Commentary: Transcatheter aortic valve replacement durability—Wouldn't it be nice if we were older?

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Recent publication of PARTNER 3¹ and Evolut Low Risk² trials provided further evidence for transcatheter aortic valve replacement (TAVR) as the treatment of severe symptomatic aortic stenosis, demonstrating that TAVR is comparable, possibly superior, to surgical aortic valve replacement (SAVR) in terms of outcomes at 1 year in low-risk patients. Clinicians can confidently counsel patients regarding short-term outcomes with either TAVR or SAVR; however, they cannot answer a question routinely asked during clinic visits: “Doc, how long will this valve last?”

In this issue of the *Journal*, Edelman and colleagues³ provide a focused review of durability of TAVR and SAVR valves that is based on earlier trials with longer follow-up. Notable findings are as follows:

1. Systematically collected data on the durability of SAVR valves are limited.
2. Surgical data suggest an inverse relationship between patient age and rate of structural valve deterioration (SVD).
3. There does not appear to be accelerated degeneration of TAVR valves implanted in patients considered to be at intermediate, high, or prohibitive risk for SAVR.
4. There are no intermediate (6-10 years) or long-term (>10 years) data regarding SVD in TAVR valves.

This review also raises multiple clinically relevant questions:

1. Can data from a cohort of octogenarian patients (mean age, 79-84 years) be applied to younger, low-risk patients?
2. What is the optimal anticoagulant and antiplatelet strategy in patients undergoing TAVR, and will this effect SVD?
3. What are the risks of TAVR-in-TAVR (valve-in-valve) when the first TAVR fails?

Until systematically collected data are available on long-term follow-up of low-risk patients, clinicians must

counsel them on the basis of extrapolations from higher risk trial populations or data collected from registries. These extrapolations are challenging for clinicians to explain and for patients to understand, because many patients are enthusiastic to undergo TAVR to avoid “having my chest cracked.”

Further, anticoagulant and antiplatelet agents likely influence durability of all bioprosthetic valves. To date, optimal medication management of patients after TAVR remains unknown. Dedicated studies are needed to determine the optimal strategy to decrease SVD and reintervention.

Without intermediate and long-term durability data, it is difficult to counsel young, low-risk patients on the potential need for another aortic valve replacement. Clinicians need to consider limitations with valve-in-valve TAVR that are not classically associated with redo SAVR: increased gradients and coronary obstruction.

TAVR in young, low-risk patients remains a promising therapy. Until long-term data are available, clinicians must thoroughly counsel patients by acknowledging not only the short-term data but also limitations in our understanding. The low-risk trials highlighted increased rates of patient prosthetic mismatch for balloon-expandable valves and increased permanent pacemaker rates for self-expanding valves, the long-term consequences of which are unknown. Whereas mismatch may affect durability, pacemaker implantation

Central Message

TAVR is a promising treatment for severe aortic stenosis in low-risk patients. In discussing options, we must focus not only on 1-year results, but also on the unknowns of limitations and durability.

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affects long-term survival. As with SVD, the consequences of these issues will only be fully understood when long-term data are available. In the era of shared decision making, low-risk patients should be made aware of all treatment options for the management of aortic stenosis, with an emphasis not only on outstanding 1-year results seen in low-risk trials but on the risks and limitations of valve-in-valve TAVR and on the unknowns regarding durability in this patient population.

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