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### Pediatric cardiac transplantation. The Stanford experience.

[Sarris GE](#), [Smith JA](#), [Bernstein D](#), [Griffin ML](#), [Pitlick PT](#), [Baum D](#), [Billingham ME](#), [Over PE](#), [Stinson EB](#), [Starnes VA](#), et al.

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**BACKGROUND:** Cardiac transplantation for children with endstage heart disease has become an accepted form of therapy and is being practiced with increasing frequency and improving short-term outcome. **METHODS AND RESULTS:** To assess the medium-term outcome of pediatric cardiac transplantation, we analyzed our experience with 72 patients under the age of 18 (range, 0.1 to 17.7 years; mean, 9 +/- 6.4 [SD]) who underwent orthotopic cardiac transplantation at Stanford University between 1977 and 1993. There were 38 male and 34 female patients. Preoperative diagnoses included congenital heart disease in 24 (33%), idiopathic cardiomyopathy in 27 (37%), viral cardiomyopathy in 12 (17%), and familial cardiomyopathy in 7 (10%) patients. Immunosuppressive management has evolved over time and has included a tapering schedule of steroids, azathioprine, rabbit antithymocyte globulin, cyclosporine in all patients after 1980, and induction with OKT3 since 1987. Operative mortality rate was 12.5 +/- 4.0% (mean +/- 70% confidence intervals). Actuarial survival estimates at 1, 5, and 10 years are 75 +/- 7.1%, 60 +/- 6.4%, and 50 +/- 8.1% (mean +/- 1 SEM), respectively. Causes of death included infection in 8 (28% of deaths), rejection in 7 (24%), graft coronary disease in 5 (17%), pulmonary hypertension in 4 (14%), and nonspecific graft failure in 2 (7%) patients. Survival rates were similar for patients over and those under age 10 years (including the infant cohort of 18 patients transplanted since 1986). Currently, there are 43 patients alive, all in New York Heart Association functional class I. Only 22 +/- 5.6% of patients were free of rejection at 1 year, but 86 +/- 5.4% were free of rejection-related death at 10 years. At 1 year, only 37 +/- 6% of patients were free from any infection, but 88 +/- 4.2% remained free of infection-related death at 5 years. Actuarial freedom from graft coronary artery disease (angiographic or autopsy proven) was 85 +/- 6.6% at 5 years and from coronary artery disease-related death was 91 +/- 4.7%. **CONCLUSIONS:** These data demonstrate satisfactory medium-term outcome of cardiac transplantation in selected pediatric patients with end-stage heart disease, but further progress is necessary to more effectively control rejection, infection, and graft coronary disease.

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