TRANSCATHETER AORTIC VALVES INTO THE MITRAL POSITION IN PATIENTS WITH MITRAL VALVE DISEASE.

CATEGORIES STRUCTURAL: Valvular Disease: Mitral

KEYWORDS Mitral valve replacement, Transapical Access, Transcatheter intervention

TCT-710 Learning Curve Experience in the MitraClip® REALISM Trial: An Analysis of 899 High Risk and Non-High Risk Subjects

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BACKGROUND The REALISM study, the largest US-based study of the MitraClip Device, is a continued access registry designed for long-term data collection on the use of MitraClip Device in a “real world” setting. Retrospective analyses are being performed to determine the procedural learning curve related to the MitraClip procedure.

METHODS A total of 628 high risk and 271 non-high risk patients, with symptomatic chronic moderate-to-severe (3+) or severe (4+) mitral regurgitation (MR), were enrolled at 38 centers with varying degrees of experience. Learning curve effects on procedural, safety, and efficacy parameters are of particular interest will be investigated.

RESULTS Initial analyses indicate significant reduction in procedure and device time as sites gain experience with the MitraClip device. Following initial experience, reduction in procedure, device, and fluoroscopy time was observed, with continuing trend of further gradual reduction in time. The effect of learning curve on safety and efficacy is being analyzed.

CONCLUSIONS Initial analysis demonstrates reduction in procedure time is achieved as each site gains experience. Further analysis will determine any changes in efficacy and/or safety outcomes associated with further experience in this large study cohort.

TCT-711 Moderately Elevated Mean Mitral Gradient after MitraClip Repair of Mitral Regurgitation Is Not Associated with Increased Mortality

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BACKGROUND Mean mitral gradient (MMG) increases after percutaneous edge-to-edge repair of mitral regurgitation (MR). Near complete reduction of MR has been associated with improved outcomes but may result in an elevated MMG. However, it is not known whether an elevated post-procedural MMG is associated with all-cause mortality.

METHODS Patients (pts) who underwent percutaneous repair of MR between April 2009 and May 2014 with the MitraClip device (Abbott Vascular, Santa Clara, CA) were included. An elevated gradient was defined as a MMG ≥5 mmHg on transthoracic echocardiogram prior to discharge. Survival was compared between pts with and without an elevated post-procedural MMG by Log Rank test. Univariate Cox regression analysis of all-cause mortality was performed for the predictor variables of post-procedural MMG and change in MMG. Multivariate logistic regression analysis of predictors for an elevated post-procedural MMG was performed for normal ejection fraction (EF) patients. Patients (pts) were classified as having a normal EF if EF was ≥50%.

RESULTS 174 pts were included in the analysis. Mean age at percutaneous repair was 76.9 ± 12.6 yrs and 40.8% were females. Post-procedural MMG ranged from 1 to 10 mmHg. An elevated post-procedural MMG ≥5 mmHg occurred in 52/174 (29.9%) of pts with an average MMG of 5.9 ± 1.2 mmHg in this group. MMG was significantly lower in the remaining pts (2.7 ± 0.9 mmHg; p < 0.001). Baseline MR was moderate-to-severe in 36/174 (20.7%) of pts and severe in 138/174 (79.3%) of pts and not different between the groups (p = 1.000). Number of clips used was 1.5 ± 0.5 (median 2) and not different between the groups (p = 0.144). Procedural success of reducing MR by 2 or more grades (95.4% of pts) or to less than or equal to mild-or-moderate (82.8% of pts) was not different between groups p = 0.242 and p = 0.665, respectively. Pts with an elevated post-procedural MMG had a higher increase in MMG from 3.6 ± 1.5 mmHg to 1.0 mmHg (p < 0.001) after clipping. Pts with an elevated post-procedural MMG had improved survival (Log rank p = 0.036). In univariate Cox regression analysis both post-procedural MMG and change in MMG were associated with decreased all-cause mortality hazard ratio 0.839 (95% CI 0.711–0.969), respectively. On multivariate logistic regression analysis pts with normal ejection fraction ≥50% had an odds ratio of 2.241 (95% CI 1.125–4.461) p = 0.022 for developing an elevated post-procedural MMG. Reduction of MR to ≤ mild-or-moderate, number of clips, and age were not significantly associated with an elevated post-procedural MMG.

CONCLUSIONS Moderate elevation of post-procedural MMG is not associated with increased mortality and may be the expression of improved hemodynamics. An increase of MMG ≥5 mmHg to a post-procedural MMG of 5-10 mmHg might be expected for optimal outcomes.

CATEGORIES STRUCTURAL: Valvular Disease: Mitral

KEYWORDS Mitraclip, Mitral valve disease, Percutaneous mitral valve repair

TCT-712 Immediate and mid-term impact of successful percutaneous transcatheter mitral commissurotomy on right ventricular systolic function

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BACKGROUND Right ventricular function is an important determinant of clinical symptoms, exercise capacity, and survival in patients with Mitral Stenosis. The aim of this study is to evaluate immediate and mid-term impact of successful percutaneous transcatheter mitral commissurotomy (PTMC) on systolic right ventricular function.

