





Temporal trends in patient characteristics and transcatheter aortic valve implantation procedures over four years at the University Hospital Centre Split

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KEYWORDS: aortic stenosis, transcatheter aortic valve implantation, clinical characteristics.

CITATION: *Cardiol Croat.* 2024;19(11-12):462. | <https://doi.org/10.15836/ccar2024.462>

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Introduction: The aim of this study is to determine whether there are differences in the clinical, laboratory and procedural characteristics¹⁻³ of patients treated with transcatheter aortic valve implantation (TAVI) at University Hospital Centre Split in 2019-2020 and 2023.

Patients and Methods: The study included 187 patients diagnosed with severe aortic stenosis who underwent TAVI during 2019, 2020 and 2023. Basic clinical and procedural data were collected from the hospital's information system and archives. To compare the outcomes, patients were divided into two groups: the 2019-2020 group and the 2023 group.

Results: The 2019-2020 group had 39 patients, while the 2023 group had 148 patients. The median age for the entire cohort was 82 years (IQR=6.5), with no significant change over time (P=0.366). The proportion of patients aged ≤75 years remained the same (15.38% in 2019-2020 and 16.22% in 2023). The 2023 group had a significantly shorter median hospital stay, 3 days compared to 6 days in the 2019-2020 group (P<0.001). The estimated EuroSCORE II decreased from 4.4% to 3.71% in 2023 (P=0.649). In the 2023 group there were more patients classified as New York Heart Association (NYHA) class 4 for heart failure (12.84% compared to 0% in 2019-2020; P=0.054). In the entire cohort, 81.82% of patients had arterial hypertension, 39.57% had atrial fibrillation, and 33.16% had diabetes. No significant differences were found in most comorbidities between the two groups. The 2019-2020 group had significantly more patients who had previously undergone percutaneous coronary intervention (33.33% vs. 14.19%, in 2023; P=0.012). The use of balloon pre-dilation and post-dilation did not change significantly over time. The transfemoral access was most commonly used, although a small number of procedures in 2023 were performed using the transaxillary access. In the entire cohort, the most commonly implanted valve was the Medtronic Evolut PRO + (31.5%, N=57) and Edwards Sapien 3 (25.4%, N=46).

Conclusion: Over the four-year period, there has been a significant increase in TAVI procedures, with the use of various types of valves and vascular access routes, and more complex procedures. The length of hospital stay has been significantly reduced. The comorbidities burden and patient age did not change significantly during the observed period.

RECEIVED:
October 13, 2024

ACCEPTED:
October 31, 2024



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