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Be an Organ Donor: Be Alive Forever**Dr.Renuka Kolamkar**

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Abstract:

'Organ donation' is the act of donating an organ or tissue by a person to a patient who is in need of it. Demand for organs and tissue is growing day by day worldwide. Organ donation by one person can save lives of many others.

'Organ transplantation' is moving an organ from one person (donor) to another (recipient) who is in need of it. Organ transplantation is the safe procedure that gives hope to thousands of people with end stage organ failure.

In this article need of organ and tissue donation, ways to increase awareness about organ and tissue donation, organ and tissue transplantation and detail knowledge about it is discussed.

Key words: Organ donation, Tissue donation, Organ transplantation.

Introduction:-

'Organ donation' is the process of donating Organs or biological tissue to living recipient, who is in need of transplant.^[1]

The purpose of tissue or organ donation is replacing recipients damaged or absent organ or tissue or by donors healthy organ or tissue.

The donor is the person providing organs or tissues to recipient who receives it through a surgery called 'transplantation. Donors may be living or brain dead. Any healthy willing person of age upto 80 years can be a donor excluding HIV, Hepatitis infected patients, active cancer patients and patients with chronic illness who can not be donors. A living donor can change his decision of donation at any time.

Distributions of donated organs depends on donor- recipient match which is based on number of factors including blood and tissue typing, medical need, time on the waiting list and geographical location.^[2]

Medical science has made tremendous progress in recent times in the field of transplant procedures. Organ and tissue transplantation improves and increases the life expectancy of patients suffering from end stage organ failure.

History:

'Sushrut Samhita' is one of the ancient texts of Ayurveda. In Sushrut Samhita there is description that various tissue and organ transplant procedures have been successfully performed in past. 'Sushruta' the first Indian surgeon used autografted skin transplantation in 'nasa sandhan' means nose reconstruction as well as to repair torn ear and ear lobes and damaged lips. Even today procedures described by sushruta in 600 B.C. are referred and studied by many surgeons and practitioners by the name 'Indian method.'^[3] For that great work sushruta is called 'father of surgery'.

As Modern medicine is regenerative skin transplants, kidney, lungs, liver, pancreas, heart and corneal transplants are successfully performed in the past decades worldwide. In recent times Modern medicine has succeeded to grow organs or tissues from stem cells for transplantation.

Types of organ donation:-Donation may be in the form of biological tissue or organ. Though human tissues or organs anatomically are of several types, medicolegally they are of only two types i.e. regenerative and non regenerative. Regenerative tissues or organs are human tissues or organs, which, even if removed from their respective places in the anatomy, have the capacity to rejuvenate or replicate within the body. On the other hand, non regenerative tissues or organs if removed from human body will not be regenerated.^[4] There are following types of organ donation –

- a) Living donation
- b) Deceased donation
- c) Vascularized Composite Allografts^[5]

a) Living donation:

In this type of organ donation donor remains alive and donates renewable tissues, cells, or fluid (e.g. blood, skin) or donates an organ or a part of an organ in which the remaining organ can regenerate.

Organs which can be donated by living person are –

- a) Single kidney
- b) Partial donation of liver
- c) Partial donation of lung lobe
- d) Partial donation of small bowels
- e) Healthy cell extracts from the failing organs^[6]

b) Deceased donation:

It is the process of giving an organ or part of an organ at the time of donor's death for the purpose of transplantation to another living person who is in need of it.

Organs and tissues which can be donated after natural death are –

- a) Eyes
- b) Skin and fascia
- c) Heart valves
- d) Bones and tendons
- e) Cartilage
- f) Veins and arteries
- g) Middle ear bones

C) Vascularized Composite Allografts (VCA):

Vascularized Composite Allografts involve the transplantation of multiple structures that may include skin, bones, muscles, blood vessels, nerves, and connective tissue. The most commonly known type of VCAs is for hand and face transplants. This groundbreaking form of therapy returns vital function and identity to people who have suffered a devastating injury or illness.^[5]

Organ Transplantation:

Organ transplantation is a medical procedure in which an organ is removed from one body and placed in the body of recipient, to replace a damaged or missing organ. The donor and recipient may be at the same location, or organs may be transported from a donor site to another location.^[6] Through 'Organ transplantation' surgery donor provides organ or tissue to needful recipient.

Transplantation of human organs Act, 1994 (Amendment 2011, 2014):

This act was enacted for removal, storage and transplantation of human organs for therapeutic purposes and for the prevention of commercial dealings in human organs.

Authority for removal of human organs

Any donor (≥ 18 years of age) may authorize the removal before his death of any organ of his body for therapeutic purposes.

