

RE-EVALUATING DONOR CRITERIA: LIVE DONORS

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The use of living, rather than cadaveric, donors for organ transplantation remains controversial.¹⁻⁵ Physicians who consider using living donors face a unique ethical dilemma. They subject a healthy person to a procedure which entails some medical and surgical risk and which does not improve or maintain that person's health. Instead, the risk to the donor is justified by the benefit to the recipient.

This dilemma is often mistakenly perceived as a problem of patient consent. However, Woodruff noted as early as 1964 that consent is not the crucial issue. Many competent adults freely consent to self-sacrificial actions for altruistic reasons. Instead, Woodruff wrote, "The question is not whether the donor is right to offer to give up his kidney, but whether the doctor is right to allow him to do so."⁶

Woodruff proposed that solutions to this dilemma would not be found in moral absolutes but in clinical judgments based on probabilities. He proposed four relevant considerations for physicians who would consider allowing a person to undergo the risk of kidney donation. First, he thought that it must be established that the proposed recipient would die without the kidney (this written in 1964, before dialysis was available and before brain death made the use of cadaver organs feasible). Second, the donor must be in good health. Third, the donation must be entirely voluntary. Woodruff was so concerned about possible coercion that he thought the potential recipient should not be told that transplant was under discussion until the decision was made to proceed. Finally, the donor must be informed of risks, and of the fact that, given the state of the art at that time, there was a considerable chance that his organ donation would turn out to be of little or no benefit to the patient. These arguments, Woodruff thought, justified renal donation in 1964. Many physicians agreed. Live kidney donation became a widely used procedure.

Since 1964, the circumstances under which live donation is offered have changed. With regard to renal transplantation, the development of dialysis and the acceptance of brain death, which allows the timely harvesting of cadaver kidneys for transplant, have led to alternatives to live donation which can extend the lives of patients with end stage renal disease. Use of live donation can no longer be justified as the only alternative to death. Instead, it must be justified as a better

therapy than alternative therapies, either because it offers better quality of life or because it offers better long-term outcome. Similar arguments must be made to justify pancreatic transplants, although they are tougher to make since the alternative therapy is relatively less burdensome. For patients with end stage liver or lung disease, by contrast, no alternative to transplant presently exists, so patients must either wait for a cadaveric organ or consider a transplant from a living donor.

In spite of these modifications, the approach taken by Woodruff, which involves probabilistic balancing of risks and benefits, is still relevant today. Most transplant surgeons do not consider live donor transplants as unacceptable because they involve donor risk, however minimal. Instead, in deciding whether to use living donors, they weigh the relative risks to the donor, which must be low, against the potential benefits to the recipient. Prudent people might be allowed to consent to a small personal risk in order to give another person a great benefit, but not a great risk for a small benefit. Decisions about whether the risks outweigh the benefits allow for individual variations within areas of general consensus among both physicians and potential donors.

This paper will focus on what is now known of the risks and benefits of kidney, pancreas, liver, and lung transplantation using living donors. We will then consider ethical and policy issues surrounding live organ donation.

KIDNEY DONATION

History

The first successful kidney transplant, in the mid 1950s, involved a genetically identical live donor.⁷ Attempts at unrelated transplants over the next 5 years were universally unsuccessful.⁸ In the early 1960s, immunosuppression with azathioprine and corticosteroids led to improved results and cautious optimism.⁹ By the late 1960s, transplantation using both cadaveric and live donors had become a standard therapy.¹⁰ During the 1960s, dialysis also developed to the point where it could be routinely offered. By the 1970s, patients with end stage renal disease and their doctors faced a choice between live donor transplant, cadaveric transplant, or hemodialysis. By the late 1970s, peritoneal dialysis became another widely used alternative. Nevertheless, living donors continued to be used. By 1984, 32 percent of all kidney transplantations done in the United States involved living donors.¹¹

Donor Risks

Live kidney donation requires general anesthesia. Data on the risk of general anesthesia are controversial. A large recent analysis by Lund and Mushin estimated the mortality associated with general anesthesia at 0.1/1000.¹² Mortality estimates from older studies, many of which did not carefully distinguish anesthesia-related deaths from other post-operative deaths, range from 0.6/1000^{13,14} to 19.3/1000.¹⁵ The American Society of Anesthesiologists lists the mortality risk for the healthiest (Class I) patients as 1/1250, or 0.8/1000.¹⁶

