

**INCREASED LEFT ATRIAL COMPLIANCE IS AN INDEPENDENT PREDICTOR OF IMPROVED FUNCTIONAL CAPACITY AFTER PERCUTANEOUS MITRAL VALVULOPLASTY**

Poster Contributions
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Background: Percutaneous mitral valvuloplasty (PMV) is the standard treatment option for mitral stenosis (MS) with hemodynamic and symptomatic improvement. The compliance of the left chambers is an important determinant of functional capacity in MS and may be an useful tool to assess functional improvement after PMV. This prospective study was designed to determine the acute effects of PMV on compliance of the left heart and to evaluate the effects of its variation after the intervention on patient's functional capacity.

Methods: One-hundred thirty-seven patients with severe MS who were referred for PMV were prospectively enrolled. All echocardiographic and hemodynamic parameters were recorded before and immediately after the procedure. Left atrial (Ca) and left ventricular (Cv) compliance were invasively estimated and net compliance was calculated ($Cav = (1 / Ca + 1 / Cv) - 1$). The endpoint was functional status at 6-month follow-up.

Results: The mean age was 43 ± 12 years, and 119 patients were female (87%). Nine patients were excluded due to severe mitral regurgitation (MR). Ca and the Cav improved significantly from $5.3 [3.2-8.2]$ to $8.7 [5.2-19.2]$ mL/mmHg ($p < 0.001$) and $2.2 [1.6-3.4]$ to $2.8 [2.1-4.1]$ mL/mmHg ($p < 0.001$), whereas Cv did not alter. At 6-month follow-up, NYHA functional class improved from 2.4 ± 0.8 to 1.6 ± 0.7 ($p < 0.001$), whereas it remained unchanged or worsened in 42 patients (31%). By the multivariate logistic regression analysis, the independent predictors of functional improvement were changes in Ca immediately after PMV (adjusted odds ratio [OR] 1.42; 95% confidence interval [CI 95%] 1.02-1.97; $p = 0.038$), and age (OR 0.95; CI 95% 0.92-0.98; $p = 0.004$), after adjusting for immediate procedural results, including postprocedural mitral valve area, systolic pulmonary artery pressure, and mean transvalvular gradient.

Conclusions: Ca and Cav increased significantly after PMV and the variation of Ca was associated with the improvement of the symptoms at 6-month follow up, independently of other hemodynamic data, suggesting its importance as a periprocedural parameter.