Coronary artery disease in transcatheter aortic valve implantation: bystander or protagonist

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Background: Systematic screening for coronary artery disease (CAD) and routine percutaneous coronary intervention (PCI) of significant lesions before for transcatheter aortic valve implantation (TAVI) have been reconsidered recently because of no evidence of benefit.[1,2] We wanted to investigate important clinical factors that could predict the importance of coronary artery disease in patients scheduled for TAVI.

Patients and Methods: We retrospectively analyzed all patients with confirmed CAD who underwent TAVI in our center from April 2012 to May 2023. Data on CAD diagnosis and management were compared between patients with different CAD treatment strategies, in regard to complications and composite event rate of death and myocardial infarction during follow-up.

Results: Among 349 patients (median age 80 years, 52% males, median AVA 0.7 cm^2), 124 (36%) had confirmed CAD. Routine invasive coronary angiography during TAVI work-up was performed in 328 (94%) of patients. Patients with CAD had median age of 79, with 88/124 (71%) of males. History of PCI or CABG was noted in 61 (49%) and 46 (37%) of patients, respectively. Significant CAD deserving clinical attention was found in 80 (65%) patients, out of which 48 (60%) patients underwent PCI before TAVI. There were no differences in TAVI complications in regard to CAD management. Composite event rate of death and myocardial infarction during follow-up did not differ significantly between patients treated conservatively (28%) and patients who received PCI (21%) (OR 1.58, 95% CI 0.66-3.64). Significant univariate predictors of composite endpoints were male gender, peripheral artery disease (PAD), history of CABG, and reduced LVEF below 50%. Only PAD remained significant in a multivariate Cox regression analysis (OR 3.02, 95% CI 1.16-7.84).

Conclusion: Routine PCI before TAVI did not impact clinical outcomes, so CAD could be considered bystander disease in most TAVI candidates. However, our data showed that CAD with history of CABG, reduced EF, and PAD, probably deserves a more scrutinized approach for better long-term outcomes after TAVI, and therefore it should not be considered as bystander in TAVI patients with any of these characteristics.

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LITERATURE

1. Amat-Santos IJ, Blasco-Turrión S, Ferrero V, Ribichini FL. PCI of bystander coronary artery lesions should be performed before TAVI: pros and cons. EuroIntervention. 2022 Nov 18;18(10):783-785. https://doi.org/10.4244/EIJ-E-22-00038
2. Weferling M, Hamm CW, Kim WK. Percutaneous Coronary Intervention in Transcatheter Aortic Valve Implantation Patients: Overview and Practical Management. Front Cardiovasc Med. 2021 May 4;8:653768. https://doi.org/10.3389/fcvm.2021.653768