TCT-795

Tricuspid Annular Plane Systolic Excursion and Cardiac Output Predict Recovery of Right Ventricular Function After MitraClip Therapy for Significant Functional Mitral Regurgitation

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Background: Impaired right ventricular (RV) function markedly impacts the prognosis in patients (pts) with functional mitral regurgitation (FMR). In such pts, significant recovery of RV function after MitraClip (MC) therapy has been shown. We sought to identify echocardiographic and/or hemodynamic variables predicting recovery of RV function after MC therapy.
Methods: Of 194 pts with significant FMR receiving MC therapy at our institution, impaired RV function (defined as tricuspid annular plane systolic excursion [TAPSE] < 18mm) was present at baseline in 78 (40%). Six-week echocardiographic follow-up was obtained from 36 pts (71 ± 11 years; 23 men [64%]).
Results: Recovery of RV function – defined as a change in TAPSE (ΔTAPSE) >3mm – was observed at 6 weeks in 8/36 pts (22%). These 8 pts (mean ΔTAPSE 5.6 ± 0.9mm) differed from the 28 pts with ΔTAPSE ≤3mm (mean ΔTAPSE 0.7 ± 2.4mm) in baseline TAPSE (9.4 ± 1.7mm vs. 12.2 ± 2.5mm, respectively; p=0.005) and baseline cardiac output (4.4 ± 1.3L/min vs. 3.2 ± 1.0L/min, respectively; p=0.01). Normal baseline cardiac output (≥4.5L/min) was present in 50% of pts with ΔTAPSE >3mm, yet only in 14% of pts with ΔTAPSE ≤3mm (p=0.054). No differences between the 2 groups were noted in terms of left ventricular (LV) end-diastolic diameter, LV ejection fraction, systolic pulmonary artery pressure, capillary wedge pressure, and MR severity at baseline. Univariate logistic regression analysis for the end point of ΔTAPSE >3mm at 6 weeks revealed odds ratios of 1.85 (95% confidence interval, 1.11 – 3.03; p=0.017) associated with a 1-mm decrease in baseline TAPSE and 2.66 (1.15 – 6.18; p=0.023) associated with a 1-L/min increase in baseline cardiac output.
Conclusions: MC therapy for significant FMR apparently leads to recovery of RV function particularly in pts with markedly reduced baseline TAPSE yet unimpaired cardiac output. Further study is warranted to verify these observations.

TCT-796

Comparison of Three Contemporary Surgical Scores For Predicting All-Cause Mortality Of Patients Undergoing Percutaneous Mitral Valve Repair With The MitraClip System: Insights From The Multicenter GRASP-IT Registry

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Background: There is a lack of knowledge on risk stratification for Mitraclip patients.
Methods: To explore the adaptability of three contemporary surgical scores (Logistic EuroSCORE [LES], EuroSCORE II [ESII] and Society of Thoracic Surgeons Predicted Risk of Mortality [STS-PROM] for prediction of mortality after percutaneous mitral valve repair with the Mitraclip system.
Results: A statistically significant gradient in the distribution of mortality was observed at all time points with ESII, at 2 years with LES and at 2 and 3 years with STS-PROM. ESII had the best discrimination at 30 days (c-statistic 0.80), which remained acceptable at later follow-up, being significantly superior to that of LES at each time point (P=0.003 at 30 days, P=0.005 at 1 year, P=0.011 at 2 years, P=0.029 at 3 years). Compared with STS-PROM (c-statistic 0.62), ESII showed better discrimination at 30 days (P=0.023). All scores over-predicted the risk of mortality at 30 days and were miscalibrated at 2 and 3 years. At 1 year, there was a good agreement between the observed and predicted probabilities for ESII and STS-PROM, whereas LES remained over-predictive. ESII showed the best global accuracy at 30 days and 1 year, whereas no notable differences were noted versus LES and STS-PROM at 2 and 3 years.
Conclusions: In the absence of specific tools for risk stratification of patients undergoing MitraClip implantation, ESII holds favorable prognostic characteristics, which make it a valid surrogate.

