

## Topic 14 – Myocardial hypoxia, reperfusion, stroke – C

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0014

### Implications of myocardial reperfusion on survival in women versus men with acute myocardial infarction undergoing primary coronary intervention

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**Background:** The in hospital mortality rate after myocardial infarction is higher among women than men. PCI is recommended treatment for ST-segment elevation myocardial infarction (STEMI) in patients of both genders. It is used in women without a clear demonstration of their efficiency in this population. It is only extrapolations of studies enrolling a large majority of males (more than 85%). It is very important to improve our therapeutic strategies in women, to perform dedicated studies.

**Aim:** Of our study was to compare clinical and angiographic features in men and women and to determine whether gender influenced in – hospital prognosis of primary percutaneous coronary intervention.

**Methods:** We conducted a retrospective study including 282 patients admitted in the University hospital of Blida (Alegria). Between April 2009 and January 2011. All these patients had an ST segment elevation myocardial infarction and underwent primary PCI within 12 hours after symptom onset.

**Results:** Our population counted 239 men and 43 women. Females were significantly older ( $p < 0.05$ ). They had a higher prevalence of diabetes 32.6% ( $P < 0.05$ ), hypertension 55.8% ( $P = 0.01$ ), dyslipidemia 16.3% ( $P < 0.05$ ). They were more likely to consult late (Mean time from symptom onset was  $299.7 \pm 93.9$  min in women vs  $296 \pm 97.9$  min in men ( $p < 0.001$ )). In our study, angiographic success was achieved in 76.7% of the cases in women and in 92.1% of the cases in men ( $p = 0.005$ ). The in hospital mortality rate was 7% in women and 5% in men ( $p = \text{NS}$ ).

**Conclusion:** There is no gender discrepancy in – hospital mortality in patients who undergo emergency PCI for treatment of STEMI. These data suggest that gender should not affect the decision to offer PCI but further gender specific studies are warranted.

0455

### Relationship of hyperglycemia to the no-reflow phenomenon in ST-elevation myocardial infarction patients treated by primary percutaneous coronary intervention

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**Background:** It has been shown that elevated blood glucose levels on admission are associated with worse outcome in ST elevation myocardial infarction.

Impaired microvascular function and no-reflow phenomenon seem to be one of the underlying mechanisms of hyperglycemia deleterious effects

**Aim:** To establish the relationship between hyperglycemia on admission and the no-reflow phenomenon

**Methods:** Patients presenting with acute STEMI who underwent primary percutaneous coronary intervention (PCI) were enrolled. ST segment resolution was evaluated at 90 minutes in the worst lead. No-reflow was defined as a resolution of ST segment less than 50% in the worst lead at 90 minutes

**Results:** 102 consecutive patients were enrolled (87 men and 15 women) with a mean age of  $56.95 \pm 12.89$  years. The no-reflow phenomenon was observed in 28 (27.45 %) patients, their glucose level on hospital admission was significantly higher than in patients without no-reflow phenomenon ( $12.48 \pm 7.48$  vs.  $8.55 \pm 2.27$  mmol/L;  $p = 0.01$ ). Multivariate analysis showed that hyperglycemia defined as glycemia  $> 11$  mmol/L was an independent predictor factor for no-reflow (OR = 2.18, CI = 1.42 – 3.84;  $p = 0.002$ )

**Conclusion:** Hyperglycemia on admission is associated with higher risk of no-reflow in STEMI patients undergoing primary PCI.

0457

### Relationship between balloon release pressure and ST resolution in STEMI patients undergoing primary PCI

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**Background:** The optimal balloon release pressure in primary percutaneous coronary intervention is not well established and use of high pressure may jeopardize ST resolution and increase the occurrence of no-reflow.

**Aim:** To investigate the relationship between balloon release pressure and ST resolution in STEMI patients undergoing primary PCI.

