Abstract: **424**

Recurrence of angina after ST-elevation myocardial infarction: role of microvascular obstruction

Authors:
V Vetrugno[1], RA Montone[1], MG Del Buono[1], M Russo[1], G Santacroce[1], F Fracassi[1], F Vergni[1], M Camilli[1], MC Meucci[1], F Gurgoglione[1], G Niccoli[1], F Crea[1], [1]Polyclinic Agostino Gemelli, Department of Cardiovascular and Thoracic Sciences, Catholic University of the Sacred Heart, Rome, I - Rome - Italy,

Topic(s):
Acute Myocardial Ischemia

Citation:

Funding Acknowledgements:
None

Background
Recurrence or persistence of angina after percutaneous coronary intervention (PCI) is common in clinical practice, affecting 20-35% of patients with stable coronary artery disease. No data are available in the setting of ST-segment elevation myocardial infarction (STEMI). Microvascular obstruction (MVO) affects a sizeable proportion of patients after primary PCI with negative impact on short and long-term prognosis.
Purpose
To evaluate the relation between MVO incidence and recurrence of angina at 1-year follow-up in STEMI patients after primary PCI.
Methods
Patients with a diagnosis of STEMI undergoing primary PCI at the Catholic University teaching Hospital were included. Cardiovascular risk factors, clinical history as well as therapy on admission and laboratory data were collected for all patients. MVO was defined as follows: TIMI flow <3 or TIMI flow 3 with myocardial blush grade <2. At 1-year follow-up angina was evaluated by Seattle Angina Questionnaire Summary Score (SAQSS). Major cardiovascular events and therapy were also reported.
Results
We enrolled 200 patients (66.5 ± 11.3 years, male sex 75.5%). MVO was detected in 52 patients (26.1%); ejection fraction (EF) at discharge was 55 (47-60)%. Follow-up [median time 739 (502-981) days] was performed in all patients. Peak troponin I was higher and EF at discharge was lower in patients who experienced MVO as compared to those with a good reperfusion [159.8 (60-309.6) ng/mL vs 65.5 (32-167.4) ng/mL, p=0.001 and 49.5 (42.5-57.2)% vs 56 (49-61)%, p=0.01 respectively]. Cardiovascular deaths were more frequent in patients with MVO (17.3 vs 5.4, p=0.017) as well as the use of more than 1 anti-anginal drug (44.7% vs 13.6%, p<0.001) at follow-up. SAQSS demonstrated higher physical limitation and frequency of angina and a worse quality of life in patients with MVO. In particular, linear regression analysis showed that previous ACS [ß=-0.147, CI (-10.387; -0.296), p=0.038], calcium channel blockers on admission therapy [ß=-0.153, CI (-12.472; -0.446), p=0.036] and MVO [ß=-0.189, CI (-11.485; -1.324), p=0.014] were predictors of a worse SAQSS. At multiple linear regression analysis previous ACS [ß=-0.204, CI (-17.471;-2.291), p=0.011] and MVO [ß=-0.186, CI (-11.656; -1.008), p=0.020] were independent predictors of a worse SAQSS (R Square=0.089, p=0.001).
Conclusion
MVO is frequent in STEMI patients undergoing primary PCI and is associated with a worse clinical outcome. Moreover, our study for the first time demonstrated that the occurrence of MVO is associated with a worse angina status (in terms of physical limitation, frequency and quality of life) at 1-year follow-up, thus helping physicians to stratify patients requiring a more aggressive anti-anginal therapy.