In addition to anesthesia risk, nephrectomy may be associated with post-operative mortality. An analysis by Bay and Herbert of 2495 donor nephrectomies reported in the literature, and 5698 donor nephrectomies reported from the 12 largest centers that transplant kidneys from living donors, indicates an approximate incidence of 1 donor death per 1600 nephrectomies.⁶ Margreiter estimates that 20 living kidney donors had died by 1987, for a mortality rate of at least 1/1000.¹⁷

In addition, there is some risk of long-term morbidity as a result of the loss of a kidney. Sobh et al compared 45 living related kidney donors with 20 healthy sex- and age-matched controls. Donors had minor abnormalities in renal function, including lower glomerular filtration rate, higher creatinine, and a greater incidence of albuminuria than controls.¹⁸ However, they had no difference in the incidence of hypertension. Foster, in an uncontrolled study, reports similar findings among 13 patients who had single kidneys and were at least 5 years status post nephrectomies for renal cancer--mild increases in creatinine and albuminuria that appear to be stable over time.¹⁹ Wikstad reports on 36 patients who were born with a single kidney. Patients were followed for 7-40 years. They found microalbuminuria in 47 percent of patients with a single kidney, although none of the patients had renal insufficiency or hypertension.²⁰ Other studies indicate similar long-term complications of kidney donation.^{21,22}

Taken together, these small single-center studies offer some reassurance about the long-term prognosis for kidney donors. However, they offer no guarantees about the long-term safety of living with a single kidney. Each study was small enough to have missed rare but serious complications. In each study, a number of patients were lost to follow up. It is surprising that no long-term multicenter follow-up on a large cohort of renal donors have been reported. Such a study could help quantify donor risks.

Recipient Benefits

Kidneys from living donors are in greater supply than those from cadavers, so one of the primary benefits of using live donors is increased organ availability.²³ However, 86 percent of transplant centers say that they would continue to use living donors even if there were an adequate supply of cadaver kidneys.²⁴ Thus, in addition to increasing organ supply, live donor transplants are perceived as having other advantages over cadaver transplants. These are primarily related to outcome.

Kidneys from unrelated living donors probably do not confer a better prognosis for the recipient than kidneys from cadavers. In one study comparing 41 patients who received grafts from living unrelated donors with 41 patients who received cadaveric grafts, graft survival rates at 3 years were 81 percent for unrelated living donors and 86 percent from cadaveric transplants.²⁵ In this study, the grafts from live donors functioned more rapidly than cadaver grafts, with no need for post-transplantation dialysis. Preliminary data on 809 transplants from the International Collaborative Transplant Study also indicates no differences in graft survival between cadaveric and unrelated living grafts. (Newsletter 1, Feb 6, 1991). There are currently no large, multicenter, long-term follow-up studies which address this question. However, that may be remedied soon with the International Collaborative Study and with the UNOS registry.²⁶

Kidney grafts from related living donors fare considerably better than grafts from cadavers. The North American Pediatric Renal Transplant Cooperative studied 761 transplants, of which 42 percent were from living related donors. Children who received kidneys from living relatives required less immunosuppressive therapy and had a longer period of time between their transplant and their first rejection (36 v 156 days). One year graft survival was 88 percent in the live donor group and 71 percent in the cadaver group.²⁷

A study from the University of Miami compared results from 368 adults who received cadaveric kidneys with those of 263 adults who received living related kidneys. Both patient survival and graft survival were better in the living related group. Ten year actuarial patient survival rates were 72 percent and 58 percent in the two groups. Graft survival rates were 56 percent and 36 percent respectively.²⁸

Improvement in survival among recipients of kidneys donated by living relatives appears to be explained by HLA matching. In one study, which had only a small number of living related transplants, survival was no different between those and transplants between HLA A, B, and DR-identical cadaver donors.²⁹ Nevertheless, the likelihood of finding perfect matches is higher among relatives than among unrelated donors.

Altogether, the sum of risks and benefits have led many renal transplant centers to conclude that continued use of living donors is justified.

