The final gift: ethical and legal considerations of liver donation and patient selection

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The first liver transplants were performed in 1963 on three patients, with the longest surviving for 22 days. The ability to sustain patients beyond the 25% one year survival seen throughout the 1970s was made possible by the introduction of a key immunosuppressant agent, cyclosporine A in the early 1980s. Living donor liver transplantation (LDLT), which involves a liver resection of the right liver lobe in adults, and the left lobe in children was first performed in 1988 in a pediatric recipient and 1996 in an adult recipient. At press, 1,742 living and deceased donor liver transplants have been performed in London, Ontario.

Liver transplantation is a life-saving procedure with the ability to significantly decrease mortality and morbidity for high-need patients. Procurement of organs for any type of transplantation is a major limiting factor and presents a significant challenge to their fair and equitable distribution. Currently, there are 218 people waiting for a liver transplant in Ontario. Patient selection, therefore, aims to maximize the benefits of transplant while minimizing the risks associated with the procedure.

There are multiple ethical considerations applicable to patient selection and organ donation practices. Legislation governing organ and tissue transplantation also play a central role in patient selection. Here we explore some of these ethical and regulatory considerations of liver transplants and the widening gap between demand and supply in Canada.

RECIPIENT SELECTION

Organ donation represents a “final gift” one can bestow on another individual. This sentiment imposes substantial responsibility on the medical system to select suitable recipients in an ethical and just manner. In addition to numerous immunological and physiological considerations, relevant social factors need to be considered when allocating a finite resource for which there is such high demand. Should patients who require transplants as a result of their own actions, such as alcohol related disease or IV drug use (Hepatitis B, Hepatitis C), be considered on equal grounds with those requiring a liver transplant due to circumstances out of their control?

Eunice Booker, the mother of an organ donor was quoted in The Guardian as saying “I find it offensive that one in four livers donated goes to alcoholics… [The liver should go to] the one who’s not an alcoholic, they are more entitled.” Further, the rate of alcoholic recidivism post-transplantation is estimated at 11 to 22%. In addition, IV drug use (IVDU) use is a significant cause of Hepatitis C, which is the most common indication for liver transplantation among adults. Retransplantation for recurrent HCV infections is estimated at 3.6%-5.0%.

Whether a patient is responsible for their past alcoholism or IVDU use poses the question of whether individuals that abuse substances are exercising free will. If they are deemed not to be free agents, penalizing them would be unfair. Many arguments could be raised on both sides of the issue, including the strong genetic preponderance to alcoholism, and the higher prevalence of comorbid psychiatric illnesses among substance abusers. In addition, the time elapsed between when the causative behavior has ceased and when transplantation is necessary may be a significant duration, even decades. The legal system has tended to believe those abusing substances should be held accountable. However, given the aims of the legal system are to uphold justice and apply criminal punishments, while the medical system aims to allocate medical resources and heal, the role of free will in decision-making may not be the same. Further, this can lead down a slippery slope: Do alcoholics deserve a liver? Do smokers deserve a lung? Does a street-racer deserve an ICU stay following a crash?

As medical innovations result in an increased number of chronically ill and older patients being eligible for liver transplant, it is important to consider the presence of comorbidities and the patient’s age. Thus, should an elderly individual with multiple comorbidities be considered on equal grounds with a young adult without any comorbidities, who has the potential of a considerably longer lifespan and better outcomes? Utilitarian ethics would favor donation to the younger and healthier patient. However, widespread application of this criterion would systematically exclude older and sicker patients from transplantation. Given the moral obligation of providers to all patients, this would lead to an unjust outcome.

The solution of Canadian transplant organizations to these issues is a pragmatic one, which generally avoids passing moral judgments, and circumvents adding qualifiers to the value of human life. The Model for End-stage Liver Disease (MELD) is a scoring system used to estimate disease severity. This model is widely implemented in the US, and increasingly in Canada. When an organ becomes available, recipients are considered starting with the patient in greatest need and sequentially going down the list, checking for compatibility between the donor and potential recipient (including body size and blood type).

In Ontario, the relevant human tissues legislation is the Trillium Gift of Life Network (TGLN) Act. The Ontario waiting list is managed by TGLN. The transplant organizations have protocols to communicate with one another, and will cross-match medically urgent patients. When an interprovincial donation occurs, transportation, even across Canada, can be arranged in a matter of hours. However, in part due to the fragmented transplant network, organs are only occasionally donated outside a province. The system in Canada is in contrast to the U.S., which has a national registry, known as the United Network for Organ Sharing (UNOS).

