

The Association between Adipokines and Macrophage Inflammatory Proteins in Patients with Untreated Rheumatoid Arthritis

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Abstract: Actuality: The adipose tissue is an active endocrine organ that synthesizes adipokines (adiponectin, leptin, etc.) and also a depot for macrophages. These immune cells produce macrophage inflammatory proteins (MIP), what activated granulocytes, also induce the synthesis and release of other pro-inflammatory cytokines (interleukin-1, interleukin-6, tissue necrosis factor α) which play an important role in the pathogenesis of rheumatoid arthritis (RA). Aim: To examine the correlation between adipokines synthesis and levels of MIP in patients with early RA.

Material-Methods: The study included 27 early RA patients (20 women, 7 men; 56 [46; 64] years old), never receiving anti-inflammatory therapy (glucocorticoids and disease-modifying antirheumatic drugs). The median disease duration was 8 [6,15] months. The majority of pts were seropositive for IgM RF (89%) and anti-CCP (96%). Medium or high RA activity was documented in all pts (DAS28 5,4 [5,0;6,5]). The control group consisted of 30 healthy subjects without rheumatic diseases, matched by age and sex with RA patients. Serum concentration of adiponectin and leptin was measured with ELISA, MIP-1 α and MIP-1 β – by multiplex technology X-MAP.

Results: The adiponectin level was higher in untreated RA patients than in the controls (23,0 [15,8; 67,0] vs 9,2 [5,6; 12,2]ng/ml), while leptin concentration were lower than in the control group (25,0 [8,0; 32,0] vs 30,5 [19,0; 46,2]ng/ml, $p < 0,05$ for all). Clear correlation was established between leptin/adiponectin ratio and MIP-1 β ($r = 0,55$, $p = 0,03$). High adiponectin concentration was associated with decreased MIP-1 β level ($r = -0,63$, $p < 0,01$). MIP-1 α did not show correlation with any of these parameters.

Conclusion: Antiatherogenic adiponectin demonstrated anti-inflammatory properties, its increasing concentration in patients with untreated RA could be compensatory. The indicator of insulin resistance (leptin/adiponectin ratio) was correlated with synthesis of pro-inflammatory MIP-1 β .

Key words: rheumatoid arthritis, adiponectin, leptin, Macrophage inflammatory proteins