PANCREAS DONATION

History

Partial pancreas transplantation from living donors has been performed at the University of Minnesota since 1977. The Minnesota group began exploring the use of live donors with hopes that pancreatic grafts from living donors would be rejected less often than grafts from cadavers.³⁰ Data showing that partial pancreatic resection would not lead to diabetes was cited to justify the donor risk.

Pancreas transplantation has not been used as extensively as other organ transplants, primarily because insulin therapy for diabetes is believed to be safer than transplantation, even though it may be less effective. A large part of the risk of transplantation comes from the need for long-term immunosuppression. Thus, for patients who are receiving a kidney transplant for renal failure, the additional risks of pancreatic transplant diminish. Such patients have been the primary target population for pancreatic transplants.

Donor risks

Partial pancreas donation is a complicated operation. Some partial pancreas donors have developed pancreatic fistulae and pseudocysts with post-operative pancreatitis. Pancreas donors also face the risks of general anesthesia discussed above.

In addition to operative mortality, partial pancreas donors are at risk of developing pancreatic insufficiency and diabetes. Kendall et al, from the University of Minnesota, found that partial pancreatectomy was associated with deterioration in insulin secretion and glucose tolerance in all of 28 donors when they were evaluated 1 year post-operatively.³¹ However, fasting serum glucose levels, fasting serum insulin levels, and daily fluctuation in serum glucose levels during a 24-hour sampling period were all within normal range in the donors. Eight donors were followed for 1 to 6 years, and none showed any further deterioration in pancreatic function. Altogether, 1 of 54 donors in the Minnesota series developed diabetes, and this donor would not have been accepted for donation by the pre-donation screening criteria now in use.³² Given this small experience, however, there is not enough data to accurately determine the risk of a partial pancreas donor's developing diabetes.

Recipient benefits

Before examining the benefits of live donor pancreatic transplant, we acknowledge that there is serious debate about the indications for any pancreatic transplant.³³ Successful pancreatic transplantation, using either cadaver or living donor pancreas, cures diabetes. Transplant recipients no longer require exogenous insulin for the maintenance of normoglycemia. Pancreatic transplantation also improves some of the complications of diabetes, such as peripheral neuropathy and nephropathy,^{34,35} although it is not clear how much improvement transplantation can confer. Retinopathy is not improved by pancreatic transplantation, but early transplantation may prevent the development of retinopathy.³⁶

Thus, the potential benefits of pancreatic transplants are for patients who are prone to complications and who do not yet have severe complications.³⁷ Unfortunately, there is no reliable method for predicting which patients will develop complications, except by selecting those with early complications, such as early renal disease or pre-proliferative retinopathy.³⁸ Diabetic children whose disease is associated with major neurovascular disease may also be candidates for grafting, although, as of June 1988, only 6 transplants had been done in patients under the age of 20.³⁹

Pancreatic transplantation results have been steadily improving. Comparing results from 1966-77 and 1986-89, 1-year recipient survival rates have gone from 39 percent to 87 percent and 1-year graft survival rates have gone from 5 to 56 percent.⁴⁰ Results are even better for those United States cases reported to the UNOS Registry. From 1987-89, 1-year patient and graft survival rates were 91 percent and 69 percent respectively.⁴⁰

Grafts from live donors appear to be less prone to rejection than cadaver grafts. In Minnesota, at a time when 1-year functional graft survival rate for technically successful transplants in non-uremic, non-kidney transplanted patients was 32 percent for cadaver donors, the graft survival rate was 73 percent for living related transplants.⁴¹ This probably reflects better HLA matching, as 1-year graft survival in cadaver transplants varies from 67 percent for transplants with 0-2 HLA-AB mismatches to 58 percent for patients with 3 or 4 mismatches ($p = 0.058$).⁴²

Thus, to the extent that pancreatic transplantation is indicated, there may be some benefit to the recipient to receive a segmental graft from a live donor rather than from a cadaveric donor. However, the current controversy over the indications for pancreatic transplantation, combined with the relatively high risk to the living pancreas donor, make the use of live donors for pancreatic transplantation difficult to ethically justify.