TCT-797

Single Center Experience In Long Term Follow Up In Patients After MitraClip Procedure Due To Severe Symptomatic Functional Mitral Regurgitation

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Background: Percutaneous mitral valve repair using the MitraClip system has gained increasingly acceptance in patients with significant mitral regurgitation who are inegible or with disproportionately high risk for surgical intervention. However, data about long-term follow up are rare, especially in those who are treated for functional mitral regurgitation (FMR).
Methods: Procedural data, safety results and clinical outcomes, including mortality rates, freedom from mitral valve (MV) surgery, reduction in MR, as well as improvements in NYHA Class, Six Minute Walk Test (6MWT), and Quality of Life (QoL) were evaluated beyond at least 2 years after MitraClip procedure in patients with FMR ≥ 3+ and symptomatic heart failure.
Results: From August 2009 to March 2014 we treated 50 patients with a percutaneous catheter-based MitraClip system. In 45 patients significant FMR grade 3+/4+ was the indication of index procedure and in 95% (43/45) we could place 1 or more clips. Up to now we have hemodynamic and clinical outcome data available in 30 sufficiently treated patients beyond at least 24 month after MitraClip procedure. 60% were male, median age was 73.5 years (IQR 66.5-80), the logEuroscore I was mean 23.9±13.0% and NTpropBNP was median 5421 pg/ml(IQR 2877-12633). All of them were highly symptomatic in NYHA class III/IV and 6 minute walktest (6 MWT) was mean 181±141 meters. The mean LVEF was 30.68±12.2% and even 8 patients had an LVEF< 25%. Survival rate at 24 month was 70% (21/30). The proportion of patients with residual MR≤2 was 90%. One patient underwent heart transplantation due to persistant heart failure symptoms although the the Clip procedure was successful and residual MR was grade< 2. After 24 month the 6 MWT increased and symptoms and NTproBNP decreased both significantly. Even in a subgroup of 7/30 patients with a higly reduced LVEF< 25% surprisingly the survival rates was 62.5% (5/8).
Conclusions: Treatment with the MitraClip system in symptomatic patients with severe FMR was effective with acceptable mortality rates despite multimorbidity. Thus confirms adequateness of this methode as an important non surgical option and provide evidence for sustained efficacy of MitraClip treatment.

TCT-798

Transcatheter Edge-to-edge Repair for Functional Mitral Regurgitation: Real-World Clinical Outcomes

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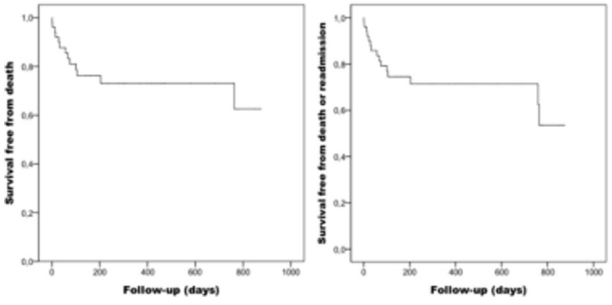
Background: Transcatheter edge-to-edge repair has been demonstrated to be safe and effective in degenerative mitral regurgitation and is currently approved for high risk patients. The outcomes in patients with left ventricular dysfunction and functional mitral regurgitation (MR) are currently being evaluated in clinical trial. We sought to describe the outcomes of real-world patients with functional MR treated with the MitraClip®.
Methods: Single-center prospective registry of patients with significant MR treated with the MitraClip under the compassionate use program of Health Canada. Data was collected on baseline demographics, echocardiographic parameters and clinical outcomes including mortality, re-hospitalizations for congestive heart failure and post-procedural MR.
Results: A total of 63 patients with symptomatic functional MR underwent therapy with the MitraClip between December 2010 and February 2014. The mean age was 72.2 years with 76.2% males (n=48) and 93.7% of patients in NYHA Class III-IV. Patients were high surgical risk (mean logistic Euroscore-2 15%) due to comorbidities: diabetes (44.4%), hypertension (61.9%), renal insufficiency (81%), and previous cardiac surgery (55.6%). The mean LVEF was 33.6±12.8%. Procedural success, defined as reduction of MR to ≤ 2+, was achieved in 82.5% (n=52 patients). At mean follow up of 288 days, the mortality was 19% (12 patients), with a re-hospitalization rate of 7.9% (5 patients).



Conclusions: Transcatheter edge-to edge repair of the mitral valve in patients with symptomatic functional MR is feasible, safe and has shown favorable outcomes in real-world patients.