

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

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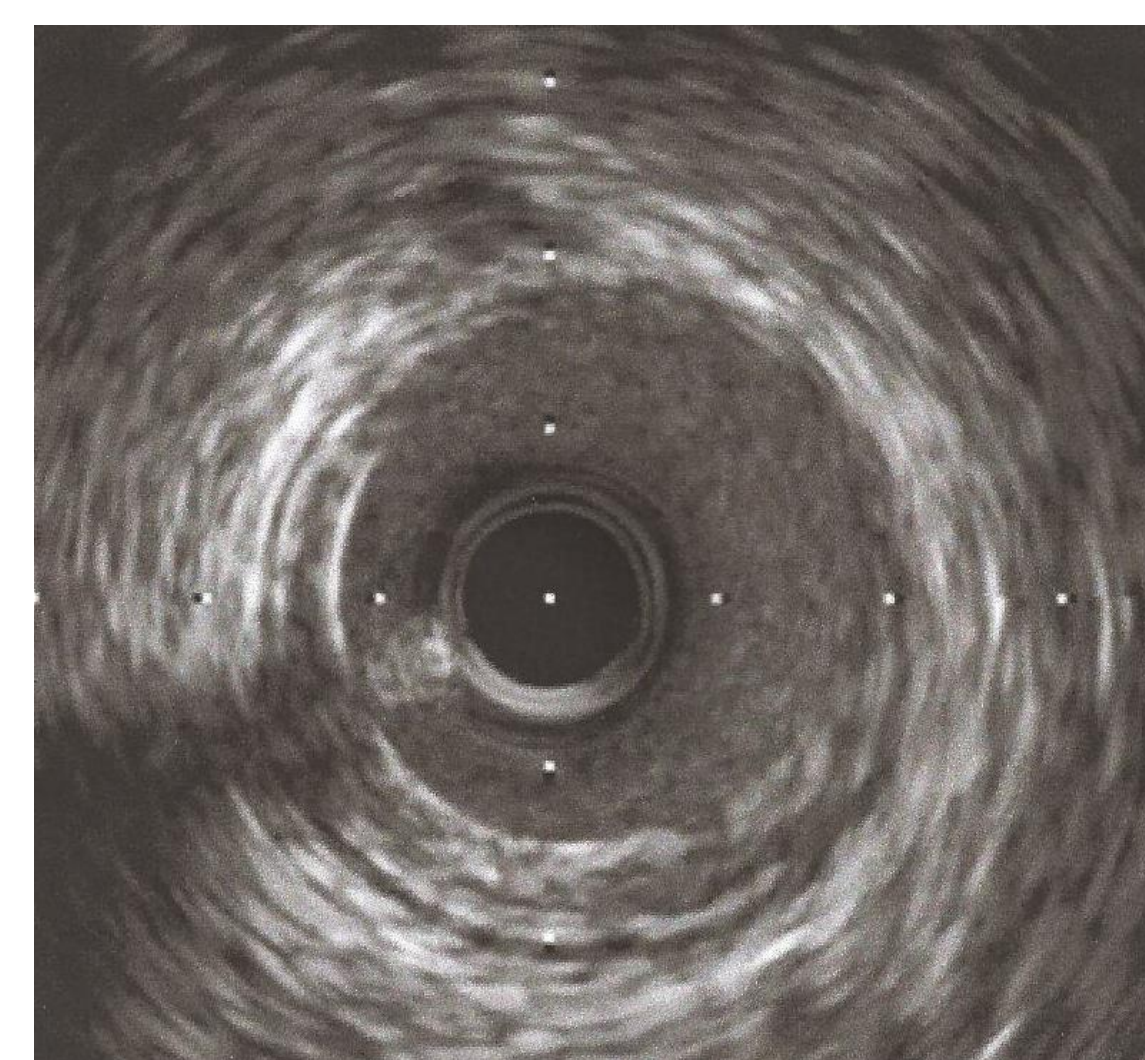
INTRODUCTION:

Different biomarkers have been recognized for early diagnosis of Coronary Arteries Vasculopathy (CAV) after Heart Transplant, such as Troponin T, Antibodies anti Endothelin and anti HLA DR, Procalcitonin, Lipoprotein, Tissue Plasminogen Activator and C Reactive Protein (CRP).

