Exercise–Induced St Elevation and Polymorphic Ventricular Tachycardia in a Patient with Variant Angina

Tong Hyuk PARK1, YG K01
Severance Hospital, Korea

Unlike classical stable angina, Prinzmetal’s angina occurs at rest and does not get provoked by exercise. We discuss a case of exercise-induced vasospasm without presence of significant coronary artery stenosis. A 62-year-old male presented with chest pain, which mainly occurs in the morning, but also during physical effort at daytime. Coronary angiography revealed no significant coronary stenosis, but the acetylcholine provocation test showed a severe spasm at the proximal left descending (LAD). The patient was then treated with nitrates and a calcium channel blocker. However, the patient’s symptom persisted. Therefore, the patient was reevaluated with a treadmill exercise electrocardiogram, which showed ST elevation and non-sustained polymorphic ventricular tachycardia. A repeated coronary angiography, however, demonstrated no significant change from the previous angiography taken 3 months earlier, but an eccentric plaque without significant stenosis at the proximal LAD. Because of symptom persistence and polymorphic ventricular arrhythmia during exercise, we decided to treat the spastic lesion with coronary stenting at proximal LAD. After coronary stenting, the patient remained free of chest pain. Our case demonstrated that coronary spasm can be induced by exercise at a location with mild to moderate focal atherosclerotic plaque due to unknown pathomechanisms and that coronary stenting may be an effective treatment in such a case.

Risk Factors of Long-Term Mortality after Acute Myocardial Infarction

Valentin Alexandrovich KOKORIN1, Ivan Gennadiевич GORDEEV1, Ilya Alexandrovich KOKORIN1
Russian National Research Medical University, Russia

Background: Complications of myocardial infarction may develop many months after MI occurred. Currently applied risk scales (GRACE, TIMI) have a number of shortcomings and not effective enough in prediction of such complications.

Methods: 457 patients (mean age 59.7±0.5 y.o.) with STEMI survived at the moment of discharge were enrolled. During 28.8±0.8 months follow-up period 37 lethal cases (8.1%) occurred. 72 characteristics (demographic, anamnestic, clinical, laboratory, instrumental, treatment) was examined.

Results: Risk factors of all-cause mortality was: age ≥ 60 y.o. (RR 2,94 (1.5-5.76), 95% CI), BMI ≥ 25 kg/m2 (RR 2,14 (1.13-4.06), 95% CI), history of previous MI (RR 2,27 (1.31-5.76), 95% CI), cerebrovascular disease (RR 2,55 (1.31-4.93), 95% CI), anemia (RR 5,09 (2,59-10,01), 95% CI), anterior localization (RR 2,23 (1,18-4,23), 95% CI), obstruction ≥ 60 hours after clinical presentation (RR 2,18 (1,19-3,99), 95% CI), HR at admission ≥ 90 bpm (RR 2,62 (1,44-4,77), 95% CI), systolic BP at admission outside 120-140 mm Hg limits (RR 1,66 (0,89-3,15), 95% CI), acute heart failure during hospitalization (RR 3,03 (1,68-5,49), 95% CI), GFR < 45 mL/min/1.73m2 (RR 3,38 (1,82-6,24), 95% CI), WBC count > 15x109/l (RR 2,17 (1,13-4,18), 95% CI), BNP at admission ≥ 60 pg/ml (RR 5,08 (0,67-38,76), 95% CI), LV EF at admission ≥ 40% (RR 2,08 (1,12-3,85), 95% CI), LV EDV < 140 ml (RR 2,06 (1,06-4,0), 95% CI), presence of LV aneurysm (RR 1,95 (1.07-3.58), 95% CI), overage HR by 24-hours monitoring ≥70 bpm (RR 3,18 (1,14-8,87), 95% CI), ventricular extrasystoles ≥ 50 per day (RR 3,18 (1,14-8,87), 95% CI). The factors decreasing mortality were: primary PCI (RR 0,49 (0,25-0,96), 95% CI), reperfusion achievement (RR 0,4 (0,21-0,75), 95% CI), beta-blockers intake during hospitalization (RR 0,27 (1,03-0,56), 95% CI) and statins in-hospital administration (RR 0,24 (0,14-0,44), 95% CI).

Conclusions: According to the results new model predicting lethal outcomes can be elaborated.

Associations Between Levels of Syntax Score and Hospital Complications in Patients with ST-Segment Elevation Myocardial Infarction

Irina URVANTSEVA1, Konstantin NIKOLAEV1, Mikhail VOEOVDA4, Alevtina NIKOLAEVA4
Department of Internal Medicine, Novosibirsk State University, Russia1, Department of Cardiology, Surgut State University, Russia2, Department Fundamental Medicine, Novosibirsk State University, Russia3, Department of Urgent Medical Care, Institute of Internal Medicine and Preventive Medicine, Russia4

Background: SYNTAX score (SS) is an effective angiographic predictor of clinical outcomes in patients with multivessel coronary artery disease undergoing percutaneous coronary intervention, but the associations between high SS and short-term outcome in patients treated with primary percutaneous coronary intervention (PCI) for acute ST-segment elevation myocardial infarction (STEMI) have not been studied. The aim of this study was to evaluate associations of the severity of coronary artery disease according to SYNTAX score with short-term outcome and clinical characteristics in patients treated with PCI for acute STEMI.

Methods: A total of 330 patients (274 male, 56 female, mean age 53.6±8.9 years) with acute STEMI who underwent primary PCI were stratified into the 3 groups. For SS the following distribution was used: low (≤22, N = 216), medium (23–32, N = 66), high score (>32, N = 48). All in-hospital clinical outcomes were estimated in these patients.

Results: During the short-term observation in hospital cardiovascular mortality was higher in groups of high and medium SS in compared with group of low SS (18.8%, 12.1% and 1.4%, respectively, p<0.01). Besides that the no-reflow phenomenon, stent thrombosis, pulmonary edema, pleural effusion, acute left ventricular aneurysm, recurrent myocardial infarction and bleeding were significantly more frequent among the patients in high SS group (p<0.05). Multivariate binary logistic regression analyses demonstrated that SS is an independent determinant for pleural effusion (95% confidence interval (CI), 1.019-1.082, p=0.002), no-reflow phenomenon (95% CI, 1.008-1.089, p=0.018), pulmonary edema (95% CI, 1.027-1.090, p<0.001) and acute left ventricular aneurysm (95% CI, 1.015-1.092, p=0.006).

Conclusions: The SS is useful index to predict the risk of short-term adverse clinical events during hospitalization in patients with acute STEMI undergoing PCI.