The number of living pancreas donation procedures has decreased over the past 2 years, suggesting that even the proponents of the procedure may feel that the risk-benefit balance currently does not justify use of this procedure.

LIVER TRANSPLANTATION

History

Liver transplantation was developed throughout the 1960s and 1970s. By 1983, an NIH consensus panel concluded that whole liver transplantation was standard therapy for a number of indications, including biliary atresia, inborn errors of metabolism and nonalcoholic cirrhosis⁴³. Technical advances in the 1980s allowed surgeons to transplant reduced-size livers,^{44,45} split livers,⁴⁶ and eventually to use a portion of a liver from a living donor for transplantation into a child.⁴⁷ Liver transplants from live donors have now been performed in at least five centers in four countries.

Donor Risks

The donor requires a general anesthesia for a partial hepatectomy. Anesthesia risks have been discussed above. A partial hepatectomy can be quite risky in the face of underlying cirrhosis, and some surgeons have reported operative mortality rates as high as 11 percent.^{48,49} In a number of series involving non-cirrhotic patients, however, the operation has been performed with no or very low mortality.⁵⁰⁻⁵⁴

Liver donors have developed operative complications. One patient required splenectomy as a result of an intra-operative laceration of the spleen. Two donors have required non-operative management of bile leaks. As of May 1, 1991, 50 living liver donor procedures had been performed without a death in the donor group (Whittington PF, personal communication). Long-term risks to the donor appear to be low. After partial hepatectomy, the liver regenerates⁵⁵ so liver mass is expected to return to normal within 4-6 weeks, although this has not been studied in the living donor situation. Thus, although no long-term data on donors are currently available, there is clinical evidence from comparable patients and some physiologic reason to believe that donors will not have inadequate hepatic function as a result of partial liver donation.⁵⁶

Recipient Benefits

In contrast to kidney and pancreatic transplants, there is no alternative medical therapy for patients dying of end stage liver disease. The primary benefit to the recipient is the availability of an organ suitable for transplant at a time when the recipient is still medically suitable or appropriate for transplant. For a number of

patients, especially children and adults with fulminant hepatic failure, the shortage of suitable cadaveric livers leads to their death or clinical deterioration while waiting for an organ. The use of reduced-size and split livers ameliorates the organ shortage for children, but the shortage remains.

Liver transplantation from living donors, rather than cadavers, may confer other benefits as well. The transplanted organs may be healthier, since there would be decreased ischemic time between organ harvest and transplantation. Cadaver organs may have suffered ischemic injury as a result of the events that led to the donors' death. Furthermore, in other organ transplant situations, organs from family members are less likely to be rejected, most likely as a result of better HLA matching. This may be true for livers as well.

It is hard to evaluate the efficacy of living liver donation since the procedure is so new. Initial results are comparable to results after whole liver transplants from cadaver donors. Preliminary data shows that, for liver transplants from living donors, graft survival rates are 72 percent (36/50). Graft survival rates in the U.S. and Japan, the countries with the most experience, are 80 percent (35/44). The period of follow-up varies from 1-15 months. These are comparable to 6-month graft survival rates of 69 percent for cadaveric liver transplants.⁵⁷

If graft survival is comparable or better, and living liver transplants allow patients who would have died while waiting for an organ to survive, then many people will judge the recipient benefits to outweigh the small known and unquantified unknown risks to the donor.

LUNG TRANSPLANTS

History

Partial lung transplants from living donors have been successfully carried out in animals for a number of years.⁵⁸ The first use in humans took place in 1990, with the transplant of a lung lobe from a mother to a daughter.⁵⁹ To date, only one such procedure has been performed. As a result, little is known of the feasibility, the risks and benefits, or the likely outcomes of this procedure.

Donor Risks

Because only one such procedure has been done, the donor risks are difficult to assess at this point. However, lobectomies have been done in patients with underlying pulmonary disease, that is, patients who might be expected to be sicker than prospective lung donors, with very low operative mortality.^{60,61} The feasibility of this operation makes the use of living lung donation ethically possible.

