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SIGNIFICANT ASPECTS OF ATHEROSCLEROSIS IN CLINICAL GENETICS

N.N. kipshidze, M.B. Khelaia, A.T.Jabauri, K.A,,Nadaraia, N.M.,Shavgulidze,
Department of cardiomyopathy and ishemic heart disease national center of therapy

BACKGROUND/AIM: of the study was to investigate dyslipoproteinemia in neonates, their parents and grandparents to reveal genetic predisposition to lipid exchange disturbances.

METHODS: In the first group, the levels of total cholesterol (TC) in B –lipoproteins and triglycerides concentration were investigated in the blood serum of 660 neonates and their parents for 10 years. In second group, consisting of 450 neonates and their parents, the levels of TC, low-density lipoprotein cholesterol (LDLC), high-density lipoprotein cholesterol (HDLC), and triglycerides were investigated. Enzymatic colorimetric tests were used (CHOD-PAP, HDL-CHC, GPO-PAP).

RESULTS: Examination of 660 neonates and their parents revealed dyslipoproteinemia in 17.5%. Among these, II B-type dyslipoproteinemia was found in 25.9%, hyperlipoproteinemia II B in 45.6%, and hyperlipoproteinemia type IV in 28.5%. It should be noted that all the neonates with hyperlipoproteinemia had a hereditary burden of atherosclerosis. On repeated examinations of the children and their parents, lipid spectrum values almost failed to change and we found a group of children with high probability of developing atherosclerosis.

A second investigation using neonatal umbilical cord blood revealed DLP in 12%. All indices (TC, LDLC, HDLC, TG) were increased in each case. The character of the neonate's DLP coincided with the mother's in 51% and with the father's in 35%. The character of DLP of both parents coincided with the DLP of the neonates in 16.7%.

Among 192 grandparents of the above-mentioned 54 neonates, 128 had disease which could influence indices of neonatal lipid exchange.

DISCUSSION/CONCLUSION: On the basis of our findings, it is possible to make a wide-scale screening examination for children with hereditary predisposition to atherosclerosis with the aim of detecting DLP.

Keyword: Atherosclerosis, Genetic Factors, Hypercholesterinemia