

# Paediatric Transplantation

Where are we now ?

Where are we going ?

Clarke Thuys BAppSc GradDipAppSc CCP  
Royal Children's Hospital, Melbourne

# Paediatric Heart Transplantation

- First procedure by Kantrowitz in 1967.
- Essentially abandoned in the 70s.
- Renewed interest with the advent of cyclosporin in 1980.

# Paediatric Heart Transplantation

Indications

Current issues

Outcome

# Paediatric Heart Transplantation

## Indications

- Cardiomyopathy
- HLHS
- Other congenital defects

# Paediatric Heart Transplantation

## Current Issues

- Graft coronary artery disease
- Rejection diagnosis

# Paediatric Heart Transplantation

## Outcome

- Risk factors
- Survival
- Sequelae

# Paediatric Lung Transplantation

- First successful single lung transplant 1963.
- For the next two decades all attempts ended in failure.
- Availability of cyclosporin had a dramatic impact on outcome.

# Paediatric Lung Transplantation

## Current issues.

- Cytomegalovirus
- Obliterative Bronchiolitis
- PTLD (post transplant lymphoproliferative disease)
- Cystic Fibrosis
- Airways



# Cytomegalovirus

Promotes allograft rejection through different mechanisms.

Production of proinflammatory cytokines.

Increased expression of major histocompatibility complex and adhesion molecules, and molecular mimicry.

# Obliterative Bronchiolitis

Predominant limiter of prolonged survival.

Defined as a staged decline in pulmonary function.

Histologic hallmarks are scar formation and fibrosis of small airways, often accompanied by intimal thickening and sclerosis of vessels.

# PTLD (Post Transplant Lymphoproliferative Disease)

A family of lymphoid hyperplasias and neoplasias.

A strong association with Epstein Barr virus infection.

# Cystic Fibrosis

Tracheal colonisation with organisms difficult to treat with antibiotics.

# Airways

- Running absorbable suture is utilised for membranous bronchus anastamosis.
- Interrupted absorbable suture is utilised for cartilaginous bronchus anastamosis.
- End to end anastamosis of the bronchus without telescoping.

# Immunosuppression

Tacrolimus based immunosuppression linked to diabetes mellitus.

# Paediatric Lung Transplantation

## Outcome

- Risks
- Survival
- Sequelae

# Paediatric Heart Lung Transplantation

- Experience began in 1905.
- Clinical experience started in the late 60's.



# Paediatric Heart Lung Transplantation

## Indications

- End-stage restrictive or obstructive pulmonary disease.
- Primary or secondary end-stage pulmonary vascular disease.
- Significant LV dysfunction or cardiopulmonary defects.

# Paediatric Heart Lung Transplantation

## Current Issues.

- Immunosuppression
- Rejection diagnosis
- Graft Coronary artery disease
- Cytomegalovirus
- Obliterative Bronchiolitis
- PTLD
- Cystic Fibrosis
- Airways

# Paediatric Heart Lung Transplantation

Outcomes.