Kidney viability criteria

- Kidney donor exclusion criteria
  - HIV positive
  - Multi-organ failure
  - Malignant tumor disease
  - Chronic renal failure (Cr > 2 mg%)

- Relative contraindications
  - Age
  - Cardiovascular Risk Factors (DM, High blood pressure)
  - Acute renal failure
  - Ischemic insult
Renal screening procedure

- Evaluate kidney function (Creatinine, Urea, sediment, Proteinuria, Creatinine clearance)
- Abdominal Ultrasound
- Macroscopic evaluation
- Kidney Biopsy
  - > 60 years and/or CVRF history
  - < 60 years + CVRF or HBP – DM or ischemia
  - Abdominal trauma
  - Acute renal failure – D.I.C.
Kidney criteria for biopsy

> 60 years
< 60 years and CVRF
+ Functional evaluation

Macroscopic Evaluation

BIOPSY (% GS, vessels, interstitium)

< 20 %
> 20 %
> 50 %

SINGLE
DOUBLE
PATHOLOGIC

> 75 years: Double vs Single
Recent Literature

- Kidney transplantation from cadaveric donors unsuitable for other centers and older than 60 yoa. Veroux, Puliatti et al (Transplant Proc, 2005;37(6):2451-3)


- Chap.6 Organ donation after acute poisoning: methanol intoxication. E. Hantson Thesis Université Catholoique de Louvain 1999
Liver viability criteria

- Liver donor exclusion criteria
  - HIV positive
  - Multi-organ failure
  - Primary liver tumors
  - Steatohepatitis (steatose > 60%)

- Relative contraindications
  - Acute viral hepatitis HbsAg positive
  - Ischaemic insult
  - Malignant tumor disease < 10yrs
  - Alcohol abusus in context of biochemical and macroscopic analysis
Liver screening procedure

- Evaluate direct liver function (AST, ALT, Bilirubine, PT, INR, \(\gamma\)GT)
- Sodium level impact
- Abdominal Ultrasound
- Macroscopic evaluation (steatosis, fibrosis)
- Liver Biopsy
  - Steatosis > 60%
    (macro-vesicular/ micro-vesicular)
  - Ischemic damage
Liver evaluation algorithm

Medical history

+ Functional evaluation

Normal or descending

+ 

Macroscopic Evaluation

BIOPSY

(% MACRO-VESICULAR STEATOSIS, FIBROSIS)

< 30 %
NORMAL

30%<X<60%
MARGINAL

> 60 %
PATHOLOGIC
Recent Literature


Heart viability criteria

- Heart donor exclusion criteria
  - HIV positive
  - Multi-organ failure
  - Age > 65yrs
  - History of Cardiac insult (MI, stenting, valvular disease)
  - Malignant tumor

- Relative contraindications
  - Age (intensify screening with age)
  - Cardio-vascular risk factors (hypertension, hypercholesterolemia, smoking)
  - Uncontrollable hemodynamic instability
  - High dose Inotropy, EF% <40%, ...
Heart screening procedure

- Evaluate direct heart function (Troponine, CK, CK-MB)
- Sodium level impact
- ECG - Heart Ultrasound (EF %)
- Macroscopic evaluation:
  - Rhythm
  - Contractility
  - Preservation (seconds to asystolic moment)
Lung viability criteria

- **Lung donor exclusion criteria**
  - HIV positive
  - Multi-organ failure
  - Age > 65yrs
  - History of lung disease (cystic fibrosis, emphysema)
  - Malignant tumor

- **Relative contraindications**
  - Age in combination with smoking history (intensify screening with age)
  - Low gas exchange (pO$_2$ < 200 mm Hg)
  - Uncontrollable irreversible edema
  - Infection (pneumonia)
  - Ventilation > 14 days
  - Extensive bilateral lung contusion
Lung screening procedure

- Evaluate direct lung function
  - (gas exchange on normo-ventilation in relation with 100% oxygen and PEEP5)
  - Sputum cultures if available
- History of ventilation/infection
- Chest X-ray, bronchoscopy
- Macroscopic evaluation:
  - edema
  - Lung tissue (fibrosis, emphysema, infection)
Recent Literature


- Cardiac transplantation in over 1000 patients: a single institution experience from Columbia University. Edwards, Rajasinghe, John (Clin transpl 1999;249-61)


- Extended donor criteria: hemodynamic follow-up of heart transplant recipients receiving a cardia allograft from donors >or = 60 years of age. (Transplantation 1998 Oct 27; 66(8):1109-13)


Pancreas viability criteria

- Pancreas donor exclusion criteria
  - HIV positive
  - Multi-organ failure
  - Malignant tumor disease
  - Pancreas diseases (DM, pancreatitis)

- Relative contraindications
  - Women < 50 yrs
  - Men according to cause of death:
    - CET: Age above 55 yrs
    - CVA: Age above 50 yrs
  - Alcohol abuse
  - Obesity (BMI >29)
  - High dose of (nor)adrenaline
  - Hypoxemia – Ischemia
  - High doses of insuline
Pancreas screening procedure

- Evaluate pancreas function (Lipase, amylase, glucose, liver enzymes)
  - Hba1C if doubtful blood glucose
- Abdominal Ultrasound
- Macroscopic evaluation
- Re-evaluation:
  - Abdominal Trauma
  - > 6 hours hypotension
  - High dose catecholamines
  - High Glicemia levels + insuline
Recent Literature


- Strategies to expand the donor pool for pancreas transplantation. Kapur s, onham, et al. (Transplantation 1999 jan 27; 67(2): 284-90)
General viability criteria

- **Donor exclusion criteria**
  - HIV positive
  - Acute Multi-organ failure (not recovering)
  - Actual Malignant tumor disease
  - Uncontrolled septicemia

- **Relative contraindications**
  - Age (organ specific)
  - Ischemic insult

- **How to evaluate**
  - Balance the total risk versus the benefit patient
  - Do not exclude based on one possible factor
  - Life-saving transplant versus QoL transplant
Organs viability and selection criteria

1. CENTER EFFECT:
   Previous medical and surgical experience
   Economics and organizational aspects

2. SOCIAL EFFECT:
   Waiting list pressure
   (Hospital based vs National based)
   Donor and recipients availability
General approach

- **Define your general acceptance criteria**
- **Remember “center and social effect for final acceptance”**
- Recent general and total analysis
  - If normal then proceed to procurement
  - If abnormal
    - Tailor diagnostics and analysis
    - Sudden unstable condition
      - Re-evaluate lab analysis (previous history, first results)
      - Re-evaluate organ specific
        - If normal: proceed to procurement
    - In situ examination
      - If normal: proceed to procurement
      - If abnormal reject for TX – consider cell isolation for research