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Organ Transplantation: The Ethics of Consequences

by

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Organ allograft transplantation, as a life-saving procedure for those in end-stage irreversible organ failure, has benefited and progressed because of the innovations in clinical and pharmacological research. Advancing the early studies in transplantation Dr. Joseph Murray and colleagues were among the first to use pharmacological agents in transplant patients.¹ Initially, the agents used to enhance graft acceptance were either cytotoxic and suppressed all dividing cells in the body or cytostatic, such as the steroids, which attenuated the immune cells.² These drugs, however, were non-specific, had unpredictable efficacy, and usually grave side effects. As knowledge and understanding of the immune system unfolded, so did new concepts for designing better methods of preventing organ allograft rejection. Early on, attention centered on the theory of graft "foreignness", but in the era of molecular biology, it has expanded to include the intricacies of the intracellular environment and the events, which comprise the recognition, activation and cellular proliferation of the immune response. This science has unmasked new strategies for the identification of targets for immunopharmacological intervention, so that each phase in the intracellular signaling system is available for modification or inhibition to alleviate the aggressive response that destroys the transplanted organ.

Now more specific agents, which are directed to a distinct component of the immune response, are used to inhibit the initiation phase. In 1984, the discovery and use Cyclosporin-A (CsA), a powerful new immunosuppressive drug that lowers significantly the chances of rejecting

the new organ, truly revolutionized the field of organ transplantation and is to this day the mainstay of clinical immunosuppression. CsA is selective for T cells and devoid of bone marrow cytotoxicity and is also a valued probe for medical and pharmacological research.³ It is not, however, without unwanted side effects, which often increase with duration of therapy. For an allograft to function indefinitely immunosuppressive therapy must be taken continuously.

Most recently, research in immunology has expanded to investigate the totality of the immune response, including cellular communication and the signals that govern it. This approach provides the precision and discrimination to target the cells immediately involved in the immune response, and not the immune cells responsible for prevention of disease. The untold advantage to this method is the development of a stable tolerance where the immune system no longer detects the graft as foreign and the graft survives without further immunosuppression.⁴ The great scientific and clinical investigations and advances in organ transplantation have evoked some novel ethical questions and consequences. Unquestionably, as organ transplantation has become more successful and available, one of the major, if not the most significant, ethical questions to be resolved is the gap between the number of recipients in need of vital organs and the availability of life-saving donor organs for transplantation.

Organ procurement and allocation presents some of the major moral problems in medicine: the role of the physician and surgeon, patient autonomy, respect for the dying and the deceased, and the equitable distribution of scarce resources. First, since the majority (> 85%) of transplantable organs, primarily kidneys, are from cadaver donors, the definition of death has been a problematic issue. Ontologically, death is the loss of personhood, but medically quantitative criteria are required. In 1968, the concept of brain death was formulated at Harvard Medical School in direct response to the transplant teams, and replaced the former criteria of cardiopulmonary cessation.⁵ In 1981, the Committee on Morals and Ethics of the Transplantation Society articulated the objective judgment of death as the irreversible cessation of all brain function, so that the decision was made *independent* of the transplant team and the need for organs.⁶ The concern was to ensure that organ donation was not connected with the definition of death; this is a potential and dangerous sortie into the discussion of the worth and existence of a life.

Secondly, what comprises informed consent for organ donation? In the United States, informed consent requires explicit consent from the donor before death by written advance directives, called "opting-in", or by proxy consent from the next-of-kin. Individuals may also "opt-out" of donation through a written directive of refusal. In other countries societal

needs are placed above individual autonomy and altruism. The 1976 Presumed Consent Law in France argues that the needs of society outweigh those of the individual to control bodily remains after death.⁷ Austria has adopted a policy whereby the state assigns dominion over bodies to physicians for important social purposes such as research and organ transplantation.

To increase organ donation in the United States, the 1986 Omnibus Reconciliation Act mandated that all federally funded hospitals make a *required request* to ensure that every potential donor be notified of the transplant option and asked to make a donation and that organ procurement agencies be notified of potential donors.⁸ Nonetheless, the *moral means* of organ donation is traditionally by voluntary consent based on altruism.