ORGAN DONATION AND SUPPLY

There are two sources for liver donations: living donors and cadaveric
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donors. Out of the 6,000 transplants performed in the United States annually, only 320 are living donor transplants. Donation after Cardiac Death (DCD), or “non-beating heart donors”, are cadaveric donors who donate following withdrawal of life support. While DCDs were performed many years ago in Canada, they were re-introduced after a national forum in 2005. The London Health Sciences Centre (LHSC), a Canadian leader in the field, is the provincial leader, having transplanted over 30 of the 100 DCDs performed in Ontario.

Regarding determination of death, there is no federal legislation which defines death in Canada. Some provinces, including Ontario, have legislation that requires the determination of death be made by two physicians. The United States’ Uniformed Determination of Death Act specifies that death may be established by irreversible loss of neurological function (“brain death”), or irreversible cessation of cardiorespiratory function. The latter criteria is used in cases of DCDs.

Critics of DCD have noted that since the patients are sustained on life support, their death is not inevitable. Further, DCD associates withdrawal of end-of-life care with organ procurement, in a manner nearly ideal for transplantation. In order to prevent conflicts of interest, and to maintain public support of DCD, it is imperative to ensure the medical professions who decide to withdraw end of life care are not associated with organ transplantation. This supports the “dead donor rule” that organ donation should not cause harm or hasten death.

Even with DCDs as a source for organ donation, the organ supply is unable to meet demand. One strategy proposed to increase the supply is switching to an “opt-out” system. Currently, Canada’s “opt-in” system assumes one does not wish to donate unless they otherwise specify. In an opt-out system, such as Spain’s, one is assumed to want to donate their organs unless otherwise specified. In addition, given society’s reverence for the importance of the human body, even though an individual’s rights cease with death, an opt-out policy may be seen as a transgression of the state. Further, public health campaigns to increase awareness and improve cadaveric donation rates, including the recent Ontario Gift of Life Campaign (http://www.giftoflife.on.ca/en/) have been widely implemented.

In most provinces, except Manitoba and Quebec, a patient’s recorded consent constitutes legally-binding consent to organ donation. Nonetheless, patients are encouraged to make their substitute decision maker aware of their choices, to ensure wishes are followed. In Ontario, the TLGN Act notes consent is legally binding and provides legal immunity to physicians who act in good faith with regards to organ procurement. However, even if the deceased patient’s consent is clearly indicated, physicians tend to consult family members before proceeding with organ procurement.

Living donor liver transplantation (LDLT) has been effectively used in Canada for the past forty years. However, since a living donor has an estimated 0.2% mortality risk in adult-to-adult transplants, the procedure is not without ethical considerations. Potential living donors are often healthy individuals, for which the occurrence of even a low probability of mortality is costly and should be avoided. This may explain the low rate of LDLT in Canada. Even though they are willing and informed donors, performing such a risky procedure violates the non-maleficence principle. Further, these donors often incur significant costs from lost income and travel expenses. While it is ethically unacceptable to purchase an organ, it may be fitting to compensate donors for their personal costs. Currently Canada does not have a national strategy to reimburse living organ donors.

Donor compensation raises the issue of organ trafficking, in which patients circumvent waitlists by paying for and receiving an organ and medical care. When the procedure occurs in a foreign nation, it is common referred to as transplant tourism. Often the donor receives insufficient medical care, placing them at risk. The Canadian government condemns organ trafficking, and the various provincial Human Tissue Grant Acts directly outlaw paying for human tissues. The Criminal Code outlaws any situation where a person is compelled to provide organs or tissues. However, how this will be applied in relation to organ trafficking remains to be seen. Further, Canadian physicians may feel uncomfortable treating patients who have been involved with organ trafficking. Nonetheless, as with other cases in which physicians are conscientious objectors, this cannot prevent a patient’s access to care.

CONCLUSIONS

In many ways organ transplantation represents the pinnacle of our biomedical understanding of human physiology. Despite medical advances, progress is hindered by the lack of supply, which has struggled to keep up even with the introduction of living donation and DCDs as well as massive public awareness campaigns. It is therefore the responsibility of every health care provider to ensure patients are well-educated and informed of the desperate need of organ donation. And as far as the question of why to donate, we asked Michael Bloch, the donor coordinator at LHSC and his view is that:

“You have an opportunity of providing numerous people with improvement of their health and in fact save their life. It is human nature to help fellow human beings, so if it is the last good thing you do in your life, or even the only good thing you do in your life, I can’t see why you will not”.

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