

Heart Transplantation: It's a Life Saving Procedure

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Abstract

In the human body heart play a vital role to manage the function of circulatory system. If the brain stops working, the heart can manage the body, but if the heart stops working, nothing can manage the body. Heart disease increase day by day and death rate also increased due to heart disease as compare to brain disease. Deaths due to cardiovascular diseases increases from 13 lakh to 28 lakh in 2016. A heart transplant is the replacement of a person's diseased or damaged heart with a donor's healthy heart transplants are performed when other treatments possibility is not available leading to heart failure. Heart transplantation its having two types orthotopic and hetrotopic. Goal of cardiac transplantation is to improve the patient condition and save the patient life.

Keyword: Heart; Transplantation; End-stage cardiac disease; Orthotopic Heterotopic.

Introduction

The heart is one of the most important organs in the entire human body. If the brain stops working, the heart can manage the body, but if the heart stops working, nothing can manage the body.¹ Heart disease increases the death rate burden in India, as compare to stroke. Heart disease (CVD) and stroke both are increased death rate in 2016 as compare to 1990 i.e 28 lakhs.²

Heart transplant is important and necessary treatment of end- stage heart failure.³ Heart transplants are done as a life-saving measure for end-stage heart failure. People who had done the transplant have improved the survival rate and life expectancy, especially after the transplant. After the surgery, most of the heart transplant patients can return to their normal activity of life.⁴



Image 1:

Heart Transplant

A heart transplant is the replacement of a damaged heart with a donor's healthy heart. The donor is a person and whose family has agreed to donate their organs after the person died.⁴

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The first human heart transplant in 1967 by Dr. Christian Barnard of south Africa, heart transplantation has changed from an experimental operation to an perfect established treatment for heart disease and for the patient life. More than 2,000 heart transplants are performed each year in the U.S.¹

In India Venugopal led a team of doctors to perform the first successful heart transplant on 3 August 1994.⁵

Why its Done: (Indication)

Heart transplants is the last option of treatment and its performed when other treatments for heart problems haven't worked and the patient its having cardiovascular diseases. Cardiovascular diseases, including:

1. Cardiomyopathy
2. Cardiovascular disease
3. Heart valve disease
4. Congenital defects
5. End stage heart failure

Contraindication

- *Pulmonary Hypertension:* It is the only hemodynamic contraindication to transplantation. Its increased a Pulmonary artery pressure.
- *Age:* It is a factor depend on old age person more than 70 years.
- *Malignancy:* Active neoplasm it's a contraindication to transplantation.
- *Diabetes with end-organ damage:* Diabetes can cause the cardiac disease but uncontrolled diabetes is also contraindicated.
- *Renal dysfunction:* Poor renal perfusion related to renal disease or portal hypertension its a contraindicated.
- *Peripheral vascular disease:* Severity of lesion its contraindicated.
- *Active tobacco and substance abuse:* Tobacco use cause the several disease. Its cause a vasculopathy and malignancy and adverse outcomes of the surgery.
- *Severe pulmonary or liver disease:* Pulmonary or problem with other organ its also contraindicated.⁶

Assessment for Cardiac Transplantation

- Age below 45 years
- Assessment of neurologic status: brain death certified by two neurological at interval of 4 to 5 hr
- Assessment of blood group for listing purposes
- Assessment of pulmonary artery pressure, and documentation of the absence of irreversible pulmonary hypertension.
- Careful consultation with patient and family. It is important that the patient and family be aware of the risks and benefits of transplantation, and informed consent.

Types of Transplantation

There are two types of heart transplants

- *Orthotopic heart transplants:* Orthotopic heart transplants it's a common type of heart transplant. It was developed by shumway and lower at Stanford lane hospital in san franciso in 1958. It is a removal of patient heart and implant of recieipient heart.
- *Heterotopic heart transplants:* Heterotopic heart transplants are when the donor heart is piggy-backed on to your old heart. In this case, the donor heart acts as an assist pump for your diseased heart. in that patient heart is not removed and implantation of recieipient heart is done through anastomosis.⁷

Complication after Heart Transplantation

Cardiac transplantation is considered the standard treatment, its improve the quality of life and expectancy of life. Every surgery its minor complication However, heart transplantation is also not without risk, and almost all transplant recipients also having a complication, from mild to severe. most frequent complications following heart transplant, including rejection, cardiac vasculopathy, dysfunction of graft , infection, and malignancy, but its depend on the several factors of the patient.⁸

Summary

Goal of cardiac transplantation is to improve survival rate and life expectancy of the patient who is severe suffer with the cardiac disease. The greatest limitation to transplantation at this time is lack of donor availability. Cardiac diseases increases day by day awareness regarding cardiac transplant is also most important and Patients who are felt to be potential candidates for cardiac transplantation should be referred for evaluation at a cardiac transplant program, where they will be assessed for listing suitability.

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