

Experience of Diabetic Dyslipidemia Correction in Patients with Ischemic Heart Disease and Type 2 Diabetes Mellitus Using α -Lipoic Acid in Combination Therapy

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Purposes: to investigate the effects of α -lipoic acid (ALA) on diabetic dyslipidemia, endothelial dysfunction, levels of adiponectin and proinflammatory mediators in combination therapy of patients with ischemic heart disease (IHD) and type 2 diabetes mellitus (T2DM).

Methods. We examined 40 patients with IHD and T2DM (19 males, age 60.5 ± 4.7 years). Baseline characteristics of patients included history of IHD (7.2 ± 2.3 years), T2DM (4.7 ± 0.5 years). The level of HbA1c was less than 7.5%. All patients were divided into 2 groups: the 1st (n = 20) – received the standard therapy, the 2nd (n = 20) in the standard therapy received ALA 600 mg once daily. In all patients were determined the levels of total cholesterol (TC), low-density lipoprotein cholesterol (LDL), triglycerides (TG), high-density lipoprotein cholesterol (HDL) by enzymatic colorimetric method, proinflammatory mediators (TNF- α , hsCRP), vascular endothelial growth factor (VEGF) and adiponectin by ELISA method at baseline and in 6 months.

Results. Using in combination therapy ALA increased plasma levels of HDL on 5% (0.4mmol/L), decreased TC, LDL and TG levels on 4%, 5,2% and 6,3% respectively (all $p < 0.001$), substantially lowered plasma levels of TNF- α by $6 \pm 1,5\%$ ($P < 0.05$) and hsCRP from 1.53 ± 0.13 to 0.98 ± 0.11 pg/ml ($P < 0.05$), increased plasma levels of adiponectin by $18 \pm 2\%$ ($P = 0.001$) compared with the 1st group. The serum VEGF concentrations in patients who received in the standard therapy ALA were significantly reduced from 320 ± 26 pg/mL at baseline to 212 ± 22 pg/mL in 6 months ($P = 0.022$). There were correlations between changes in adiponectin levels and the VEGF concentrations ($r = -0.31$, $P = 0.043$).

Conclusions. Combination therapy with ALA significantly reduced TC, LDL, TG and proinflammatory mediators, VEGF, increased HDL in patients with IHD and T2DM.