Approximately fifteen per cent of kidney transplants are from living-related donors, which raises some serious social and ethical questions regarding this procedure as often both the donor and recipient are minors. Elective nephrectomy to save the life of another human being is a serious issue to be weighed with great responsibility and deserving of deep moral reflection by the patients (if they are of age), the family, the physician, and the surgeon. Dr. Murray has written that the volunteer donor must, without coercion, freely consent to the act of donation as a gift, which in essence is the purest form of charity.⁹ Further, the donor must not be deprived of the opportunity to save a loved one. According to Clinical Bioethicist, Dr. Pellegrino, the doctor, using the virtue of prudence, seeks to preserve human life by means based on unyielding concern for the welfare of the individual patient.¹⁰

These and other attempts to increase organ donation have been implemented to combat the current climate of commercialization and the covert buying and selling of organs. The hazards of commodification of organs are imminent. Proposals for a marketing and business approach to organ collection have been put forward by health policy analyst, Jeffrey Prottas, who argues that organ donation and procurement is more than a moral enterprise.¹¹ It should be regarded as a not-for-profit industry that engages and encourages altruism. Others, moving beyond the idea of donation as gift, have proposed the adoption of a system of financial incentives or regulated compensation to organ donors or their next of kin as a mechanism to increase the supply of organs.¹² Their intent is to foster greater efficiency and coordination in the allocation process; and even if it is morally marginal, it is preferable to the acceptance of suffering and death of those who cannot get transplants.¹³ In shifting from a gift to a market model, the conviction that economic and social ethics should be guided by the maximization of rational, self-interested free choices is without doubt materialistic individualism. Will human organs become legitimated market

commodities rather than altruistic gifts of life? The outcome will depend on the moral standing of society more than the shortage of organs. The sale of organs was condemned by the World Health Organization in 1947, the World Medical Association in 1985, the International Transplant Society in 1985, and was prohibited by the 1984 National Organ and Transplant Act.¹⁴

This recurrent concept is morally repugnant and devalues all altruism and solidarity within the community. We, as humans, are not possessors, but stewards of our bodies as gifts from God. The community as the elected steward of the gifts of donated organs has the responsibility to implement policies for the allocation of scarce and life-saving resources in an equitable and just manner and to preserve what David Lamb has termed the symbolism of transplantation as relationship.¹⁵ For within the context of organ transplantation are all the deeper questions concerning what it means to be a human being, to have obligations towards others and to belong to the human family.

The allocation of organs requires political and ethical imperatives for the efficient management of medical resources through an equitable and fair system of distribution. Such policy decisions may be based on principles of social utility, which measures the patient's capacity to benefit society – judgments that are prone to subjectivity and prejudice; on principles of distributive justice, which seek to maximize the fairness of the claims of all to basic goods – policies that may disadvantage the poor and the marginalized on society; or on egalitarian principles which stress the equality of worth of all persons as human beings.

Initially, the ownership of donated organs in most organ allocation policies was under the dispositional authority of the transplant surgeons. In 1986, the Task Force for Organ Transplantation stipulated that donated organs belonged to the community with the transplant professionals serving as the trustees or stewards.¹⁶ This rule mandated public accountability and participation in setting the criteria for organ allocation. Currently, organ allocation is managed by UNOS (United Network for Organ Sharing), a federally funded and publicly accountable nationwide organ procurement and transplant network, which has placed organ allocation in the public domain.¹⁷

UNOS attempted to make the system equitable by setting criteria and creating a formula for organ allocation to judge which patient would benefit most medically from receiving an organ. Specific technical points such as tissue matching and immunosuppressive therapies, time on the waiting list, and medical urgency influence judgments concerning allocation to outside the community or between two patients within the community. Medical utility for maximum welfare of patients in end-stage organ failure considers factors that influence both graft and patient survival

and potential need. When an organ becomes available the most suitable recipient on the waiting list is identified by a computer match between the transplant center and UNOS. However, the "right" distribution policy is still a function of the best clinical judgment. Recently, two novel technologies have been investigated as alternative sources for organs and tissues: xenotransplantation and stem cell research.

As a result of the organ donor shortage, which was declared a public health crisis in 1991, there has emerged new interest in the idea of cross-species transplantation or xenotransplantation. Xenotransplantation is appealing because the organs are available, they are biological, in that there is adequate tissue to support organ physiology, and they are totally implantable in contrast to artificial devices.¹⁸ Additionally, they can serve as life-saving biological bridges until a human organ becomes available and the surgical techniques to implant them are similar to that for human organs.

