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Commentary: When you get to a fork in the road, take it

Jack S. Shanewise, MD, FASE

Without treatment, severe symptomatic aortic stenosis is fatal. And the sole effective treatment—aortic valve replacement—only became available within the lifetime of many patients diagnosed with aortic stenosis today. For decades, open-heart surgery was the only way to replace a stenotic aortic valve, but more recently, driven by the realization that many patients with advanced age, comorbidities, and/or frailty were not being offered surgical aortic valve replacement (SAVR), transcatheter aortic valve implantation (TAVI) has emerged as an alternative, creating a new fork in the decision process: should the patient have a surgical or a transcatheter procedure?

In their article in this issue of the *Journal*, Hoogma and colleagues¹ prospectively compared SAVR and TAVI in 250 patients aged 70 years or older with respect to 2 outcomes: postoperative delirium (POD) and quality of life (QOL). They did a very extensive and careful assessment of cognitive and neuropsychiatric function and QOL for each patient. About two-thirds of these patients had SAVR and one-third had TAVI. The decision whether to offer SAVR, TAVI, or medical treatment was made by a multidisciplinary heart team “following international guidelines while considering the restrictive reimbursement policy for TAVI in Belgium.” The authors used propensity score matching to reduce the chance of bias from this selection process. They found the patients who underwent SAVR were more than 3 times as likely to have POD but reported improved QOL after 6 months more than 3 times as often as the patients who underwent

Fork in the road at the bottom of Rattlesnake Hill, West Cornwall, CT.

CENTRAL MESSAGE

Deciding between SAVR and TAVI can be difficult.

TAVI. Would you be willing to trade being delirious a while for feeling better overall in the long run? I think I would.

It makes sense to me that SAVR would have more POD than TAVI considering the vast difference in magnitude of the trespass to the patient, especially in an older population. However, the randomized Placement of Aortic Transcatheter Valves (PARTNER) 2 trial recently reported no difference in QOL outcomes for up to 5 years after SAVR and TAVI in intermediate-risk patients.² Why the difference between these 2 study results? Each study uses different tools to assess QOL, which may account for some of the discrepancy, and the different selection criteria for each study may have included or excluded very different types of patients. Also, the propensity score matching in the study in this issue of the *Journal* may not have eliminated all the bias in the selection process, which theoretically is taken care of by randomization. Even after the propensity adjustment, the TAVI group still had a significantly lower QOL score at baseline.

One of the challenges of comparing these 2 very different treatment options is that they are both moving targets. Surgical techniques, anesthetic management, cardiopulmonary bypass, perioperative care, and prosthetic valves are continuously evolving and improving, and new and improved transcatheter techniques and devices come on the scene regularly. So, we will continue to need carefully designed and conducted studies comparing SAVR and TAVI to make to best possible choice when we get to that fork in the road: SAVR or TAVI? Stay tuned!

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