







Single center experience with coronary bioadaptor implants: initial cohort follow-up

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KEYWORDS: percutaneous coronary intervention, stent, coronary bioadaptor, major adverse cardiovascular event.

CITATION: *Cardiol Croat.* 2025;20(1-2):17. | <https://doi.org/10.15836/ccar2025.17>

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Introduction: Contemporary drug eluting stents (DES) are still mainstay of percutaneous coronary interventions (PCI). However, stentless PCI is evolving, also with coronary bioadaptors - new adaptable implants showing similar short-and mid-term results, and offering potentially even better long-term results compared to contemporary DES.¹ We present initial experience and the follow-up of our first cohort treated in 2024.

Methods and Results: We analyzed PCI characteristics and outcomes of the first 17 patients treated with the coronary bioadaptor implant from January 2024 to January 2025, and compared it to patients treated with DES in the same period. Among 17 patients treated with bioadaptors, 11 (65%) were male with median age of 52 years. Only 2 (11%) patients had diabetes mellitus, and only 1 (7%) patient had previous PCI. Acute coronary syndrome was the indication for PCI in 8 (47%) patients, with 7 (41%) of patients treated for ST-elevation myocardial infarction (STEMI). All patients except one had left anterior descending artery (LAD) treated. Chronic total occlusion (CTO) was treated in 3 (17%) patients, with 1 (7%) patient having a highly calcified stenosis. Additional imaging (intravascular ultrasound or optical coherence tomography) was used in 3 (17%), whereas functional tests were used to guide PCI in 2 (12%) cases. All 18 bioadaptors were delivered successfully over workhorse wires, or extra-support wires only in case of CTOs. Median bioadaptor diameter was 3.5 mm, and median lesion length 28 mm. Median follow-up was 7 months, with no major adverse events recorded. In comparison to 676 patients who received DES during the same period, patients who received bioadaptors were significantly younger, more likely to be treated for STEMI or CTO in the LAD with larger diameter devices, and less likely to have diabetes mellitus, severe calcifications and previous PCI. They had longer event free survival, but no statistical analysis was performed because of the small sample and marked difference in age and clinical characteristics.

Conclusion: First experience with coronary bioadaptors showed good short- and mid-term results among a small cohort of younger patients with mostly acute PCI in the LAD or PCI in CTO lesions. These results should be confirmed in a larger cohort of patients with longer follow-up, patients with diabetes mellitus, and patients with more complex and calcified lesions.

RECEIVED:
February 5, 2025

ACCEPTED:
February 14, 2025



LITERATURE

1. Erlinge D, Andersson J, Fröbert O, Törnerud M, Hamid M, Kellerth T, et al. Bioadaptor implant versus contemporary drug-eluting stent in percutaneous coronary interventions in Sweden (INFINITY-SWEDEHEART): a single-blind, non-inferiority, registry-based, randomised controlled trial. *Lancet.* 2024 Nov 2;404(10464):1750-1759.