Kidney Transplantation in IgA Nephropathy

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The benefits of kidney transplantation

- Improved patient survival
- Improved quality of life
- (Financial benefits)
The benefits of kidney transplantation

Comparison of lifespan of patients with ESRD on dialysis or Tx vs general population

The benefits of kidney transplantation

Quality of life

Numerous studies have demonstrated improved quality of life when compared to dialysis


The benefits of kidney transplantation

Economics

Dialysis on average costs £30,000 per patient per year

This is approximately 3% of the total NHS budget

Kidney transplant costs approximately £20,000 in first year and £6,500/year thereafter

Therefore savings: £10,000 in first year £23,500/yr/pt in subsequent years

Over 25000 kidney transplant patients in UK
Cost to NHS is £600m /yr less than if still on dialysis

Plus the economic benefits of patients being able to return to work
The anatomy of kidney transplantation

Placed in iliac fossa (either)

Extra-peritoneal

Attached to iliac blood vessels

Donor ureter directly attached onto bladder

Own kidneys are usually Left in place.
The anatomy of kidney transplantation

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Where do kidneys come from?

2 main sources:

Live donors

Deceased donors
  After brain death (DBD) - controlled
  After cardiac death (DCD) – less well controlled
Where do kidneys come from?

Number of deceased and living donors in the UK, 1 April 2003 - 31 March 2013

Number of deceased and living donors in the UK, 2012-2013
HBD (DBD) 653 donors → 1291 kidneys
NHBD (DCD) 495 donors → 974 kidneys
Living donors 1002 kidneys
The deceased donor renal transplant programme

Number of donors, transplants and patients on the active transplant list at 31 March 2013

Deceased donor kidney programme in the UK, 1 April 2003 - 31 March 2013
Number of donors, transplants and patients on the active transplant list at 31 March

Average waiting time to renal transplant – 1156 days
(for patients listed 2006 to 2010)
926 days for blood grp A patient, 1369 days for blood grp 0

No of Transplants
1181 HBD
749 NHBD (1068 LD)
Transplantation in patients with IgA nephropathy

Risk of recurrence of IgA nephropathy

Limited data

21 to 58% of patients have demonstrable IgA on biopsy
This doesn’t always result in kidney dysfunction

Risk factors for recurrence

Possibly more likely with:
  - live donor vs deceased donor
  - better tissue type matches
  - higher serum IgA concentration

Currently no way of accurately predicting or preventing recurrence
Transplantation in patients with IgA nephropathy

Presentation of recurrent IgA nephropathy

Study of 42 patients with recurrent IgA nephropathy

5 Isolated haematuria
8 Isolated proteinuria
12 Both haematuria and proteinuria
4 Reduced transplant function (with normal urinalysis)
13 Reduced transplant function with haematuria/proteinuria
Transplantation in patients with IgA nephropathy

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Treatment of recurrent IgA nephropathy

No specific treatment available

Blood pressure control – use of ACEi or ARBs
Transplantation in patients with IgA nephropathy

Outcome of recurrent IgA nephropathy

Australian study of 532 patients with ESKD due to IgA nephropathy

10 year graft loss due to recurrent IgA nephropathy was 9.7%

10 year graft survival comparable to that of patients with non-IgAN pts

Chronic rejection or death were more common causes of graft loss
Transplantation in patients with IgA nephropathy

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Beyond 10 years there may be an effect of recurrent IgA nephropathy on outcome

15 year graft survival:

- 62.6%  Pts with recurrent IgA nephropathy
- 72.4%  Pts without IgA nephropathy (as primary disease)
Summary

Where possible kidney transplantation is the treatment of choice for patients with kidney failure due to IgA nephropathy.

A live donor is the best option if available.

Recurrence of disease is fairly common.

But long-term outcomes are comparable to those without IgA nephropathy.
Potential benefits of live donation

- Kidney is stored on ice for less time
- Absence of brain death in the donor
- Donors are fit and well
- Possibly better health of the recipient
- Higher nephron mass
- Possibly shorter wait before transplantation
- Better concordance with drug treatment after transplant
Impact of HLA match on graft outcome

Live donation eliminates effect of a poor tissue type match

OPTN/SRTR data 2008
Live kidney donation does not affect life expectancy

Kaplan-Meier Curves Comparing Cumulative Mortality of Live Kidney Donors and Matched Controls for the Entire Cohort of Live Donors

Perioperative Mortality and Long-term Survival Following Live Kidney Donation
Segev at al. JAMA. 2010;303(10):959-966
Risks of living donation

Operation related mortality

1:3000

Perioperative Mortality and Long-term Survival Following Live Kidney Donation
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25 deaths in 80347 donors in USA
Overall 3.1 per 10000 donors (men 5.1; women 1.7)

3 deaths reported in the UK (3, 14 and 18 months post-op)
2 peri-operative deaths reported

Equivalent to risk of death from RTA

29% of donors would accept a mortality risk of 1:2

Donation operation is now ‘keyhole’

‘Open’ operation

‘Keyhole’ laparoscopic operation’