Recipient Benefits

The shortage of acceptable cadaver lungs for transplant is more severe than for other organs.⁶² Patients who become brain dead usually have suffered some lung injury, and the incidence of pulmonary infection, a contraindication to transplant, among ventilated patients is high.⁶³ Furthermore, lungs may be used either alone or as part of a combined heart lung transplant, which increases the demand for donor lungs. As a result, patients who may benefit from lung transplants are likely to die while awaiting a suitable organ. The use of living donors could improve the chances of such patients receiving a transplant.

ETHICS AND PUBLIC POLICY

Some major differences exist in the four organ transplant situations described above. For kidney and pancreas failure, alternative medical therapies are available, so patients rarely require a transplant to prevent imminent death. Instead, the goal of transplantation is to improve quality of life.^{64,65} By contrast, patients with end stage lung or liver failure must either receive a transplant or die. There are differences in operative risks for the donation procedures, although clearly each procedure is associated with some risk -- at least the risk of general anesthesia. In each case, there is some uncertainty about the long-term risks to the donor, especially whether they are at higher risk for disease as a result of donation. These facts and uncertainties must form the basis for judgments about whether the benefits to the recipient outweigh the risks to the donor. These judgments will change as more experience and information is accumulated about each procedure. Nevertheless, in each situation, certain ethical concerns arise that must be addressed.

Beneficence and Nonmaleficence

Physicians set limits on the types of procedures which are offered to patients, and thus, on the procedures to which patients may consent. Generally, physicians are guided in establishing these limits by considerations of beneficence (i.e. the desire to do what is good for the patient) and nonmaleficence (i.e. the desire to avoid harm). Most physicians feel that the donor risks must be minimal, and will not allow patients to donate unless they are in perfect health. Only 10 percent of renal transplant centers will allow patients who are less than optimal donor candidates to donate.⁶⁶

Studies show that many patients would be willing to consent to donation, even if they were in poor health or there was a significant mortality risk to donation, especially if the potential recipient is a relative.⁶⁷ This has led some to argue that physicians should loosen the acceptability criteria for donors, allowing patients to

assess risks and benefits for themselves.⁶⁸ Regardless of the acceptability criteria used, physicians will still be in the role of deciding whether to consider a particular person for organ donation. In doing so, the physicians' concerns about doing harm to the patient will be weighed against patients' desires to act altruistically.

Physicians may consider not only the physical risks of donation but the psychological sequelae as well. For many kidney donors, donation is a difficult, anxiety producing, and painful experience.⁶⁹ Kidney donors often have moderately severe depressions for 1 to 2 weeks after the operation.⁷⁰ Some donors have even gone on to commit suicide.⁷¹ For most, however, the anxiety and depression resolves after a few weeks and most donors then experience a considerable boost in self-esteem.^{72,73} Long-term follow up shows that most donors experience positive psychological sequelae from donation.⁷⁴ There are no data on the number of adults who, when asked, refuse to donate, to see whether not donating causes psychological problems. Interestingly, when Gouge et al studied adults who were considered as donors and who went through HLA matching but were not selected as the donor,⁷⁵ there were no differences in objective or subjective assessments of quality of life or psychological well-being between this group and the actual donors when assessed a number of years after the transplant occurred.

On the whole, then, it appears that the risks of psychological harm to donors are low, and the potential for long-term psychological benefits quite high. Here again, however, physicians are in the position of having to make clinical judgments about whether, for a particular person, the risk of harm outweighs the likelihood of benefit.

Patient Autonomy and Informed Consent

In most cases, donation is only acceptable if an autonomous patient consents to the procedure. (Possible exceptions include children or incompetent adults.) Valid consent has three elements. First, the patient must have the cognitive capacity to make decisions; second, the patient must be given sufficient information to understand the medical situation; and finally, the decision must be made without undue coercion.

As healthy individuals who are choosing to undergo potentially risky surgery, living organ donors must meet the highest standards of decision making capacity. On rare occasions, such as when the only compatible donor is a minor or an incompetent adult, difficult decisions may arise about the appropriateness of using a donor who lacks decision making capacity.^{76,77} The circumstances under which donation by a minor or incompetent adult is acceptable are beyond the scope of this paper, but have been discussed elsewhere.⁷⁷

It is axiomatic that organ donors should have access to all relevant information about the risks of donation. This should include both short-term risks and long-term risks, and must include discussions of current areas of uncertainty, such as the long-term risk of renal failure for kidney donors or the long-term risk of diabetes for pancreas donors. Although standards for disclosure of risks in informed consent for any medical procedure are not well defined, standards for donation should be especially rigorous since the donor does not stand to benefit from the procedure.

