Thirty-day readmission after transcatheter aortic valve replacement in the United States: Insights from the Nationwide Readmission Database

Authors Kolte D, Khere S, Sardar MR, Gheewala N, et al.

Citation *Circ Cardiovasc Interv* 2017;10: e004472
DOI:10.1161/CIRCINTERVENTIONS.116.00472

Period of study January to November 2013

Objectives

To investigate the trends, predictors and outcomes of delayed discharge (>72h) after transcatheter aortic valve replacement TAVR).

Study design

Observational.

Materials and methods

- Patients undergoing TAVR who survived index hospitalisation were identified in the Nationwide Readmissions Database
- Primary outcome of interest was 30-day, all-cause readmission
- Incidence, predictors, causes and costs of 30-day readmissions were analysed

Key results

- Of 12221 TAVR patients, 2188 (17.9%) were readmitted within 30 days
- Length of stay (>5 days) during index hospitalisation, acute kidney injury, >4 Elixhauser comorbidities, transapical TAVR, chronic kidney disease, chronic lung disease, and discharge to nursing facility were independent predictors of 30-day readmission
- Readmissions were because of noncardiac causes in 62% of cases and cardiac causes in 38% of cases
- The most common noncardiac causes were respiratory (15%), infections (13%), bleeding (8%) and peripheral valvular disease (4%)
- The most common cardiac causes were heart failure (23%) and arrhythmia (7%)
- Median length of stay for readmissions was 4 days
- Cost of readmission accounts for an average of 16.4% of the total cost of the episode of care in patients who are readmitted.
- Median cost of readmissions were US$8302

Limitations of study

- Analysis is based on administrative data, which lack clinical and laboratory variables
- Information on STS score, valve type and size, echocardiographic findings such as aortic regurgitation/ paravalvular leak, and medications were not available
- Causes of readmissions were identified using the primary diagnosis codes
- Most previous studies on 30-day readmission after cardiac procedures have used a similar approach
- Patients admitted in one state and readmitted in another are not tracked in the Nationwide Readmissions Database
- Unable to account for the influence of mortality on readmission owing to those patients who died outside the hospital or in the emergency room

Conclusions

Thirty-day readmissions after TAVR are frequent and are related to baseline comorbidities, TAVR access site, and post-procedure complications. Awareness of these predictors can help identify and target high-risk patients for interventions to reduce readmissions and costs.