

# **INTERLEUKIN 18 IN THE IMPLEMENTATION OF AUTOIMMUNE DISORDERS IN PATIENTS WITH THYROIDITIS AND GASTROESOPHAGEAL REFLUX DISEASE**

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The development of the inflammatory reaction in many diseases of the internal organs occurs with the participation of the sequential inclusion of the cytokine immunity. Interleukin 18 (IL18) belongs to cytokines that have a variety of actions. One of the areas of IL18's activity is participation in autoimmune processes.

Purpose: to study the level of IL18 in the blood serum of patients with autoimmune thyroiditis (AIT) and gastroesophageal reflux disease (GERD) and to determine its role in the progression of diseases.

Materials and methods: 85 patients with AIT and GERD and 47 patients with isolated AIT were examined. The age of patients was in the range of 18-25 years, women predominated. The duration of the history of AIT was in the range of "first established" to 5 years. The diagnosis of AIT was proved on the basis of evaluating the results of ultrasound examination and laboratory research methods (presence of antibodies to thyroperoxidase and thyroglobulin). The levels of TSH, FT3 and FT4 corresponded to the euthyroid state. The concentration of IL-18 was determined by ELISA (commercial kit Bender MedSystems GmbH, Austria).

Results. The content of IL18 in patients with AIT was 1029.2 (779.3; 1252.4) pg/ml with a norm 229.4 (198.31; 269.37) pg/ml. Patients with AIT and GERD had the level of IL18 1763.4 (1451.7; 2879.2) pg/ml. At the same time, IL18 activity was highest in patients with AIT and erosive form of GERD - 1975.4 pg/ml. The high levels of IL18 in patients with AIT, in our opinion, is a consequence of both inflammatory and immune components of the disease, and we can assume that the autoimmune component is prevalent in such patients. Clinically more often we speculate about the absence of an inflammatory process in the thyroid gland in patients with AIT, the presence of an increased content of IL18 denies this

conclusion. The inflammatory process in the gland is permanent. This is confirmed by the formation of a hypothyroid state in the future. In patients with GERD, elevated levels of IL18 result from a general systemic pro-inflammatory response. The combination with AIT contributes to an increase in IL18 due to the addition of an autoimmune component of inflammation. The increased activity of IL18 with the erosive form of GERD in patients with AIT is probably due to an increase of the inflammation area and the depth of the mucous membrane damage with the formation of an inflammatory shaft along its edges. AIT and its combination with GERD were accompanied by changes in the immune response by autoimmune mechanisms. Such changes contribute to the diseases progression of and the formation of complications.

Conclusions. It was found that in patients with autoimmune thyroiditis associated with gastroesophageal reflux disease levels of IL18 were significantly higher than in group with isolated autoimmune thyroiditis. Autoimmune thyroiditis and its combination with gastroesophageal reflux disease occurs on the background of an increased content of IL18. It is relevant to the preservation of autoimmune changes in the immune system. The indicated changes in the IL18 levels can be considered as a marker of the latent autoimmune process in the gland. Such changes can contribute to the outcomes progression of diseases and the development of complications.