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Risk factors for acute or chronic rejection in pediatric heart transplanted pediatrics.

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Objectives: Define characteristics and variables associated with acute and chronic rejection in pediatric patients undergoing cardiac transplantation in our institution.

Methods: Retrospective, observational study. Data of our patients undergoing cardiac transplantation and controlled in our center.

Results: A total 49 cardiac transplants in pediatric patients have been performed in our hospital from 2008. Mean age at transplant was 7,4 +/- 5,9 years old (age range 3 months-17years).
The majority were male 61.2%. Overall, 28.6% (14/49) patients had a diagnosis of congenital heart disease and 69.4% (34/49) patients had diagnosis of cardiomyopathy. Prior to transplant 65.3% (32/49) require some surgical procedure, assistance as a bridge to cardiac transplantation 32.7% (16/49), extracorporeal membrane oxygenation (ECMO) 20,4% (10/49) and 30.6% (14/49) ventricular assist device.

Induction treatment was used in all patients: basiliximab in 61.2% (30/49) and ATG-thymoglobulin in 38.8% (19/49).
ECMO support was required in 18.4% (9/49) cases post-transplant.
Cellular rejection was considered by endomyocardial biopsy in 36.7% (18/49) of the cases, the majority of them in the first-year post transplantation and 26.5% (13/49) as antibodies-mediated rejection (AMR).

There was no statistically significant association between some type of hemodynamic support prior to transplantation (CR p=0,733; AMR p=0,384), diagnosis (CR p=0,715; AMR p=0,547), treatment induction (CR p=0,281; AMR p=1), donor-recipient mismatch (size, sex, Ebstein-Barr and Cytomegalovirus serology), and previous surgical procedures (CR p=0,733, AMR p=0,108) with cellular rejection or AMR. Cardiac allograft vasculopathy has been documented by IVUS in 6.1% (3/49) of patients.

A statistically significant association in patients who required ECMO support for primary graft failure post-heart transplantation and AMR episodes was found (p= 0.001). Overall actuarial survival after cardiac transplantation was 94.5% at 1 month, 89% at 1 year, and 86% at 5 years. Freedom from rejection and survival was similar in our patients with or without cardiac support pre-transplantation

Conclusions: Cellular rejection and AMR are not related with clinical features, donor-recipient mismatch (size, sex, Ebstein-Barr and Cytomegalovirus serology) and cardiac support pre-transplant. Children who require ECMO support after cardiac transplantation have greater risk of developing AMR episodes.