

CAN PREOPERATIVE LEVELS OF HbA1c PREDICT POSTOPERATIVE GLYCOMETABOLIC DISTURBANCES IN SURGERY PATIENTS?

M. Jovanovski-Srceva^{1,*}, M. Stevic², M. Temelkovska³

¹*Clinic for Anesthesia, reanimation and intensive care, University Clinic "Mother Theresa", Skopje, Skopje, Macedonia, The Former Yugoslav Republic Of,* ²*Clinical Center Serbia, Paediatric Clinic, Belgrade, Serbia,* ³*University Clinic "Mother Theresa", Skopje, Skopje, Macedonia, The Former Yugoslav Republic Of*

Background & Objectives: Surgical trauma attributes to glycometabolic disturbances in diabetic and non-diabetic patients. Postoperative insulin resistance is a major contributor to prolonged hospital stay and comorbidities. Recent data showed results that preoperative values of HbA1c may have predictive values in terms to the occurrence of postoperative insulin resistance in major surgeries. Aim of this study was to evaluate the levels of insulin resistance, glycaemia and insulin in surgical patient with different preoperative levels of HbA1c.

Materials & Methods: The study included 72 female patients scheduled for mastectomy, aged 30– 60 years, without known diabetes and BMI < 30 m², ASA I,II. HbA1c was preoperatively determined in every patient and according to its levels patients were divided into three groups. Group A(n=30) included patients with levels of HbA1c<5.5%, group B(n=30) included patients with HbA1c 5.5-5.7% and group C (12) where patients with HbA1c from 5.7%>6.1%. all patients underwent standardized anesthesia and surgery protocol. In all groups, glucose and C-peptide levels were determinate preoperatively and postoperatively. From the obtained C-peptide and glucose values, with the help of computer model (HOMA2*), the insulin resistance (IR)was calculated. Occurrence of insulin resistance was registered for any value above 2.5U.

Results: Mean levels of HbA1c in the groups were 5.3% vs 5.8% vs 6.0% in respect to the groups. Differences between the average preoperative values of glycaemia (p=0.02) and C-peptide(p=0.4) were statistically not significant. Postoperative average values for glycaemia (5.5±0.5sd vs 6.2±0.8sd vs 7.7±0.8sd) and C-peptide (2.6±0.9sd vs 5.8±2.5sd vs 8.4±1.8sd) were statistically significant between the groups. Postoperative values of insulin resistance were significantly lower in the group A (2.0 ± 0.6sd) compared to group B (4.4± 1.7sd) and group C (6.9 ± 1.3sd). Postoperative insulin resistance was present in 23.3% of the patients from the group A in 83.3% of the patients in group B and in 100% of the patients in the group C.

Conclusion: Non diabetic Patients, who have lower preoperative levels of HbA1c have less postoperative glycometabolic disturbances, lower glycemic levels and lower incidence of postoperative insulin resistance. If this is confirmed in larger study, HbA1c might become new preoperative marker for glycemic disturbances in surgical patients.

References:

*HOMA 2 model is available on www.OCDem.com.

1. Sato H, Carvalho G, Sato T, Lattermann R et al. The association of preoperative glycemic control, intraoperative insulin sensitivity, and outcomes after cardiac surgery. *J Clin Endocrinol Metab.* 2010 Sep;95(9):4338-44.

Disclosure of Interest: None declared

DOI: 10.1213/01.ane.0000492771.23645.cf