Such information may not, however, be a key factor in donor decision making. Empirical studies show that most kidney donors make their decision to donate immediately after the subject of transplant is first mentioned to them, and no additional information has any effect on their decision.^{78,79,80} Nevertheless, because some potential donors may change their decisions based on medical data, detailed information about the risks of donation must be provided.⁸¹ Because potential donors appear unwilling or incapable of evaluating information about risks and benefits, physicians may recommend that donors undergo psychological or psychiatric evaluation to determine whether their decision is truly voluntary.^{82,83} Unfortunately, since this is an area of psychology that is seldom evaluated in a medical context, it is not clear what evaluative tools psychiatrists should use to assess voluntariness, or whether psychiatrists are truly better than other physicians or social workers in making this assessment.

Three forms of coercion: altruism, guilt, and greed

Given high standards of decision making capacity and adequate disclosure of information about donor risk, the potential for coercion becomes the key element of informed consent. Three possible components of donor coercion should be distinguished. The first is psychological or internal coercion created by the donor's own feelings of guilt because the patient may die without donor participation.⁸⁴ This negative or coercive psychological response may, of course, be balanced by positive emotional responses to donation, such as feelings of loyalty, responsibility, love, or duty toward a family member.

Psychological coercion may be unavoidable, but may also be indistinguishable, in many cases, from laudable psychological motivations for donation. In any case, this sort of coercion is not unique to organ transplantation. The need to balance selfishness and altruism is a universal feature of an individual's relationship with his or her family. Because this is a universal element of human interaction, we do not think that it invalidates voluntary consent.

The second element of donor coercion is external. Pressure upon an unwilling donor to consent may come from family members or even from health care workers.⁸⁵ If family pressures appear to be unduly coercive and the donor seems

conflicted about the decision to donate, psychiatric evaluation and counseling of both the potential donor and the family may be necessary.⁸⁶ Although controversial, physicians might also, with the consent of the patient, inform a family that the decision not to donate was based on medical criteria, such as tissue incompatibility, rather than lack of consent. This would offer the potential donor psychological protection from family pressures.

Pressure from the transplant team may be more difficult to avoid. Surgeons can counter the risk that they will unconsciously coerce donors by highlighting the potential risks of donation, and emphasizing that a decision not to donate would be understandable and acceptable. A "donor advocate," independent of the transplant team, may counsel the potential donor and help work through the tangle of conflicting emotions.⁸⁷ However, the use of a mandatory "donor advocate" would subject donors who have no emotional conflicts to a needless and potentially unpleasant psychological evaluation.

A third form of coercion could come from financial incentives to donate. Some people argue that the legalization of organ selling would be coercive, as it would create an irresistible financial incentive. Further, this coercion would be strongest on the poor, who may yield to financial incentives and make decisions that they otherwise would not want to make.⁸⁸ Thus, by this argument, remuneration for donation is inherently discriminatory against the poor. Others argue that the coercive elements of a market in organs could be regulated so that the public policy benefits outweigh the ethical risks.⁸⁹ We will now examine arguments for and against financial incentives. For the purpose of this paper, we will not discuss the sale of cadaver organs, but will focus on arguments for and against the sale of organs by living persons.

The most compelling argument for financial incentives is that they might increase the supply of organs for transplant. At present, the use of organ transplants is limited by the supply of available organs. Thus, for each of the four procedures discussed above, there is a permanent waiting list of patients for transplant. For liver and lung transplants, in which no alternative therapy is available, a number of patients die because no suitable organ becomes available.

Opponents of policies permitting the purchase or sale of organs argue that other policies might also increase the supply of organs. Such policies include the use of driver's license check-offs to consent to organ donation, required request laws, physician education, and public awareness campaigns. Until such policies are fully implemented and their results evaluated, opponents of markets argue, we can't say that the organ shortage is irremediable, and so should not make a drastic, controversial change in public policy.⁹⁰ Opponents further argue that permitting payment for organs will taint organ donation, drive voluntary donors away, and that the organs obtained under a free market system will likely be of inferior or

uncertain quality compared to those obtained today.⁹¹ Thus, they argue, payment for organs may actually decrease the supply or quality of organs.

