

Biomedical ethics: Organ transplantation

In the third part of our series, **Pierre Mallia** looks at the controversial world of organ transplantation

Classifying organs

- Regenerative organs such as blood and bone marrow
- Non-regenerative organs such as kidneys, liver, heart, corneas

It is generally considered that donation of organs is an altruistic human endeavour. Organs can be classified into regenerative, such as blood and bone marrow, and non-regenerative, such as kidneys, heart, liver, and corneas.

A scarce resource

Organs are a scarce resource, especially non-regenerative ones. People on waiting lists are assessed according to medical necessity at the time an organ is available. Most non-regenerative organs come from cadavers of people who have expressed a wish to donate after they die. The kidney is the only non-regenerative organ that can be donated during a person's lifetime since it is possible to live with one kidney.

Different countries use various methods to obtain organs. In an opting-in system, accepted by most, you opt to donate your organs after death. Opting-out systems are rarer: your organs can be taken when you die unless you express a wish against this during your lifetime. Some American states have tested a "mandated choice," whereby you must state your wish on applying for driving licence. This has generated some doubt about whether people should be forced to make such a choice. Donor cards are also common, but unless they are made binding the medical team will probably still seek the consent of the family in some countries.

Often, when someone dies in an accident and the relatives arrive at the hospital, the medical team advise them on the possibility of donating the organs of the deceased. This is often met positively by the relatives as it engenders the sensation that the death was not in vain and could save other people's lives. It is wise that the family do not know who received the organs as this may cause feelings of obligation towards the family of the donor. In many places this secrecy is not imposed, but families of both recipients and donors must understand and have counselling to help them choose whether they wish to remain anonymous. Recipients should never be under any obligation to make themselves known and relatives can-

not impose on the medical team to reveal the identity of the recipient.

Death

Ethical protocols ensure that the medical teams of the dying patient and of the organ recipient are different. Since the onset of advanced life support systems, some doctors have expressed concern to wait for complete brain death. At the University of Pittsburgh organs are obtained from cadavers without a heartbeat. Although controversial, the idea is a controlled "switching off" of the support system in an operating theatre adjacent to one where a recipient is waiting. A protocol, known as the Pittsburgh protocol, ensures that all is done in an ethical manner and that people are actually dead, in the sense that there is no spontaneous heartbeat when the machines are switched off.¹

Who should receive the organ?

Medical teams go to extreme ethical pains to see that the recipient who is most in need receives an organ. Should a 40 year old working husband with three children be given preference over a man of 68 who lives alone? These are choices based on utility and utilitarian approaches and have come under attack. All human beings should be treated equally. One cannot be more worthy than another based on age. While it is important to keep the workforce of a country running, at the other end of life we strive to "add more life to years rather than years to life." Living with dialysis at 70 in a way wastes that patient's precious time available. Such decisions are thus often based on whose medical need is most urgent.

Countries with insurance based health systems have found themselves in quandaries. Recently, in the United States a case was described where a prisoner serving a life sentence for murder needed a liver transplant because he had hepatitis C.² As prisoners are the responsibility of the state he was put immediately on a waiting list. At the same time a young woman with three children who also had hepatitis C and was a candidate for transplantation could not be put on a waiting list. Her husband's income was not below a point for them to benefit from the Medicaid system, and they were not covered by insurance for transplantation. The husband protested—should a murderer receive more attention than his wife? Is a person worthy for who he or she is, or for what he has or does? Ethicists have been

very careful to abide by the former. The prisoner is being punished by having his liberty taken away; he should not be punished further by maltreatment or by putting his health at a disadvantage. But it is unfortunate that advanced health systems in which medicine is more market oriented than socially oriented can find themselves in such dilemmas. Doctors have to be patients' advocates through their political bodies, to resolve such issues.

Non-related donors and children

Traditionally people donate to relatives. There is more concern about people donating to non-relatives because of possible conflict of interest. Some people may feel strongly about donating a kidney to a friend or a person at work. The problem with these choices is that there may be a hidden psychological agenda, or even a sense of obligation, to donate a kidney, say, to the daughter of a superior. Even if the feelings of the potential donor are strong, there is always the possibility of exploitation. Many social issues can circle these cases. Consider the above situation. Would the donor receive special treatment in the future for a promotion? And should the donor not receive the promotion, can he or she then have regrets for having donated? The same reasoning holds for donating to a friend. What if the friend lets you down in the future? Will not the question of the donated kidney come up, if not verbally, then psychologically? What if one regrets the choice made in the future?

