

**Regression of Pulmonary Hypertension Following Mitral Valve Surgery in Patients with Severe Mitral Regurgitation.**

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Introduction – Chronic mitral regurgitation is often complicated by secondary pulmonary hypertension. The aim of this study was to assess the changes in pulmonary pressure following MVR. In addition, we examined clinical and echocardiographic predictors that might influence changes in pulmonary pressures.

Methods – A retrospective case control study design was employed. All consecutive patients undergoing mitral valve surgery during the period 2005-2009 were considered. Patients with significant aortic or mitral valve stenosis, previous mitral valve surgery, endocarditis, myxoma, hypertrophic cardiomyopathy, or acute mitral regurgitation were excluded. The pre-operative echocardiogram had to demonstrate pulmonary hypertension – an estimated pulmonary artery pressure above 30 mmHg. A significant reduction in pulmonary arterial pressure was considered if pulmonary pressure post surgery dropped greater than 7 mmHg.

Results- A total of 276 patients underwent mitral valve surgery. 160 patients were excluded due to the co-existing conditions mentioned earlier. Of the remaining 116 patients, 84 had a retrievable pre-operative echocardiogram. Pulmonary hypertension was noted in 61 patients (72.6%). Only 27 patients had an available echocardiogram post surgery. Post operative death occurred in 7 patients with documented pulmonary hypertension (mortality = 11.5%). The mean pre-operative TR gradient of  $42 \pm 11.1$  mmHg decreased to a post-operative value of  $36.9 \pm 11.7$  mmHg ( $P < 0.05$ ). No association was noted between the reduction in pulmonary hypertension and factors such as age, congestive heart failure, MR etiology, LV function and mortality. However, the baseline TR gradient was positively associated with the extent of decrease in TR gradient, especially in patients with ischemic MR.

Conclusion- Secondary pulmonary hypertension is a common finding among patients with severe MR. This condition may regress following mitral valve surgery, especially in patients with ischemic MR.