Abstract: P2271

Contemporary trends and outcomes of percutaneous vs. surgical aortic valve replacement in cancer patients.

Authors:
A Guha¹, A Dey², S Arora³, M Cavender³, J Vavalle³, H Jneid⁴, D Addison¹, ¹The Ohio State University, Cardiovascular diseases - Columbus - United States of America, ²National Institutes of Health - Bethesda - United States of America, ³University of North Carolina Hospitals - Chapel Hill - United States of America, ⁴Baylor College of Medicine - Houston - United States of America,

Topic(s):
Valvular Heart Disease – Epidemiology, Prognosis, Outcome

Citation:
Importance: Cancer patients with severe AS are often ineligible for surgical aortic valve replacement (SAVR). Transcatheter aortic valve replacement (TAVR) is an emerging non-invasive treatment option for severe AS. Cancer patients likely stand to benefit from TAVR given its non-invasive nature; however, there is a paucity of data regarding the comparative effectiveness of TAVR vs. SAVR in cancer. We sought to assess the relative utilization, outcomes, and dispositions associated with TAVR vs. SAVR in cancer and non-cancer patients.

Methods: The US-based National Inpatient Sample was queried between 2012 and 2015 using ICD-9 codes for adults>18 years with comorbid AS and cancer without metastatic disease. Multiple in-hospital and disposition outcomes were evaluated. Comparison of TAVR vs SAVR required propensity score estimation using demographic, socio-economic, comorbidity, and hospital specific variables. A standardized morbidity ratio (SMR) weight was calculated by assigning TAVR a weight of 1, and those undergoing SAVR weight of PS/(1-PS). SMR-weighted generalized logistic regression was conducted to estimate the average effect of TAVR compared with SAVR. Finally, the Cochran–Mantel–Haenszel (CMH) test for propensity-matched data was utilized to compare the effect modification of cancer on these outcomes.

Results: A total of 979,912 out of 5,611,173 patients with AS were found to have non-metastatic cancer (17.5%). Average Elixhauser’s mortality score of patients undergoing TAVR and SAVR was 8.9 vs. 8.1 and 8.5 vs. 7.1 for cancer vs. non-cancer respectively (p<0.0001). Over time, patients undergoing AVR increased in both groups, primarily driven by significantly increased rates of TAVR utilization in the cancer group. Over the study time period, an increase in the proportion of patients undergoing TAVR among all patients undergoing AVR was noted (figure) with 21.8% and 19.6% patient with prostate and breast cancer in 2015. TAVR in cancer patients was associated with lower odds of acute kidney injury [AKI; odds ratio (OR): 0.6, 95% confidence interval (CI): 0.5- 0.8], cardiogenic shock [OR: 0.6 (0.4-0.8)] and major bleeding [OR: 0.4 (0.3-0.5)] with no difference in in-hospital mortality and stroke compared to SAVR. Additionally, TAVR was associated with higher odds of home-discharge [OR: 1.9 (1.7-2.2)], and lower need for nursing facility transfer [OR: 0.7 (0.6-0.8)] compared to SAVR among cancer patients. Similar outcomes are noted in the non-cancer cohort upon comparing TAVR to SAVR. However, favorable effect-modification of cancer was noted in regard to AKI (p = 0.003), home discharge (p<0.0001), and less nursing facility transfer (p = 0.0003), suggesting safety.

Conclusions: Compared to patients without cancer, the utilization of AVR in cancer patients has steadily increased. The benefits of TAVR over SAVR appear to extend to patients, regardless of cancer status. TAVR might be a more suitable procedure for cancer patients with AS.
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1 The Ohio State University, Cardiovascular diseases – Columbus – United States of America,
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3 University of North Carolina Hospitals – Chapel Hill – United States of America,
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