

## Topic 01 – Coronary heart disease

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### 001

#### Predictive Value of Post Treatment Platelet Reactivity for Occurrence of Post-discharge Bleeding After Non ST Elevation Acute Coronary Syndrome

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**Aims:** We assessed prospectively the association between occurrence of post-discharge non-CABG-related TIMI major and minor bleedings and post treatment platelet reactivity in patients with Non ST Elevation Acute Coronary Syndrome (NSTE ACS).

**Methods and Results:** 597 consecutive patients admitted with NSTE ACS were prospectively included. Between hospital discharge and one month follow-up, we observed 16 (2.7%) non-CABG-related TIMI hemorrhagic complications including 5 (0.84%) major and 11 (1.8%) minor bleeds. Patients with bleeding had significantly lower post treatment values of ADP-induced aggregation ( $43 \pm 14\%$  versus  $56 \pm 19\%$ ,  $P=0.002$ ) and platelet reactivity index VASP ( $43 \pm 14\%$  versus  $54 \pm 23\%$ ;  $P=0.04$ ) and a trend for lower values of arachidonic acid-induced aggregation ( $2.4 \pm 5.4$  versus  $13 \pm 21$ ;  $P=0.27$ ). After stratification by quartiles based on post treatment ADP-induced platelet aggregation, we identified patients in the first quartile as hyper-responders with very low post treatment platelet reactivity, below  $<40\%$ . The risk of TIMI major and minor bleeding was significantly higher in the first quartile of hyper-responders than in the others quartiles: 10 (6.6%) versus 6 (1.4%),  $p=0.001$ .

**Conclusion:** Our results suggest that assessment of post treatment platelet reactivity might be used to detect hyper responders to antiplatelet therapy with higher risk of non-CABG related bleedings and tailor antiplatelet therapy according to both ischemic and bleeding risk.

### 002

#### Implementation of the ESC guidelines on the management of AMI in community hospitals

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**Background:** Discrepancies may exist between guidelines and their implementation in daily practice. The aim of this study was to analyze management of acute myocardial infarction (AMI) in three population registries.

**Methods:** In three areas of France, we registered in 2006 all acute coronary syndromes (ACS) aged 35-74 years, without any previous history of coronary heart disease, in the 3 MONICA Registries of Lille, Strasbourg and Toulouse. We obtained data before, during and after hospitalization for all consecutive

cases of ACS in all hospitals covered by the 3 registries. In order to compare with the 2008 ESC guidelines on AMI, we restricted our analysis in patients (pts) with a discharge diagnosis of incident AMI.

**Results:** Among 2018 incident ACS hospitalized in 2006, 1212 (60%) were discharged with a diagnosis of incident AMI (mean age  $57.2 \pm 10.3$ , 79.2% men). The delay between symptom onset and first medical contact was  $<1$  h in 25%,  $<2$  h in 45% and  $<4$  h in 59% of pts. The first medical contact was a physician-manned ambulance for 48% of pts. The delay between symptom onset and hospitalization was  $<1$  h in 8%,  $<2$  h in 26% and  $<4$  h in 53% of pts. Pre-hospital care included pre-hospital fibrinolysis in 10.6%, aspirin in 35.5% and clopidogrel in 15.1% of pts. Among all AMI, 74% were hospitalized in a percutaneous coronary intervention (PCI)-capable hospital and 53% had a primary angioplasty. During the first 24 h of hospitalization, 60.7% had PCI, 5.0% in-hospital fibrinolysis, 89.2% aspirin, 86.2% clopidogrel, 66.0%  $\beta$ -blockers, 60.7% angiotensin-converting enzyme (ACE) inhibitors and 42.2% statins. Among discharged pts, 93.7% had aspirin, 86.3% clopidogrel, 87.0%  $\beta$ -blockers, 75.6% ACE inhibitors and 90.8% had statins. One month mortality was 6.0%.

**Conclusion:** The management of AMI has greatly improved in France. However, the first medical contact often remains a general practitioner and about half of the pts are admitted at hospital more than 4 hours after symptom onset.

### 003

#### Comparison of Visual Scoring and Quantitative Planimetry Methods for Estimation of Global Infarct Size on Delayed Enhanced Cardiac MRI and Validation with Myocardial Enzymes

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**Objective:** Although delayed enhanced CMR has become a reference method for infarct size quantification, there is no ideal method to quantify total infarct size in a routine clinical practice. In a prospective study we compared the performance and post-processing time of a global visual scoring method to standard quantitative planimetry and we compared both methods to the peak values of myocardial biomarkers.

**Material and Methods:** This study had local ethics committee approval; all patients gave written informed consent. 136 patients admitted with reperfused AMI to our intensive care unit had a complete CMR study with Gadolinium-contrast injection 4 $\pm$ 2 days after admission. A global visual score was defined on a 17-segment model and compared with the quantitative planimetric evaluation of hyperenhancement. The peak values of serum troponin I (TnI) and creatine kinase (CK) release were measured in each patient.

**Results:** The mean percentage of hyperenhanced myocardium determined by the quantitative planimetry method was ( $21.3 \pm 14.1$ ) with a range of 0-68.6%. There was an excellent correlation between quantitative planimetry and visual global scoring for the hyperenhancement extent's measurement ( $r=0.91$ ;  $y=1.04x+3.2$ ;  $SEE=1.2$ ;  $P<0.001$ ) The Bland-Altman plot showed a good concordance between the two approaches (mean of the differences =  $-4.04\%$  with a standard deviation of 6.9).

Mean post-processing time for quantitative planimetry was significantly longer than visual scoring post-processing time ( $23.7 \pm 5.7$  minutes VS  $5.0 \pm 1.1$  minutes respectively,  $P<0.001$ ). Correlation between peak CK and quantitative planimetry was  $r=0.71$  ( $P<0.001$ ) and  $r=0.75$  ( $P<0.001$ ) with visual global scoring. Correlation between peak troponin I and quantitative planimetry was  $r=0.69$  ( $P<0.001$ ) and  $r=0.70$  ( $P<0.001$ ) with visual global scoring.

**Conclusion:** A visual approach based on a 17-segment model allows a rapid and accurate assessment of the myocardial global delayed enhancement. This scoring method could be used on a daily practice and useful for the management strategy of post-MI patients.