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MULTI-CENTER INTRAVASCULAR ULTRASOUND VALIDATION STUDY AMONG HEART TRANSPLANT RECIPIENTS: OUTCOMES AFTER 5 YEARS

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Background: Cardiac allograft vasculopathy (CAV) is a major impediment to long-term graft survival. Intravascular Ultrasound (IVUS) is an invasive procedure that is more sensitive than coronary angiography and detects intimal thickening (early CAV) in the coronary arteries of the donor heart. There have been single center studies suggesting that the first year IVUS results might predict or be a surrogate marker for long-term outcome however this has not been established in a large multicenter study.

Methods: First- year IVUS results and subsequent five-year clinical data followup were reviewed in 125 cardiac transplant recipients from 5 institutions skilled in performing IVUS in heart transplant patients. IVUS tapes (at baseline and 1-year follow-up) were re-analyzed at a core IVUS laboratory. The greatest change in maximal intimal thickness (MIT) from baseline to year 1 was recorded for matched sites in the LAD coronary artery. Patients were divided into two groups: Those with an increase of ≥ 0.5 mm in the MIT in any matched site and those without this increase. Analysis of the results is ongoing and will correlate these two IVUS groups with 5-year patient outcomes (death/retransplant, non-fatal major adverse cardiac events, cardiac function, morbidity factors, and subsequent development of angiographic/autopsy confirmed cardiac allograft vasculopathy).

The results will serve to validate first year IVUS data as a surrogate marker for poor outcome after heart transplantation. Data has been collected and the complete analysis will be available at the time of the ISHLT Scientific Sessions.