Commentary: Are we really choosing between less delirium or better quality of life when comparing transcatheter aortic valve implantation with surgical aortic valve replacement?

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In the present manuscript entitled “Postoperative Delirium and Quality of Life After Transcatheter and Surgical Aortic Valve Replacement: A Prospective Observational Study,” Hoogma and colleagues1 provide a rare example of a prospective cohort study of intervention for aortic stenosis in which all subjects underwent daily screening for postoperative delirium (POD) using the 3-minute Diagnostic Confusion Assessment Method (ie, 3D-CAM) and Confusion Assessment Method–Intensive Care Unit (ie, CAM-ICU). The authors were able to demonstrate that POD was common and affected 37% of all patients undergoing intervention. The primary outcome for the study showed that POD was significantly lower in patients undergoing transcatheter aortic valve implantation (TAVI; 15%) when compared with surgical aortic valve replacement (SAVR; 51%) (Figure 1). These findings are especially relevant, given that delirium has been shown by others to be associated with prolonged hospitalization, failure to be discharged home, increased mortality, and consequently increased health care costs.2,3

However, it is important to note that patients who underwent TAVI (n = 84) were significantly older, frailer, and had a significantly greater European System for Cardiac Operative Risk Evaluation score compared with patients who underwent SAVR (n = 166). To adjust for these differences, the authors chose to perform a propensity weighing approach to balance the groups and allow meaningful comparison. Propensity weighting should not be confused with propensity matching, which would have resulted in loss of subjects for comparison. The approach of propensity weighting has been previously validated and ensured that all patients who underwent TAVI (n = 84) and SAVR (n = 166) were included in the comparison.

One cannot help noticing that the patients included in the TAVI group were also largely moderate- to high-risk patients based on a mean European System for Cardiac Operative Risk Evaluation score of 7.28. This group of greater-risk patients may not reflect current trends worldwide, where TAVI is being increasingly offered to lower-risk groups.4 One could also speculate that the reported POD of 15% in the patients who underwent TAVI could have been lower should fewer patients have needed general anesthesia (29%) or required a nontransfemoral approach (12%). Current experience with TAVI has demonstrated the safety of avoiding general anesthesia and maximizing transfemoral approach to help achieve early discharge home (day 1) after intervention.4

What is harder to explain is the unusual finding from the study suggesting that patients who underwent SAVR appeared to have significantly better quality of life at 6 months after their intervention versus patients who underwent TAVI. These findings were based on a good...
response rate, with quality of life data available in 80% of patients who underwent TAVI and 90% of patients who underwent SAVR. One wonders if the propensity weighting approach used by the authors was able to address all important differences between groups, in particular, the fact that patients who underwent TAVI were significantly frailer. Frailty is particularly important here, as patients who are frail tend to have poor self-reported health outcomes sometimes weeks after intervention. Patients who are frail can continue to suffer from fatigue, poor energy, and persistent symptoms despite having their valve pathology addressed successfully, potentially confounding outcomes. This highlights the value and importance in quantifying frailty in our patients to better understand their risks and benefits from intervention.

References


FIGURE 1. Balancing outcomes in choosing the optimal treatment for AS comparing TAVI with SAVR. AS, Aortic stenosis; POD, postoperative delirium; TAVI, transcatheter aortic valve implantation; QOL, quality of life; SAVR, surgical aortic valve replacement.