



The efficacy of diet modification in improving of both elevated low-density lipoprotein cholesterol (LDL-C) and HOMA index

N. Samoilenko¹, V. Khorunzha², H. Bielokoz¹, M. Lisevych¹, K. Deineko¹, O. Aleksieieva¹, D. Zubach¹, O. Zinchenko¹, S. Shpak¹, A. Kucherenko¹, Y. Muzyra¹ and Kseniia Mazanko¹
¹LLC Samoilenko Clinic, Kyiv, Ukraine and
²Bogomolets National Medical University, Kyiv, Ukraine

Dyslipidemia and insulin resistance are associated with high cardiovascular risks. Both pathologies are associated with an irrational lifestyle, so the prevention of CVD is based on its modification including diet⁽¹⁾. Many studies have confirmed the benefits of Mediterranean diet on CVD prognosis, whereas low carbohydrate diet improves metabolic and liver-related parameters among patients with metabolic syndrome⁽²⁾. We decided to study the efficacy of Mediterranean diet with the selection of exact food that have a low insulin index serum lipids and also on HOMA index.

80 slavs patients, male 45 (56,25%), female 35 (43,75%), mean age $44,4 \pm 9,2$, mean BMI $31,36 \pm 6,5$, with dyslipidemia were studied, 53 of them (66.2%) were with obesity. We offered them the following diet: 3-fold meal restricted in red and processed meat, butter, milk, trans fat, sugar, white flour products, alcohol. The following food components were recommended: high intake of plant-based foods, including non-starchy vegetables and legumes with adding of olive oil and flax seeds and tree nuts, increased consumption of fish and seafood; moderate consumption of eggs, dairy products, berries and whole grains and cereals. Diet intervention lasted 12 weeks. Self-reported diet records were used to assess dietary intake. No drugs were used during this period. Statistical analysis were based on using paired t-test with assessment of the dynamics of clinical indicators with 95% CI and calculation of the standardized effect size based on mean comparison⁽²⁾.

After 12 weeks the mean reduction in serum total cholesterol was 0.91 mmol/L (from 6.21 ± 1.01 to 5.3 ± 0.88) or 14.7%; LDL-C was 0.82 mmol/L (from 4.48 ± 1.05 to 3.66 ± 0.83) or 18.3%; triglycerides - 0.51 mmol/L (from 1.68 ± 0.91 to 1.17 ± 0.48) or -30.4%; HOMA_{air} Index decreased on 27.8% - from 4.49 ± 1.08 to 3.24 ± 0.72 . The dynamics for these indicators are statistically significant ($p < 0.05$).

These diet modifications based on a predominantly plant-based food could be not only the good addition or even alternative to pharmacological treatment of dyslipidaemia and prevention of CVD but further contribute to reducing the impact of food choices on environmental degradation and determine the environmentally sustainable eating pattern.

References

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