MEHRAN models provide two risk scores that predict the likelihood of major bleeding in patients hospitalized with ACS.

The aim of this study: was to evaluate the performance of CRUSADE AND MEHRAN risk scores to predict in-hospital major bleeding in a contemporary cohort of patients hospitalized for ACS in Tunisia.

Methods and results: The study subjects were 205 consecutive patients admitted to our center between January 2010 and June 2010 with ACS. For each patient, we calculated both the CRUSADE AND MEHRAN risk score and evaluated its discrimination by the C statistic.

By CRUSADE and MEHRAN risk scores, our patients were classified as high or very high risk of major bleeding in 46.3%, 32.2% of cases, respectively.

The overall incidence of in-hospital bleeding events and major bleeding (TIMI major definition) was 19.5%, 3.9%, respectively. The major bleeding rate increased with the CRUSADE risk category: very low, 0%; low, 0%; moderate, 3.8%; high, 4.0%; and very high, 13.3% (P=0.004). A stepwise increase in rates of major bleeding with increasing MEHRAN score was also noted (0%, 0%, 4.2% vs 9.9%; p<0.01). CRUSADE and MEHRAN risk scores demonstrated a high performance for predicting in-hospital major bleeding (C-statistic=0.86 and 0.83, respectively).

Conclusions: In routine clinical practice, bleeding is a relatively frequent non-cardiac complication of contemporary therapy for ACS. These two scores discriminate major bleeding risk and are both potentially useful in clinical decision-making during ACS.

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Coronary stenting and surgery, a complex situation to manage. Usefulness of endothelial progenitor cells capture

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Background: Dealing with thrombotic risk of stent occlusion and hemorrhagic risk of surgery is not well documented in literature. Endothelial progenitor cells (EPCs), have been demonstrated to achieve a complete and functional reendothelialization of resected coronary stent in 48 hours in animal model. EPCs are captured by antibodies and immobilized on the stent surface of the Genous stent (Orbus Medical).

Method: 11 patients, 7 male, 4 female, 77.4+/–7.37 year old, presented an acute coronary syndrome with severe coronary artery lesions and an urgent surgical indication underwent PTCA with exclusive one or more Genous stent (Orbus Medical). Single unique bolus of 10 mg/kg of clopidogrel associated to 2 mg/kg of aspirin was given at least 6 hours prior PTCA. Surgery was planned to be performed at day 5 following half pool platelet renewal. Informed consent was obtained for all patients.

Results: 1.72+/–0.78 stent was implanted for a total length of 28+/–12 mm and a mean diameter of 3.04+/–0.5 mm. All target selected lesions included left main (n=1), LAD (n=9), CX (n=3), RCA (n=6) were treated with angiographic success. Mean ventricular ejection fraction was 55.0+/–0.5. Surgeries were performed in average at day 5 under aspirin alone (2 mg/kg) with success of the planed surgical act (colectomy, proctectomy, cholestrolomy, mammectomy, gastroctomy, peripheral arterial graft) with no complication. Intravenous nitrate was used for patients presenting incomplete revascularization and distal lesions. Only one patient needed a blood transfusion. At one month no event was observed (death, myocardial infarction, repeat PTCA, cerebral event, stent thrombosis).

Conclusion: Single bolus of clopidogrel for high risk evolutive coronary artery lesions treated with Genous stent allow a surgical act at day 5 under aspirin alone in good condition with no complication in this short series. Those preliminary data can serve as an impetus for multi-center studies.

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Clopidogrel and statins: assessing a potential drug-drug interaction

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Background: Clopidogrel and statins are frequently administered in patients with ischemic heart disease or other atherothrombotic manifestations and are effective in the prevention of cardiovascular disease. Clopidogrel is a pro-drug metabolised in the liver to the active compound which inhibits the P2Y (12) ADP platelet receptor. The aim of this study was to assess the association between the loss-of-function cytochrome P450 2C19 (CYP2C19)*2 variant, the use of statins which are metabolized by the CYP3A4 system and ischemic outcomes (major adverse cardiovascular events [MACE]) in patients treated with clopidogrel.

Methods: Between May 2009, and September 2010, 100 patients who underwent a percutaneous coronary intervention (PCI) and were exposed to clopidogrel treatment for at least one month, were enrolled in our study. They underwent CYP2C19*2 determination. The primary endpoint was a composite of death, myocardial infarction, and urgent coronary revascularisation occurring during exposure to clopidogrel.

Results: 94% of our patients were on statins. Among these patients, 57% were on statins metabolized by CYP3A4 (simvastatin or atorvastatin) and 37% in statin not metabolized by CYP 3A4 (Rosuvastatin, Fluvastatin and Pravastatin). Statins metabolized by CYP3A4 have no effect on the occurrence of MACE under clopidogrel (p=0.18). In the group of patients on statins metabolized by CYP3A4, no statistically significant difference was observed regarding the occurrence of intra hospital MACE according to genetic profile (11.1% in the non mutated group versus 25% in the mutated group).

Conclusion: The results of our study are consistent with those of the literature and have not shown any association between major cardiovascular events and the use of statins metabolized by CYP3A4, this genotype.

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The C93T and G121A polymorphisms of the LPA gene is not associated with susceptibility to acute myocardial infarction

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Background: Acute myocardial infarction (AMI) is the clinical manifestation of the chronic development of coronary artery atheroma, with the final process of plaque rupture and coronary thrombosis. Plasma lipoprotein (a) (Lp(a)) levels are mainly genetically determined. The C93T and G121A polymorphisms are a naturally occurring variant of the LPA gene that may influence Lp(a) concentration. The role of Lp(a) in the pathogenesis of myocardial infarction has not been established.

Methods: A one hundred sixty-eight AMI patients compared to 169 healthy controls.

Results: No association between LPA C93T genotypes and AMI was found. The frequencies of the GG, GA and AA genotypes of LPA G121A polymorphism were not significantly different in AMI patients and in healthy controls (45.2 %, 48.2 %, 6.6 % vs 41.7 %, 49.4 %, 8.9 %, P=0.880). In multivariate logistic regression analysis with covariates including traditional risk factors (diabetes, hypertension, smoking and cholesterol) and, The C93T and G121A polymorphisms, hypertension was independently associated with increased risk of AMI (OR=3.5, P=0.044).

Conclusion: The C93T and G121A polymorphisms of the LPA gene is not associated with susceptibility to acute myocardial infarction