

Total revascularization in acute coronary syndrome patients with multivessel disease and major adverse events during long-term follow-up

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Introduction: Multivessel disease is often found during coronary angiography and percutaneous coronary intervention (PCI) in acute coronary syndromes (ACS). Routine revascularization in angiographically significant by-stander coronary lesions is considered to be a standard after culprit lesion PCI and has been linked with better outcomes.¹ We wanted to investigate differences in outcomes after total and non-total revascularization among different subsets of patients (ST elevation myocardial infarction [STEMI] vs non-ST-elevation myocardial infarction [NSTEMI]).

Patients and Methods: Among 1081 patients (72% males, 58% with STEMI, 22% with diabetes) who received PCI in ACS, and were discharged in stable condition between 2018 and 2020, we analyzed data on coronary artery disease burden, the completeness of revascularization and outcomes (death and MACE as composite of cardiac death, myocardial infarction, any unplanned revascularization, stroke, symptomatic heart failure and clinically relevant bleeding) during a mean follow-up of 44 months.

Results: Patients with STEMI had significantly lower proportion (17% vs 30%) of multivessel disease/left main disease (MVD/LM) and significantly lower mean Syntax scores (11 vs 14) in comparison to NSTEMI patients. Total revascularization (ad hoc or staged) was achieved more often in STEMI than in NSTEMI (77% vs 65%). Among STEMI patients, there were no differences in death or MACE in regard to completeness of revascularization. However, NSTEMI patients who received total revascularization had significantly higher overall survival rate during follow-up (97% vs 90%, p=0.006) in comparison to patients without total revascularization. There were no differences in occurrence of MACE among NSTEMI patients during follow-up in regard to the completeness of revascularization.

Conclusion: Complete revascularization did not show to influence outcomes in STEMI, where multivessel disease was less present. However, in NSTEMI patients with more frequent multivessel disease, complete revascularization was linked with longer overall survival after ACS.

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LITERATURE

1. Vriesendorp PA, Wilschut JM, Diletti R, Daemen J, Kardys I, Zijlstra F, et al. Immediate versus staged revascularisation of non-culprit arteries in patients with acute coronary syndrome: a systematic review and meta-analysis. *Neth Heart J.* 2022 Oct;30(10):449-456. <https://doi.org/10.1007/s12471-022-01687-7>