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The prevalence of dyslipidemia in patients with different types of MODY diabetes

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Aim: The purpose of the research was to determine and compare the prevalence of dyslipidemia in patients with different types of maturity onset diabetes of the young (MODY).

Materials & Methods: Diagnosis of MODY was verified in 37 patients on the basis of direct automatic sequencing and sequencing by Sanger genes, mutations in which lead to the development of MODY 1-13 diabetes. This group consisted of 21 patients with GCK-MODY (MODY2), 9 with HNF1A-MODY (MODY3), 1 with HNF1B-MODY (MODY5), 1 with NEUROD1-MODY (MODY6), 2 with CEL-MODY (MODY8), 3 with ABCC8-MODY (MODY12).

Results: The group of patients with MODY diabetes is comprised by 37 people: 23 females (62.2%), 14 (37.8%) males ($p=0.934$). The median age of the patients was 29.1 (0; 70) years, the median age of diagnosis of diabetes mellitus was 25 (0; 45) years, the median duration was 3.2 (0; 35) years. All patients had a normal body mass index. The median level of total cholesterol was 4.9 (3.4; 7.1) mmol/L, LDL- 2.9 (1.6; 4.5) mmol/L, HDL - 1.3 (1.0; 2.4) mmol/L, triglycerides - 1.0 (0.5; 3.1) mmol/L. Elevated LDL was diagnosed in 10 patients (27.0%) and hypertriglyceridemia in 6 patients (18.8%). The HNF1A gene (MODY3) encodes one of the transcription factors that regulates the expression of genes associated with lipid and carbohydrate metabolism. Therefore, it is this type of MODY associated with the dyslipidemia which leads to early macrovascular complications. In this study 4 out of 9 (44.4%) patients with HNF1A-MODY had an elevated level of LDL and 2 (22.2%) hypertriglyceridemia. In patients with GCK-MODY, an increase in LDL was detected in 3 patients (14.3%, $p_{\text{MODY2-MODY3}} = 0.209$), hypertriglyceridemia in 2 (12.5%, $p_{\text{MODY2-MODY3}} = 0.533$).

Conclusions: Dyslipidemia is determined in 27% in young patients with MODY diabetes with a short duration of diabetes mellitus and a lack of obesity which indicates the need for prescribing therapy to prevent macrovascular complications. There were no significant differences in lipid levels in patients with HNF1A-MODY and GCK-MODY in the Siberian region.

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Biography

Alla Ovsyannikova finished Novosibirsk Medical University, Russia in 2008 year with Honors. She had two certificates of specialists in Internal Medicine and Endocrinologist. She is a PhD since 2013 with dissertation work "Diabetes mellitus in young people: Some clinical and molecular genetic aspects". Currently, she is working as an Endocrinologist and Scientist in IIPM-Branch of IC&G SB RAS. Her research work is about monogenic types of diabetes mellitus (especially MODY diabetes) in young patients. She investigates the characteristics of the clinical course, treatment and genetic features in Siberian and Russian population. She has published more than 20 abstracts in national refereed journals, 30 abstracts in conference with international participation. She has participated in international conferences.

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