

LIPOPROTEIN A(a) LEVEL AND HUMORAL AND CELLULAR IMMUNITY INDICATORS IN CORONARY ATHEROSCLEROSIS PROGRESSION IN PATIENTS WITH STABLE CHRONARY DISEASE AFTER STENTING

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Introduction. Atherogenesis is based on a chronic inflammatory process developing in the wall of large and medium arteries against the background of lipid metabolism disorders and endothelial damage. Increased concentration of lipoprotein a(a) [Lp (a)] in blood plasma is an independent risk factor for the occurrence and development of atherosclerotic lesions of various localizations.

Objective. To analyze the relationship of Lp (a) and autoantibodies to Lp (a) and low-density lipoproteins (LDL) with cellular inflammation indices and progression of coronary atherosclerosis in patients with stable coronary artery disease

Methods. The retrospective study included 46 patients with stable coronary artery disease: group 1 - without progression (n=30) and group 2 - with progression (n=16) of atherosclerosis during 22.4 ± 8.7 months of observation according to coronary angiography data. All patients took statins . Lymphocyte subpopulations (Th1 , Th2, Treg , Th17) were typed using direct immunofluorescence and flow cytometry. Biochemical studies included determination of lipid spectrum parameters, Lp (a), autoantibodies (autoAb) to Lp (a) and LDL, as well as their oxidized derivatives.

Results . The level of Lp (a) and the titer of class G autoAbs specific to Lp (a) and LDL were higher in group 2 relative to group 1: Lp (a) - median 16.8 (9.5-35.5) mg/ dL and 6.5 (4.4-15.9) mg/ dL , p=0.07, autoAbs to Lp (a) - 0.23 ± 0.12 p.u. and 0.17 ± 0.09 p.u. , p=0.08 and autoAbs to LDL 0.22 ± 0.07 p.u. and 0.17 ± 0.06 p.u. , p=0.02, respectively. According to the correlation analysis, the absolute content of Th17 (CD4+IL17+) in the blood correlated with the titer of autoAbs to oxidized L p (a), related to IgG ($r=0.253$ p=0.089). Analysis of patients relative to the median of the studied parameters showed that the concentration of L p (a) ≥ 12.3 mg / dL increases the chances of rapid progression of coronary atherosclerosis after stenting by 2 times (OR = 2.2 95% CI 0.6-7.6), as well as the absolute concentration of Th17 in the blood ≥ 11.5 thousand / ml (OR = 2.1, 95% CI 0.6-7.5). The combined increase in these parameters potentiated the risk of rapid progression of coronary atherosclerosis by 4 times (OR = 4.2, 95% CI 0.7-23.9). In the case of patients having both a Lp(a) concentration above 12.3 mg / dL and an elevated titer of autoantibodies to Lp (a) or LDL in the blood plasma, the risk of developing 34 progressive atherosclerosis also increased (OR = 5.3, 95% CI 0.9-32.1 and OR = 6.0, 95% CI 1.0-37.3), respectively.

Conclusion. Our work revealed that Lp (a), T-helper 17 and autoantibodies to Lp (a) and LDL are associated with rapidly progressing coronary artery disease in patients with stable coronary artery disease.

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