**DYNAMICS OF BIOMARKERS AFTER CORONARY STENT PROCEDURE**

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**Rational:** Although drug-eluting stents (DES) have drastically reduced the incidence of in-stent restenosis (ISR), this remains an important clinical problem. The key pathophysiological players in appearance of ISR are the aggressive neointimal proliferation and neoatherosclerosis.
**Objective:** The aim of this study was to identify pre-interventional markers with the capacity to predict in-stent restenosis (ISR).
**Methods:** 80 patients with significant stenosis proven through angiography underwent percutaneous coronary intervention (PCI). For all patients the following biomarkers were evaluated: creatin kinase isoenzyme MB ( CK-MB), C reactive protein ( CRP), Ischemia-modified albumin (IMA), CD40 ligand, plasma adiponectin (APO), paraoxonase (PON),myeloperoxidase (MPO) and plasma lipoprotein-associated phospholipase A2 (Lp-PLA2)activity. All biomarkers were evaluated before and after PCI, at established time points. Post procedure, biomarkers were measured at 24, 48, 72 hours, and at 1, 3, respectively at 6 months. ISR was evaluated at 6 months after stenting procedure by coronary angiography, and it was defined as > 50% stenosis of the target lesion. Based on the initial CRP value, measured before PCI a cut off value of 3 mg/L was established, and the subjects were divided in 2 groups (Group 1 PCR≤3mg/L, Group 2 PCR>3mg/L). Each group was subdivided, based on type of stent used, bare metal stent (BMS), respectively drug eluting stent (DES).
**Results:**6 month after PCI, the ISR was present in 33.75% cases. As expected, the ISR rate was lower in DES compared to BMS cases, the difference being significant just for Group 1 ($p<0.001$), but not for Group 2, were the initial inflammatory status had higher intensity.
For both groups, regardless of type of stent used, baseline APO plasma concentration, measured before PCI, was lower in ISR patients than those without ISR [3.97 (±1.05) vs 6.65 (±2.95) μg/ml respectively, $p<0.001$]. SimilarAPO plasma concentration pattern was mentioned at 6 month [5.05 (±1.75) vs 7.52 (±3.02) μg/ml respectively, $p<0.005$].ROC curve showed an APO cut-off valueof 4.9 μg/ml, at discharge, being significant in detection of patients susceptible to develop ISR post PCI(odd ratio, 4.27; 95% CI, 1.56-11.72,$P< 0.001$). APO and PON values varied similar during the study. ISR rate was independent from any otherinvestigated inflammation markers baseline values (CK-MB, CRP, IMA, CD40 ligand, MP, Lp-PLA2).
**Conclusions:** The persistence of a low APO plasma level post PCI, at discharge, may be used as a clinically useful marker for ISR prediction in patients undergoing PCI. Further studies, involving higher number of participants are needed for confirming our results.