Hyperglycemia in the Cath Lab is Related to Background Dysglycemia and Less to Acute Stress

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Background: Increased serum glucose concentration during acute coronary syndromes (ACS) is associated with adverse clinical outcome. This hyperglycemia is usually attributed to acute stress reaction. We examined the determinants of glucose levels in patients with and without ACS, and with and without the metabolic syndrome.

Methods: We recruited 3998 consecutive patients. Arterial blood was obtained from all participants via their arterial access puncture sites as a part of the coronary angiography procedure. To assess which variables affect serum glucose levels, a linear regression model was created. The regression included HbA1c, ACS status, inflammatory biomarkers, metabolic and anthropometric biomarkers.

Results: We found that HbA1c was the most significant variable (beta=0.62,p<0.0001). ACS status had little effect on glucose or HbA1c levels (beta=0.04, p=0.02). The effect of ACS on glucose levels was non-significant in patients without the metabolic syndrome (100±35mg/dl versus 103±35mg/dl, p=0.07) while in patients with the metabolic syndrome it was significant (130mg±60 mg/dl versus 143±65mg/dl, p=0.003) .

Conclusions: Hyperglycemia during angiography should be attributed to chronic background dysglycemia and might single out patients in need of treatment.