

Cadaveric Transplant

A New Hope for Life

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Abstract- Transplantation of Human organs is an effective lifesaving treatment recognized the world over. Organs transplantation from living humans is considered globally to be the best line of treatment and perhaps the only way to save the lives in case of fatal diseases likes liver failure or renal failure. Organ donation by a living person can only certain organs/tissues can be donated like bones or cornea. Cadaver transplants shown hopeful and () options. They are now considered a viable option besides living donors. A cad over in medical and legal parlance is a dead human body which, if found suitable for transplantation, can be dissected and its organs used for graft surgeries.

Index Terms- cadaveric Transplant, Brain stem death, Society, Patient.

I. INTRODUCTION

Organ Transplantation offers a lifesaving treatment option for patients who are suffering from organ failure or critical deterioration of organ function

India witnessed its first successful renal transplant surgery from a cadaver in the year 1967 in KEM Hospital, Mumbai 1994 saw the first successful heart transplant at the All India Institute of Medical Sciences. New Delhi and Apollo Hospital in Chennai carried out its first multi-organ transplant surgery in 1995. Where up until 1997 only 4 Indian hospitals were carrying out cadaver transplantation surgeries, 21st century has witnessed more and more hospitals recognizing the importance of the procedure. Organ transplantation is now considered to be an extremely viable option of medical treatment.¹

Unfortunately India is, yet, far behind in fully enjoying the boons of this life saving medical protocol. In spite of being a country of over a billion people, India lags miles behind in actually implementing the use of cadavers for organ donation and transplantation. Every year, while over 100,000 people in India suffer from critical kidney failure, only a handful of about 3,000 receive kidney transplants, out of which cadaver transplants form a minuscule percentage. A study suggests that since 1995 up until 2003 only 524 critical patients received kidney transplants from cadavers.²

Further, India has recorded only 426 cadaver transplant surgeries from 1995 to 2001, that in a country where millions die of organ failure waiting for organ transplantation. This includes 377 kidney transplants, 34 heart transplants, 12 liver transplant surgeries, 2 pancreatic transplants and only 1 lung transplantation. All these average out to about 50 organ transplants from cadavers in a year.³

II. CHANGES BROUGHT ABOUT BY THOTA, 1994

The Transplantation of Human Organs Act, 1994 as amended by the amendment Act of 2011 (now named as The Transplantation of Human Organs and Tissues Act) was passed by the Government of India to reorganize and restructure the organ donation and transplantation program in the country. The Act aims to:

- Regulate of removal, storage and transplantation of human organs for therapeutic purposes;
- Prevent all or any kind of commercial dealings in human organs and for matters connected therewith or incidental thereto;
- Make brain death acceptable and make it possible for these patients to be viable potential organ donors.⁴

The Act legalised the idea of brain death and their use as potential organ donors for the first time in India. The passing of this legislation had made possible organ donation from patients that have been declared 'brain dead'. Further, the Act also defines the terms "Brain-stem Death" and "Deceased" as follows:

- "Brain-stem death" means the stage at which all functions of the brain stem have permanently and irreversibly ceased and is so certified under sub-section (6) of section 3.
- "Deceased person" means a person in whom permanent disappearance of all evidence of life occurs, by reason of brain-stem death or in a cardio-pulmonary sense, at any time after live birth has taken place.

¹.KD Phadke and U. Anandh, "Ethics of paid organ donation" vol 17(5) pediatric Nephrology. PP 309-311 (2002)

²Available at <http://www.tn.gov.in/sta/tables>.

³Available at <http://doctor.ndtv.com/story/page/ndtv/id/3774/type/feature/cadaver-organ-donation-in-india.html>

⁴ M Goyal and RL Mehta and LJ Schneiderman, et.al, "Economic and health consequences of selling a kidney in India", Vol. 288(13), JAMA, pp 1589-1593 (2002)

III. CONSENT AS AN ESSENTIAL ELEMENT

Fundamental to any transplant surgery is consent and the following rules must be adhered to for obtaining informed consent from the donor:-

1. Organ Donation cannot be accomplished against the express wishes of the donor himself. Even for a deceased person, the consent for organ donation should have been given during his life time or there should have been no express condition against organ donation.
2. The next of kin have to be involved for consent if the deceased provided no express condition against organ donation.
3. Most importantly, consent has to be given freely and without any kind of coercion or forceful persuasion.
4. No organ is allowed to be taken without the express legal permission of the investigating office during a medico-legal autopsy.
5. Material to organ donation is the consent of the person lawfully in possession of the body.⁵

IV. BRAIN STEM DEATH – MEANING

The advancements in the science and procedures of Organ Transplantation made the concept of brain death extremely viable. It was inevitable that a person would die within a few hours once he had been brain dead. What about the organs? Could they be used for organ transplantation if informed consent is available?⁶

Conventionally, all treatment is stopped once breathing has stopped permanently and all functions of the heart have ceased. Indian legislations and practices follow the British lead. It is now recognized in India that irretrievable damage to the brain-stem of a human being is equivalent to clinical death. Once established by an expert committee using specified standards, that the person is Brain Dead, the organs of the deceased are allowed to be excised. The only condition is that legal consent had been taken when the deceased was alive or consent has been legally procured from the next of kin of the deceased.

