Live kidney donation: what are our ethical responsibilities?

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Live kidney donation is becoming increasingly common as the need for donors is unmet from the deceased donor population. However, there are potential risks to the donor, and careful counselling and rigorous pretransplant assessment are imperative. The authors discuss the ethical implications associated with live organ donation.

The kidney was the first organ to be successfully transplanted in 1954 by Dr Joseph E. Murray from Boston, Massachusetts. However, research into organ transplantation began as early as the 18th century.1 We have witnessed both increased organ transplant rates and improved survival rates among recipients with the introduction in 1983 of cyclosporine, as a novel immunosuppressive agent, alongside improved tissue typing.1 Consequently, there has been a dramatic increase in the demand for organs, which currently outstrips their supply.

Renal transplantation is now widely considered the treatment of choice for patients with end-stage kidney disease.2 The advantages are apparent in survival, with the average recipient of a deceased donor kidney surviving for 12 years compared with a 15-year average survival in those who receive a living donor kidney.3 The Human Tissue Act (HTA) 2004 regulates this process.

STATISTICS FOR RENAL TRANSPLANTS

There were 6633 patients registered on the active kidney transplant list in 2011–12.3 During this time period there were 2801 transplants in the UK. Only 21 per cent of patients were transplanted within one year of registering on the list and 65 per cent will have received a transplant within five years. The median wait for a transplant is 1168 days in adults.

In comparison to 1209 kidneys from 612 brain-dead donors, there were 823 kidneys from 419 donors who suffered circulatory death and 940 kidneys from live donors. The most common of these live donors are 'directed', which means that the donor knows the person receiving the kidney (ie close friend or family). Interestingly, there were also 34 'undirected' or altruistic donor transplants. The third type of living donor transplant is a 'paired' variety. This means that the donors are not biologically compatible with the intended recipients and a 'swap' takes place with those with whom they may be compatible from a list.4 During the 12-month period from April 2011 to March 2012, 51 patients received a 'paired' transplant.3

PRINCIPLES OF LIVE KIDNEY DONATION

Living donation is becoming increasingly common as the need for donors is unmet from the current deceased donor population. It presents an unusual ethical...
dilemma with an imposed potential risk for healthy donors in order to improve the life of another individual (Figure 1).

The risks to the donor include wound, chest and urinary infection, which occur in approximately a third of donors. Furthermore, there is a 2 per cent risk of a venous thromboembolic event or significant bleeding requiring subsequent transfusion. The death rate is quoted as 1 in 3300; mostly from pulmonary emboli or myocardial infarction. There is a 3 per cent risk of having persistent pain for one year post donation.

The hospital stay is between four and ten days, with potentially up to 12 weeks off work in certain cases. This can impact any absence from the workplace and potential earning power. Insurers, although aware of the rigorous predonation health assessment, should be informed but may not charge a premium.

The psychological morbidity may be significant and careful counselling for patients is imperative. There is a small risk of detecting a serious medical anomaly during the preoperative assessment. This can lead to a number of issues for these ‘healthy’ men and women, including serious implications for life and medical insurance.

Additionally, the donor may be under direct or implied pressure from family or the patient to donate, with a perceived obligation to proceed with surgery. Coercion in any form can have a detrimental impact on the donor’s ability to make a balanced decision regarding the risks and benefits of the procedure for both parties involved.

Finally, in spite of rigorous and exhaustive preoperative testing, the transplanted kidney may be rejected or fail. This can have devastating psychological sequelae and individuals need extensive counselling to consider this risk carefully.

THE SELECTION PROCESS
The donor undergoes rigorous testing in order to fulfil the criteria for donation. Pretransplant assessment will establish ABO compatibility and HLA sensitisation in order to identify any potential mismatch. The formal process takes a number of weeks and involves multiple visits to hospital. This process will also determine the presence or transferable risk of any transmittable diseases. Hence, individuals with a history of homosexual activity, illicit drug use, prostitution or intercourse with residential native-African partners are excluded. Haematological testing obviates the risk of subsequent infection with Epstein-Barr virus, cytomegalovirus, HIV, or hepatitis B or C.

Imaging assessment includes renal ultrasound, and most centres will also perform computed tomography or magnetic resonance angiography to help outline the renal vasculature and renal drainage to determine the appropriate kidney to remove.

