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Predicting early and late mortality in patients presenting for STEMI with CHADS2 score

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Based on age and simple history data of patients, the CHADS2 score provides accurate assessment of the 1 year risk of stroke in the setting of atrial fibrillation. We sought to assess the hypothesis that the CHADS2 score may be as useful in the setting of STEMI, in comparison with more complex validated scores.

Methods: We assessed CHADS2, TIMI and GRACE risk scores, in 697 consecutive patients admitted for STEMI within 24 hours after the onset of the symptom. In-hospital, 30-days, 6-months and 1-year mortality rates were assessed according to the CHADS score (0 to 6). Low, intermediate and high risk patients were identified by different scores: <2, 2-3, >3 for CHADS; <4, 4-6, >6 for TIMI; <126, 126-154, >154 for GRACE respectively.

Results: The cumulative in-hospital, 30-day, 6-month and 1-year mortality rates were 5.3%, 6.3%, 7.8% and 8.8% respectively. CHADS2 score was significantly associated with all mortality rates (p<0.0001) with ORs of 2.2 (95%CI 1.7-2.8), 2.1 (95%CI 1.6-2.7), and 2 (95%CI 1.6-2.6) per score point respectively. The concordance between the scores in predicting 1-year mortality was fair as shown by kappa values of 0.53 and 0.50 for CHADS2 versus the 2 other and 0.53 between GRACE and TIMI scores (Figure).

Conclusions: CHADS2 score is highly correlated to early and late mortality after STEMI. The risk prediction by this simple purely clinical and available at first medical contact score, is concordant with more sophisticated scores.

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Prognostic value of high sensibility C reactive protein after acute coronary syndrome

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Background: Inflammation plays an important role in the initiation and progression of atherosclerosis and in the pathogenesis of acute cardiovascular (CV) events. Recent studies focused on the measurement of high sensitivity C-reactive protein (hsCRP) as predictors of CV events. hsCRP has been reported to have prognostic value immediately after ACS and to be associated with CV risk in patients with stable and unstable angina pectoris.

Objective: High blood glucose on admission provides incremental prognostic value for mortality over GRACE risk score and left ventricular ejection fraction. Data from the RICO survey

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Conclusion: hsCRP is associated with cardiovascular risk factors, but is not an independent predictor of total events in post-ACS patients receiving optimized secondary prevention.

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Admission glycemia in acute myocardial infarction: incremental prognostic value for mortality over GRACE risk score and left ventricular ejection fraction data from the RICO survey

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Objective: High blood glucose (HBG) on admission is a major common metabolic disorder in patients with acute myocardial infarction (MI) and is associated with worse prognosis. However, only few data have examined its predictive performance over established risk score.

Patients and methods: From a French regional survey for acute MI, we analyzed the relationship between HBG, as defined by admission glycemia >11 mmol/L, and 1 year mortality in patients with acute MI. All multivariate Cox models were adjusted for the Global Registry of Acute Coronary Events (GRACE) risk score, which is a validated 9 variables prediction tool, and left ventricular ejection fraction as assessed by echocardiography <3 days after admission. The additional prognostic information of HBG was tested by comparing the –2log likelihood of the Cox models with vs without HBG (χ²).

Results: In the study population (n=3358), both admission glycemia as a continuous variable and HBG were univariately associated with increased mortality (HR(95%CI): 1.06(1.05-1.07) and 2.67(2.17-3.29), respectively). The addition of either admission glycemia as a continuous variable (HR(95%CI): 1.04(1.01-1.06) or of HBG (HR(95%CI): 1.61(1.28-2.03)) significantly improved the risk prediction in the multivariate model (χ²: p<0.001). However, in diabetic patients (n=756), HBG failed to independently predict mortality (HR(95%CI):1.17(0.80-1.71)). In contrast, in non diabetic patients (n=2592), HBG remained an independent predictor of death (HR(95%CI): 1.93(1.39-2.67)) and added incremental prognostic value in the model over the GRACE risk score and LVEF (χ²: p<0.001).

Conclusion: High blood glucose on admission provides incremental prognostic information over established risk score and LVEF, in particular in non diabetic patients. Admission glycemia is not an independent predictive marker in diabetic patients.