Influence of Combined Therapy on Inflammatory State and Pro-inflammatory Cytokines in Patients with Coronary Artery Disease and Metabolic Syndrome

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Background and aims: The aim of the study was to investigate the influence of combined lipid lowering therapy with rosuvastatin and ezetimibe on lipid profile, inflammatory state and pro-inflammatory cytokines in dyslipidaemic patients with coronary heart disease (CHD) and metabolic syndrome (MS).

Material and methods: 128 patients with CHD and MS were randomly divided into two groups of 64. The first group was provided rosuvastatin (10 mg) and ezetimibe (10 mg) and the second group (control) was provided only rosuvastatin (10 mg). Plasma lipids, inflammatory state (hs-CRP), and pro-inflammatory cytokines (IL-1β, IL-6 and TNF-α) were measured at baseline and in 12 weeks.

Results: The levels of total cholesterol (TC) and LHL cholesterol (LDL-C) decreased significantly in the combination group versus controls ($p<0.05$). However, there was no significant difference in HDL cholesterol ($p>0.05$) between the two groups. Hs-CRP decreased by 38% in the first group ($p=0.003$) versus 31% in the control group ($p=0.005$) from baseline, however there were no obvious changes between the two groups. Even though, pro-inflammatory cytokines: TNF-α (from 1.42 ± 0.98 to 0.87 ± 0.18 in 12 weeks, $p=0.018$), IL-6 (from 7.8 pg/ml to 4.1 pg/ml, $p=0.012$), IL-1β (from 28.4 ± 19.5 pg/ml to 17.5 ± 15.8 pg/ml, $p=0.010$) in the combination group versus TNF-α (from 1.48 ± 1.12 to 1.12 ± 0.25, $p=0.047$), IL-6 (from 8.0 pg/ml to 5.9 pg/ml, $p=0.037$), IL-1β (from 29.6 ± 20.6 pg/ml to 20.6 ± 17.4 pg/ml, $p=0.040$) significantly decreased in both groups from baseline. However, there were statistically significant changes observed only in the first group ($p<0.05$) when compared two groups.

Conclusion: Therapy with rosuvastatin and ezitemibe is superior than rosuvastatin alone to improve TC, LDL-C and pro-inflammatory cytokines in patients with CHD and MS. ■