

**Elevated C-Reactive Protein Level After Heart Transplantation in Paediatric Recipients: A Predictor of Development of Coronary Artery Disease?**

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**Purpose:** We sought to clarify whether a persistent increase of the CRP level could be considered a marker for Coronary Arteries Vasculopathy (CAV) development in a group of pediatric heart recipients. One hypothesis for the etiology of CAV implicates early endothelial inflammatory activation within the microvasculature.

**Methods:** Twenty-eight patients younger than 18 years who underwent heart transplantation between January 2010 and January 2014 were investigated with coronary angiography and intravascular ultrasound (IVUS) on a yearly basis. Triple drug immunosuppressive treatment was used. Statins were used at physician's discretion without knowledge of serum concentrations of C-reactive protein. C-reactive protein level was considered abnormal if greater than 0,05 mg/dl. Coronary artery disease was defined as any decrease in coronary vessel luminal diameter and classified as mild (I), moderate (II-III) or severe (IV) using Stanford Scale classification too. We collected data also on donor age.

**Results:** There were 12 females and 16 males. The median age at HTX was 69 months (range 7-176), the median graft ischemic time was 255 minutes (range 162-362). The median donor's age was 10 yrs (range 2-36). A diagnosis of congenital heart disease was made in 9 pts (32 %) and of cardiomyopathy in 19(68%). Eight patients (29%) were on Statin therapy. The CRP level, as measured at the time of first catheterization study, was higher than 0,05 mg/dl in 15 pts(54%). These values remained persistently elevated during follow-up.

By the Stanford scale, CAV of degree I was found in 11 (49%) pts, II in 7(25%), III in 4 (14%) and IV in 6 (21%). We did not observe a statistically significant correlation between CAV degree and CRP level, use of statins nor donor's age. We only observed a borderline association ( $p=0,05$ ) between older age of donors and higher postoperative CRP in recipients.

**Conclusion:** In this small group of pediatric heart recipients, we have not identified an association of high CRP level and presence or severity of CAV; nevertheless, we found that recipients of grafts from older donors had a higher CRP level. This observation suggests that serial levels of CRP may be useful in defining high-risk patients for CAV development.