**Methods:** Patients undergoing primary PCI for ST elevation myocardial infarction were enrolled and assigned into two groups according to the stent implantation pressure. High pressure group with a pressure  $> 16$  atm. Standard pressure  $< 16$  atm. The balloon pressure release was left to the operators' discretion. No-reflow phenomenon was defined as  $\Sigma$  ST-segment resolution  $< 70\%$

**Results:** 137 patients were enrolled with a mean age of  $56.39 \pm 12.8$  years. The results showed that no-reflow phenomenon occurred more frequently in the high pressure group 49.32% vs 27%;  $p = 0.002$ . Furthermore, the high pressure group showed less ST resolution than the low pressure group with a mean ST-resolution  $60.43 \pm 25.86$  vs  $72.35 \pm 18.13$ ;  $p = 0.001$

**Conclusion:** In primary PCI when stenting the culprit lesion, low pressure release may be better in avoiding the no-reflow phenomenon

0320

### Prevalence of glucose disorders in a cohort of patients hospitalized for ACS in coronary care unit, and security and efficiency of an intravenous insulin protocol adapted on glycemic kinetic

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**Background:** Glycemic variabilities have a negative impact on the morbidity and mortality of acute coronary syndromes (ACS). A strict glucose monitoring is recommended on admission in Coronary Care Unit (CCU). The aims of our study were to assess the prevalence of various glucose disorders (diabetes mellitus, impaired fasting hyperglycemia, glucose intolerance, stress hyperglycemia) among patients hospitalized for ACS, and to assess the efficiency and security of an IV insulin protocol adapted on glycemic kinetic, to decrease the risk of hypoglycemia, and for which the goal was to stabilize glycemia between 1.10 and 1.40 g/l.

**Population and Method:** This retrospective monocenter study concerns all patients admitted for ACS (STEMI and NSTEMI) in Troyes hospital from May 2012 to May 2013. The different glycemic parameters, capillary and venous were collected through analysis of medical reports.

**Results:** 164 patients were included. The mean age was  $65 \pm 13$  years. Among them, 97 (59%) had diabetes mellitus, and 8 (5%) had an intermediate disorder. Stress hyperglycemia was observed in 10 patients (11%) free from glucose abnormalities. Among the patients without history of diabetes mellitus and with hyperglycemia on admission, 53% were authentic diabetics. The IV insulin

protocol was initiated in 36 patients with a average baseline blood glucose  $2.7 \pm 0.7$ g/l. thirty-two were diabetics (31 type 2 and 1 and type 1) and diabete mellitus has been found on the occasion of the SCA in 4 of them with HbA1c  $>6.5\%$ . The average time to reach a glycemia within the target range was  $12.7 \pm 11$ h. Only 3 patients (8%) had moderate hypoglycemia ( $<0.70$ g / l) and there were no severe hypoglycemia.

**Conclusion:** In this study, 59% of patients are diabetics, know or revealed at the opportunity of SCA, higher than the usual literature data. Hyperglycemia at admission reveals glucose disorder in 53% of cases. Our IV insulin protocol is safe and efficient.

## 0063

### Radial vs femoral access after percutaneous coronary intervention for ST-segment elevation myocardial infarction. Thirty-day and one-year mortality results in Algerian cohort

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**Introduction and Objectives:** Little attention has been given to the effect of vascular access site on mortality, while an increasing body of evidence is showing that radial access has much more benefit than femoral access for ST-segment elevation myocardial infarction patients. We aimed to assess the influence of vascular access site on mortality at 30 days and at 1 year in ST-segment elevation myocardial infarction patients.

**Methods:** We included all patients with ST-segment elevation myocardial infarction who had undergone angioplasty at military hospitals of Constantine and Algiers and the hospital of erriadh (ESH erriadh) between 2010 and 2013. We performed 2 multivariate regression models for each endpoint (30-day and 1-year mortality). The only difference between these models was the inclusion or not of the vascular access site (femoral vs radial). We also tested the interaction between hemodynamic instability and vascular access.

**Results:** We included 395 patients with a mean age of 62. Of these patients, 32% had radial access and 7.4% had hemodynamic instability. All-cause mortality was 8.6% (34/395) at 30 days and 13.1% (52/395) at 1 year. Vascular access site follows hemodynamic instability and age in terms of effect on mortality risk, with an odds ratio of 5.20 (95% confidence interval, 2.80-9.66) for 30-day mortality. A similar effect occurs for 1-year mortality.

**Conclusions:** Vascular access site should be taken into account when predicting mortality after a primary percutaneous coronary intervention.

## 0064

### Effect of acute heart failure following discharge in patients with non-ST elevation acute coronary syndrome on the subsequent risk of death or acute myocardial infarction: Algerian experience

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**Introduction and Objectives:** Little is known about how prognosis is influenced by readmission for acute heart failure (AHF) following non-ST-segment elevation acute coronary syndrome (NSTEMACS). The aim of this study was to determine the prognostic effect of a first admission for AHF on the risk of acute myocardial infarction (AMI) or death in patients who survived an episode of high-risk NSTEMACS.

