Cardiac allograft vasculopathy in heart transplant recipients: insights from the University Hospital Centre Zagreb cohort

Marija Doronjga[1], Marijan Pašalić[2], Maja Čikeš[1,2], Dora Fabijanović[1], Nina Jakuš[1], Hrvoje Jurin[1], Daniel Lovrić[1], Vedran Pašara[1], Ivo Planinc[1], Jure Samardžić[1,2], Željko Čolak[1,2], Joško Bulum[1,2], Hrvoje Gašparović[1,2], Davor Miličić[1,2], Boško Skorić[1,2]*

[1]University Hospital Centre Zagreb, Zagreb, Croatia
[2]University of Zagreb, School of Medicine, Zagreb, Croatia

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***ADDRESS FOR CORRESPONDENCE:** Boško Skorić, Klinički bolnički centar Zagreb, Kišpatićeva 12, HR-10000 Zagreb, Croatia. / Phone: +385-95-3959-910 / E-mail: bskoric3@yahoo.com

ORCID: Marija Doronjga, https://orcid.org/0009-0007-9361-6953 • Marijan Pašalić, https://orcid.org/0000-0002-3197-2190
Maja Čikeš, https://orcid.org/0000-0002-4772-5549 • Dora Fabijanović, https://orcid.org/0000-0003-2633-3439
Nina Jakuš, https://orcid.org/0000-0001-7304-1127 • Hrvoje Jurin, https://orcid.org/0000-0002-2599-553X
Daniel Lovrić, https://orcid.org/0000-0002-5052-6559 • Vedran Pašara, https://orcid.org/0000-0002-6587-2315
Ivo Planinc, https://orcid.org/0000-0003-0561-6704 • Jure Samardžić, https://orcid.org/0000-0002-9346-6402
Željko Čolak, https://orcid.org/0000-0003-0507-4714 • Joško Bulum, https://orcid.org/0000-0002-1482-6503
Hrvoje Gašparović, https://orcid.org/0000-0002-2492-3702 • Davor Miličić, https://orcid.org/0000-0001-9101-1570
Boško Skorić, https://orcid.org/0000-0001-5979-2346

Introduction: Cardiac allograft vasculopathy (CAV) remains a leading cause of late graft loss after heart transplantation (HTx) and results from complex immune- and non-immune-mediated pathways, each contributing to endothelial dysfunction.[1-3]

Patients and Methods: We performed a retrospective registry-based analysis of HTx recipients who underwent CAV assessment by coronary angiography between January 2010 and January 2018 at the University Hospital Centre Zagreb. Baseline donor and recipient characteristics were collected, along with recipient clinical parameters at 1 and 3 years following HTx. The objective was to identify risk factors for CAV at 3 years.

Results: Among 126 heart transplant recipients, CAV was present in 38 patients (30%) at 3 years; 25 (65.8%) were male. The CAV group had a higher mean donor age (46.7 ± 8.7 years). Recipient history of coronary artery disease (CAD) and donor age >45 years were independently associated with increased CAV risk. CAD history conferred a 3.6-fold higher risk (HR = 3.61, 95% CI: 1.59–8.22, p = 0.002), and donor age >45 was associated with a 3.7-fold increased risk (HR = 3.72, 95% CI: 1.64–8.45,

