

A data-driven journey through cardiac surgery referrals at University Hospital "Merkur"

 **Josip Stjepanović***,
 **Damir Kozmar**¹,
 **Davor Richter**¹,
 **Ena Kurtić**¹,
 **Vedran Radonić**¹,
 **Andro Franković**²,
 **Niko Grubišić**
Neidhardt²,
 **Tomislav Letilović**^{1,2}

¹University Hospital "Merkur",
Zagreb, Croatia

²University of Zagreb, School
of Medicine, Zagreb, Croatia

KEYWORDS: cardiac surgery, procedure waiting time, patient outcomes.

CITATION: *Cardiol Croat.* 2025;20(1-2):12. | <https://doi.org/10.15836/ccar2025.12>

***ADDRESS FOR CORRESPONDENCE:** Josip Stjepanović, Klinička bolnica Merkur, Zajčeva 19, HR-10000 Zagreb, Croatia. / Phone: +385-99-7047-299 / E-mail: josipstjepanovi@gmail.com

ORCID: Josip Stjepanović, <https://orcid.org/0000-0002-3146-9704> • Damir Kozmar, <https://orcid.org/0000-0001-7626-3534>
Davor Richter, <https://orcid.org/0009-0000-7865-1813> • Ena Kurtić, <https://orcid.org/0000-0001-6673-6510>
Vedran Radonić, <https://orcid.org/0000-0002-2115-2826> • Andro Franković, <https://orcid.org/0009-0008-6213-9207>
Niko Grubišić Neidhardt, <https://orcid.org/0009-0005-4191-0232> • Tomislav Letilović, <https://orcid.org/0000-0003-1229-7983>

Introduction: Coronary artery disease (CAD) and aortic stenosis (AS) often require intervention. Coronary artery bypass grafting (CABG) is the standard revascularization method for CAD, whereas surgical aortic valve replacement (SAVR) is recommended for AS. However, percutaneous coronary intervention (PCI) and transcatheter aortic valve implantation (TAVI) may be considered based on patient evaluation^{1,2}. A multidisciplinary Heart Team determines the treatment most likely to yield optimal outcomes³. This study aims to evaluate waiting times for cardiac surgery and assess patient outcomes post-intervention.

Patients and Methods: We analyzed 324 patients referred to the Heart Team between January 2023 and November 2024, assessed waiting times for cardiac surgery and TAVI at University Hospital Centre Zagreb, documented cardiovascular risk factors pre coronary angiography, and conducted follow-up interviews to evaluate post-treatment outcomes. Data were analyzed using SPSS software.

Results: Our analysis revealed a significant reduction in cardiac surgery waiting times, from 85 days in 2023 to 41 days in 2024 (51.8%, $p=0.008$). SAVR wait times decreased from 123 to 60 days (51.2%), and TAVI from 127 to 24 days (81.1%). Patients under 65 had 13.64% shorter waiting time for the procedure (57 vs. 66 days, $p=0.037$). CAD patients had 37.5% shorter wait times than those with isolated AS (55 vs. 88 days, $p<0.001$). Patients with reduced ejection fraction showed markedly higher rates of adverse outcomes post-surgery ($p=0.001$).

Conclusion: This research highlights a substantial reduction in cardiac surgery waiting times in 2024. Further evaluation is required to accurately assess long-term outcomes and develop survival curves that clarify prognostic trajectories.

RECEIVED:
February 4, 2025

ACCEPTED:
February 14, 2025



LITERATURE

1. Lawton JS, Tamis-Holland JE, Bangalore S, Bates ER, Beckie TM, Bischoff JM, et al. 2021 ACC/AHA/SCAI Guideline for Coronary Artery Revascularization: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines. *Circulation.* 2022 Jan 18;145(3):e18-e114. <https://doi.org/10.1161/CIR.0000000000001038>
2. Vahanian A, Beyersdorf F, Praz F, Milojevic M, Baldus S, Bauersachs J, et al; ESC/EACTS Scientific Document Group. 2021 ESC/EACTS Guidelines for the management of valvular heart disease. *Eur Heart J.* 2022 Feb 12;43(7):561-632. <https://doi.org/10.1093/eurheartj/ehab395>
3. Neumann FJ, Sousa-Uva M, Ahlsson A, Alfonso F, Banning AP, Benedetto U, et al; ESC Scientific Document Group. 2018 ESC/EACTS Guidelines on myocardial revascularization. *Eur Heart J.* 2019 Jan 7;40(2):87-165. <https://doi.org/10.1093/eurheartj/ehy394>