Solid Organ Transplantation
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Transplantation is a constantly evolving science, placing on the life care planner, the responsibility for updating research specific to the patient and type of transplant on which they are working. The inroads made in the last 10 years have been phenomenal due primarily to greater expertise and the development of more effective immunosuppressant medications. The first successful kidney transplant between identical twins was done in 1954. The first successful kidney transplant from an unrelated donor was completed in 1962. The first successful liver transplant was performed in 1967. The first human heart transplant was conducted in 1967. The first successful heart transplant in the United States was performed in 1968. The first successful double lung transplant was performed in 1986.

These reading assignments discuss the life care planning and related medical issues in solid organ transplantation; specifically kidney, pancreatic, liver, heart/lung, and intestinal. The assignments discuss familial issues, and vocational issues.

Introduction

Transplantation is a constantly evolving science, placing on the life care planner, the responsibility for updating research specific to the patient and type of transplant on which they are working. The inroads made in the last 10 years have been phenomenal due primarily to greater expertise and the development of more effective immunosuppressant medications. The first successful kidney transplant between identical twins was done by Dr. Joseph E. Murray, Brigham and Women’s Hospital, Boston, Massachusetts, in 1954. The first successful kidney transplant from an unrelated donor was completed by Dr. Joseph Murray in 1962. The first successful liver transplant was performed by Dr. Thomas E. Starzl, University of Colorado Health Sciences Center, Denver, Colorado, in 1967. The first successful heart transplant was conducted by Dr. Christian Barnard in 1967. The first successful heart transplant in the United States was performed by Dr. Norman Shumway, Stanford University Hospital, Stanford, California, in 1968. The first successful double lung transplant was performed by Dr. Joel Cooper, Toronto Lung Transplant Group, Toronto General Hospital, Canada, in 1986. In 1990 the Nobel Prize in Medicine was presented to Dr. Joseph Murray and Dr. E. Donnell Thomas for their accomplishments in, and contributions, to transplantation, (Thomas A. Gonwa, M.D., F.A.C.P., Associate Director of Transplant Services at Baylor University Medical Center in Dallas, Texas presented during the “Transplantation ’97” seminar).

Solid organs transplants are transplants of the kidney, kidney-pancreas, pancreas, liver, lung (single or double), heart, heart-lung and intestine. Solid organ transplants are performed for life saving purposes due to organ failure
secondary to disease or injury.

The United Network of Organ Sharing (UNOS) was established by the National Organ Transplant Act of 1984, which provided for a federally funded, non-profit network for organ procurement and transplantation. The names of all candidates awaiting cadaveric organ transplants are placed on a central waiting list maintained by UNOS. UNOS also is responsible for maintaining a scientific registry to collect relevant data from transplant centers on the recipients of organ transplants (Schaeffer, MJ; Alexander, DC, 1992). UNOS membership is made up of 258 transplant centers, 3 consortium members, 58 organ procurement organizations, 153 histocompatibility laboratories and 8 voluntary health organizations, 12 general public members and 25 medical professional/scientific organizations.

UNOS rates recipients according to the severity of their illness. Organs remain in short supply, so criteria for acceptance to become a recipient are stringent. Thomas A. Gonwa, M.D., F.A.C.P. noted in his lecture that the waiting list for organ recipients is growing each year. In 1992 there were 22,376 people waiting for kidney transplants, 2,323 waiting for liver transplant and 2,690 waiting for heart transplants. These numbers drastically increased by 1995. There were 31,045 people waiting for kidney transplants, 5,691 people waiting for liver transplants and 3,468 people waiting for heart transplants. UNOS lists on their website that there are a total of 86,252 people in all on the waiting lists as of August 2, 2004, which included kidney, liver, heart and all other organs.

Organ Procurement Organizations (OPO) goals are to match donor organs with recipients. They are required by law to operate as not for profit organizations. The transplant centers best resource with respect to the donation process is the local OPO, which provides services related to organ donor referral, evaluation, and surgical recovery. The organ donation process consists of eight components: donor identification, referral, evaluation, consent, management, recovery of organs, allocation, and follow-up. Organ procurement organizations routinely pay for all cost incurred in the cadaveric organ donation process, commencing with the declaration of brain death, obtaining consent for donation from the donor’s family, until the recovery procedure is completed (Shires et al., 1994). The cost incurred by living-related donors, which are typically associated with kidney transplants, the OPO pays for the cost of all reasonable preoperative, hospital and postoperative charges incurred in recovery of the organ (Shires et al., 1994). The OPO is billed for charges related to the donation, and they in turn bill the cost associated with the donation to the transplant center receiving the organ (Schaeffer, MJ; Alexander, DC, 1992). Direct procurement costs consist of such things as operating room charges, intensive care charges, anesthesia, respiratory therapy, medical supplies, pharmacy and hospital lab costs. Import costs can also be incurred when one procurement organization
obtains an organ from another procurement organization. The average charges (based on 2000 data) for procurement, alone, of donor organs were as follows: liver - $54,100; heart - $57,000; lung - $58,200; heart/lung-$115,200; kidney - $45,700; pancreas - $43,900 and kidney-pancreas $89,600. Since 1983, kidney acquisition charges have increased by 12.9%, heart charges by 64.1% and liver charges by 61.8%, after adjusting for inflation. Between 9% and 31% of total transplant procedure specific charges were associated with donor organ acquisition (2002 Milliman USA).

Works Cited:
Gonawa, Thomas A., M.D., F.A.C.P., Associate Director of Transplant Services, Baylor University Medical Center, Dallas, Texas; presentation “Transplantation ’97,” Current and Future Trends, Baylor University Medical Center an affiliate of Baylor Health Care System, A. Webb Roberts Center for Continuing Education, Dallas, Texas, January 29-31, 1997.


Schaffer, MJ; Alexander, DC; “U.S. Systems for organ procurement and transplantation;” Recovery Services, Washington Regional Transplant Consortium Washington, DC, 20037; American Journal Hospital Pharmacy (United States); July 1992; 49(7); p.1733-40; ISSN: 0002-9289.

Shires, Dana L., Jr., M.D.; Sanders, Charles E., Jr., M.D.; and Heinrichs, Dennis F., BSN; “Funding and Availability of Organ Transplantation in the United States;” J. Florida M.A.; May 1994; Vol. 81; No. 5; pp. 324-327.