

THE ROLE OF CYTOKINES IN PATIENTS WITH OSTEOARTHRITIS AND TYPE 2 DIABETES MELLITUS

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Purposes: to investigate influence of concentration in plasma tumor necrosis factor- α (TNF- α), interleukin-1 β (IL-1 β) on articular syndrome and parameters of carbohydrate metabolism in patients with osteoarthritis (OA) and type 2 diabetes mellitus (T2DM).

Methods. The study was performed on 65 patients (29 males), aged 57.9 ± 3.2 with combination OA and T2DM in Regional Hospital of Kharkov. Baseline characteristics of patients included history of OA (7.1 ± 2.3 years), T2DM (8.1 ± 2.5 years). All patients were divided into 2 groups: group 1 (n = 30) - with combined course of OA and T2DM with normal body weight, group 2 (n = 35) - with combined course of OA and T2DM with obesity (BMI ≥ 30 kg/m²). The survey plan included: anthropometric data, indices of carbohydrate exchange (insulin, glucose, HbA1C, HOMA-IR) and level of C-reactive protein (CRP). The level of HbA1C was $<7.5\%$ in all patients. The level of TNF- α and IL-1 β was determined by ELISA. All patients were made X-ray examination of knees.

Results. Significant correlation between TNF- α and CRP was determined in 1st group ($r=0.59$; $p<0.05$) and 2nd group ($r=0.72$; $p<0.05$), also correlation between IL-1 β and CRP was determined in 1st group ($r=0.61$; $p<0.05$) and 2nd group ($r=0.78$; $p<0.05$). Among the 1st group of patients the level of insulin resistance was correlated with TNF- α ($r=0.36$; $p<0.05$) and IL-1 β ($r=0.42$; $p<0.05$). More significant correlation between TNF- α and glucose ($r=0.44$; $p<0.05$), HbA1C ($r=0.54$; $p<0.05$), insulin resistance ($r=0.74$; $p<0.05$), HOMAIR ($r=0.63$; $p<0.05$) and between IL-1 β and glucose ($r=0.42$; $p<0.05$), HbA1C ($r=0.40$; $p<0.05$), insulin resistance ($r=0.52$; $p<0.05$), HOMAIR ($r=0.50$; $p<0.05$) was determined in 2nd group with comorbid pathology and obesity. We noticed, the degree of X-ray changes (by Kellgren-Lawrence) were more in 2nd group in compare with the 1st group.

Conclusion. Significant correlation between TNF- α , IL-1 β and CRP, glucose, HbA1, insulin resistance, HOMA-IR in group of patients with comorbid pathology and obesity means, that obesity is important factor of pathogenesis relationship immune and metabolic processes in patients with OA and T2DM.