Imaging: Valve Disease

Prognostic significance of cardiac amyloidosis in patients with aortic stenosis: a systematic review and meta-analysis

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Background: Cardiac amyloidosis (CA) has been increasingly recognized in elderly patients with aortic stenosis (AS), but with uncertain prognostic significance.

Objectives: We performed a systematic review and meta-analysis to clarify whether concurrent CA portends excess mortality in patients with aortic stenosis AS.

Methods: Our systematic review of the literature published through June 2020, sought observational studies reporting summary-level outcome data of all-cause mortality in AS patients with or without concurrent CA. Pooled estimate of Mantel-Haenszel odds ratio (OR) and 95% confidence intervals (CIs) for all-cause death was assessed as the primary endpoint. We performed subgroup analysis stratified by severity of left ventricular hypertrophy (LVH) and study-level meta-regression analysis to explore the effect of covariates on summary effect size and to address statistical heterogeneity.

Results: We identified 4 studies including 609 AS patients (9% AS-CA; 69% men; age, 84 ± 5 years). The average follow-up was 20 ± 5 months. Compared with lone AS, AS-CA was associated with 2-fold increase in all-cause mortality (pooled OR: 2.30; 95% CI: 1.02-5.18; I2 = 62%). When analysed according to LVH severity, pooled ORs (95% CI) for all-cause mortality were 1.29 (0.65-2.22) for mild LVH (≤16 mm), and 4.81 (2.19-10.56) for moderate/severe LVH (>16 mm). Meta-regression analysis confirmed a stronger relationship proportional to the degree of LVH, regardless of age and aortic valve replacement, explaining between-study heterogeneity variance.

Conclusions: CA heralds significantly higher risk of all-cause death in elderly patients with AS. Severity of LVH appears to be a major prognostic determinant in patients with dual AS-CA pathology.

Abstract Figure.