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Meta-analysis or systematic review

Outcomes of Severe Aortic Stenosis in Patients with Cardiac Amyloidosis Undergoing Transcatheter and Surgical Aortic Valve Replacement: A Systematic Review and Meta-Analysis

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Background: Limited data is available regarding the prognostic implications of cardiac amyloidosis (CA) in patients with severe aortic stenosis (AS) and the outcomes of transcatheter and surgical aortic valve replacement (TAVR; SAVR) in this high-risk patient population.

Methods: A systematic database search was conducted for relevant studies using MEDLINE (PubMed), EMBASE, Scopus, Cochrane CENTRAL, Conference Abstracts, and ClinicalTrials.com through June 20, 2023. The primary outcome was long-term mortality. Meta-analysis was performed using the random-effects Mantel-Haenszel method, and pooled risk ratios (RRs) along with 95% confidence intervals (CIs) were calculated using RevMan 4.0.

Results: Eleven studies with 2,209 patients were included. The mean age was 80 years, and 38% were female. Patients with AS in the setting of CA (AS-CA) had higher mortality compared to patients with AS alone (RR 2.31, 95%CI 1.35-3.94, $p=0.002$, $I^2=60\%$). TAVR was associated with improved survival compared to conservative management for AS-CA (RR 0.45, 95%CI 0.25-0.81, $p=0.008$, $I^2=0\%$). TAVR in patients with AS-CA had comparable mortality risk as compared to TAVR in patients with AS alone (RR 1.41, 95%CI 0.83-2.38, $p=0.20$, $I^2=34\%$). Additionally, there was no difference in survival between TAVR and SAVR for patients with AS-CA (RR 0.37, 95%CI 0.06-2.33, $p=0.29$, $I^2=0\%$). (Figure)

Conclusion: Cardiac amyloidosis is associated with increased mortality risk in patients with AS. TAVR in AS-CA resulted in improved survival as compared to conservative management. The survival benefit of TAVR in AS-CA was comparable to that of SAVR in AS-CA and of TAVR in AS

alone. These findings suggest that TAVR is a safe and effective treatment option for patients with AS-CA.

Figure: Outcomes of Severe Aortic Stenosis in Patients with Cardiac Amyloidosis Undergoing Transcatheter and Surgical Aortic Valve Replacement.