Aim of the study was to clarify if a persistent increase of the CRP level could be considered as an early marker for CAV development in a subgroup of pediatric heart recipients, confirming the hypothesis that an early endothelial inflammatory activation within the microvasculature, could be considered as a principal etiological cause.

CAV RISK'S FACTORS	
Recipient age >11 ys	No steroids in treatment protocol
Donor age > 30 ys	Smokers
More than 2 rejections	Arterial Hypertension
PRA > 10%	Dyslipidemia
Prolonged graft ischemic time	Diabetes
Reason for HTx	CMV infection
Re-transplantation	Antibody-mediated rejection

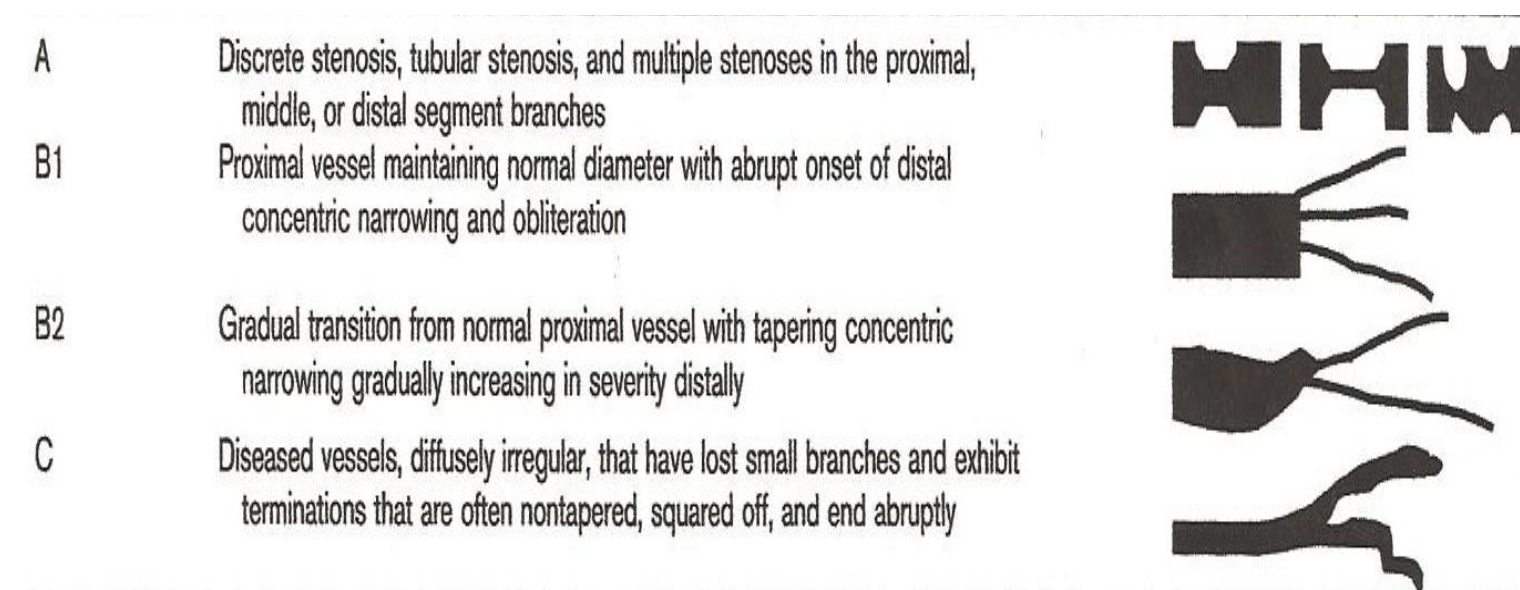
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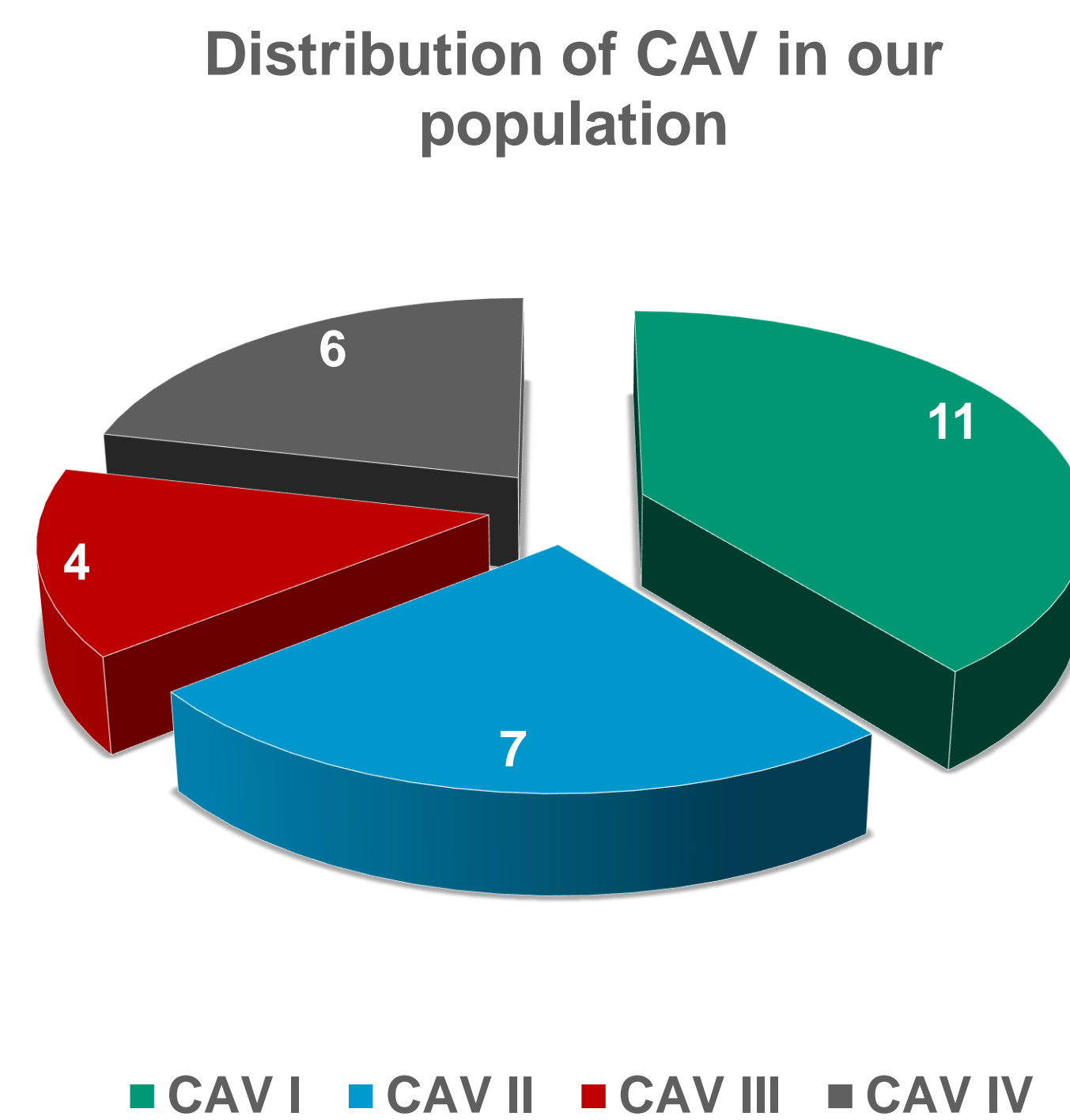
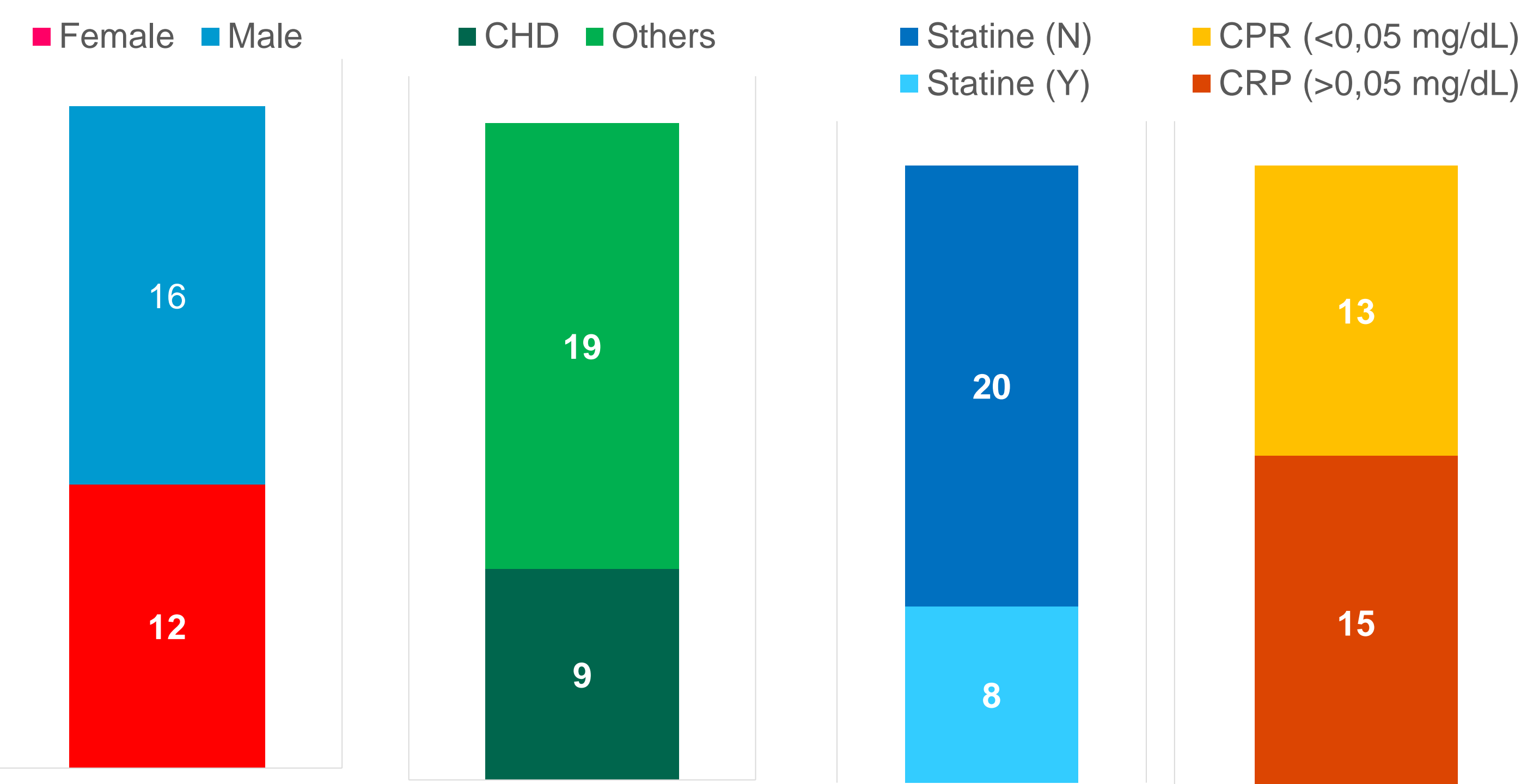
METHODS: Twenty-eight patients younger than 18 years who underwent heart transplantation between January 2010 and January 2014 were investigated with coronary angiography and intravascular ultrasound (IVUS) on a yearly basis. Triple drug immunosuppressive treatment was used. Statins were used at physician's discretion without knowledge of serum concentrations of C-reactive protein (normal value >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.

Stanford Scale classification

	Class I	Class II	Class III	Class IV
Severity	Minimum	Mild	Moderate	Severe
Intimal Thickening	< 0,3 mm	> 0,3 mm	0,3-0,5 mm	> 1,0 mm
Or		Or	Or	Or
Extension of the plaque	< 180°	> 180°	> 0,5 mm and < 180°	> 0,5 mm and > 180°



RESULTS: 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).



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.