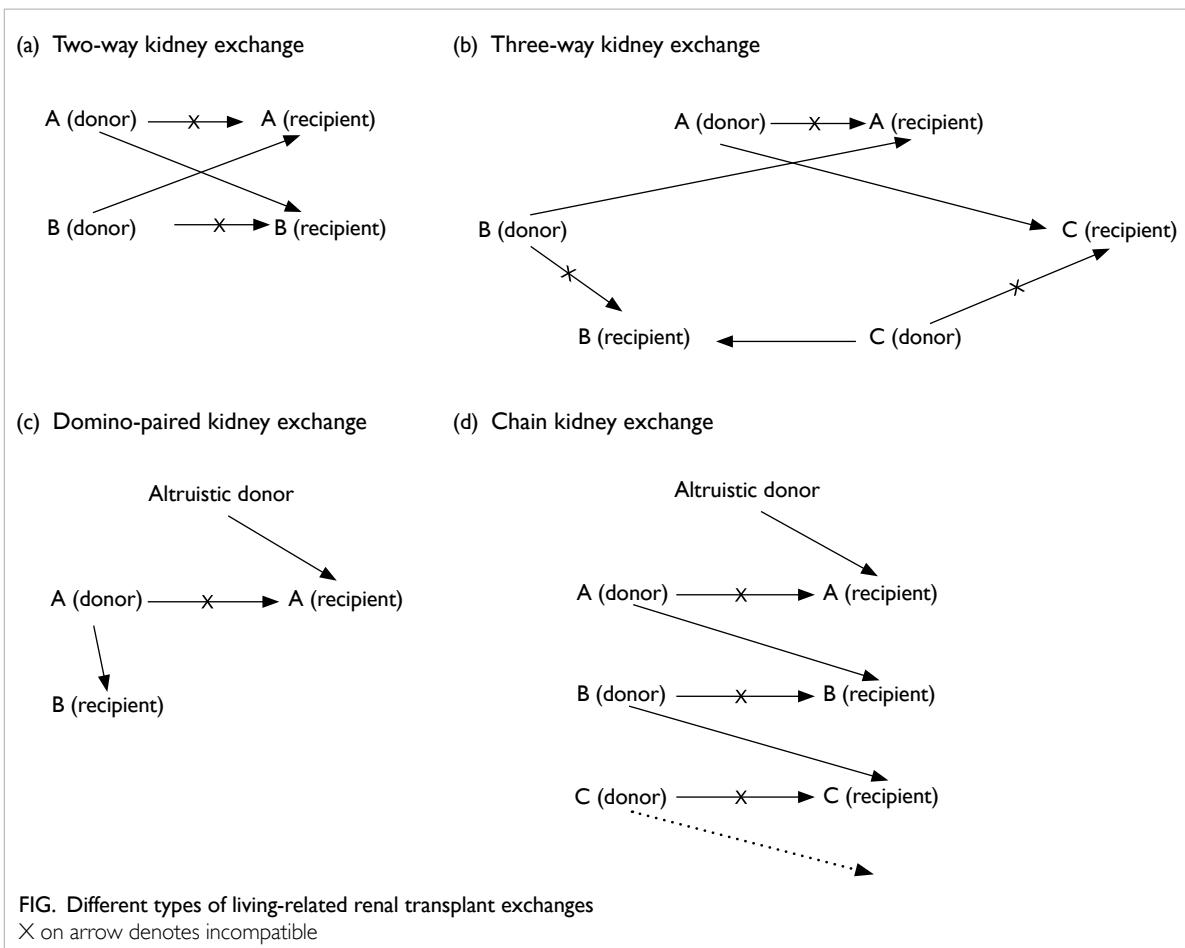


FIG. Different types of living-related renal transplant exchanges
X on arrow denotes incompatible

kidney donation, however, carries potential risks to the donor. The short-term risks include those related to anaesthesia, bleeding, and infection. In the long term, there is an increased risk of hypertension and proteinuria,^{3,4} as well as hypertension, pre-eclampsia, and proteinuria during pregnancy.⁵

Laparoscopic nephrectomy rather than an open procedure is now the preferred approach in many transplant centres for living-kidney procurement. Comparative studies have shown a shorter hospital stay and less bleeding, although the ischaemic time is longer with the laparoscopic approach.⁶

In order to overcome the problem of ABO blood group or human leukocyte antigen incompatibility in living-related organ donation, paired kidney exchange is becoming popular in many countries. It may be a simple two-way exchange, a three-way exchange or, if an altruistic donor is available, a domino-paired exchange or altruistic donor chain (Fig). The longest chain was in 2012 in the United States and involved 30 kidneys and 60 patients. In preparation for paired kidney exchange in Hong Kong, the Food and Health Bureau plans to clarify the legal situation by submitting a proposal to the Legislative Council. Another means by which to overcome ABO blood group incompatibility is by a pre-transplant immunosuppressive protocol that includes plasmapheresis alone or together with rituximab.

Because of the potential risks to the donor, a cadaveric kidney is still preferred. In 2016, the cadaveric organ donation rate was 6.3 per million population in Hong Kong.¹ Owing to the increasing gap between the number of patients requiring a

transplant and the number of organs available, the waiting time for a cadaveric organ is increasing. The average waiting time is approximately 6 years but may also be as long as 28 years.¹ Public education is essential to raise general awareness of the need for cadaveric organ donation. Other measures include increasing human resources for organ procurement in acute care hospitals, increasing the effectiveness of donor referral and management and organ procurement, and establishing an independent organ procurement organisation. These initiatives are vital in order to boost organ donation rate in Hong Kong.

Declaration

The author has disclosed no conflicts of interest.

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