In the follow-up period 33.3% vs. 13.1% of patients experienced hospitalization for heart failure (p < 0.0001).

**Conclusion:** MC therapy for FMR is a valuable treatment for high-risk patients. It has been demonstrated to be feasible and safe and results in significant symptomatic improvement even in patients at high risk for surgery. Although it is generally acknowledged that a postinterventional atrial septal defect (ASD) is detectable in the majority of patients due to the transseptal access as an essential prerequisite for this procedure, its clinical significance has so far been contested.

**Methods and results:** Patients treated with the MitraClip at two clinical sites 5 patients were indicative of a clinically significant right-to-left shunt requiring perinterventional implantation of an ASD occluder. The mean age of the patients was 68.6 ± 7 years. All patients suffered from functional mitral regurgitation due to leaflet tethering as a consequence of left ventricular dilatation and moderate to severe impairment of left ventricular function in four cases and due to annular dilatation in one patient with chronic atrial fibrillation but preserved left ventricular function. PMVR was successful in all 5 patients, with a reduction in MR severity to grade 2+ in two patients and grade 1+ in three patients. Two patients exhibited pulmonary hypertension classified as “out of proportion” Dana Point II and the remaining three patients had high-grade tricuspid regurgitation without elevation of mean pulmonary arterial pressure. Right-to-left-shunt became clinically manifest in all patients by a drop in arterial oxygen saturation. In the most dramatic case oxygen saturation dropped immediately after grasping of the mitral leaflets while the transseptal guide catheter was still in position. In the most le- nient case, an oxygen saturation of 86% was noted after extubation under room air and the patient received an ASD occluder three days after the procedure. Of the remaining patients, two received an ASD occluder during the PMVR procedure and one patient one day after PMVR. All patients received an Amplatzer® seal occluder (12-20 mm). No further complications were encountered due to ASD occluder implantation; all patients had an uneventful clinical course.

**Discussion:** Iatrogenic atrial septal defect is a rare but potentially significant complication in patients undergoing PMVR, particularly in the presence of el- evated pulmonary arterial pressure or severe tricuspid regurgitation. Screen- ing for postinterventional ASD should be performed in all patients undergoing PMVR. Whether inappropriate shunting affects the clinical course of patients follow- ing PMVR deserves thorough future investigation.

**P5382 | BENCH**

**Echocardiographic evaluation of right ventricular function after MitraClip implantation in functional mitral regurgitation**

C. Giannini, V.D.B. Di Bello, M.D.C. De Carlo, F.F. Fiorelli, F.G. Guaraccino, L.C. Conte, A.P. Pieroni, A.S.P. Petronio. Cardiac Thoracic and Vascular Department, Pisa, Italy

**Aims:** Percutaneous mitral valve repair (PMVR) for mitral regurgitation (MR) can be performed with the MitraClip System. Our aim was to assess the changes of right ventricular (RV) function in patients with functional MR.***

**Methods and results:** Between November 2009 and December 2012, 44 pa- tients affected by severe functional MR underwent PMVR with the MitraClip. Patients who didn't undergo successful MitraClip implantation were excluded from the analysis and that a postinterventional septal defect (ASD) is detectable e- diarian age was 75 years (63-81), 65.7% (n=23) were male with a median logis- tic EuroSCORE of 20%. Patients with MR grade 3+ were 5.7% and 11.4% at discharge and 6 months, respectively (p < 0.0001) versus 100% at base- line, with a clinical benefit in NYHA class (p < 0.0001). BNP plasma levels re- vealed a significant overall decrease at follow-up (from 61.1±16.5 to 32.9±18.4; P < 0.0001). Improvements in left ventricular (LV) size and function were observed. At baseline, before discharge and 6 months, respectively, the LV end-diastolic diameter was 66.1±11.2mm, 63.6±10.8mm and 61.6±13.3mm (p < 0.0001), the LV end-systolic volume 191.4±73.3ml, 174.2±72.9ml and 152.9±73.8ml (p < 0.0001), the LV ejection fraction 36.5±11.3%, 39.2±8.7% and 41.8±10.5% (p < 0.0001). During follow-up, an improvement in the RV function was also observed. At baseline, before discharge and 6-months, respectively, the tricus- pid anti-clockwise systolic excursion (TASE) was 16.8±3.9mm, 18.7±5.3mm and 19.3±4.5mm (p < 0.0001), the systolic pulmonary artery pressure (SPAP): 50.1±6.8mmHg, 41.2±6.8 mmHg and 38.1±6.8 mmHg (p < 0.0001), the sys- tolic velocity at the tricuspid anular (RV-Sm): 8.8±2.9 cm, 10.4±3.5 cm and 117.7±3.1 cm (p < 0.0001). Moreover, we observed right atrial (RA) reverse re- modeling with significant decrease in RA area (p < 0.0001). A significant inverse correlation was observed between baseline NYHA class and TAPSE (r = –0.36, P = 0.03) while no significant correlation was seen between baseline MR grade and 6-months TAPSE (r = +0.44, P = 0.03). 6-months TAPSE improvement correlated significantly with improvements in NYHA class (r = +0.41, P < 0.05).

