0060

Is “residual” SYNTAX score associated with myocardial ischemia assessed by gSPECT at 6 months after acute coronary infarction?

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Background: The SYNTAX score was developed to characterize the degree and the complexity of coronary anatomy. Since then, many studies have demonstrated the prognostic value of the SYNTAX score and the “residual” SYNTAX score (SYNTAX score after PCI) in patients who suffered an acute coronary syndrome.

Aims: The relationship between the “residual” SYNTAX score and myocardial ischemia assessed by gSPECT at 6 months after acute coronary syndrome has not yet been established.

Methods: 245 consecutive patients admitted for acute myocardial infarction between January 2009 and December 2010 who underwent percutaneous coronary intervention were prospectively included. The SYNTAX score and “residual” SYNTAX score were assessed before and after PCI, respectively. Six months after discharge, a post-stress/rest 99mTc-sestamibi gated-SPECT was performed.

Results: Patients were divided into two groups according to “residual” SYNTAX score tertiles: 81 patients > 4 (highest tertile) vs. 164 patients ≤ 4 (lowest and mean tertiles). On perfusion data there were significant differences for significant ischemia (SDS>1) (48% vs. 35%, p = 0.043) and post-stress LVEF < 45% (OR: 3.49, 95% CI: 1.06-11.51; p=0.04) and post-stress LVEF < 45% (OR: 3.49, 95% CI: 1.06-11.51; p = 0.003). At 1-year follow-up, the first group had experienced significantly more MACE (12% vs. 2%, p = 0.004). By Cox model regression, only age (OR: 1.05, 95% CI: 1.003-1.09, p=0.038), RSS >4 (OR: 3.49, 95% CI: 1.06-11.51; p=0.04) and post-stress LVEF < 45% (OR: 3.59, 95% CI: 1.23-10.45, p=0.019) were independent predictors of MACE.

Conclusions: Six months after acute myocardial infarction, a “residual” SYNTAX score > 4 was associated with myocardial ischemia and post-stress LVEF < 45%. Moreover, the “residual” SYNTAX score was found to be an independent predictor of MACE at one-year follow-up, as were post-stress LVEF and age.

0199

Acute coronary syndrome with ST elevation in patients younger than 35 years–aetiologies, baseline characteristics and in-hospital clinical outcome

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Purpose: Coronary atherosclerosis begins early in life, but acute coronary syndromes in adults aged <35 years are rare. We aimed to investigate the rate of occurrence, clinical and angiographic characteristics, and in-hospital clinical outcome of STEMI in young patients who were referred to our cardiology department.

Methods: From 2003 to 2013, data of all patients with STEMI aged <35 years were retrospectively retrieved from our database. Baseline, procedural characteristics, and clinical outcome were analyzed. In 2013 we prospectively analyzed the causal lesion with a systematic coronary angiogram and a comparison between patients in whom an underlying athero-typical aetiology was found (non-ATS group; ATS: atherosclerosis) and patients in whom no such aetiology was detected (ATS group).

Results: A total of 98 young patients with STEMI aged <35 years were admitted during the study period. They accounted for 1.94% of all STEMI admitted. Mean patient age was 28.7±4.7 years and 93 patients (95%) were men. Current smoking (77%) and dyslipidaemia (43%) were the most frequent risk factors. Typical chest pain (n = 90; 92%) and inferior ST-segment elevation myocardial infarction (n=57; 68%) were most often found. Cannabis intoxication was the most frequently encountered athero-typical aetiology (n=11; 11.2%). In 2013 the ATS group consisted of 4 patients (57%) and the non-ATS group of 3 patients (43%). In-hospital clinical outcome, mortality and complications rate were 2% and 5.1%, respectively.

Conclusions: STEMI in young patients is an uncommon condition with a variety of possible aetiologies and distinct risk factors. In-hospital outcome is satisfactory.

0277

Risk assessment for the management of STEMI: which score fits best for the Tunisian context?

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Background: Risk assessment after ACS is essential. Risk scores have been mainly used in Non-STEMI patients; nevertheless, patients with STEMI should also be screened according to their risk. Scores have been validated in European and American populations but have not been tested in African populations.

Purpose: To compare the short term prognosis according to the GRACE and TIMI scores for STEMI.

Methods: GRACE and TIMI scores for STEMI were calculated for patients who were admitted for STEMI between January 2000 and June 2012. All variables included in each score were tested by univariate analysis then included in multivariate model. ROC curve was assessed for each score.

Results: 1162 patients were included in our analysis. 132 deaths occurred during the study period. All variables included in both scores were tested by univariate analysis and were significantly correlated to intra-hospital mortality except time delay to reperfusion >4 hours (p=0.38). By multivariate analysis, the model provided 88.6% power to predict mortality and explained 35.1% of the outcome. Mean GRACE and TIMI scores were significantly higher in the mortality Group (respectively: 198 vs 149 and 7.46 vs 5.88; p<0.001), ROC curve was then drawn for each score; GRACE score provided a better accuracy in predicting the outcomes (AUC: 0.862, CI 95% [0.788-0.863]) than TIMI score (AUC: 0.715, CI 95% [0.668, 0.762]).

Conclusion: In the North African context, GRACE score seems to be more powerful in predicting intra-hospital mortality after STEMI and therefore it should be calculated in every patient.

