

DIAGNOSTIC VALUE OF INFLAMMATORY MARKERS, TUMOR NECROSIS FACTOR-ALPHA AND VASCULAR ENDOTHELIAL GROWTH FACTOR AT ATHEROSCLEROSIS

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ABSTRACT

Urgency of problem. The number of patients with ischemic heart disease increases in population, including patients with coronary stents. Progressive grow of these cohort gives a special urgency to a problem, which has both medical and economical significance. One of the reasons of unsatisfactory results of IHD treatment can be chronic subclinical inflammation and oxidizing stress which value is indisputable at an atherosclerosis (Rojtman A.P., 2011; Titov V.N., 2018). Epidemiological and clinical researches have shown, that size of a baseline level of C-reactive protein (CRP) – which is one of the effectors of inflammations, is directly connected to risk of development of a fatal and not fatal acute coronary syndrome, stroke (Shevchenko O.P., 2016), and also a stenosis of coronary arteries (Kragelund C et al., 2016). Cytokines are produced by an act on on almost all cells involved in the pathogenesis of atherosclerosis and participate in all phases of of the process, which starting from early endothelial dysfunction to the late formation and disruption of a vulnerable plaque (Tousoulis D et al, 2016).

The purpose of the research is evaluation of proinflammatory cytokines levels: interleykin-6 (IL-6), tumor necrosis factor alpha (TNF- α), C-reactive protein (CRP) and marker of endothelial proliferation and migration - vascular endothelial growth factor (VEGF) in the blood serum at the patients with an atherosclerosis of various localizations.

Material and methods. Measurements has been provides before treatment and after coronary stent implantation by percutaneous coronary intervention (PCI). IL-6, TNF- α , CRP, VEGF were measured at 30 patients with a peripheral (in iliac-femoral arterial pool) atherosclerosis (PA) and at 95 patients with ischemic heart disease (IHD). CRP was evaluated in mg/l in automatic biochemical analyzer "VITROS-350" (USA). IL-6, TNF- α , VEGF were measured in the blood serum using enzyme-linked immunoassay method on analyzer ST-360, (China) with ELISA kits manufactured by "Vector-Best" (Russia).

Results. IL-6 level and CPR was increased both at PA and IHD patient, IL-6 - in 12,2 and 9,2 times and CRP - in 3,1 and 2,8 times concerning to the control respectively. There was significant difference in FNO-a concentration between PA and IHD patients ($p < 0,05$), it was increased in 1,6 and 2,3 times respectively at PA and IHD patients. VEGF level was increased in PA patients at 2,2 times concerning the IHD patients. This data suggest that ischemia of peripheral muscles in PA patients leads endothelial proliferation and collateral bloodstream, which are more intensive in contrast with IHD patients due to VEGF concentration increasing. This data can be used in therapeutic angiogenesis conception development. TNF- α was increased both after stenting on 39% versus preprocedural level. IL-6 and VEGF concentration decreases after PCI of coronary vessels in 1,5 and 2,2 times versus preprocedural. This data suggest that coronary revascularization by stenting is not accompanied by oxidative stress, inflammation progression and neointimal proliferation. Conclusion. Proinflammatory cytokines IL-6, TNF- α and CRP were increased both at atherosclerosis in iliac-femoral arterial pool and at IHD patients, but more intensively at periphery atherosclerosis. Probably, chronic ischemia of peripheral tissues leads local inflammatory reaction and VEGF expression, that causes VEGF level increasing. Coronary stent implantation by percutaneous coronary intervention is not accompanied by oxidative stress, inflammation progression and neointimal proliferation, that may predicts a good outcomes.

