# The most important secondary element in transcatheter aortic valve implantation: safe vascular access

**Irzal Hadžibegović*, Daniel Unić, Ivana Jurin, Nikola Pavlović, Tomislav Šipić, Marin Pavlov, Savica Gjorgjievska, Igor Rudež, Šime Manola**

University Hospital Dubrava, Zagreb, Croatia

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***ADDRESS FOR CORRESPONDENCE:** Irzal Hadžibegović, Klinička bolnica Dubrava, Avenija Gojka Šuška 6, HR-10000 Zagreb, Croatia. / Phone: +385-91-5333-091 / E-mail: irzalh@gmail.com

**ORCID:** Irzal Hadžibegović, https://orcid.org/0000-0002-3768-9134 • Daniel Unić, https://orcid.org/0000-0003-2740-4067 Ivana Jurin, https://orcid.org/0000-0002-2637-9691 • Nikola Pavlović, https://orcid.org/0000-0001-9187-7681 Tomislav Šipić, https://orcid.org/0000-0001-8652-4523 • Marin Pavlov, https://orcid.org/0000-0003-3962-2774 Savica Gjorgjievska, https://orcid.org/0000-0002-4304-1852 • Igor Rudež, https://orcid.org/0000-0002-7735-6721 Šime Manola, https://orcid.org/0000-0001-6444-2674

**Introduction**: Patient and device selection, appropriate expansion and apposition, and implantation depth optimization are all essential aspects of a successful percutaneous transcatheter aortic valve implantation (TAVI).[1,2] However, guidelines clearly state that advantages of TAVI over surgery are warranted only in case of safe and uncomplicated transfemoral procedure. We present our experiences with hemostasis after transfemoral TAVI with different strategies, alternative vascular access in patients without the possibility of transfemoral access, and vascular and bleeding complications analysis.

**Patients and Methods**: We analyzed 736 patients who underwent TAVI in our center between 2012 and 2025. Median age was 80 years, 51% were female, with median aortic MPG 46 mmHg and LVEF of 55%. There were 41% of patients on oral anticoagulants, whereas 14% of patients had peripheral artery disease.

**Results:** There were 76.2% patients with full percutaneous transfemoral approach, 18.8% patients with surgical cut down of femoral artery (performed routinely between 2012 and 2018), and 5% of patients with alternative access. Composite clinical endpoint of major bleeding, major or minor vascular complication, stroke or 30-day cardiovascular mortality occurred in 8.3%, 10.8%, and 28% of patients undergoing TAVI with full percutaneous transfemoral, surgical transfemoral, and alternative vascular access, respectfully. Full percutaneous transfemoral access with one perclose device combined with a vascular plug was the safest technique in comparison to other percutaneous closure techniques (RR 1.12 95% CI 0.57-2.20 for composite endpoint that occurred in 7.6% of patients, with proportion of major vascular complications or major bleeding of only 1%). Age, peripheral artery disease and alternative vascular access were the only variables independently associated with the composite endpoint.

**Conclusions**: Uncomplicated percutaneous femoral access remains the most important secondary factor in TAVI. Hybrid vascular closure with one perclose and one vascular seal showed optimal safety with the lowest proportion of major vascular complications compared to other closure techniques. Alternative access should be carefully weighed against surgery since it carried the greatest risk of major complications and bleeding.

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## LITERATURE

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