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SIROLIMUS-BASED IMMUNOSUPPRESSION MITIGATES PROGRESSION OF CARDIAC ALLOGRAFT VASCULOPATHY AND IMPROVES CARDIAC OUTCOMES AFTER HEART TRANSPLANTATION: A SINGLE CENTER 15-YEAR FOLLOW-UP STUDY

Moderated Poster Contributions
Heart Failure and Cardiomyopathies Moderated Poster Theater, Poster Hall, Hall C
Sunday, March 19, 2017, 12:45 p.m.-12:55 p.m.

Session Title: Advanced Therapies = Advanced Trouble: VAD and Transplant Challenges
Abstract Category: 13. Heart Failure and Cardiomyopathies: Clinical
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Background: Cardiac allograft vasculopathy (CAV) is the major long-term complication following heart transplantation (HTx) resulting in increased late morbidity and mortality. Our previous studies have demonstrated attenuation of CAV with the substitution of calcineurin inhibitor (CNI) by sirolimus (SRI) as primary immunosuppression agent, up to 5 years after HTx.

Methods: We sought to investigate longer-term differences in CAV progression and in particular, differences in cardiac events and mortality between CNI-based and SRI-based immunosuppression following HTx. We retrospectively analyzed a long-term follow-up cohort of 126 patients who underwent HTx during the period 1994-2003 and treated either with CNI (CNI group; n=59) or converted to SRI (SRI group; n=67) as primary immunosuppressant. CAV progression was assessed by retrospective analysis of serial coronary intravascular ultrasound (IVUS) as the difference (ΔPI) between baseline and last follow-up plaque index (plaque volume/vessel volume ratio). Patient characteristics, cardiac events and all-cause mortality were compared between CNI and SRI groups.

Results: There were no significant differences between SRI and CNI groups in age, gender, graft function, time from transplantation to baseline and to last IVUS study, as well as use of steroids and secondary immunosuppression. The median time for conversion to SRI was 5.4 years. During a median follow-up of 15 years, ΔPI was significantly lower in the SRI group compared with the CNI group (8.5±1.1% vs. 2.7±1.4%, p=0.003). After adjusting for patient characteristics, SRI was associated with significantly lower mortality (HR 0.43; 95% CI: 0.24-0.75, p=0.003) and cardiac events (HR 0.25; 95% CI: 0.07-0.9, p=0.035). Subgroup analyses suggested a trend towards lower ΔPI with earlier conversion to SRI (≤2 years) compared with late conversion (>2 years) after HTx (p=0.08).

Conclusions: Conversion to SRI is associated with attenuated plaque progression as well as with lower long-term mortality and cardiac events compared with CNI. Our findings reinforce the benefits of SRI as primary immunosuppression in mitigating CAV progression and most importantly, improving late survival.