Demographic data of acute coronary syndrome Egyptian patients. Validation of TIMI and GRACE scores

Background: Demographic data and comparative performance of both TIMI (Thrombolysis in myocardial infarction) and GRACE (global registry in acute coronary events) scores in our acute coronary syndrome (ACS) patients are lacking.

Aims: This study aimed to report the demographics of ACS patients admitted to our hospital, and to validate both TIMI and GRACE scores in the prediction of both in-hospital MACE and 30-days mortality and recurrent MI in both ST-elevation myocardial infarction (STEMI) and unstable angina/non-ST-elevation myocardial infarction (UA/NSTEMI) patients.

Methods: This was a prospective cross-sectional observational study. Demographics data, TIMI and GRACE scores were collected from all patients admitted to our coronary care unit in Egypt over one year from 1st of April 2011. The study was conducted on 795 patients; 270 patients (34%) with STEMI 525 patients (66%) with UA/NSTEMI. Patients were followed by phone for 30 days after discharge.

Results: Both STEMI and UA/NSTEMI groups had comparable mean age 57.8 ± 10.7 Vs 56.9 ± 11.5 years respectively. STEMI had higher rate of male gender (75% vs 64%), smoking (51% vs 38%), and familial predisposition (16% vs 7%). UA/NSTEMI had a higher rate of history of previous ischemia (70% vs 24%), hypertension (59% vs 33%), diabetes (45% vs 34%), pervious coronary angiography (31% vs 9%), and previous coronary artery bypass grafting (3% vs 0). STEMI was associated with a higher in-hospital MACE (23.3% vs 13.7%), and a higher 30 days all cause mortality rate (9% vs 2%) and recurrent non-fatal MI (35% vs 15%). Both scores were valid in our patient population and successfully predicted in hospital MACE, 30-days events with a good discriminative ability (c-statistics 0.72-0.97) in both groups. GRACE score had a better discriminative ability than TIMI score in all these occasions except in STEMT patients where both scores performed comparably in predicting 30-days mortality and recurrent non-fatal MI.

Conclusions: ACS occur in a relatively young age in our locality, sharing the common known risk factors of CAD. STEMI patients, in our locality, represent about one third of ACS patients and are associated with worse in-hospital as well as 30-days outcomes. Both TIMI and GRACE risk scores are valid for use in ACS patients, with a better discriminative ability of GRACE score especially in UA/STEMI patients.