Candidates

Who is a *candidate*?

Free of medical problems that would increase risk
- Will NOT take if: advanced/ uncorrected (cardiac) disease, cancer, psych issues, multiple organ involvement

Who is a *donor*?

Healthy, no infection/systemic disease
May donate diseased organs (hepatitis)
Living, NHBB, cadavers
No significant cancer history
No history of kidney disease/adequate kidney function

Compatible?

Human Leukocyte Antigen (HLA)
Same blood type, tissue type

Kidney: ages 2-70
Heart: <65yo, <1 yr to live, stages 3 & 4 HF

Factors to Consider

Tissue typing & blood typing

Body size

Geography

Pre-Op

Extensive evaluation process - tissue typing

Health teaching - ready to take care of themselves?

Kidney transplant: dialysis after, may receive blood transfusion before

Post-Op

Expected clinical findings & potential complications *MUST* be anticipated by the nurse!

Stages of Rejection

1. Hyperacute (& Accelerated)
2. Acute
3. Chronic

Hyperacute Rejection

1st 48 hours - WORST

Recipient has antibody to donor transplant, not known before

Risk factors: previous transplant, different blood type

Clotting cascade → vascular damage → graft necrosis

A sure sign of graft failure

Symptoms: **inc. BP & pain at site**

Prevention:
- **Matching HLA**
- **Start anti-rejection meds ASAP**

Accelerated Rejection

Within 1 week - 3 months

Variation of hyperacute
- Body makes lesser amount of antibodies

Specific to kidneys

Symptoms: **anuria, inc. BUN & creat., pain**

Acute Rejection

Within 3 months - MOST COMMON

Responds best to - **immunosuppressive therapy**

Symptoms:
- **Dec. urine/anuria**
- **Temp. > 100^{o}F**
- **Inc. BP**
- **Inc. BUN & creat.**

Chronic Rejection

3 months - 1 year

Most likely a combination of cell-mediated responses to circulating antibodies

Symptoms:
- **Inc. BUN & creat.**
- **Fatigue**
- **Electrolyte imbalances**

Treated conservatively

Other Complications

Infection - AMS, low-grade fevers, opportunistic infections

Bleeding

Hematomas/abscesses & fluid accumulation = wound complications

Urinary tract complications

Maintenance Drug Therapy

Combination of...
IMMUNOSUPPRESSANTS & STEROIDS

Cyclosporine (Gengraf & Sandimmune): *stops the production of IL-2, which prevents activation of lymphocytes involved in transplant rejection*

Anti-proliferatives: *inhibit something essential to DNA synthesis, preventing cell division/activating lymphocytes*
- **Imuran (Azathioprine)**
- **Cellcept (Mycophenolate)**
- **Prograf (Tacrolimus)**
- **Rapamune (Sirolimus)**

Risk of... leukopenia, thrombocytopenia, opportunistic infection

Monoclonal antibodies: *target activation sites of T-lymphocytes, increasing their elimination*
- **Orthoclone (OKT3)**
- **Zenapax (Daclizumab)**

Risk of... SIRS, developing malignancies

Polyclonal antibodies: *derived from other animals, bind to and eliminate most T-lymphocytes, stopping rejection*
- **Atgam (Antithymocyte globulin)**

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