Results

In the early 1990's, we expect that at least 95% of fully HLA matched living related grafts will be working satisfactorily 12 months after the transplant and that about 90% of other related grafts will work. Fully matched kidneys can undergo rejection and all recipients have immunosuppression, which may lead to infection.

Costs

Costs of tests and hospitalisation are met by insurance funds and/or Medicare. Issues such as overseas donors should be discussed with the renal physician. There should be no excess to be paid by the donor/family for the donor preparation and operation.

Long-Term Effects for Donors

Living with one kidney does not change the life expectancy or increase the risk of acquiring kidney disease.

In general, the donor has the satisfaction of helping a loved one and the experience can be rewarding for both the recipient and the donor, provided the decision is based on sound information and discussion.

A small minority of kidney donors have negative or mixed feelings after the surgery. The stresses associated with the decision to donate, the operation itself, and the outcome, sometimes result in family upheaval.

Extensive screening and follow up of donors and other healthy patients who have lost kidneys due to trauma have shown no effect on their life expectancy. Some male donors appear to develop protein in the urine beyond ten years after the time of organ donation and there appears to be no significance in this. Other studies have shown an incidence of high blood pressure in donors of 10-15% at ten years, which is similar to the ordinary population.

Glossary

Antigen. A molecule which stimulates the production of antibodies; in the case of renal transplantation, the most important antigens are called HLA (Human Leukocyte Antigens) – they are molecules on the surface of all cells except red blood cells (usually tested on lymphocytes – i.e. white blood cells). Recipients whose antigens are similar to those of the donor are more likely to have a successful transplant.

Blood Groups. Determined by red cell antigens, as O, A, B, or AB.

Crossmatch. A test between recipient's serum and donor's white cells to determine the degree of reactivity. A positive result indicates that rejection will occur.

HLA Typing / Tissue Typing. Is a blood test which identifies the HLA antigens on lymphocytes and whether the donor and the recipient have compatible antigens.

A Final Note for Donors

The decision to donate a kidney is an important one and needs to be made on the basis of sound information, without pressure from family or friends. Some people make the decision instantly with few worries or problems. Others need to think carefully, before deciding. For some, the existence of other responsibilities may make donation impossible. It is quite normal for the donor to be afraid of the prospect of donating a kidney.

This pamphlet will answer some of the questions but it is not a substitute for talking to a kidney specialist about donating a kidney and the issues involved. Many people offer kidneys but only a few are accepted.

SO YOUR RELATIVE NEEDS A KIDNEY...

RENAL RESOURCE CENTRE, 1992
37 Darling Point Road, Darling Point, NSW 2027
Telephone: (02) 362 3995 or (02) 362 3121
Facsimile: (02) 362 4354

Supported by the Australian Kidney Foundation

Introduction

If you have a relative whose kidneys have failed and who needs a kidney transplant, you may be thinking of giving one of your kidneys to help save his/her life and to overcome the long-term problems of artificial kidney treatment.

The first successful kidney transplantation in man was performed between identical twin brothers. Most of the early transplants were subsequently performed from close relatives and only in the late 1960's did transplants from recently deceased people become the usual practice in Australia. However, because transplants from close relatives have been so successful for the past 20 years, they have continued to make up between 10 and 15% of the total number of transplants done. The results are not entirely predictable in every case because each transplant can be damaged by rejection processes.

Why a Relative as a Donor?

Transplant results are best when the donor and the recipient are identical on the white blood cell HLA antigen series. Because of inherited genes this can only happen between brothers and sisters where there is a 1 in 4 chance of a perfect match. Parents and children have only a 50% match because only half of the genes in a child come from each parent. Although this is usually acceptable, occasionally there are problems with red cell (ordinary blood group) typing. Transplants with living related donors are more likely to be successful than with unrelated, or recently deceased donors because the body tissues are more likely to be closely matched. For this reason, the recipients require less immunosuppressive drugs and therefore have fewer side effects, especially if the donor and recipient are fully matched. Secondly, a transplant from a live donor usually means that the patient will spend much less time on dialysis, which is particularly important for children, young adults and diabetics; average waiting time for a kidney is about three years. Thirdly, the operation can be planned so that the recipient has had adequate dialysis treatment and is as fit as possible, which improves the overall results.

