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Abstract 4: Coronary Computed Tomography Angiography (CCTA) Of Orthotopic Heart TransplantRecipients: A Single Centre Experience

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Introduction: Cardiac Allograft Vasculopathy (CAV) is an accelerated form of coronary artery disease that affects transplanted hearts and is one of the most common causes of death post-transplantation[1]; Coronary Computed Tomography Angiography (CCTA) has been suggested as an alternative to conventional coronary angiogram (CCAG) in the surveillance of CAV[2,3]. The aim of this study is to assess the utility of CCTA in the surveillance of CAV in Orthotopic Heart Transplant (OHT) recipients.

Methods: CCTAs of adult OHT recipients performed at our institution between 2013 and 2018 were reviewed retrospectively using our local PACS (Picture Archiving and Communication System). CCTAs were performed on a 128-slice multidetector CT; prospective gating was attempted after administration of oral metoprolol and sublingual GTN (glyceryl trinitrate). Data collected included: patient demographics, time since transplant, total Agatston calcium score, and presence of CAV. Data was also collected on CT gating, CT diagnostic quality, and CCAG results. The degree of stenosis on CCTA was compared to the degree of stenosis on CCAG. Stenosis was defined using the International Registry for Heart and Lung Transplantation (ISHLT) classification as; absent (< 1%), mild (1-49%), moderate(50-70%) and severe(> 70%).

Results: There were 42 CCTAs performed on OHT recipients in the five year period reviewed. The average age was 50 years (range 21-78). 69% were male (n = 29). The indications for cardiac transplant were as follows: dilated cardiomyopathy (n = 19), ischaemic cardiomyopathy (n = 8),hypertrophic cardiomyopathy (n = 7), unspecified cardiomyopathy (n = 6) and congenital heart disease (n = 2). 79% of CCTAs had been performed retrospectively (n = 33), due to difficulty controlling rate. In 12% a degree of cardiac motion was noted in the report, however all studies were diagnostic. 31% (n = 13) were suggestive of CAV. Of those, the result of a contemporaneous CCAG was available in 8. All stenoses detected on CCTA correlated to the same grade or one below on CCAG. CCAG results were also reviewed for OHT recipients with normal CCTAs, none of which had CAV on CCAG.

Conclusions: CCTA is a reliable non-invasive test compared to CCAG in patients post OHT to assess for CAV. Our analysis correlates with the findings of previous studies on surveillance for CAV.

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