



**INTERNATIONAL STUDENT
CONFERENCE ON PEDIATRICS 2024**

ABSTRACT BOOK



**Vilnius
University**

**VILNIUS UNIVERSITY PRESS
2024**

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Leidinio bibliografinė informacija pateikiama Lietuvos nacionalinės Martyno Mažvydo bibliotekos Nacionalinės bibliografijos duomenų banke (NBDB).

DOI: <https://doi.org/10.15388/Proceedings.2024.45>

ISBN 978-609-07-1049-4 (skaitmeninis PDF)

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UNDERSTANDING DYSLIPIDEMIAS IN PEDIATRIC POPULATION: PROGRESS REPORT FROM AN OBSERVANT PREVALENCE STUDY

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Introduction. The main etiological factor of early morbidity and mortality from cardiovascular diseases is atherosclerosis, which develops already in childhood. Atherosclerosis at a young age is caused by dyslipidemia.

Objectives. The aim of the study is to determine the prevalence of dyslipidemia in the population of children aged between 5 and 10 years, determine the causes, characteristics of dyslipidemias, and the relationship with risk factors.

Methods. Children aged 5-10 years were included in the biomedical study "Prevalence study of dyslipidemias in children" conducted at Vilnius University Hospital, Santaros Clinics. A questionnaire inquiring about sociodemographic characteristics medical histories, detailed histories of diet, physical activities was completed. Body composition analysis data was evaluated using the machine TANITA MC-780MA-N: weight, fat mass (kg; %), trunk fat content (kg; %), muscle mass (kg), BMI. Standard lipid panels were also evaluated. The study protocol was approved by the Vilnius Regional Biomedical Research Ethics Committee of Lithuania (No. 2023/1-1497-955). Written informed consent to participate in this research was obtained from their parents or legal guardians.

Results. A total of 54 participants were included in the analysis, with a median age of 7.21 (5; 10) years, and boys accounting for 50%. Girls were non-significantly younger (7.1 y. vs. 7.3 y., $p=0.637$) with a higher BMI (16.5 (14.35; 17.05) kg/m² vs. 16.2 (14.25; 17.65) kg/m², $p = 0.965$). Increased total cholesterol was measured for 9 (17.3%), LDL-Ch for 10 (19.2%), TG for 0 patients, decreased HDL-Ch for 6 (11.5%) patients. There was a total of 17 patients with dyslipidemia. 9 (52.9%) of those had a family history of cardiovascular diseases. Body composition analyzer of children with dyslipidemia (N =17) revealed the following factors: a median weight of 27.5 (23.5; 48.7); fat mass 5.8 (4.5; 14.4) kg; trunk fat content 2.5 (1.8; 5.9) kg; BMI 16.4 (14.8; 22.0) kg/m²; waistline 54,5 (53.0; 70.5) cm. Median body weight was significantly higher by 2.8 kilograms in children with dyslipidemia ($p=0.046$). Comparing these two groups, significant differences were also found between the medians of fat masses (5.8 (4.5; 14.35) kg vs. 4.7 (3.8; 6.3) kg, $p=0.033$) and trunk fat content (2.5 (1.8; 5.9) kg vs. 1.9 (1.6; 2.7) kg, $p=0.035$). Increased BMI (>85th percentile) is statistically significantly different between children with and without dyslipidemia (58.3% vs. 41.7%) $p=0.031$. Our questionnaire revealed that there were significant differences between diets. Children with dyslipidemia consumed less vegetables (17.6% vs. 57.1%; $p=0.007$) and fruits (0% vs. 22.6%; $p=0.032$) than children without dyslipidemia.

Conclusions. Our study highlights the concerning prevalence of dyslipidemia among children, with approximately one-third of participants exhibiting abnormal lipid profiles. Children with dyslipidemia displayed different characteristics such as higher body weight, increased fat mass, and lower consumption of vegetables and fruits compared to healthy children.

Keywords. Dyslipidemia, children, causes, risk factors.