

Chronic Obstructive Pulmonary Disease in Symptomatic Aortic Stenosis: A Main Underlying Diagnostic Confounder and Prognostic Factor

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Word Count: 350

Introduction and Objectives: COPD is associated with increased prevalence of cardiovascular comorbidities and mortality from cardiac pathologies. In heart valve diseases, the onset of dyspnoea is the main determinant of outcome and treatment. Thus, COPD may represent a confounding factor in patients with severe aortic stenosis (AS) whilst influencing management. Moreover, the correct diagnosis of COPD in symptomatic AS is extremely challenging. We investigate prevalence of COPD in patients with symptomatic AS and its relation with all-cause mortality.

Methods: Consecutive patients with symptomatic severe AS referred to a cardiology tertiary centre for their clinical management were recruited. The severity of aortic valve disease, diagnosis of COPD and symptomatic status were recorded. Patients were treated with either surgical or percutaneous valve implantation, or were excluded from any invasive option at the discretion of the responsible physician. Full pulmonary function testing (PFT) was performed.

Results: A total of 425 symptomatic AS patients were included. Of these, 313 (74%) underwent PFT. COPD was clinically recognised in 25% (n=110) of the total group and in 20% (n=64) of the AS patients with PFT. On PFT retrospective analysis, the actual prevalence of COPD was even higher (33%). Severity of COPD in AS based on FEV₁ was classified as follows: mild in 46%, moderate in 41%, severe in 12%, and very severe in 1%. There were no differences in terms of aortic disease severity, body habitus, functional class nor cardiac function in patients with or without COPD. AS patients with COPD were more likely to be males (56% vs 43%, p<0.001) and with a non-significant tendency to older age (80±7 vs 78±8, p=0.07). Of the AS COPD patients, only 9% were on inhaled treatment. During a mean follow-up of 16 ± 10 months, patients with COPD showed higher rates of all-cause mortality compared to patients without COPD (39% vs. 20%, p<0.001). COPD was an independent predictor of all-cause death (HR: 2.1, 95% CI: 1.4 to 3.2, p<0.001).

Conclusion: COPD in symptomatic AS is common, under-treated and associated with an increased risk of death. Spirometry and COPD case-finding should be performed when managing patients with symptomatic AS.