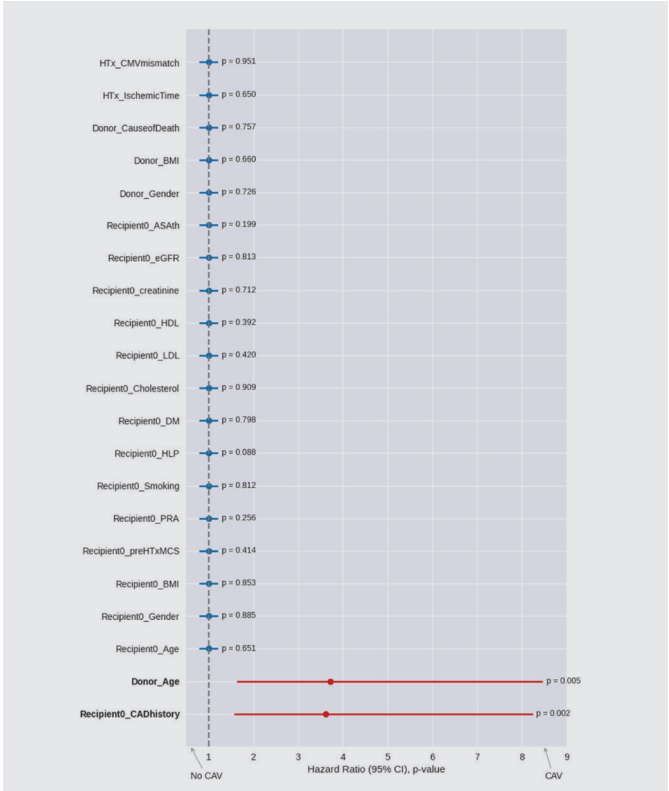

FIGURE 1. Forest plot illustrating the association between baseline donor and recipient characteristics and detection of coronary allograft vasculopathy at 3 years.

AMCS = acute mechanical circulatory support, BMI = body mass index, CAD = coronary artery disease, CAV = coronary allograft vasculopathy, CMV = cytomegalovirus, DMCS = durable mechanical circulatory support, eGFR = estimated Glomerular Filtration Rate, HDL = high-density lipoprotein, HTx = heart transplantation, LDL = low density lipoprotein, MCS = mechanical circulatory support, PRA = panel reactive antibodies, SD = standard deviation.

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FIGURE 2. Recipient 1-year characteristics based on ≥1 coronary allograft vasculopathy at 3 years.

ACEi = angiotensin-converting enzyme inhibitor, ARB = angiotensin II receptor blockers, CCB = calcium channel blocker, CyA = cyclosporine, eGFR = estimated Glomerular Filtration Rate, HDL = high-density lipoprotein, DL = low-density lipoprotein, MMP = mycophenolate mofetil.

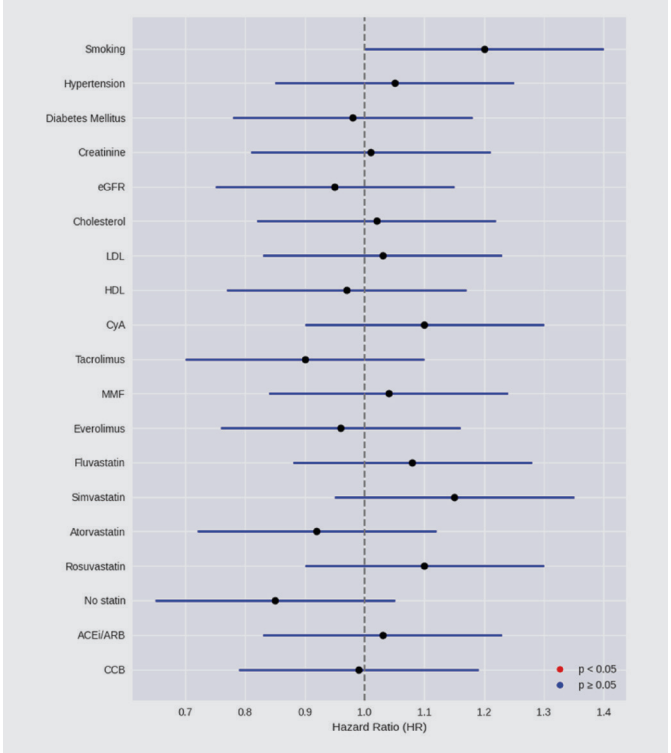

FIGURE 3. Recipient 3-year characteristics based on ≥1 coronary allograft vasculopathy at 3 years.

ACEi = angiotensin-converting enzyme inhibitor, ARB = angiotensin II receptor blockers, CCB = calcium channel blocker, CyA = cyclosporine, eGFR = estimated Glomerular Filtration Rate, HDL = high-density lipoprotein, LDL = low-density lipoprotein, MMP = mycophenolate mofetil.

p = 0.002) (**Figure 1**). No other baseline characteristics or recipient cardiovascular risk factors at 1 and 3 years were significantly different between groups (**Figures 2** and **3**).

Conclusion: Recipient CAD history and donor age >45 years were significantly associated with CAV development at 3 years after HTx. These results are consistent with prior studies and underscore the importance of donor-recipient risk profiling to improve prediction of post-HTx outcomes and may warrant more intensive prevention measures.

LITERATURE

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