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Entry glucose, diabetes and clinical outcomes in patiente with acute coronary syndromes

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Background: Hyperglycemia in acute coronary syndrome (ACS) impacts short term outcomes, but little is known about longer term. We studied the association between hyperglycemia and short and longer term outcomes in ACS and prognostics of diabetes, body mass index (BMI) and the novel biomarker Cyr61.

Methods: The SPUM-ACS cohort enrolled 2'168 patients between 2009-2012, of which 2'034 underwent PCI and followed up for 12 months. Events were independently adjudicated. Patients were grouped according to history of diabetes (or HbA1c >6%), blood sugar (BSL; <6, 6–11.1 and >11.1 mmol/L) and BMI. The outcome was major adverse cardiac events (MACE; myocardial infarction, stroke and all-cause death). Secondary outcomes included also revascularisations, BARC bleeding and or stroke or TIA.

Results: Patients with BSL ≥ 11.1 mmol/L, had increased C-reactive protein (CRP), white blood cell count (WBC), creatinine kinase (CK), heart rates, N-terminal pro-brain natriuretic peptide and lower left ventricular ejection fraction (LVEF). At 1 and 12 months, those with BSL ≥ 11.1 mmol/L had more MACE and death compared to those with BSL <6.0 mmol/L or 6.0–11.1 mmol/L (HR-ratio 4.78 and 6.6; p<0.001). Cyr61 strongly associated with high BSL and STEMI and was associated with 1 year outcomes (HR 2.22; 95% CI 1.33–3.72; Tertile 3 vs. 1).

Conclusions and relevance: In all comer ACS undergoing PCI, a history of diabetes and elevated entry glucose was associated with inflammation and increased MACE both at short and long-term.

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