

Clinical and Echocardiographic Features of Patients with Mitral Stenosis and Effort Dyspnea

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Background: Left atrium compliance (LAc) can explain, at least partially, the erratic functional capacity of patients with mitral stenosis (MS). Previous studies have shown that LA size has no impact on LAc, however LA size was investigated only at rest and not at effort. We thought to investigate clinical and echocardiographic parameters that could potentially impact on MS patients' symptoms.

Methods: Patients with rheumatic mitral valve injury and predominantly MS who underwent a treadmill stress echocardiography study were included in the study. Clinical and echocardiographic data at rest and at effort were noted. We compared patients in whom the stress study was terminated due to dyspnea (group I) to those in whom the study was stopped for other reasons (tiredness, fatigue, maximal predictive heart rate) (group II).

Results: Thirty-two patients, age 54 ± 7 years, female 81% completed a treadmill stress echocardiography. Patients exercised during 4.4 ± 1.0 minutes. Average age, gender and duration of exercise were similar between groups. Atrial fibrillation was seen in 6/18 (33%) of patients in group I compared to 1/14 (7%) in group II ($p < 0.0001$). The table depicts echocardiographic characteristics of both groups. There was no significant difference between groups for all the parameters evaluated except for the presence of \geq moderate mitral regurgitation at rest and effort, which was significantly more frequent in group I than in group II.

Conclusions: Patients with similar severity of MS and different symptoms at effort had no echocardiographic differences at rest and effort except for the presence of mitral regurgitation, which was more common in patients with effort dyspnea. A significantly higher incidence of atrial fibrillation was seen in patients with MS whose effort was limited because of dyspnea.

ECHOCARDIOGRAPHIC PARAMETERS	GROUP I (n=18)	GROUP II (n=14)
REST		
Mitral valve area (cm ²)	1.5 ± 0.3	1.6 ± 0.3
Mean mitral gradient (mm Hg)	9.0 ± 1.3	8.0 ± 0.9
Pulmonary artery systolic pressure (mm Hg)	45 ± 4.1	42 ± 3.9
More than mild mitral regurgitation (n) (%)	6/18 (33%)	1/14 (7%)
Left atrial size (supero-onferior diameter) (mm)	64 ± 7.1	63 ± 5.3
EXERCISE		
Mean mitral gradient (mm Hg)	18 ± 3.4	17 ± 3.6
Pulmonary artery systolic pressure (mm Hg)	64 ± 7.2	60 ± 6.9
More than mild mitral regurgitation (n) (%)	7/18 (39%)	2/14 (14%)
Left atrial size (supero-inferior diameter) (mm)	61 ± 5.9	62 ± 7.0