Do apples equal oranges in access for transcatheter aortic valve replacement?

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In their article in the October 2017 of the *Journal*, McCarthy and coauthors¹ have provided a cleanly written and statistically orthodox comparison of the principal access modes for transcatheter aortic valve replacement (TAVR). We learn that transfemoral (TF) and non-TF (transapical and transaortic) access methods were “similar” and “acceptable.” Significant differences in early mortality favoring TF relative to non-TF access were not significant at 1 year. Use of cardiopulmonary bypass predicted mortality and was concentrated in the transapical cohort.

Unfortunately for the relevance of these data, TAVR experience has been expanding with almost unimaginable speed for a technology so young, and a cohort from 2011 through 2012 feels almost geologic, back from the Surgeocene epoch. One thing that has not changed is that patients with non-TF access have more peripheral vascular disease and other important comorbidities than patients with TF access, ensuring worse outcomes in any unadjusted comparison for any foreseeable future. And as a practical matter, in discussions with patients, how is “similar adjusted mortality” relevant? What the patient faces is unadjusted risk.

What has changed is that design adaptations and experience with TF TAVR have produced decreases in mortality and length of stay that are frankly stunning. As a consequence, TF access is increasingly dominant. Although it is true that only 55% of TAVR procedures in the United States were performed with TF access when this study was done,¹ TF access is now about 80% in the most recent data from the Transcatheter Valve Therapy Registry.² Is this a result of sharp elbows on the cardiology side of the valve team? At least at Columbia, our experience suggests otherwise. Even though cardiac surgeons are primary operators in 50% of our TF TAVR cases, the frequency of non-TF access has fallen to 6.5% in the 430 cases done in the past 12 months (unpublished data).

It is nonetheless true that there are, and always will be, patients for whom TF TAVR is not an option. In that population, alternatives to transapical access (direct aortic,

Sailing into the sunset.

Central Message

Nontransfemoral access for transcatheter aortic valve replacement occupies a shrinking niche and may often be inferior to surgical aortic valve replacement.

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suprasternal, carotid, axillary, transseptal) continue to be explored. Data are largely anecdotal, but none appear likely to compete with TF access as the option of first choice. With this in mind, the series reported here becomes potentially misleading, because “similar” in all the domains reported is so unlikely to be reproducible in an era of infrequent non-TF access, when patients with TF access are increasingly approached without general anesthesia and are frequently discharged in 1 or 2 days.

Finally, the role of conventional (surgical) aortic valve replacement (SAVR) is not mentioned. In patients not eligible for TF access, the proper comparison is therefore between non-TF access and SAVR. Relatively small cohorts in the Placement of Aortic Transcatheter Valves (PARTNER) trials PARTNER 1A³ and PARTNER 2⁴ suggest that SAVR may be superior to transapical access, and quite possibly to other non-TF access strategies. Granted, there will still be patients for whom SAVR is a very poor option, and non-TF access will need to be used, while respecting the important obligation to avoid treating patients who should not be treated with any modality.

References

1. McCarthy FH, Spragan DD, Savino D, Dibble T, Hoedt AC, McDermott KM, et al. Outcomes, readmissions, and costs in transfemoral and alternative access for transcatheter aortic valve replacement in the US Medicare population. *J Thorac Cardiovasc Surg*. 2017;154:1224-32.
2. Holmes DR Jr, Nishimura RA, Grover FL, Brindis RG, Carroll JD, Edwards FH, et al; STS/ACC TVT Registry. Annual outcomes with transcatheter valve therapy: from the STS/ACC TVT Registry. *Ann Thorac Surg*. 2016;101:789-800.

3. Smith CR, Leon MB, Mack M, Miller DC, Moses JW, Svensson LG, et al; PARTNER Trial Investigators. Transcatheter versus surgical aortic valve replacement in high-risk patients. *N Engl J Med*. 2011;364:2187-98.
4. Leon MB, Smith CR, Mack MJ, Makkar RR, Svensson LG, Kodali SK, et al; PARTNER 2 Investigators. Transcatheter or surgical aortic-valve replacement in intermediate-risk patients. *N Engl J Med*. 2016;374:1609-20.