

Organ Donation: *the Facts, the Need*

By Edmund Q. Sanchez, MD, FACS



THE NEED FOR organ donation registration is great. Currently in the United States there are more than 110,000 (1800 pediatric) people listed for organ transplants, but only 95,000 registered donors. Last year, only 21,354 organ transplants were performed from 10, 558 organ donors. More donors are needed to meet the demand.

History

The first successful kidney transplant took place in 1954. It involved 23-year-old monozygotic twins who received their organs from a living donor who lived to the age of 79. The organ recipients remained dialysis free for 9 years.

At that time, the success of organ transplants from deceased donors was plagued with problems, including warm ischemia of the donor allografts and narrow selection of immunosuppressive agents. As a result, this type of organ donation underwent a period of inactivity during the 1960s.

During the same period, developments in defining criteria by which patients could be selected for use as an organ donor were ongoing. Brain death was not the defining criteria for an organ donor until the Uniform Determination of Death Act in 1980. This fortunately proved to be one of the more significant cornerstones needed to advance organ donation to help propagate advances in transplantation.

Living Donation

Living donation, which is mostly utilized in renal and liver transplantation, is

being pushed to its limits of applicability with reports of success in virtually all organ transplants. The reduction in wait time, utilization of a documented “healthy” donor, and the ability to electively time a transplant have led to superior results.

Donor selection is based on strict institutional criteria based on medical, psychosocial, and anatomical evaluations. (“First, do no harm” — *primum non nocere* — is the rule). The number of living donation, however, appears to have peaked in recent years.

Paired donation is another effective way to receive a live donor transplant. Paired donation allows incompatible pairs to “swap” with others who are in the same predicament. The swaps can be in a multiple pair chain which can span numerous transplant locations over many states.

In regard to liver transplantation, living donation relies on the fact that the liver possesses regenerative abilities, so it can be split for donation of the right or left lobe to adult or pediatric patients on the waiting list. In a deceased donor, both lobes can be used to perform two liver transplants.

Although less mainstream, living donation can be utilized for other organ transplants including lung, intestine, and pancreas.

Pushing the Limits With Deceased Donation

In 2006, the United Network for Organ Sharing (UNOS) defined Expanded Criteria Donor (ECD) for renal transplantation in an effort to increase the

number of deceased donation of kidneys. The ECD included advanced donor age >50, serum creatinine >1.5, hypertension, and cerebrovascular accident. Utilization of ECD’s in renal transplantation has allowed individuals in need of kidneys to receive them and successfully discontinue dialysis.

Although no designation exists in other organs, the limits are being pushed to utilize organs which are from marginal donors. Therefore, it is extremely important to allow the organ bank personnel to determine who is a viable donor and who should be ruled out.

Donation after cardiac death (DCD) allows a critically injured patient that has not been declared brain dead to become a donor — mostly for liver and kidney transplants, but also for transplantation of lungs, pancreas, and intestines. Until recently, there were very few DCD donors. They still do not exceed 10% of donors.

Summary

It is estimated that 1 in 20 patients listed for organ transplantation in the next year will die waiting for a transplant. Without increased numbers of donor registrations, this trend will continue. The need for organ donation is great. Remember, one donor can change many lives.

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