Evaluation of the potential renal transplant recipient

Mike Stephens
Objectives of the Session

• Understand the reasons why we perform kidney transplants

• Learn the contraindications to transplantation (absolute and relative)

• Learn about the process for transplant assessment
Access to renal transplantation

- RRT of choice for patients with CKD Stage V fit for major surgery and chronic immunosuppression
- Mean increase in life expectancy of 10 years
  - more for younger patients
  - ? no survival advantage for over 65s
  - diabetics have even greater benefit
- Improved quality of life
- More cost effective
Survival Advantage of Cadaveric Transplantation

MORTALITY IN PATIENTS ON DIALYSIS AND TRANSPLANT RECIPIENTS

COMPARISON OF MORTALITY IN ALL PATIENTS ON DIALYSIS, PATIENTS ON DIALYSIS AWAITING TRANSPLANTATION, AND RECIPIENTS OF A FIRST CADAVERIC TRANSPLANT

ROBERT A. WOLFE, PH.D., VALARIE B. ASHBY, M.A., EDGAR L. MILFORD, M.D., AKINLOLU O. OJO, M.D., PH.D., ROBERT E. ETTENGER, M.D., LAWRENCE Y.C. AGODOA, M.D., PHILIP J. HELD, PH.D., AND FRIEDRICH K. PORT, M.D.

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Access to renal transplantation

• All patients with stage IV and V progressive CKD should be assessed for suitability
• Age is not a contraindication (although age related co-morbidities may be)
• Live donor renal transplant is the best option (ideally pre-emptive)
  - improved outcomes
  - expands donor pool
When to transplant?

• The sooner the better!

  Transplant survival negatively related to duration of dialysis

• For cadaveric donor list should be within 6 months of anticipated start of dialysis or GFR<15

  Note current median wait >3 years
Graft survival in relation to duration of pre-transplantation dialysis
Graft survival in relation to duration of pre-transplantation dialysis

Figure 2. Unadjusted graft survival in 56,587 recipients of cadaveric transplants by length of dialysis treatment before transplant.
Figure 3. Unadjusted graft survival in 21,836 recipients of living transplants by length of dialysis treatment before transplant.
Pre-transplant assessment

• Ensure transplantation is technically possible
• Ensure recipients chances of survival are not compromised
• Ensure graft survival not limited
• Ensure pre-existing conditions not exacerbated
• Identify measures to minimise morbidity/mortality
• Inform patients of risks/benefits
Contra-indications

- Patient survival predicted less than 5 years
- Malignant disease not amenable to curative treatment
- Untreated HIV or already progressed to AIDS
- CVD not amenable to revascularisation and a predicted risk of death >50% at 5 years
- Predicted risk of graft loss >50% at 1 year

Anti-GBM disease with circulating antibody
Anti-GBM disease in Alport's Syndrome following graft failure
? FSGS/IgA/membranoproliferative disease following graft failure
Contra-indications

• Patients unable to comply with immunosuppression
  - history previous non-compliance
  - history poorly controlled psychosis or regular use class A drugs

• Immunosuppression predicted to cause life threatening complications
  - untreated bacterial or persistent viral infection
Malignancy

- Not an absolute contraindication if treated
- Should screen for breast/colorectal/prostate/renal
- Israel Penn International Transplant Tumour Registry
- Risk of recurrence depends on type of cancer and time since treatment
Low recurrence rate (0-10%)

- Incidentally discovered renal tumours
- Lymphomas
- Testicular carcinoma
- Uterine carcinoma
- Thyroid carcinoma
Intermediate recurrence rate (11-25%)

- Carcinoma of the uterine body
- Wilm’s tumours
- Colonic carcinoma
- Prostate carcinoma
- Breast carcinoma
High recurrence rate (>25%)

- Carcinoma of the bladder
- Sarcomas
- Skin cancers
- Symptomatic renal carcinomas
- Myelomas
Waiting period between treatment of cancer and transplantation

Less than 2 years

• Incidentally discovered renal carcinomas
• *In situ* carcinomas
• Small single focal neoplasms
• Low-grade bladder cancer
• Basal cell skin carcinomas
Waiting period between treatment of cancer and transplantation

5 years

- Malignant melanomas
- Breast carcinomas
- Colorectal carcinoma
- *Non-in situ* carcinoma of the uterus
Recurrence of primary disease

Primary glomerulonephritis

• FSGS 15-50% risk of recurrence (higher if previous recurrence)
  Usually early recurrence- 10-18 days post transplant

• MN 20-30%

• MPGN very high histological recurrence for type II (80-100%), but clinical much less (10-20%)

• IgA >60% recurrence but may follow a relatively benign course

• Anti GBM recurrence high if anti-GBM antibody present but minimal without
Recurrence of primary disease

Systemic diseases

- Amyloidosis: 10-40% recurrence, cardiac complications
- Lupus: recurrence rare
- HSP: histological recurrence 50%, 50% 2 year graft survival
- HUS: 10-45% (note may develop *de novo* disease)
- ANCA vasculitis: <20%
Recurrence of primary disease

Metabolic disease
• Diabetic nephropathy  almost inevitable but graft loss low
• Primary hyperoxaluria  high recurrence, ? combined liver Tx
• Cystinosis  no recurrence
Cardiovascular disease

- Cardiovascular disease accelerated in CKD patients
- CVD is the main cause of mortality after transplantation
- Careful assessment required
  - >50 years old
  - Diabetes Mellitus
  - Abnormal ECG
  - IHD/CCF/PVD/CVD
  - BMI>30
- Echo and referral for cardiac stress test
- Don’t transplant if CVD not amenable to revascularisation and a predicted risk of death >50% at 5 years
Pre-transplant Cardiac Assessment

Patient considered for transplantation

- Is there a history of cardiac disease?
  - Yes: Refer to Cardiology
  - No: Request ECG CXR Echo

- Are results abnormal?
  - Yes: Discuss at MDT or with Cardiology
  - No: Is patient diabetic?
    - Yes: Assessment of functional capacity needed
    - No: Is patient <50 years old?
      - Yes: Does patient have good functional capacity and ≤2 risk factors?
        - Yes: ASSESSMENT COMPLETE
        - No: ASSESSMENT COMPLETE
      - No: Is patient able to walk on treadmill?
        - Yes: Request ETT
          - Is result normal?
            - Yes: ASSESSMENT COMPLETE
            - No: Refer to Cardiology
        - No: Request MPI/DSE
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Risk Factors
- Premature IHD in 1st relative (♂<55 years; ♀<65 years)
- ↑BP
- TC >5.2; HDL <0.9mmol/l
- Smoker
Cardiovascular disease

• Remember peripheral vascular disease and cerebrovascular disease as well
• Doppler scan of iliac arteries (and veins) may be appropriate
Weight

- Recipient BMI associated with both operative complications and graft survival
- BMI > 35 relative contraindication
- Patients need help to lose excess weight
Urological assessment

- Reflux
- Bladder
- Polycystic kidneys
Immunogenetic work-up of the recipient

- ABO blood group
- HLA-A, -B and –DR phenotypes
- Antibody screen every 3 months
Screening for other diseases

• No need to screen for gallstones, peptic ulcer disease or diverticular disease
Summary

• Renal Transplantation is the ‘gold standard’ RRT

• Few absolute contraindications

• Assessment is aimed at quantifying risk:benefit ratio
Questions?