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Pulmonary Hypertension in Patients with Significant Aortic Regurgitation:an Echocardiographic Study.

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Background: Pulmonary hypertension(PH) is well recognized risk factor for worse prognosis in patients with mitral valve disease and aortic stenosis. However, little is known about its incidence in patients with significant aortic regurgitation(AR). Therefore, we sought to evaluate this issue by means of echocardiograpy.
Methods:Patients with more than moderate AR were recruited from the departmental echo database. Excluded were patients with prosthetic valves, acute aortic dissection , concomitant significant aortic stenosis or mitral valve disease.PH was defined by TR gradient ≥ 30 mmHg : mild - 30-39, moderate - 40-49 , severe-≥50. Patients were divided into two groups according to the presence of normal (group I) or increased (group II) pulmonary pressure.
Results: 121 patients were included(78% male, mean age 61±16, years) . The main causes of AR were aortic dilatation (n=46) , degenerative disease (n=26),and bicuspid valve (n=14). Data regarding TR gradients and left ventricular dimensions and function between group I and II are depicted in the table. Overall, PH was found in half of the patients , and it was moderate to severe in twenty five (20.6% of the entire population) and mild in thirty six. Compared to group I, patients in group II had significantly larger TR gradients, left ventricular dimensions and reduced shortening fraction. Moreover , by qualitative analysis ("eyeballing") , left ventricular systolic function was considered depressed in 28 group II vs. 8 group I patients, and right ventricular dysfunction in seven vs. two.

	Group I N=60	Group II N=61	P value
Male- n (%)	44 (74.5)	50 (81)	NS
Age	60±15	63±17	NS
LVEDd (cm)	5.7±0.7	6±0.7	<0.02
LVESd (cm)	3.8±0.7	4.3±0.9	<0.01
Shortening fraction (%)	34±7	29±9	<0.01
Septum thickness (cm)	1.05±0.2	1.1±0.2	NS
TR gradient (mmHg)	23±3.5	40±11	<0.01
LV dysfunction- n	8	28	<0.01
RV dysfunction-n	2	7	

Conclusions: Pulmonary hypertension is frequently found in patients with significant, chronic AR and it is associated with larger ventricles and decreased ventricular function. It may reflect left ventricular decompensation after a long-standing disease. The significance of these findings on the outcome of these patients is unknown and deserves further investigation.