0293

Predictors of major cardiovascular events during unprotected left main PCI

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Introduction: PCI has become increasingly practiced in left main stenosis (LMS). The purpose of this study was to determine predictors of mid term major cardiovascular events in 110 cases of unprotected left main PCI.

Methods: Clinical and angiographic data were collected retrospectively for all patients with LMS, admitted to the cardiology center of Sfax between 2002 and 2013 and for which urgent or scheduled percutaneous revascularization was performed. The occurrence of cardiovascular events, or MACCE: death, Ml, heart failure, angina or stroke recurrence was assessed at 12 months.

Results: During the study period, 110 patients underwent an unprotected LM PCI. These patients were predominantly male (72.7%). The death rate intra – hospital was 4.5% and 12 months mortality was 3.6%; 31 patients (28.2%) had nonfatal events during follow up. The clinical presentation at admission and diabetes were MACCE predictors at 12 months (p=0.04 and 0.05 successively). The distal LM location with bifurcation involvement, the multivessel disease associated and a high Syntax score> 32 are predictors of the occurrence of MACCE in the medium term (p=0,03; p=0001; and p=0001 respectively). The type and length of the stent used in the LMS are also
predictors of the occurrence of MACCE (49.1% for BMS versus 9.8% for DES, p<0.001).

Conclusion: The unprotected LM PCI became promising thanks to development of angioplasty techniques and equipment especially intracoronary imaging.

0334

Coronary artery calcium score as a predictor of myocardial ischemia in asymptomatic diabetic patients

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Background and aims: High coronary artery calcium (CAC) scores were shown to predict a higher likelihood of inducible myocardial ischemia and to be associated with a poor cardiovascular prognosis. However the predictive value for coronary stenoses (CS) has not been tested in asymptomatic diabetic patients. This study aimed to evaluate the predictive value of a high CAC score for silent myocardial ischemia (SMI) and CS in high risk asymptomatic diabetic patients.

Materials and methods: CAC score was measured by computed tomography in 150 diabetic patients without cardiac history or symptom, with a normal resting ECG and ≥1 additional risk factors. SMI was assessed using stress myocardial scintigraphy and/or stress echocardiography, and CS using coronary angiography in those with an abnormal SMI test.

Results: CAC score was ≥100 Agatston units in 35.3% of the patients. SMI was detected in 27 patients (18.0%). A coronary angiography was performed in 17 of SMI patients and detected significant CS in 6 of them. CAC score was associated with coronary status (no SMI: median value 14 (range 0-2900); SMI without CS: 101 (23-3230) and SMI with CS: 800 (76-2978); p<0.01), and similarly for a CAC score ≥100 (in 37/123 patients without SMI (30.2%), 6/11 with SMI and no CS (54.5%) and 5/6 patients with SMI and CS (83.3%) (p<0.05). A CAC score ≥100 predicted the presence of SMI 30.2% of patients had SMI vs 11.3% of those with CAC <100 (odds ratio 3.4 [1.4-8.0], p=0.01), with a sensitivity and specificity of 59% and 70%, and positive and negative predictive values of 30 and 87%, respectively.

Conclusion: These data suggest that in asymptomatic high risk diabetic patients CAC score is associated with cardiac ischemic status, with a 3.4-fold increased risk of SMI when the score is ≥100. The negative predictive value of CAC score for SMI is an interesting finding. The predictive value for CS remains to be determined in a larger sample of patients with CS.

0341

Predictor of left ventricular remodeling after acute myocardial infarction: a study of end-systolic wall stress

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Objectives: investigate whether the end-systolic wall stress is a predictor of left ventricular remodeling (LVR) in the aftermath of an acute myocardial infarction after successful reperfusion.

Background: LVR is a poor prognosis outcome associated with a greater number of major adverse cardiovascular events. It remains difficult to predict which patients will remodel.

Methods: 169 STEMI patients were prospectively included in a CMR study. We calculate, among other parameters, end-systolic wall stress (WS) by three-dimensional MRI method with an home-made software. CMR was performed at day 5±2 and repeated at 3 months follow-up. LVR was defined as a LV end-diastolic volume indexed (LVEDVi) >120ml/m² at 3 months.

Results: 13 patients presented LVR, including 11 due to anterior MI. LVR patients presented worse initial CMR parameters: WS 25.9±6 vs 16.0±4103N•m⁻² (p<0.001), a LVEDVi 117.2±20 vs 84.6±16ml/m² (p<0.001), an infarct size 46.8±20 vs 22.8±15g (p<0.001), a microvascular obstruction size 8.7±1.9 vs 9±3g (p<0.001) and a LV ejection fraction 31.0±8 vs 49.0±9% (p<0.001). The initial global WS emerges as an independent predictor of LVR (OR 1.298 [1.046 to 1.612], p<0.018) as LVEDVi (OR 1.093 [1.013 to 1.180], p<0.022) and the occurrence of heart failure (OR 9.912 [1.094 to 89.842], p<0.041). LVEF as infarct and microvascular obstruction size were not independent predictors. Patients with an initial global WS below 20.88 103N•m⁻² will not develop LVR in 98.5% of cases (sensitivity and specificity of 84.6%).

Conclusion: end-systolic wall stress is an independent predictor of LV remodeling in post-MI. Patients with an initial global WS below 20.88 103N•m⁻² presented lower risk for LVR.