These opposing positions are based on predictions of how people would respond to particular policies, and on the problems that those predicted responses would create. However, since we don't know whether people would respond that way, the differences between the two positions do not seem solvable hypothetically or rhetorically. The only way to determine the effect of policies which would permit reimbursement for organ donors would be to try them and evaluate them. Policies designed to increase the recovery of cadaver organs have been tried for a number of years and have been only marginally effective.

A second argument supporting policies allowing individuals to sell their nonvital organs is that, if we respect autonomy, we should allow adults to use and dispose of their bodies as they see fit.⁹² Opponents also argue that respect for autonomy is not absolute. Society may prohibit certain activities if it deems them too dangerous, as it has done for activities such as bare fist boxing, riding motorcycles without helmets, and working in dangerous work environments. Society may also ban morally reprehensible activities, such as prostitution, baby selling, or selling oneself into slavery.

The question is whether selling organs for transplant is either too dangerous or too demeaning to permit. This question can be further refined. Clearly, it is morally acceptable to many people to allow competent adults to donate organs. People who choose to donate are considered morally praiseworthy for donating. Andrews points out that "It is difficult to justify a prohibition on payment for what would otherwise be a legal and ethical act -- giving up body parts for someone else's valid use."⁹³ Does the addition of financial incentives tip the balance of moral considerations so steeply that we must reverse our moral judgments? If it does, it is only because we fear that it would turn a voluntary act into an involuntary one.

The arguments on both sides are compelling, and suggest that a compromise position might be appropriate. Some degree of financial reimbursement or remuneration for people willing to give up their organs might increase the supply of organs. Thus, although outright sale of organs might be prohibited, some reimbursement to donors for hospital expenses, or lost wages as a result of donation might be considered acceptable. Harvey suggests that a distinction can be made between payment for organs and commercial exploitation of organs.⁹⁴ Policies to allow payment without exploitation might require that people who agree to give up organs for reimbursement wait 30 days to reconsider their decision, to prevent rash or poorly-considered decisions. They might also prohibit individual organ buying transactions, requiring instead that reimbursement be limited to donors who register with an organ bank, as potential bone marrow donors now do, and who agree to be available for donation when an appropriately matched

recipient becomes available. Careful medical screening of such donors, as takes place now, should insure the quality of donated organs.

Under such circumstances, some reimbursement seems justifiable -- at least for pain, suffering, inconvenience, and lost income -- although careful regulation to prevent exploitation would be necessary. With such regulation, it should be possible to increase the incentives for people who might consider giving an organ, without necessarily realizing the worst fears of the opponents of reimbursement for organ donation. Reimbursement would not necessarily turn a morally praiseworthy action into a morally reprehensible one, any more than paying soldiers decreases the altruism and heroism which leads them to risk their lives for their country. The real moral concern is not whether money changes hands but whether exploitation is taking place.

CONCLUSIONS

The use of living donors for kidney, pancreas, liver, and lung transplantation is likely to increase. In many cases, the use of living donors offers transplant recipients a better outcome than cadaver transplantation. It also increases the supply of available organs. Thus, live donor transplantation saves lives.

In deciding whether the use of live donors is acceptable for any particular clinical situation, it is always necessary to weigh the potential benefits to the recipient against the risks to the donor. Physicians should set guidelines for when donation using living donors is acceptable. Patient autonomy, though important, is not absolute. It is constrained by the traditional professional ethical obligation of physicians to do no harm.

Guidelines for deciding when donation is acceptable and for selecting donors should reflect clinical data on outcomes, the normative values which prohibit donors from undergoing more than minimal risk, and procedural safeguards to prevent coercion. Criteria for determining what constitutes minimal risk may vary between centers. Each center should publish their guidelines so that public scrutiny and peer review might refine them. Published guidelines and prompt reporting of outcomes should allow critical evaluation of the clinical and ethical acceptability of different approaches to live organ transplantation. This will allow transplantation using living donors to continue while safeguarding the rights of patients, donors, and doctors.

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