

Reversal of Abnormal Cardiac Parameters Following Mitral Valve Replacement For Severe Mitral Stenosis in Relation To Pulmonary Artery Pressure

Usha Parvathy T, Rajesh Rajan, Faybushevich A G, MPS Hospital, Podbelskovo Street, Department of Cardiac Surgery, Peoples Friendship University of Russia

ABSTRACT

HYPOTHESIS: Pulmonary hypertension (PAH) with mitral stenosis (MS), though regresses after surgery, can persist to a variable extent and frequency, which can be influenced by several factors and this is not adequately appraised. The study aims to compare the preoperative and postoperative clinical and hemodynamic variables in patients who attained normal, near-normal PAP and persistent-PAH one-year after MVR, thereby elucidating factors related to persistent-PAH.

METHODS: 50 patients with MS-PAH (varying grades) were classed based on their one-year post-surgical PAP: I- normalized (30-35mmHg), II- near-normal (35-40mmHg), and III- residual-PAH (>40mmHg); and compared for their demographics, preoperative and postoperative clinical & hemodynamic variables-PAP, Tricuspid regurgitation(TR), cardiac enlargement; and their regression. Their significance was statistically analysed.

RESULTS: Gp-I had 19 patients, Gp-II 14, Gp-III 17. Though their demographics did not differ much, the duration was longer in Gp-III. Hemodynamically, the stenosis-severity and rhythm did not affect the groups. Other factors associating with the severity of disease in Gp-III included a higher functional class {III: IV (17:2, 12:2, 9:8; $p < 0.05$)}, higher PAP which was most striking (mean 51.32 vs 61.21 vs 84.35 mmHg respectively; $p < 0.01$), (80% severe-PAH(>60mmHg), 6 suprasystemic-pressures), greater degree of cardiomegaly and TR-severity ($p < 0.05$). A greater right-ventricular(RV) dilatation with persistence postop ($< p 0.05$), and greater no of patients in Class-III postop accompanied the persistent-PAH (despite considerable degree of regression), compared to other groups. Preoperative-PAP, pre & postop- right-atrial(RA), RV size, and TR, showed significance on further analysis.

CONCLUSION: A higher preoperative-PAP and grade, RV dilatation and TR, indicating the severity of the disease, are most important factors that influence the postoperative hemodynamics and course after MVR regardless of other factors.

KEY WORDS: Mitral Stenosis, Pulmonary Artery Pressure, Mitral Valve Replacement

Department of Cardiac Surgery, Peoples Friendship University of Russia, Moscow