Many people consider organ donation for close relatives. It is however their right to decline to be involved at any stage of the investigations to determine suitability. Any reservations about organ donation should be discussed with the kidney specialist; the spouse and family of a potential donor may have questions and anxieties about the procedure and these must be resolved before proceeding; the assistance of a social worker, psychologist or psychiatrist may be useful to all parties.

What Other Factors are Considered Before Being Accepted as a Living Donor?

1. The donor must be a true volunteer and there must be no family pressure to donate. It is illegal in Australia to sell organs, and there must be no financial inducements to a potential donor.
2. Some doctors are reluctant to consider as donors young women who may, in the future, wish to bear children, and physically active young men, in which groups there may be a need to retain the function of two kidneys.
3. Many units will not consider a donor who smokes, or is currently taking contraceptives (because of increased risk of post operative complications).
4. The red blood cell groups must be suitable, as for blood transfusion, i.e. blood group O is a universal donor and blood group A can give only to A or AB recipients, B to B or AB recipients and AB donors only to AB recipients.
5. Although some transplant units consider mismatched siblings, it is desirable to have at least 50% matching on the white cell antigen matching. Donors with 100% matching are best.
6. A "crossmatch" blood test between donor cells and recipient serum must be negative.
7. The potential donor must have two normal kidneys assessed by renal function studies, involving one session of 4-5 hours or two urine collections, each over a 24 hour period.
8. The urine must be tested for protein and blood, and must be negative on several occasions. There must be no infection in the urine.
9. The donor's general health must be good, sufficient to undergo a major three hour operation with potential post operative complications related to lung function and general mobility.
10. The potential donor will have blood and urine tests and usually a chest x-ray and cardiogram. These tests determine that kidney function is normal, that there are no unsuspected problems which may add to the risk of major surgery and that there are no unsuspected infections which may pose a hazard to the recipient, whose immune system will be suppressed by drug therapy.
11. If all the above tests are passed, then an x-ray or nuclear scan of the kidneys is done to determine the presence of two kidneys and the number of ureters connecting each kidney to the bladder.

Acceptance

If all the above tests are satisfactory and the intending donor and recipient agree, there is a meeting between the patient's doctor and the transplant surgeon to consider all aspects of the proposed transplant. If everything appears satisfactory, admission is arranged and the only two remaining tests are:

1. A final crossmatch between the donor's white blood cells and serum from the recipient's blood, to determine reactivity. This test must be negative before proceeding.
2. An x-ray of the renal arteries (angiogram), where a small catheter is placed in the artery in the groin and then moved to the kidneys so that dye can be injected to outline the number and situation of the renal arteries. This is crucial in determining which kidney should be removed and is often the last test done before transplanting. This test is the only test which requires overnight admission to hospital as the others can all be done as an outpatient.

The Operation

To reduce complications post-operatively, both donor and recipient must stop smoking cigarettes and be as fit as possible at the time of surgery. Any infection in either donor or recipient could delay surgery. The donor and recipient are usually admitted to separate wards.

The donor goes to theatre at least one hour before the recipient so as to minimise the time between taking the kidney out and putting it into the recipient. The donor and recipient are usually in adjoining operating theatres with separate surgical teams. The incision for the donor is long enough to expose the kidney beneath and parallel to the 12th rib and is usually 15-20cms (6-8 inches) long.

Surgery is less complicated in the thin patient and the post operative course is shorter in those who have normal heart and lung function prior to surgery. For the donor, the hospital admission usually extends to 10 to 12 days beyond surgery. Because of the extent and nature of the surgical incision, donors should not undergo heavy exercise or heavy lifting for at least two months after surgery. Normal daily activity can resume as soon as the donor returns home. Most donors can return to work within a month, unless involved in heavy duties.