CARDIOVASCULAR RISK REDUCTION AND CORRECTION OF HYPERLIPIDEMIA IN PATIENTS AT PRIMARY PREVENTION THROUGH PHYSICAL ACTIVITY

Branimir Mekić[1], Dragan Toskić[1], Tatjana Popović-Ilić[1], Hadži Saša Ilić[1], Vesko Milenković[1], Aleksandar Rajić[1], Milica Bojović[1], Jasmina Ranković[2], Miroslav Živković[1], Hadži Miloš Vidaković[1]

[1]Faculty of Sport and Physical Education, University of Priština, Leposavić, Serbia
[2]Health Centre Niš, Niš, Serbia

Contact: Branimir Mekić
Dositeja Obradovića bb, 38218 Leposavić, Serbia
E-mail: branimir.mekic@pr.ac.rs

Coronary heart disease is responsible for a high degree of morbidity and mortality in industrialized countries. Many countries have therefore adopted preventive measures to reduce the prevalence of major risk factors for coronary artery disease (CD): high serum cholesterol, high blood pressure, diabetes, and smoking.

The aim of this study was to determine the effects of physical training and diet on lipid and lipoprotein parameters in patients with hyperlipidemia without developed coronary heart disease.

The study included 45 patients, average age 56.1 ± 12.7 years. All patients had total cholesterol greater than 5.2 mmol/1, elevated blood pressure, and 16.42 % of respondents had used tobacco. Risk factors for the CD were evaluated through clinical history, anthropometric and cardiovascular parameters with the use of biochemical analysis. Lipid parameters included the determination of total cholesterol, triglycerides and HDL, LDL and VLDL cholesterol as well as lipid relations. All tested parameters were determined at the beginning and after the six months of testing. All patients were on a program of physical activity as recommended by ACC /AHA and on a diet according to NCEP ATP III recommendations for primary prevention of coronary heart disease.

After six months of testing, there was a change in the risk factors of lipid origin: triglycerides were reduced by 22.3 %, HDL-C was increased for 11.94 %, VLDL was reduced for 21.9 % and nonHDL-C for 8:09 %. By applying physical activity the target value of HDL-C > 1 mmol/1 was achieved in all patients. A high percentage of respondents achieved the target values for Tg < 2.3 mmol/1 (92.79 %) and for the atherogenic relation LDL-C/HDL-C < 5 (84.59 %). BMI was reduced for 8.06 % ($p < 0.05$) a systolic blood pressure for 12.8 % ($p < 0.03$).

In patients with hyperlipidemia without coronary heart disease and other risk factors for coronary heart disease, the achieved changes of lipoprotein levels are an indicator for the further implementation of non-pharmacological measures with the goal to reduce the risk for coronary events. Determination of lipoprotein profiles and atherogenic markers is very significant in the initial screening of dyslipidemia, monitoring the effects of physical activity and evaluating the risk for coronary heart disease.

Acta Medica Medianae 2019;58(2):27-32.

Key words: *physical activity, hyperlipidemia, primary prevention*