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Should Bioprosthetic Valves be Implanted in Patients with Aortic Stenosis having a Low Surgical Risk? A Perspective with Pros and Cons

Uğur Özkan[1], Muhammet Gürdoğan[1], Çağlar Kaya[1], Hasan Arı[2]

[1]Department of Cardiology, Trakya University Faculty of Medicine, Edirne, Türkiye
[2]Clinic of Cardiology, Bursa İhtisas Training and Research Hospital, Bursa, Türkiye

Aortic valve stenosis (AS) presents as a disease of advanced age in clinical practice. It often occurs due to degeneration or calcification and is accompanied by frailty and multiple comorbidities in individuals. In the last decade, transcatheter aortic valve implantation (TAVI) has become an important treatment alternative to surgical aortic valve replacement (SAVR) for severe AS due to the advanced age of the patients and/or increased comorbidity. However, there are some pros and cons of TAVI and SAVR use in low-risk patients.

SAVR remains the gold standard treatment option due to uncertainty regarding the durability of bioprosthetic valves implanted via transcatheter, especially in patients with low surgical risk.[1] Although we agree that mechanical prosthetic aortic valves are more durable and undergo less degeneration in the long term, real-life data have demonstrated that the lifespan of bioprosthetic aortic valves is not as short as expected.[2,3] Furthermore, with advancements in the diagnosis and treatment of AS in the medical field, the life expectancy of patients with AS has increased. This has made it necessary for the valves used in the treatment of young patients to have a long lifespan.

The most common complications following SAVR are bleeding due to mandatory anticoagulant use and thrombosis due to inadequate anticoagulant use.[4,5] Another complication of SAVR is prosthesis-patient mismatch, which is observed at remarkable rates and poses a significant risk of mortality and morbidity in the long term.[6] The long-term advantage of mechanical prosthetic aortic valves is its durability. However, its dysfunction is generally treated only with a redo surgery, thus increasing the morbidity and mortality risks in patients.[7] The vale-in-valve procedure can be performed with low risk, when necessary, during TAVI.[8] The disadvantages of TAVI, such as paravalvular aortic valve regurgitation and pacemaker implantation, which are associated with long-term morbidity and mortality, can be minimized by performing the procedure at experienced centers with careful pre- and peri-procedural evaluation and appropriate valve selection.[9,10]

In conclusion, we believe that TAVI should be performed in low-risk patients with AS due to its numerous advantages, such as early post-procedural discharge, low procedure-related mortality risk, the possibility of performing redo interventions when required, the absence of the need for warfarin (a drug with high comorbidity rates, which is difficult to use in patients of advanced ages), and its proven mid- to long-term success.

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Corresponding author: Uğur Özkan, Department of Cardiology, Trakya University Faculty of Medicine, Edirne, Türkiye
e-mail: drugurozkan@hotmail.com

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ORCID iDs of the authors: U.Ö. 0000-0002-7552-7654; M.G. 0000-0001-5650-9066; Ç.K. 0000-0002-2968-5352; H.A. 0000-0002-9681-2374.

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