Upon completion of all investigations/consultations, the case must be assessed with an independent assessor in accordance with the HTA. A thorough review of the case is undertaken and an application is made to the HTA requesting permission for the transplant to proceed. This involves both the donor and recipient visiting the impartial assessor independently, being able to prove their identity and being interviewed to check the relationships and motives. All documentation such as birth certificates, marriage certificates or links between the donors must be proved. Only once this deliberately detailed process is complete can the operative process be planned.

ETHICAL DILEMMAS
The ethical dilemmas associated with live organ donation are considerable. As the law stands, no one can benefit financially from donating an organ, but unethical and black-market practices are widely reported and draw regular media attention. The issues fall into two distinct categories: living related donors and living unrelated donors.

Living related donors
These donors provide kidneys to unwell relatives (Cases 1 and 2). What are the ethical boundaries? A fascinating insight into this area is discussed by Al Khader et al. They present 24 years’ experience of live transplantation and find recurrent episodes of coercion on donors, including financial, social, psychological, familial or tribal factors. This is not always overt and may not be direct.

Coercion in any form of donation is not acceptable, as the gift of a kidney should always be altruistic. In order to proceed...
with therapy, the donor should be deemed an 'adult, conscious and mentally normal with unprejudiced consent'. The psychological effect of coercion can lead to 'long-lasting guilt' within the family unit and adverse psychological upheaval for the donor. If the kidney is subsequently rejected or fails, the impact on familial relationships can be devastating.

A model is presented where it is possible to assess the willingness of donation using thorough psychological testing in conjunction with medical interview techniques. These may involve utilising 'leading questions', which can reveal true, underlying motives. An example might be enquiring about when or why the donation should happen or why the other siblings are not donating. The questions, although sometimes difficult to answer, may reveal the potential donor's true feelings. This should be combined with observational pointers to willingness and unwillingness – this could be as simple as body language or timeliness with regards to appointments or, conversely, failure to enquire about results of investigations or hostility to the team.

Living unrelated donors
A different set of ethical issues must be considered in this scenario. Paired exchange or truly altruistic donors are less common than related transplants. Extreme caution must be taken when an individual is motivated to undertake a potentially morbid and ultimately life-threatening sacrifice for a complete stranger (Case 3). Psychologically suspect motives must be ruled out in these cases. Is the donor trying to compensate for low mood or self-esteem, or even seek media attention? How easy is it to evaluate these patients? The internet has played a role in matching paired exchange donors, but the regulation worldwide is not standardised.

ORGANS FOR SALE
The illegal organ trade is rarely out of the headlines. On Baseco Island in the Phillipines, also known as 'One Kidney Island', an unsolicited trade in organs is openly carried out. Patients from around the world pay approximately £40 000 for a private renal transplant in Manila using a live donor who is paid £1000 cash.

This situation is not unique, with a number of websites advertising renal transplantation across the globe. It is possible to arrange a transplant with no strings attached and no questions asked as to the origin of the organs. Reports also suggest that organs are harvested from executed prisoners in China. Fortunately, the Chinese government is currently taking steps to try to phase out this practice over the next five years.

Private medical tourism is expanding rapidly at present and appears inadequately regulated and in some cases is ethically unsound. However, for this clinical practice to persist, the referral/treatment chain requires willing medical and surgical staff, syndicates of organ brokers and hospitals to work in this manner. Measures are now being taken to help and protect the poorest and most vulnerable groups involved in transplant tourism and the sale of tissues. The Declaration of Istanbul in 2008 aimed to address organ trafficking and transplant tourism with a consensus meeting, including medical staff, social scientists, government officials and ethicists. The document highlights six
CONCLUSION
Renal transplantation is the gold-standard treatment for those with end-stage renal disease. The issue of organ availability means that the need for kidneys from healthy donors is paramount and alternative treatments remain experimental. Medical practice aims to do ‘no harm’ to healthy people, but live organ donation goes against this premise. It is important to realise the ethical implications, and the potential psychological morbidity should not be underestimated. Furthermore, important issues are raised by the potential sale of human organs. This controversial issue is conspicuous and new steps are being taken to provide control of this practice.

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REFERENCES