Predictors of recurrent acute myocardial infarction following successful percutaneous coronary intervention

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Introduction: A subset of patients experiencing acute coronary syndrome (ACS) and undergoing successful percutaneous coronary intervention (PCI) subsequently require another revascularisation[1]. This study aimed to identify factors associated with recurrent myocardial infarction in patients who experienced acute coronary syndrome (ACS) and underwent successful percutaneous coronary intervention (PCI).

Patients and Methods: We conducted a retrospective cohort study of patients treated for ACS at our institution from January 1, 2017, to February 1, 2024. Participants were divided into two groups: those without further ACS events and those requiring additional revascularization (either PCI or surgical) during follow-up. Data were extracted from electronic health records and analyzed for comorbidities, baseline characteristics, medication regimens, and procedural details. Statistical significance was assessed using the Mann-Whitney U test and Chi-square test, with odds ratios calculated for significant differences.

Results: The study included 2,574 patients (1,789 men). Among those requiring multiple revascularizations, there were significantly more men (74.69% vs. 67.76%, p = 0.0005) and higher incidences of peripheral artery disease (18.8% vs. 13.4%, p = 0.001), smoking (28.1% vs. 19.8%, p < 0.0001) and heart failure (33.9% vs. 23.3%, p < 0.0001). This group had a greater prevalence of dual antiplatelet therapy with clopidogrel (27% vs. 21.7%, p = 0.0005), lower therapy adherence, worse renal function, and lower rates of complete revascularization (64.9% vs. 73.4%, p = 0.001), higher LDL cholesterol level and SYNTAX scores. Multivessel disease (OR 2.69 (2.18 - 3.32), p = 0.001) increased the likelihood of revascularization during follow-up.

Conclusion: These findings should be interpreted with caution due to the study's retrospective, single-centre design also, correlation does not imply correlation. Identified risk factors for recurrent revascularization include male gender, smoking, poor medication adherence, inadequate lipid management, extensive coronary disease, incomplete revascularization, and cardiogenic shock. Further research should investigate whether improved adherence and risk factor management can reduce the incidence of recurrent revascularization

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LITERATURE

1. Lee SH, Jeong MH, Ahn JH, Hyun DY, Cho KH, Kim MC, et al; KAMIR (Korea Acute Myocardial Infarction Registry)-NIH Investigators. Predictors of recurrent acute myocardial infarction despite successful percutaneous coronary intervention. Korean J Intern Med. 2022 Jul;37(4):777-785. https://doi.org/10.3904/kjim.2021.427