In general such donation is not allowed by many institutions and is discouraged by doctors. There may be instances where the doctor may wish to refer to an ethics committee if he or she feels that there is room for justification. While in some countries, donation to non-relatives is outright refused, all parties are heard by the committee, from donors and recipients to friends, relatives, and even the medical team. It is the ethics committee that decides whether the hospital should accept the case, autonomy being respected but often overridden.

Another particular area of concern is when children are the only possible donors for parents or siblings. Are children old enough to understand the informed consent process (see article two of this series) and the implications of donating a kidney? Can there be pressure from other siblings or the parents to have the child donate? On the other hand should we not allow a young girl the possibility of saving her mother's life rather

Men show their scars from selling their kidneys in Manila, the Philippines

indeed cure a large number of people. But some find objection with embryo experimentation. It is still a very sensitive area as it offers promise to very ill people.

Much less accepted is the "creation" (by selective discard of embryos) of a baby to cure a sibling. There are obvious moral consequences to bringing about another human being for the sole purpose of saving another. Will the second baby grow to resent the way he was brought into this world, or should he be thankful that were it not for an ill sibling he would not be alive?

As long as organs remain a scarce resource, transplantation is a field which will generate both research and moral controversy. The doctor interacting with the patient must be aware of the ethical issues in order to counsel and guide patients on what they hear, believe or find in the media or otherwise.

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- 1 University of Pittsburgh Medical Center Policy and Procedure Manual. Kennedy Inst Ethics [Appendix] 1993;3. (No. 2)
- 2 A new liver for a prisoner. Hastings Cent Rep 2002;32:12-3.
- 3 Paying for kidneys. Kennedy Inst Ethics 2002;12:17-46.
- 4 Mallia P. Bioethics: patients' rights. studentBMJ 2003;11:186-7. (June.)
- 5 European Science Foundation. Human stem cell research: scientific uncertainties and ethical dilemmas. Strasbourg: ESF, 2001. (European Science Foundation Policy Briefing. No 14.)

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than grow with the resentment that she was not allowed to donate a kidney? There are many issues that an ethics committee set up for this purpose may have to look at. A youngster who is athletic may be discouraged to donate, or even refused, because of the extreme implications of his or her life. The child may not appreciate the seriousness of the changes it may make to his or her life, sport must be avoided after donation in order to protect the kidney that is left.

Selling organs

Selling organs is again at issue³. The idea is that people should be given motivation to sell organs at a fixed price set by an agency. The organs are then donated to recipients. There are many controversial issues around this. From whom would this company buy organs and at what price? If the company sought organs from a poorer nation, this may reduce the black market, but on the other hand it may appear that rich countries exploit poorer ones. This can be resolved by not allowing countries to buy outside their own territory. This would on the one hand not resolve the question of black marketing and on the other still exploit people in need or in debt. Would a rich man sell his kidney? And why should he get money for it if he is

already rich? Why should he not donate instead? The whole idea of buying organs, even if they are to be bought by the government and donated free to recipients, creates considerable, for many, insurmountable, ethical objections on who sells them. It goes without saying that doctors should not participate in or encourage the buying or selling of organs until such issues are ironed out.

Xenotransplantation and regeneration of organs

A promising area is the obtaining of organs from animals. Why not use the heart of a pig? Although some find it objectionable, research into this area holds promise for those who accept it. It is quite ethical for surgeons to propose and experiment with animal organs and tissues so long as proper informed consent procedures are adhered to and the proper channels of research ethics committees are followed.⁴

Conversely, in regenerating or building an organ framework, using stem cells is today's frontier. But the problem is that most stem cells need to be obtained from embryos.⁵ Although we can get stem cells from umbilical cord blood, much more is needed that can be obtained this way. A stem cell from an embryo can be cloned and

Key points

- Most countries have an opting-in system and promote donor cards
- Asking relatives to allow the deceased's organs be donated is common practice
- The confidentiality and anonymity of the recipient must be respected
- The teams of donors and recipients are different to avoid conflict of interest
- Who receives decisions are based on medical need at the time
- Child donors are a special circumstance and need guidance, counselling and ethics committee approval
- Sale of organs is still largely prohibited
- Direct organ donation from non-related individuals are still largely not acceptable
- Xenotransplantation is a field with promise and hope
- Organs and tissues obtained from embryonic stem cells is an area of great controversy due to interpretation of the nature of the embryo