- 1) If any donor had in writing (in presence of two or more witnesses) or in documents like driving license authorized the removal of any organ after his death for therapeutic purposes, the person lawfully in possession of dead body should allow the doctor all reasonable facilities for removal.
- 2) When no such authority is there, person lawfully in possession of dead body can authorize the removal of any organ including eye/ cornea of the deceased person.
- 3) When human organ is to be removed, the medical practitioner should satisfy himself that life is extinct in such body or in case of brain stem death, it has been certified by:
 - i. The doctor in –charge of hospital in which the brainstem death has occurred.
 - ii. An independent doctor, being a specialist nominated by the above in-charge from the panel of names approved by Appropriate Authority.
 - iii. A neurologist or a neurosurgeon, nominated by the in-charge from the panel.
 - iv. The doctor treating the person whose brainstem death has occurred.

Under any circumstances, brainstem death tests should not be performed by transplant surgeon or any doctor in the transplant team or a member of the Authorization Committee.

After next of the kin or person in lawful possession of the body authorizes removal and gives consent for donation of human organ(s) or tissue(s) or both, the registered medical practitioner of the hospital through transplant Coordinator should inform the registered Human Organ Retrieval Center by telephone/fax/electronic mail for removal, storage or transportation.

Removal of organs can not be authorized wherein:

- i. An inquest may be required to be held in relation to such body.
- ii. A person who has been entrusted the body solely for the purpose of cremation.

Authority for removal of human organs in case of unclaimed bodies in hospital or prison:

- If not claimed by any near relatives within 48 hours from time of death, the authority lies with the management of hospital or prison or by employee of the hospital or prison authorized by management.
- If there is reason to believe that any near relative of the deceased person is likely to claim the body even beyond 48 hours, no authority should be given.

Authority for removal of organs from bodies sent for postmortem or pathological examination:

Person competent under this Act can give authorization, if such organ is not required for the purpose for which the body has been sent.^[7]

Importance of time factor for transplantation:

The viability of transplantable organs falls sharply after clinical death. Liver must be taken within 15 minutes, Kidney within 45 minutes, Heart within an hour, Organ required for transplantation can be removed even though the circulation and respiration have not ceased due to artificial maintenance.^[8]

The approximate maximum time of preservation for following organs/ tissues is: Lung(4 to 6 hours); Heart(4 to 6 hours); Liver(24 hours); Pancreas(24 hours); Kidney(72 hours); Corneas(14 days); Bone(5 years); Skin(5 years); Heart valves(10 years).^[9]

Types of transplant:

1) Auto graft:

A transplant of tissue from one to oneself (e.g. skin grafts, vein extraction for CABG, etc.)

2) Allograft:

It is the transplantation of organ or tissue from a genetically non identical member of same species.

Most transplants are allografts.

3) Iso graft or (Syngenic graft):

In this type organs or tissues are transplanted from one to genetically identical other person. (Identical twin transplant.)

4) Xenograft:

It is a transplant of organs or tissue from one species to another species.

e.g. Porcine heart and heart valves transplants.^[10]

Discussion:

When a deceased person is potential donor, the doctor checks whether he / she have been registered as a donor and his/her family members or close relatives have given consent for it.

In different countries rules regarding Human organ donation and transplantation are very precise and clear for dealing with the problem than in India.

In India there are many misconceptions and lack of knowledge about organs and tissue donation. Because of cultural and religious reasons, family beliefs, disfigurement after death, people hesitate to give consent for organ donation, some think that they are too old age to donate or donors get anxious about their own health in living type of donation.

Statistical data denotes that in India tissue donation and transplantation percentage is very less as compared to other countries worldwide. Corneal transplantation lightens the life of blind person or patients with severe eye disease or injury. Heart valve transplants can save patients suffering from diseased or damaged valves, Skin grafts used in burn patients help to regain their confidence. Bones, ligaments and tendons used in reconstructive surgeries enables the recipient to get back to work and live a normal life. Tissue transplantation has been proved beneficial to many people as it relieves pain, improve and enable recipient's physiological and psychological status.

Conclusion:

Organ donation is a great service as it saves lives. It breaks away all kinds of discrimination and dispels myths.

Organs and tissue donation is the precious gift for needful recipients and life giving opportunity for donors. Along with recipients, organ and tissue donation affects the families and supporters of those in need of transplantation. By providing sensitive and emotional support for donor families we can make bridge between donation and transplantation.

Many organizations work for Organs and tissues donation programme. Under those Organizations one can will and register to donate Organs. To increase public awareness about organ and tissue donation at proper time and proper place is the need of present time.

We can increase awareness about organ and tissue donation through public campaign, hospital camps, advertising through televisions and other social medias, seminars must be arranged in schools and colleges so that all age group people must get inspired and understand the importance of that noble work.

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