The Transplantation of Human Organs and Tissues Act, 1994 recognizes that fruitlessness of continuing treatment once person has been declared brain dead. The use of ventilator and drugs as part of treatment is only continued so as to allow time for excision of viable organs for organ donation.⁷

The concept of brain death has opened a new door for patients to receive organ transplants which may eventually be their only option. The human body, despite being brain dead, provides the right haemodynamic environment for the preservation of the organs before they can be excised for organ transplantation. This has allowed hospitals to save innumerable lives using organs from brain dead patients.⁸

After Brain Death has been confirmed the physicians are required to shift their focus from brain function management to preservation of organs in the cadaver: It is of critical importance that organs are kept at optimum functionality and delivery of oxygen and nutrients is maintained.

For excision of organs for organ transplantation, consent of the next of kin of the deceased has to be sought first. However, supportive medical treatment should be commenced irrespective of the consent of the family of the deceased. Brain Dead patients are usually managed in ICUs and supportive care for maintaining the organs is extended to them for optimal graft survival.

V. CADAVERIC TRANSPLANT – SITUATION IN INDIA

The increased success of Organ Transplantation Treatment has been to boon to mankind. IT is now considered to be the one of the foremost choice of treatments with patients suffering from life threatening diseases like renal failure or liver failure. The demand for this treatment has put an adverse strain on the supply side. Although India recognized brain dead patients and cadaver transplants through the Transplantation of Human Organs and Tissues Act, 1994, the number of cadaver transplants has remained miniscule. Successful implementation of the law has faced a number of problems such as:-

- **Healthcare professionals**

On the one hand families refuse to accept the concept of brain death, on the other hand healthcare professionals remain uncomfortable with explaining such concepts to the family members and consequently they refuse to declare patients brain dead even if it so. In addition to this myths and rumours about complications after organ donations spread by half knowledgeable professionals provides a serious hurdle to organ donation in the country. Sometimes narrow minded physicians themselves warn the families against organ donations.⁹

Further, the definition of 'brain stem death' is only explained by the Act in the context of organ transplantation. Health care professions confuse this to mean that a patient should only be declared brain dead if his organs are to be excised and donated. The linkage of the two concepts has created a tremendous confusion. One way to augment organ donation from cadavers is to

- a) record brain death
- b) explain, inform and request the family of the deceased for organ donation
- c) and lastly record the outcome of such procedures.¹⁰

⁵ Hans Goddard, "No Easy Way to Figure Costs of Transplants", Vol. 43, The Medical Post, July 7, 1992

⁶ Available at <http://ccn.aacnjournals.org/content/24/5/50.full> (Visited March 23, 2015)

⁷ Available at <http://www.ijme.in>

⁸ [HOPE] Human Organ Procurement and Exchange Program, "Organ & Tissue Donation" (University of Alberta Hospitals, Edmonton, 1993)

⁹ Cameron Johnston, "Transplanting Animal Organs Into Humans Could Soon Become a Reality in Canada", The Medical Post, pp 35 (1993)

¹⁰ KD Phadke and U Anandh, "Ethics of paid organ donation. Pediatric Nephrology", Vol. 17(5), pp 309-311 (2002)

- **Society**

The fact that families are informed of the idea of organ donation at the wrong time leads to majority of the refusals. Timing is utmost in these situations. The family members should not be in any way requested for organ donation at the time when their loved one is clinically declared brain dead. To get consent becomes extremely difficult in these situations.¹¹

- **Patients**

Not just the hurdles created by society and the health care professions, reservations of the patients regarding organ donation also creates a major problem. Most of the patients are unaware about organ transplantation and do not, in some cases, even consider the possibility of cadaver transplants. Further, the cost of organ transplant procedures has always been high. It becomes extremely difficult for people belonging to the lower strata of the society to even consider such treatments. It is really important that the Government should play an active part in reducing the costs involved in organ transplant surgeries. Early and mass enrolment in health insurance programs is one way of solving such a problem.¹²

VI. Conclusion

The successful implementation of organ donation is based on educating the masses, education institutions should start teaching about organ donations from a young age. Media should help spread the awareness about organ donation and transplantation. By highlighting cases requiring organ transplants and debunking the myths about organ donations, a number of lives may be saved. It is also extremely important that people are encouraged to donate organs to people keeping aside their biases based on religion, class or race.

One way to overcome such a hurdle is to make it compulsory for every one to donate organs as per the presumed consent law. This is one way of solving the problem of organ shortage. Under ideal conditions, seven critical patients can lead normal lives with organs donated from one brain dead patient. Cardio-thoracic surgeons are of the view that the heart from a brain dead patient or cadaver can be kept alive for about 5 hours. That is enough time

for it to be flown to another city for a heart transplant. The potential benefits of cadaver transplants are, therefore, immeasurable. It is for the Government and NGOs to come together to solve the problems faced by cadaver transplantation programs. The media and medical fraternity will, no doubt, have to put in an immense effort for the success of these programs. Certain suggested measures are as follows:-

- Enlarging the panel of expert physicians who can certify brain death in hospitals.
- Educating the masses and especially starting at school and college level.
- Organ donation films should be provided with free air time on television channels and movie theatres.
- Another way of persuading the family members for organ donation of the deceased is by honouring them and by telling them that they have been part of most noble cause- saving somebody's life.
- The extended family has an important role in the Indian social system and most of the times some member from the extended family may persuade the immediate family against organ donation. A lot many times relatives have demanded monetary compensations in return for organ donation. In these situations it has to be remembered that commercial transactions involving organ trade are strictly forbidden under the law. Further, commercialization of this system have significant negative effect on the number of organ donations. After all, organ donation is considered to be a noble and altruistic action.

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