

COPD in Symptomatic AS: A Main Clinical Confounder and Prognostic Factor

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Background: The correct diagnosis of chronic obstructive pulmonary disease (COPD) in symptomatic aortic stenosis (AS) is extremely challenging: previous studies in AS have shown the prognostic impact of lung disease defined by Society of Thoracic Surgeon (STS) criteria, commonly used for cardio-surgical risk evaluation. However, no data is available on COPD defined by spirometry or gold-standard pulmonary functional testing (PFT). The correct identification of lung dysfunction may impact on symptomatic AS patients in whom COPD is one of the main reasons of aortic treatment delay or exclusion. Thus, COPD may represent a significant confounding factor whilst influencing clinical management.

Purpose: To assess COPD prevalence and its relationship with all-cause mortality in symptomatic AS undergoing different treatment options.

Methods: Multi-centre retrospective study of symptomatic severe AS referred to tertiary cardiology centres for clinical management. Patients were treated invasively (surgical and percutaneous valve replacement or valvuloplasty) or conservatively according to clinician choice. COPD was defined by GOLD guidelines on PFT and compared to STS definition.

Results: 475 symptomatic AS patients were included. Of these, 205 underwent full PFT. COPD was clinically recognised in 25% of the total group and in only 20% of those with PFT. The prevalence of actual COPD was even higher (33%) on PFT retrospective analysis. However, COPD severity based on FEV₁ was only mild-moderate in most (87%) AS with lung dysfunction. There were no significant differences in terms of aortic disease severity, age, body habitus, NYHA functional class nor cardiac function in patients with or without COPD. Of the AS-COPD patients, only 9% were on inhaled treatment. During a mean follow-up of 16 ± 10 months, COPD-STS was an independent predictor of all-cause death (HR: 2.1, 95% CI: 1.4 to 3.2, p<0.001) with reduced survival in all treatment groups (Figure). However, COPD-GOLD by PFT was not prognostic.

Conclusion: COPD in symptomatic AS is common, under-treated and associated with an increased risk of death only if assessed clinically (COPD-STS). In the sub-group of patients who were able to perform a PFT, COPD-GOLD grade was mostly mild-moderate and did not show a significant prognostic impact.