With efficacious therapies to inhibit organ and tissue transplant rejection and unique methods to genetically alter donor animals for improved compatibility with the host, xenotransplantation is an area of intense research and debate. Despite the early promising studies, these very advantages underscore and contribute to the major biological and ethical hurdles of xenotransplantation. The National Institutes of Health and Nuffield Foundation for Bioethics in the United Kingdom have held conferences to define and weigh the major scientific and ethical issues of xenotransplantation.¹⁹ Foremost is the critical issue of cross-species infectivity and pathogenicity, which questions the balance between individual patient need and possible danger to society. The potential spread of endogenous animal pathogens to human xenotransplantation recipients and possibly to the public is augmented by recipient immunosuppression. Such long-term therapies weaken the host defenses to infection and potentially may favor the activation of animal pathogens. Since it is not yet feasible or possible to raise donor animals that are "clean" and to ensure against infectious agents carried within donor animal organs, the genetic manipulation of the donor animals may provide an opportunity for animal pathogens to adapt to the human host.²⁰

The Food and Drug Administration (FDA), in an effort to put the public health first and allow science to catch up with these possible risks, issued a moratorium on xenotransplant clinical trials. Human trials would only take place if the risks were deemed low and acceptable. However, the moratorium was relaxed in favor of "cautious" continuation of the trials under strict supervision.²¹

Is this decision tantamount to exposing the public to potentially serious risks that may have long-term consequences without their consent

or awareness? This question was posed by Dr. Fritz Bach, from Harvard, who has directed research in xenotransplantation. He has called for an additional Hippocratic ethic: to do no harm to the community. He believes that xenotransplantation requires a wide and informed public debate on whether this *unquantifiable* risk to the public is justified by the benefit to the few or if any trials should be allowed to proceed at present.²³

Other ethical problems raised by the Nuffield Bioethics Commissions were:

1. Is the imposition of harm (maleficence) on non-humans to benefit humans ethical? Is xenotransplantation an acceptable means for achieving this end (helping humans)?

2. What of the cost borne by other patients if the allocation of resources is redirected away from areas of research and medical care to new and experimental therapies like xenotransplantation? Is the ensuing benefit to all an equitable and effective use of resources?

3. Does xenotransplantation undermine human altruism and the "gift" metaphor? Both Hans Jonas and John Lynch, S.J., view this gift as one of fraternal love – to give ourselves to others in ways that transcend what is ordinarily expected of us.^{23, 24}

The most recent technology of considerable debate is stem cell research. Scientists have isolated pluripotent stem cells from human embryos, which hold tremendous promise for treating human diseases.²⁵ Yet the retrieval of these stem cells results in the destruction of the viable embryo. The National Institutes of Health, in an effort to forward this research, argued for a lifting of the congressional ban on embryo research. In hearings in Washington, DC, June 28-29, 1999, the National Bioethics Advisory Commission (NBAC), in support of this research, acknowledged that the embryo is entitled to *some* respect, but claimed that any respect given the embryo must be tempered by the benefits or social good that its stem cells may have for "others" in alleviating suffering.²⁶ This utilitarian calculus evokes the most basic ethical and moral questions, which have been addressed by Dr. Pellegrino.²⁷ First, do human embryos have any inherent worth independent of any benefit to others and, secondly, does the embryo have a moral status that protects it? These are questions that must be considered separately from any potential therapeutic good or instrumental value of the stem cells. He calls for scientific "moral constraint" in stem cell research, in that morally *unacceptable* experiments should never be done.

Morally and ethically, all human embryos are equally deserving of protection and respect as most vulnerable members of the human species. Though it is praiseworthy to apply the latest scientific advances to human suffering, this noble end cannot be achieved through less than noble means.

If the life of the human embryo is valued only for its benefit to others, then all human life is devalued. Scientists are obliged to pursue and support morally defensible means to accomplish the same end and seek alternate sources for procuring human stem cells (i.e., human cord blood and bone marrow).

In conclusion, what is the ethical responsibility that must govern the decisions and actions of patients, physicians and the community with regard to organ transplantation? Organ donation is based on accepted societal values. All transplantation policies must advance the moral values and concerns our society has regarding individual autonomy, importance of family, and dignity of the body. They must also embrace the social practices that enhance and strengthen altruism and our sense of community. Transplantation is not a cure – but a hope – and hope is a unique bond between the patient and the physician, the family, and the community.²⁸

As stewards of these organs both the transplant professional and the community have an important role in setting the criteria for organ procurement, allocation and distribution. The public trust in the prudential balance between principles of justice and values in these policies confirms the public's willingness to donate organs. This trust implies a moral commitment and responsibility to acknowledge and consider the universality of human rights and the common good; the opportunity for each human person to achieve physical and spiritual goods which are owed to them because of their human dignity. As defined in the Consistent Ethic of Life and its founder principles, there is an equal dignity of every human person and the right to life of each human being; and the derived principle, that any violation of the rights of an innocent human being is unethical.²⁹ The moral responsibility of all the members of the community, in solidarity, is to protect and preserve the sacredness and value of human life and to ensure that this undeniable moral factor is incorporated into public policies. If we eliminate from consideration our knowledge of ourselves as moral agents then we will never discover genuine moral knowledge or the practice of virtue. Either we bring value to experience or we find none.³⁰

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