








Single center experience with alternative access to transcatheter aortic valve implantation

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KEYWORDS: transcatheter aortic valve implantation, vascular access, vascular complications, bleeding.

CITATION: *Cardiol Croat.* 2025;20(1-2):25. | <https://doi.org/10.15836/ccar2025.25>

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Introduction: Percutaneous transfemoral transcatheter aortic valve implantation (TAVI) is the prerequisite for the superiority of TAVI in high-risk population in comparison to surgery. In case of impossible transfemoral approach alternative access to TAVI is required, increasing the periprocedural risks.¹ We present our experience with alternative access to TAVI and compare the outcomes between transfemoral and alternative access.

Patients and Results: We analyzed the data from a single center TAVI registry with 622 patients treated from Jan 2013 to Dec 2024. There were 463 (74%), 139 (23%), and 20 (3%) patients with full percutaneous transfemoral (standard after Jun 2019), surgical femoral cut-down (standard until Dec 2018), and alternative access respectively. Among 20 patients with alternative access there were 10 (50%), 5 (25%), 3 (17%), and 2 (8%) patients with transapical, percutaneous axillary, transaortic, and surgical subclavian cut-down approaches, respectively. Out of 10 transapical procedures, 8 were performed from Jan 2013 to Jun 2017, and only 2 between Jun 2017 to Dec 2024. A composite outcome of minor or major vascular complication, minor clinically significant or major bleeding, or in-hospital death occurred in 37 (7.9%), 12 (8.6%), and 3 (15%) patients treated with percutaneous transfemoral, surgical femoral cut-down, and alternative access, respectively. Alternative access carried a significantly higher risk of composite outcome in comparison to transfemoral (both percutaneous and surgical) due to higher number of comorbidities - predominantly peripheral artery disease, coronary artery disease, previous cardiovascular interventions, and also in case of transapical alternative approach.

Conclusion: TAVI procedure by an alternative access carried a higher risk of the in-hospital composite negative outcome because of higher patient risk profile. Negative composite outcome occurred in less than 10% of patients with transfemoral procedure, without significant difference between full percutaneous and surgical cut-down. Full percutaneous femoral approach is safe and effective in reducing risks of unfavorable outcomes during and after TAVI. Percutaneous axillary approach has relatively recently become the first alternative access in our center.

RECEIVED:
February 7, 2025

ACCEPTED:
February 14, 2025



LITERATURE

1. Hadžibegović I, Unić D, Jurin I, Bradić N, Starčević B, Rudež I. Percutaneous transfemoral approach and additional vascular access selection influence hospital stay and survival after transcatheter aortic valve implantation. *Cardiol Croat.* 2021;16(1-2):36. <https://doi.org/10.15836/ccar2021.36>