Peripheral artery disease is associated with worse outcomes after TAVR

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Introduction: Peripheral arterial disease (PAD) is common in patients undergoing transcatheter aortic valve replacement (TAVR) and presents unique challenges for TAVR arterial access. The impact of TAVR on limb ischemic events in PAD patients undergoing TAVR is unknown.

Purpose: Evaluate patients undergoing TAVR with and without PAD for outcomes involving limb ischemic and systemic cardiovascular events.

Methods: Patients undergoing TAVR were identified in the TriNetX database. The database provides access to electronic medical records (diagnoses and procedures) from approximately 86.5 million patients from 58 healthcare organizations. Patients were stratified by history of PAD. After propensity score matching, 30 day limb ischemic outcomes (peripheral revascularization, acute limb ischemia (ALI), lower extremity amputation), major adverse cardiac events (MACE), and mortality were compared between groups. 1 year outcomes for MACE and mortality were also compared. Event rates calculated using 1 year Kaplan-Meier estimator.

Results: We identified 22,405 patients undergoing TAVR. Of these patients 21.3% had diagnosed PAD. Patients with PAD had significantly increased 30 day peripheral revascularization (2.4% v. 1.2%; adjusted OR (aOR) 2.02, 95% CI 1.47–2.80) and ALI (2.27% v. 0.89%; aOR 2.59 95% CI 1.80–3.70) with a similar rate of amputation (Figure 1). 30 day MACE (13.2% vs. 11.4%; aOR 1.18 95% CI 1.04–1.33) and mortality (2.46% vs. 1.53%; aOR 1.63 95% CI 1.21–2.19) were also significantly increased with continued significance at 1 year follow up (MACE: 25.8% v. 21.6%; aOR 1.26 95% CI1.15–1.39; Mortality: 9.4% vs. 7.3%; aOR 1.32 95% CI 1.14–1.52) (Figure 2).

Conclusions: In our study, TAVR in PAD patients was associated with increased limb ischemic events as well as increased MACE and mortality at 30 days and 1 year follow up.