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EDITORIAL

When You Turn Up the Volume, the Benefits of TAVR Still Sound Crystal-Clear

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In this issue of *Structural Heart*, Seeger and colleagues from Ulm, Germany, describe the short and intermediate-term outcome of transcatheter aortic valve replacement (TAVR) in mixed (pressure and volume overload) aortic valve disease (MAVD) (present reference). Specifically, they studied a population with severe aortic stenosis (AS) and co-existing moderate-severe aortic regurgitation (AR) treated with contemporary devices between 2014 and 2016. They systematically employed contemporary procedural planning with computed tomography (CT)-guided device sizing. A number of different devices were used successfully including Sapien 3, Lotus, and Evolut R.

TAVR has yielded poor outcomes when performed for isolated or predominant AR, and certainly mandates novel devices and procedural techniques.[1] Nevertheless, TAVR is often performed in MAVD, despite a marked paucity of data. Indeed, as the authors point out, major clinical trials evaluating transcatheter aortic valves have typically excluded MAVD. The current guidelines are either silent on the topic or highlight the lack of data to support evidence-based recommendations in MAVD. [2–4]

In the present study, MAVD was not infrequently performed, being present in almost a tenth (9.4%; 69/734) of patients undergoing TAVR. Importantly, the present study showed that—in comparison to the population in which there was no moderate-severe AR—there was no deleterious effect on clinical outcomes up to 2 years. Specifically, there was no apparent difference in outcome between the isolated AS versus the MAVD population in terms of any clinical metric, including survival, post TAVR AR or readmission for heart failure.

It is relevant, however, that there was no difference in left ventricular (LV) chamber dimensions or in the frequency of depressed ejection fraction (EF) between patients with and those without MAVD at baseline. This suggests that, although a volume overload was present, it had not progressed to an advanced stage to deleteriously impact LV structure and function. A very recent multi-center international collaboration by Abdelghani and co-workers,[5] evaluated more than 100 patients with MAVD undergoing TAVR. Although the MAVD population was defined similarly to that of the current report, they had relatively more LV dilatation. This suggests that those patients underwent therapy at a later time point relative to the natural history of the disease than the cohort reported by Seeger and colleagues. Moreover, the study by Abdelghani and co-workers treated patients over a longer time period, between 2008 and 2015, and hence used earlier generation devices and employed two-dimensional imaging for device sizing for many patients. It is not surprising, therefore, that they saw a relatively higher frequency of paravalvular leak (PVL) in the MAVD patients undergoing TAVR than the Ulm group. It is interesting that, despite this higher incidence, PVL did not increase mortality in the MAVD population (although it did in the isolated AS cohort, in line with prior data). The authors postulated LV preconditioning as a possible mechanism to account for this difference.[5]

Together, these two important papers indicate that MAVD is relatively common in patients undergoing TAVR, despite the paucity of data. Moreover, they demonstrate that TAVR can achieve similarly excellent outcomes in MAVD compared to isolated AS, particularly if performed with contemporary devices and procedural planning, as employed by Seeger and colleagues. This data expands the population with an evidence-based indication for TAVR and provides evidence that should be incorporated into future guidelines.

Disclosure statement

Nothing to disclose.

References

1. Roy DA, Schaefer U, Guetta V, et al. Transcatheter aortic valve implantation for pure severe native aortic valve regurgitation. *J Am Coll Cardiol*. 2013;61:1577–1584. 10.1016/j.jacc.2013.01.018.
2. Joint Task Force on the Management of Valvular Heart Disease of the European Society of Cardiology, and the European Association for Cardio-Thoracic-Surgery. Vahanian A, et al. Guidelines on the management of valvular heart disease (version 2012). *Eur Heart J*. 2012;33:2451–2496. 10.1093/eurheartj/ehs109.
3. Nishimura RA, Otto CM, Bonow RO, et al. 2014 AHA/ACC guideline for the management of patients with valvular heart disease: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol*. 2014;63:e57–185. 10.1016/j.jacc.2014.02.536.
4. Nishimura RA, Otto CM, Bonow RO, et al. 2017 AHA/ACC focused update of the 2014 AHA/ACC guideline for the management of patients with valvular heart disease: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *J Am Coll Cardiol*. 2017;70:252–289. 10.1016/j.jacc.2017.03.011.
5. Abdelghani M, Cavalcante R, Miyazaki Y, et al. Transcatheter aortic valve implantation for mixed versus pure stenotic aortic valve disease. *EuroIntervention*. 2017 Jul 11. pii:EIJ-D-17-00328. doi: 10.4244/EIJ-D-17-00328. [Epub ahead of print].

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