

The Mind Is Your Best Muscle: TAVR/SAVR Outcomes in Patients With Cognitive Impairment

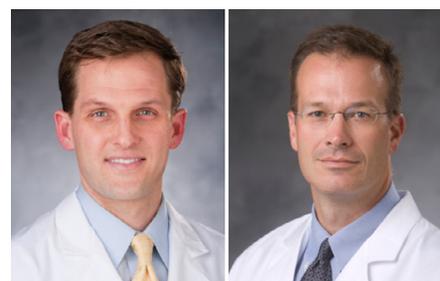


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We have read with interest the systematic review in this issue of *Seminars* and commend Erfe et al for a high-quality investigation which did not meet the investigators' goal of assessing the predictive value of preoperative cognitive impairment in SAVR/TAVR patients with cognitive impairment.¹ The search process was robust and transparent, with use of a formal quality assessment tool, the Newcastle-Ottawa Scale for nonrandomized studies.

We learn from this work that over the past 20 years, only 8 studies are published comparing outcomes of patients with and without preoperative cognitive impairment. This is a remarkable paucity of data. Three of the 8 studies were of poor quality, and given the heterogeneity of the presentations, a meta-analysis was not possible. The authors note that only 2 studies show what many would assume regarding preoperative cognitive impairment: increased risk for postoperative delirium, increased length of hospital stay, and increased risk of discharge to healthcare facility. However, with so few papers published on this topic, the authors could not draw any conclusion other than the fact that more high-quality studies are required on the incidence of cognitive impairment and association, if any, with poor outcomes after aortic valve replacement.

Several issues arise for consideration, one of which is confounding by examining cognitive function in both SAVR and TAVR populations as a differential effect between these treatment allocations may exist. SAVR and TAVR are fundamentally different procedures with attendant intraoperative and postoperative risks, including cognitive. Several questions exist here. Does the use of cardiopulmonary bypass and an aortic cross clamp increase the risk of cognitive decline from SAVR? Or, does the use of catheters traversing the aortic arch and balloon dilation of the aortic valve in TAVR increase the risk of embolic



Drs Williams (left) and Gaca (right).

Central Message

Erfe et al present a high-quality investigation of the literature on cognitive impairment and SAVR/TAVR outcomes.

phenomenon and cognitive injury? A corollary is the type of anesthetic as it relates to postoperative delirium. The literature is rich with investigations of the type of anesthetic given to cardiac patients and the development of postoperative delirium. Most TAVR patients are given conscious sedation if possible. Is this better than the general anesthesia required for SAVR? These are important issues to consider. Is there a threshold of advanced cognitive decline where a patient should not be offered any treatment of aortic stenosis? The ultimate question in this arena is whether one treatment or another is better in the patient with preoperative cognitive impairment. The evidence to date is not adequate to answer these questions.

And what about the younger patient with severe aortic valve stenosis and cognitive impairment from traumatic brain injury or heritable syndrome or any number of causes? How should cognitive impairment be weighed in the heart team discussion for the 40-year-old with Down syndrome and severe aortic valve stenosis? This question is different from the older patient with senile aortic valve stenosis. Unfortunately, the literature leaves us with few clues as 5 of the 8 reviewed studies included only “elderly” patients defined variably as >60, >65, or >70 years old.

Ultimately, Erfe et al prove simply that we have much work to do in this important area.¹ On the bright side, the majority of the included studies in the present review are contemporaneous, and ongoing work from Arora,² Afilalo and Perrault,³ and others provides hope that we will soon better understand

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ADULT — TAVR/SAVR OUTCOMES IN PATIENTS WITH COGNITIVE IMPAIRMENT

the role of cognitive impairment for our patients. Rocky Balboa said it well, “Remember, the mind is your best muscle.”

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