BACKGROUND Persistent concomitant mitral regurgitation (MR) following TAVR increases the mortality. We previously determined independent predictors of MR improvement and with them, we created the "Multivalvular Score" to predict its persistence following TAVI and developed an online electronic tool to help cardiologists in the decission-making process.

METHODS Prospective analysis across 4 insitutions where patients with moderate or severe MR who underwent TAVI were evaluated with the "multivalvular score" to determine the risk of its persistence. The characteristics prospectively evaluated in the validation cohort were: Presence of mitral calcification in the annulus and in the leaflets, functional MR according to echocardiographic assessment, atrial fibrillation, persistent left bundle branch block, pulmonary pressure as estimated by echocardiography, and mitral annular diameter.

RESULTS A total of 144 patients with moderate-severe MR were included. Of them, 51% presented an improvement in the degree of MR at 6 month of follow up that persisted at 1 year of follow up in 48%. Sensitivity and specificity for the model were 0.821 and 0.752, respectively, with an area under the curve of 0.930 (95%confidence interval: 0.891-0.969), p<0.001. The persistence of MR was independently associated to higher cardiac mortality.

CONCLUSION We confirmed a constant improvement in the degree of MR in patients undergoing TAVI. The multivalvular score demonstrated an excelent external validity to predict the persistance of MR after TAVI which was associated to higher mortality. Hence, this tool might be useful to determine when alternatives to isolated TAVI (percutaneous or surgical) should be considered.

CATEGORIES STRUCTURAL: Valvular Disease: Mitral

NEW APPROACHES TO ISCHEMIC OR DILATED CARDIOMYPATHY

Abstract nos: 744 - 748

TCT-744

Axillary Intraaortic Balloon Pumps Reduces Time to Ambulation after Ventricular Assist Device or Transplant for Advanced Heart Failure

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BACKGROUND Patients with cardiogenic shock (CGS) requiring ventricular assist device (VAD) or a transplant as a durable solution for their end-stage heart failure often require mechanical circulatory support (MCS) prior to surgery. Prolonged bedrest due to implantation of an intraaortic balloon pump (IABP) in the femoral artery often exacerbates the deconditioning of these patients. Another method of placement involves axillary arterial access which allows the patient to sit up in bed or chair, and ambulate. Our study aims to assess the effect of pre-surgical axillary IABP placement on the time to ambulation after VAD or cardiac transplant surgery.

METHODS This is an anlyisis of a single-center registry of consecutive patients having undergone axillary IABP placement for MCS in CGS with anticipated transplant or VAD implantation from January 2014 through to January 2018. The comparator arm was all patients who had undergone VAD or transplant with femoral IABP placement preoperatively. The hypothesis was that axillary IABP would be associated with shorter time to ambulation after surgery. We examined the cohort for differences in patient demographics, comorbid conditions, device-related complications.

RESULTS Of the 24 axillary IABP patients we reviewed, 14 survived and received durable therapy for their heart failure. Of the 145 patients in the femoral arm, all 145 received durable therapies for their heart failure. The time to ambulation was shorter with the axillary approach (3.86 ± 2.349) than the femoral approach (8.11 ± 5.593) by 4.253 days (95% CI, -7.238 to -1.269) and statistically significant (p = 0.006, Mann-Whitney U Test). Backwards stepwise multiple linear regression was used to identify potential predictors for a shorter time to ambulation. When adjusted for age and gender, the axillary approach was an independent predictor of a shorter time to ambulation (p=0.008), while COPD was predictive of a longer time to ambulation (p=0.013).

CONCLUSION Post-surgical time to ambulation is a surrogate for a patient's post-operative recovery and wellness. In this regard, axillary IABPs perform better than femoral IABPs with the axillary approach being predictive of shorter time to ambulation.

CATEGORIES STRUCTURAL: Heart Failure

TCT-745

Early results of Revivent Procedure in the Treatment of Patients with Left Ventricular Dilatation and Heart Failure due to Ischemic Cardiomyopathy

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BACKGROUND For patients with heart failure (HF) due to ischemic cardiomyopathy (ICM), reconstruction and volume reduction of the scarred left ventricle (LV) may be beneficial. The Revivent "Less Invasive Ventricular Enhancement" procedure (BioVentrix, Inc, San Ramon, CA) , is a minimally invasive method for LV volume reduction. We present early outcome data of a series of 20 patients at about 6 months after treatment.

METHODS From 1/2017 to 4/2018, 20 patients (age 55.7±13; 19 male: with ICM and LV dilatation underwent the Revivent procedure. The procedure is a hybrid operation performed by an interventional cardiologist and surgeon. Paired myocardial anchors reconstruct the LV through antero-septal wall apposition and scar exclusion, with one in the RV on the septum (deployed through a sheath in the right internal jugular vein), and the other on the antero-lateral LV epicardium (placed through a small left thoracotomy). Anchors are brought towards each other, apposing the walls and excluding the intervening scar. Indications included NYHA FC II-IV symptoms, contiguous antero-septal or apical scar, LVESVI > 60 mL/m2, and EF < 40%.

RESULTS During a median follow-up of 6 months (range 1.5-11.3), the total AE rate was 10% (2/20) at 6 months: one re-hospitalization for recurrent HF and one death on day 56 due to lower limb infection, gangrene, and amputation refusal. In the period, there was no loss of cardiac integrity or anchor displacement, no surgical conversions, and no device-related death. At 3 months, improvement was seen in NYHA FC (2.72 ±0.7 to 1.67 ±0.6 p<0.001), 6 min-walk (362 ±96 to 484 ± 87m, p<0.001), LVESVI (of 30%, 89.7 ±20.3 to 68.1±17.7mL/m2, p=0.0046), EF (26.2±8.4 to 35.1 ±11.5 %, p=0.018), and cardiac output (4.05±0.81 to 4.93 ±0.82 L/min, p=0.004).

CONCLUSION The Revivent procedure is safe, effective, performed on a beating heart without sternotomy, ventriculotomy, or cardiopulmonary bypass, and results in a significantly smaller LV, higher EF and improved function with few adverse events.

CATEGORIES STRUCTURAL: Heart Failure

TCT-746

Can Cardiac MRI Viability Assessment Guide Revascularization Decisions in Patients with Ischemic Cardiomyopathy?

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