

## **Heart Transplants and Organ Donation**

In 1967, the world's first heart transplant was performed in South Africa. In Australia, the first heart transplant was performed in 1968, at St Vincent's Hospital, Sydney.

Heart transplants have been performed frequently in Australia since 1984, and there are now heart transplant centres in Sydney, Melbourne, Brisbane and Perth. At the beginning of 1999 more than 48,000 heart, 2500 heart-lung, 5300 single lung and 3700 bilateral lung transplants had been performed worldwide. Australia has performed more than 1200 heart transplants and 600 lung and heart-lung transplants.

### **Who needs a heart transplant?**

People whose hearts are severely damaged may develop a life-threatening condition known as heart failure. This means the heart is unable to pump properly. It does not mean the heart is about to stop. Only some of the people who have heart failure need heart transplants.

Heart failure is usually caused by coronary artery disease or by cardiomyopathy, a condition that weakens the heart muscle. Related conditions, which may result in heart failure, include heart attacks, viral infections of the heart, inherited forms of heart disease or leaking or blocked heart valves. Children who have received certain drugs as treatment for leukemia and women whose hearts have been weakened by pregnancy or childbirth, may also suffer from heart failure.

Untreated heart failure can lead to breathlessness, tiredness, swelling of the legs and abdomen, electrical disturbances of the heart and inability to exercise. In more advanced cases, patients become breathless after very little activity, or even at rest. Sometimes the breathlessness becomes so bad that patients are woken from sleep or cannot lie down.

In recent years there have been significant developments in relation to the drugs available to treat heart failure. The appropriate use of medications can significantly improve the quality of life and outlook for people with heart failure.

An option for some patients is a heart transplant to restore health and enable them to return to work, exercise and a normal lifestyle. The longest survival after heart transplant has been almost 24 years, and the average heart transplant can be expected to last between 10 and 20 years. Heart transplants can be done from infancy to 65 years (although the results are not quite as good over 60 years of age).

To be suitable for a transplant, other organs such as kidneys and liver must be functioning normally and the patient must have given up smoking and (if necessary) alcohol and be willing to take good care of their new organ.

Patients with very advanced cases of heart failure, who are suitable for a transplant and wish to go ahead, have their names placed on a waiting list. These patients carry a beeper so they can be contacted at very short notice and can get to hospital immediately.

When a suitable heart donor is available, people on the list with similar body weight and matching blood group are considered. The sickest person, if not already in hospital, is called in for the transplant.

## **Surgery**

Heart transplant operations usually takes from three to six hours. The most common procedure involves removal of the diseased heart through an incision in the middle of the chest. The old heart is then replaced with a donor heart. This is called an 'orthotopic' heart transplant.

Occasionally, the donor heart can be 'piggy-backed' on to the old heart. In this case the donor heart acts as an 'assist pump' for the diseased heart. This is known as a 'heterotopic' heart transplant.

## **Rejection**

The body recognises the transplanted heart as 'foreign' and therefore the patient's immune system attempts to 'reject' the transplanted organ. When people think of rejection, they often imagine a dramatic occurrence that may cause sudden collapse and death. This is unlikely and it is quite common not to experience any signs or symptoms of rejection. Most patients suffer some form of organ rejection particularly in the first six months after the transplant – it is usual to experience at least two episodes of this process, which is diagnosed after performing a heart biopsy.

Drugs must be taken by the recipient over their lifetime to slow down the rejection process.

## **Follow-up after heart transplant**

Most people stay in hospital only eight to 10 days after a heart transplant – most medical care after that can be done on an outpatient basis. Medical supervision is frequent at first, but eventually patients need to be seen only once a year.

## **Life expectancy after heart transplant**

Current survival rates in Australian hospitals following heart transplant are as follows:

- One year after heart transplant, around 90 per cent of patients are living.
- Five years after heart transplant, about 80 per cent of patients are still alive.
- At 10 years, about 70 per cent of patients will still be living.

More than three heart transplant patients out of four go back to work and a normal lifestyle. There is generally no need to go back to lighter work; manual labour and other heavy occupations are often still possible.

## **Donor shortage**

Currently there are not enough donors for the number of people needing a heart transplant. In Australia, more than 100 people are waiting for heart transplants at any one time, often for up to two years.

## **Donor information**

A suitable organ donor is chosen as follows:

The donor must be 'brain dead'. This means that although the heart is beating, a series of tests prove beyond doubt that the person is dead. The organs continue to function with the help of machines.

Consent must be given for donation of organs. This is given by the donor's next-of-kin.

The donor blood group must be compatible with the recipient's blood group.

The donor and the recipient must be similar in body size and weight.

The donor organs must be healthy.

There is no detectable infectious disease.

If you wish to become an organ donor, you should discuss your decision with your partner and other close relatives so that they know what to do in the event of your death.

As well as the heart, other organs such as lungs, kidneys, pancreas, liver and corneas can be transplanted successfully.

For information on becoming an organ donor, contact the Heart Foundation's Heartline on 1300 362 787.

*The Heart Foundation would like to thank Associate Professor Anne Keogh of St Vincent's Hospital, Sydney, who assisted with the preparation of this information sheet.*

**Revised January 2000**