**Conclusion:** MitraClip implantation induced a significant reduction of LV vol- ume overload. The concomitant reduction of LV filling pressure, after Mitraclip implantation, reflected nearly immediately on clinical profile and on hemodynam- ics in the right sections. In fact, since discharge, we observed both a significant reduction of SPAP and a significant increase of longitudinal RV systolic function as shown by the increase of TAPSE and RV-Sm.

**P5383 | BENCH**

The acute haemodynamic effect of the MitraClip therapy: afterload mismatch evaluation in functional mitral regurgitation

G. Melisurgo, S. Ajeo, M. Kawai, T. Labo, O. Afferi, F. Pappalardo, F. Maisano. Ospedale San Raffaele, Milano, Italy

**Background:** Despite the safety and the efficacy of the MitraClip percutaneous mitral valve repair (MVr) have been assessed in randomized international trials, limited data on the acute hemodynamic effects is available. Aortic valve regurgitation defined as an impairment of left ventricular function after correction of mitral re- gurgitation (MR), is a known complication after surgery. The aim of this study is to investigate the incidence and the prognostic role of afterload mismatch in patients undergoing MitraClip therapy.

**Methods ans results:** We retrospectively analyzed 76 consecutive patients, af- fected by mitral regurgitation (MR) grade 3+ or 4+ that underwent MitraClip therapy. Patients with post-procedural MR=3+ were excluded from the analysis. The remaining 73 pa- tients were assigned to two groups according to the occurrence of the afterload mismatch. Afterload mismatch was defined as an acute EF reduction of <28% af- ter MitraClip therapy, compared to the baseline assessment (this value represents the first quartile in the distribution of the change of the EF; baseline LVEF mean value 27.9%)

Afterload mismatch was observed in 19 pts (26%) in the early postoperative pe- riod (LV EF 16±7 in group with afterload mismatch (AM+) vs 28±10 in group without afterload mismatch (AM-); p < 0.0001). At univariate analysis preopera- tive EDD (71±1 p < 0.0001) and ESD (57±3 p < 0.0001) were significantly higher in AM+ as compared to AM-. AM+ patients experienced an increased incidence of right ventricular dysfunction (68% of pts vs 31% of pts; P < 0.049) and pulmonary hypertension (49 vs 40mmHg; P = 0.0009). No differ- ence in the use of inotropes (84% of pts vs 83% of pts; P = 0.92), in acute renal failure (16% vs 28% of pts; P = 0.29) and in length of stay in intensive care unit (22.4 vs 23.7 hours P= 0.92) was recorded among the two groups. Patients in the AM+ group showed a significant recovery of LVEF (p < 0.0001) before hospital dis- charge, without any significant differences as compared to the AM- group (31% vs 33%; p = 0.65). Long term survival was comparable between the two groups (81.2% vs 87.2%; P = 0.44).

**Conclusion:** The reduction of MR by MitraClip therapy can be associated with af- terload mismatch, especially in patients with preoperative increased left ventricu- lar diastolic and systolic diameters. However afterload mismatch is reversible, without long-term prognostic implications.

**P5384 | BENCH**

The role of gender during percutaneous catheter-based treatment of mitral insufficiency with the MitraClipTM system

R. Zahn1, T. Bauer1, S. Baldus2, W. Schillinger3, O. Franzen4, R. Bekeredjian5, H. Sievert6, J. Scholz6, K. Kuck7, J. Senges8 on behalf of TRAMI investigators.

1Clinical Center of Ludwigshafen, Ludwigshafen am Rhein, Germany; 2Cologne University Hospital - Heart Center, Clinic III for Internal Medicine, Cologne, Germany; 3Heart Research Center Gottingen, Georg-August University, Department of Cardiology and Pneumology, Gottingen, Germany; 4Riphospitalat - Copenhagen University Hospital, Heart Center, Cardiac Catheterization Laboratory, Copenhagen, Denmark; 5University Hospital of Heidelberg, Department of Cardiology, Heidelberg, Germany; 6Cardiovascular Center Frankfurt, Santt Kardiotarin, Frankfurt am Main, Germany; 7Medical Care Center Prof. Mathey, Prof. Scholer, University Cardiovascular Center, Hamburg, Germany; 8Asklepios Clin St. Georg, Department of Cardiology, Hamburg, Germany; 9Heart Center of Ludwigshafen, Heart Attack Research Center at the University of Heidelberg, Ludwigshafen am Rhein, Germany

**Background:** Catheter-based treatment of mitral insufficiency with the Mitra-ClipTM – system in non-operable or high surgical risk patients is establishing as an accepted therapeutic option. The influence of gender on patient characteristics and clinical events has to be defined still.

**Methods:** We analysed data of the German transcatheter mitral valve interven- tions (TRAMI) - registry.

**Results:** Until 10/2012 971 patients from 15 centers treated with the MitraClipTM system were included: 595 (61.3%) men and 376 (38.7%) women. Patient as well as interventional characteristics and clinical events are given in the table.

**Conclusions:** In current clinical practice MitraClipTM- implantation is performed in women in about 1/3 of all cases. Women are 4 years older and receive less

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