**Methods:** The study involved 342 consecutive patients with high-risk NSTEMACS who survived after hospital admission in military hospital of Algiers and Constantine. Readmission for AHF was selected as the main exposure variable, and its association with subsequent AMI or all-cause death was assessed using Cox proportional hazards models for time-dependent covariates that also included adjustment for competing risks. **Results:** After a median follow-up period of 30 [interquartile range, 12-48] months, 29 patients (8.4%) were admitted for AHF, 51 (15%) had an AMI, and 71 (20.8%) died. The median time to readmission for AHF was 193 [56-336] days after NSTEMACS. Patients readmitted for AHF had an increased risk of subsequent death (hazard ratio [HR]=1.67; 95% confidence interval [CI], 1.13-2.45;

P=.009) or AMI (HR=2.15; 95% CI, 1.41-3.27; P<.001), which was independent of baseline prognostic and time-dependent variables.

**Conclusions:** Readmission for AHF after high-risk NSTEMACS was associated with an increased risk of subsequent death or AMI.

## 0447

### Optimal therapeutic management improves long-term survival in ST-elevation myocardial infarction patients with altered glomerular filtration rate. A propensity score comparison

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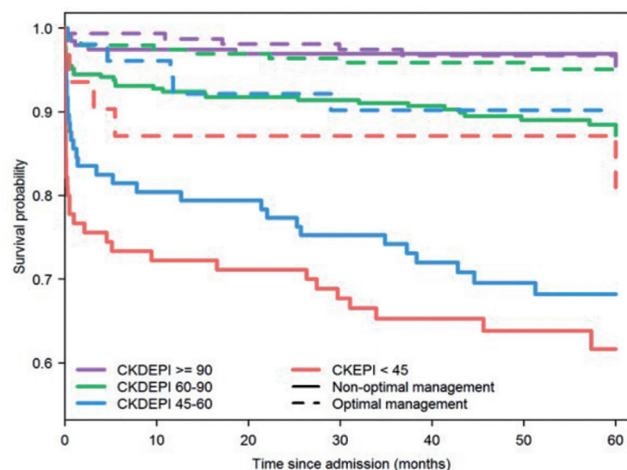
**Introduction:** Decreased glomerular filtration rate (GFR) is associated with an increased risk of cardiovascular events following acute ST elevation myocardial infarction (STEMI). However, patients with chronic kidney disease have more comorbidities and will receive fewer evidence-based therapies

In a prospective STEMI patient cohort we assessed the effect of an optimal therapeutic management (OTM) according to GFR categories on long-term all-cause mortality.

**Methods:** In a single tertiary referral center, 1,199 patients admitted for acute STEMI were enrolled between 2007 and 2011. We classified patients into 4 categories according to estimated GFR,  $<45$ , 45 to 60, 60 to 90, and  $>90$ ml/min/1.73m<sup>2</sup> with the Chronic Kidney Disease Epidemiology Collaboration (CKD EPI) equation. Optimal therapeutic management was defined as a combination of reperfusion within 12 hours of symptom onset, primary percutaneous coronary intervention (PCI), double anti-platelet regimen, angiotensin converting enzyme inhibitors, statins, beta blockers, and anti-aldosterone treatment (if left ventricle ejection fraction  $<40\%$ ) upon discharge. The effect of OTM on survival according to GFR categories was analysed in a multivariate survival model including other risk factors and using a propensity score method. Long-term mortality was the principal endpoint.

**Results:** Patients were followed-up for a median of 4.7 years and 148 (12.3%) patients died. OTM was applied in 431 (39.1%) patients of our cohort and overall, was associated with a significantly lower mortality (HR of 0.43 [95% CI, 0.26-0.70; P<0.001]). There was a significant mortality reduction in the OTM group compared to the non-OTM group that tended to increase with increasing levels of renal dysfunction (HR of 0.28 [95% CI, 0.13-0.61] in the eGFR $<60$ ml/min subgroup; P=0.001) (Figure 1).

**Conclusions:** OTM lowers long-term mortality whatever the eGFR category and with a trend towards increased efficiency with increasing levels of renal dysfunction.



Abstract 0447-Figure