METHODS Twelve patients with severe symptomatic mitral stenosis who underwent PTMC were included, all patients were subjected to transthoracic echocardiography assessment of severity of mitral stenosis and right ventricular systolic function before and 24 hours post-PTMC then at one and three months.
RESULTS Mean age was 37 +/- 4.6 years, two-thirds were female, two patients (16.7%) had prior PTMC, and 10 patients were in atrial fibrillation, all patients were symptomatic. Mitral valve area increased from 1.05 +/- 0.36 cm² to 2.02 +/- 0.45 cm² (p < 0.0001). Mean gradient decreased from 13.52 +/- 7.55 mmHg to 28.25 +/- 5.65 mmHg (p < 0.0001). There was a significant decrease in systolic pulmonary artery pressure from 38.12 +/- 25.44 mmHg to 28.25 +/- 4.65 mmHg (p < 0.0001). Pulmonary resistance measured by echocardiography using a tricuspid regurgitation Vmax/TAPSE ratio dropped from 0.14 +/- 0.017 to 0.116 +/- 0.015 (p < 0.002). Mitral annular point systolic excursion (TAPSE) increased from 21.58 +/- 3.08 mm to 24.25 +/- 4.80 mm (p < 0.029) then to 24.10 +/- 5.28 mm (p < 0.091) and to 24.10 +/- 5.28 mm (p < 0.091). Systolic velocity (S') at lateral tricuspid annulus increased from 12.80 +/- 3.76 cm/s to 14.90 +/- 3.98 cm/s (p < 0.004) and to 14.80 +/- 3.97 cm/s (p < 0.015) then to 15.60 +/- 3.92 cm/s (p < 0.001). Tei index decreased from 0.59 +/- 0.222 to 0.207 +/- 0.095 (p < 0.026) and to 0.203 +/- 0.089 (p < 0.025) then to 0.201 +/- 0.086 (p < 0.014). Myocardial acceleration during isovolumic contraction (IVA) increased from 0.359 +/- 0.105 m/s² to 0.615 +/- 0.256 m/s² and to 0.218 m/s² (p < 0.010) then to 0.615 +/- 0.231 m/s² (p < 0.003) respectively at baseline, 24 h, one month and three months after PTMC. There was no significant fraction area change and dp/dt ratio of the right ventricle immediately and at mid term after PTMC.

CONCLUSIONS We suggest that there is an immediate improvement of right ventricular systolic function after PTMC that is maintained at mid-term follow-up. Also the fact that this tendency was confirmed by using echocardiographic parameters those are loading dependent such TAPSE and others less loading dependents such IVA suggest that those improvements could be independent from loading conditions.

CATEGORIES STRUCTURAL: Valvular Disease: Mitral

KEYWORDS Mitral stenosis, Mitral valvuloplasty, percutaneous, Right ventricular dysfunction

TCT-713 Impact And Evolution Of Right Ventricular Dysfunction After MitraClip In High Risk Patients With Functional Mitral Regurgitation

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BACKGROUND Right ventricular dysfunction (RVdysf) is predictor of poor outcome in patients with heart failure and valvular disease. The aim of this study was to evaluate the impact and the evolution of RVdysf in patients with moderate–severe functional mitral regurgitation (FMRI) after MitraClip.

METHODS From October 2008 to July 2014, 60 consecutive high risk patients were treated and stratified into two groups: RVdysf-group (TAPSE < 16 mm and/or S'T'DSI < 10 cm/sec, 21 patients) and No-RVdysf-group (38 patients).

RESULTS The overall mean age was 72.8 (83% male). Ischemic FMR etiology was in 67%. Mean LVEF was 39.10 ± 10. Between the two groups the only significant differences was in presence of stroke, ICD and use of aldosterone-antagonist higher in RVdysf group. Acute procedural success was achieved in 90%. At 6-month echocardiographic follow-up significant improvement of RV function was observed in all patients and was driven by only the results of patients with RVdysf (TAPSE 15.30 ± 0.19 ± 4.5, p = 0.007; S'T'DSI 7.12 ± 11.2 ± 2.8, p = 0.0001; baseline vs. 6-month, respectively). Overall mean follow-up was 565 ± 310 days. Mean improvement in 6-MWT was 116 m (significant in both groups).

CONCLUSIONS This observational study shows that patients with RVdysf and FMR have significant improvement of RV function after MitraClip procedure. The presence of RVdysf was not predictor of unfavorable clinical outcome.

CATEGORIES STRUCTURAL: Valvular Disease: Mitral

KEYWORDS Mitralclip, Mitral regurgitation, functional, Right ventricular dysfunction

TCT-714 Transcatheter mitral valve replacement with balloon expandable valves in native mitral valve disease due to severe mitral annular calcification: Results from the first global registry

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BACKGROUND The risk of surgical mitral valve replacement in patients with severe mitral annular calcification (MAC) is very high due to comorbidities and technical challenges related to calcium burden, precluding surgery in many patients. There are few isolated reports of successful transcatheter mitral valve replacement (TMVR) with balloon expandable valves in this patient population. We report the first large analysis from a global registry of TMVR in MAC.

METHODS 44 patients in 17 centers from 8 different countries underwent TMVR with the compassionate use of SAPIEN (Edwards Lifesciences, Irvine, CA) valves between September of 2012 and April of 2015.

RESULTS The mean age was 74 years (range 39-94). 71% were females, mean STS score 14.6% (range 1-29%). Most patients (91%) had mitral stenosis and 9% mitral regurgitation. The average mean gradient was 12 mmHg, mean area 1.04 cm². The SAPIEN valve was used in 11%, SAPIEN XT in 71% and SAPIEN 3 in 18% (23mm–4.5mm, 26 mm–43.5%, 29mm–52%). The delivery approach was transapical in 11%, transapical in 41%, and transseptal in 48%. The valve was implanted without embolization in 41% (93%) patients, 6 (14%) required a second valve-in-valve (migration–2, re-regurgitation–4), and 5 (11%) had left ventricular tract obstruction (LVOTO) with hemodynamic