

Serum Endothelin-1 Levels in Pediatric Patients after Cardiac Transplantation

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Background and Hypothesis:

Worldwide, approximately 650 pediatric heart transplants occur annually. Coronary artery vasculopathy (CAV) is the foremost cause of allograft failure following heart transplantation, accounting for more than 25% of deaths within one-year post transplant. Within 10 years, 30-45% of children will be diagnosed with CAV, yet the mechanism of disease is still misunderstood. Endothelin-1 (ET-1) has been shown to play an important role in development and promotion of CAV, however no studies have evaluated ET-1 levels in the pediatric population following heart transplant.

Methods:

All patients enrolled in the study have underwent cardiac transplant and present for annual cardiac catheterization and blood draw, with data being stored in a REDCAP database. Centrifuged plasma will be analyzed for ET-1 levels and compared to accepted standard pediatric values. Relationships between ET-1 levels and other lab values will be evaluated for correlation.

Results:

Currently awaiting plasma results.

Conclusion and Potential Impact:

This study will establish ET-1 levels in pediatric patients post cardiac transplantation. If ET-1 levels are correlated with CAV severity and are increased, ET-1 levels have the potential to be an inexpensive and easily available biomarker for continuing to monitor CAV progression. Using currently available ET-1 therapies such as ERAs has the potential to lower morbidity and mortality rates by delaying or reducing re-transplantation in patients with CAV.