

Optimal vascular closure after transcatheter aortic valve implantation: managing the most frequent complication

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

Dubrava University Hospital,
Zagreb, Croatia

KEYWORDS: transcatheter aortic valve implantation, hemostasis, perclose device, vascular seal.

CITATION: *Cardiol Croat.* 2024;19(11-12):479. | <https://doi.org/10.15836/ccar2024.479>

***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>
Tomislav Šipić, <https://orcid.org/0000-0001-8652-4523> • Nikola Pavlović, <https://orcid.org/0000-0001-9187-7681>
Marin Pavlov, <https://orcid.org/0000-0003-3962-2774> • Petra Vitlov, <https://orcid.org/0000-0001-6983-1409>
Savica Gjorgjievski, <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> • Ivana Jurin, <https://orcid.org/0000-0002-2637-9691>

Introduction: Percutaneous hemostasis after transcatheter aortic valve implantation (TAVI) involves perclose devices, vascular seal devices, hemostatic bands, or combinations of any of them.¹ We present our experiences with full percutaneous hemostasis after transfemoral TAVI achieved by two different strategies involving perclose devices.

Patients and Methods: Patients who underwent full percutaneous transfemoral TAVI between October 2019 and September 2024 were included in the analysis. In total, 465 patients were divided in two groups: 176 patients who systematically received two perclose devices as a primary closure strategy from October 2019 to November 2022 were assigned to group 2PC, whereas the group 1PC+IVS consisted of 289 patients who systematically received one perclose device with one 8 French vascular seal from December 2022 to September 2024. Primary endpoint was a composite of 30-day major and minor vascular complications defined by VARC-3 consortium.

Results: There were no significant differences in demographic and clinical characteristics between the groups. Primary endpoint occurred in 12 (6.8%) patients in the group 2PC and in 22 (7.6%) patients in the group 1PC+IVS (RR 1.12 95% CI 0.57-2.20 for VARC-3 major or minor vascular complication). Proportion of major vascular complications was higher in the 2PC group (1.7% vs 1%), but that difference was not significant. Logistic regression showed independent association of age (RR 1.08 95% CI 1.01-1.16) and peripheral artery disease (RR 2.66 95% CI 1.26-5.61) with the primary endpoint. There were no significant differences in primary endpoint regarding closure technique in the whole cohort, and also among different TAVI devices or sizes within both groups.

Conclusions: Hybrid vascular closure with one perclose and one 8 French vascular seal showed similar safety with relatively lower proportion of major vascular complications compared to a standard technique using two perclose devices, irrespective of TAVI platform or size. Age and peripheral artery disease were the only variables independently associated with vascular complications.

RECEIVED:
October 13, 2024

ACCEPTED:
October 31, 2024



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>