

Characteristics of Immune System Dysfunction in Patients With Acne and Functional Dyspepsia

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Relevance.

Inflammation is known to be a very complex mechanism, in the regulation of which pro- and anti-inflammatory cytokines actively participate. This group of biologically active compounds is synthesized in almost all cellular structures of the body, the main task is to coordinate the processes of development, differentiation and proliferation of all immunocompetent cells, their migration to areas of inflammation, antibody synthesis, cytotoxic activity of all populations of immunocompetent cells, thereby regulating the immune response. The population of proinflammatory cytokines, such as IL-1 β , IL-4, IL-6, IL-12, TNF- α . they participate in the regulation at the level of local inflammation. Questions of the role and place of cytokines in the development of acne in patients with PD remain out of sight, it is problematic to understand the mechanism of cytokine status dysfunction. It remains a well-known fact that during the development of cellular and/or humoral immunity, various types of cytokines are also activated. So, after the first stage of activation of T cells, T-dependent and B-lymphocytes, the development of the primary immune response occurs, the implementation of which is carried out by mediators – cytokines.

With the development of acne in areas of inflammation due to the action of cytokines, an immune reaction of varying severity occurs, the differentiation of which depends on the level of pro- and anti-inflammatory mediators of inflammation. When an infection is introduced or the integrity of the tissue surface is violated by histiocytic cells (macrophages, monocytes), the proinflammatory cytokine IL-1 β is released, which conducts signals from macrophages to T-lymphocytes. The conducted studies have proved that under the influence of pathogenic strains of microorganisms, gene expression is induced and cytokine IL-1 β is produced by interacting with toll-like receptor (TLR), while cytokine indicators are directly proportional to these indicators of inducers, i.e. the cytokine concentration values indicate the degree of contamination. Concentrations of various types of cytokines, such as IL-1 β , IL8 and tumor necrosis factor alpha (TNF- α , forming mechanisms of innate immunity; cytokines - IL-2, IL4, IL-10, interferon-gamma INF- γ , inducing anti-inflammatory and immunoregulatory effects; cytokines with plastic effect - vascular endothelial growth factor (VEGF) play an important role in the development of acne [64]. The study of the dynamics of changes in the indicators of these types of cytokines in patients with acne on the background of PD is important, first of all, to determine the degree of effectiveness of the modified therapy.

Determination of the content of pro- and anti-inflammatory cytokines in peripheral blood serum was carried out at admission on 1-3 days, before the start of treatment and after treatment.

As can be seen from the above, the main cause of immunological disorders lies in the imbalance of all components of the immunological reaction, which leads to the depletion of protective mechanisms and the formation of an inferior immune system. It is possible that these

causes are the basis for the formation of a chronic focus of inflammation around the sebaceous glands, the chronization of the entire process of acne formation and the development of complications.

For the proliferation of T-lymphocytes, a sufficient amount of IL-2 cytokine is needed, which is activated with an active antigenic reaction to the introduction of a pathogenic agent. When forming an immune response, further specialization of immunocompetent cells, such as B-lymphocytes, is necessary, the secretion of cytokine IL-4 fits into this mechanism. In response to antigenic stimulation, immunoglobulins of the IgM and IgG class are produced. Another type of cytokines - INF- γ coordinates the severity of the immune response. A very interesting role of vascular growth factor – VEGF, which is produced by vascular endothelial cells, this factor is essentially a marker of plastic processes. The type of proinflammatory cytokines includes IL-10, according to some scientists, it also participates in the regulation of the immune system, its role in the inhibition of other cytokines of immunocompetent cells in the form of macrophages, T-helpers is not unimportant.

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