

Pulmonary Hypertension in Patients with Aortic stenosis: Clinical Profile, Prognostic Implication and response to Trans-Catheter Aortic Implantation

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Background: The incidence, predictors and prognostic implication of pulmonary hypertension (PH) in patients(pts) with severe aortic stenosis (AS) are unclear. This study aimed to investigate the impact of Trans catheter aortic valve implantation (TAVI) on (PH) in pts with severe AS

Methods: We studied 396 pts with severe AS who were referred for TAVI Pts with mitral stenosis, severe mitral regurgitation/mechanical valve or known PH were excluded. The cohort studied according to the degree of the pulmonary pressure (PP): group 1 124(31.3%) with PP < 40mmHg, group 2 149(37.6%) with PP 40-60mmHg, and group 3 123 (31.0%) with PP >60mmHg

Results: The mean age was lower in the severe PP group. Pts with severe PH had higher STS/Euroscore, creatinine level, CRP level, left atrium diameter, lower ejection fraction (EF) and smaller aortic valve area. The predictor for PH were STS, Euro score, NYHA class, renal failure, lower EF and aortic valve area. Multivariable analyses identify aortic valve area as the strongest predictor for PH. In 53 pts who underwent TAVI. There was no significant change in PH immediately after the procedure and at one year, however in 23 pts with PP >50mmHg there was significant decrease in PP during median follow up of 13 days (64.9± 14.2 vs. 52.1±13.4mmHg, p<0.001) at 1 year the PP remained low 48.2±6.4mmHg

Conclusion: Pts with severe AS tend to have high incidence of PH which is associated with high mortality rate. TAVI is an effective treatment for these pts and resulted with significant reduction of PH

	Normal pulmonary pressure (N=124)	Mild-moderate pulmonary hypertension (N=149)	Severe pulmonary hypertension (N=123)	P
Age (years)	81.9±7.7	82.5±8.2	79.7±9.2	0.01
Male (%)	57(46)	69(46.3)	53(43.1)	0.8
STS score (%)	9.9±5.8	11.9±5.4	13.2±7.5	<0.001
Logistic Euro score (%)	27.5±20.9	40.7±20.7	48.8±22	<0.001
Creatinine (mg%)	1.2±0.5	1.3±0.6	1.7±1.5	<0.001
CRP (mg/dl)	9.7±16.9	14.3±22.3	25.4±42.4	0.01
Aortic valve area (cm ²)	0.74±0.2	0.72±0.15	0.68±0.18	0.03
Ejection fraction (%)	54.1±15.7	49.6±15.9	45.0±18.9	<0.001
Pulmonary vascular resistance (Wood)	2.0±1.5	2.3±2.2	4.0±2.6	<0.001
Left atrium diameter (mm)	4.1±0.68	4.5±0.72	4.7±0.6	<0.001
Died (%)	23(18.5)	52(34.9)	53(43.1)	<0.001