ANALYSIS OF PHYSIOLOGICAL AND PATHOPHYSIOLOGICAL ROLE OF COMPLEMENT SYSTEM IN CONDITIONS OF CHRONIC INFECTIOUS-INFLAMMATORY PROCESS

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According to modern ideas, complement is a system of serum proteins that can be activated as a result of the interaction of some initial components of the system with antigen-antibody complexes or with other system-activating molecules. Complement system activation results from the interaction of some blood circulating complement system proteins with system activating agents. The regulation of the system comes at the expense of seven blood plasma proteins and a variety of membrane-bound cells of proteins and receptors. The importance of the complement system in physiology is illustrated by severe and life-threatening diseases arising from ineffective or excessive complement activity.

Keywords: the system of a complement, activation and regulation of a system of a complement, a role of a system of a complement in inflammation, the system of a complement as a pathophysiological factor.

The importance of the complement system in physiology is illustrated by severe and life-threatening diseases arising from ineffective or excessive complement activity. Abnormal complement activity is associated with a large number of inflammatory, autoimmune, thrombotic and age-related diseases. Complement system actively regulates various stages of inflammatory response. Inflammation is now seen as a complex pathophysiological process involving literally hundreds of mediators and different types of cells and tissues, and can be initiated by any agent causing cell damage. Taking into account the above topic relevance, the purpose of the present work is to analyze physiological and pathophysiological role in conditions of chronic infectious-inflammatory process (chlamydia-associated joint lesions). In order to achieve the goal, the following tasks were set: to investigate the level of complement system activity (according to CH50), the level of pro-inflammatory and physiological markers, including C-reactive protein, rheumatoid factor, β2-microglobulin, as well as immunoglobulin concentrations M, G, A, E in chlamydia-associated joint lesions.

The population of examined persons included patients diagnosed with chlamydia-associated joint lesions. 36 patients were examined for the study, including 17 men and 19 women. Age category is 21 to 49 years old. The material for the study was blood serum. The CH50 method determines the overall activity of the complement system. The method of nephelometry was used to determine humoral pro-inflammatory and physiological molecules.

Chlamydia infection is known to develop locally in its initial stages. And outside of contact with the internal environment of the body contact with the complement is simply not realized. As this infection spreads and increases, there is an increase in the responses of the species and antigen-specific immune response. Therefore, complement system values determined at blood level can become informative. The values of the activity of the classical complement pathway in the examined persons are at the level of physiological. This means the inertia of the complement system under chronic infection conditions, which creates conditions for insufficient formation of acquired immunity. Under the conditions of inertia of the complement system in case of chlamydial infection, factors of non-specific inflammation become of special importance, as they carry the burden of work of species immunity. Among the factors of non-specific inflammation are C-reactive protein, rheumatoid factor (RF) and β 2-microglobulin. The performed study allows to draw the following conclusions: 1) chlamydium infection occurs with inertia of the most important mechanisms of species immunity – complement system activity, SRB, rheumatoid factor; They are at physiological levels in most of the persons examined; 2) of all indicators of non-specific inflammation of [beta] 2 – microglobulin is more reactive: the study of [beta] 2-microglobulin in a group of individuals revealed its increase in 17 % examined; 3) chlamydial infection shows a change in the concentration of immunoglobulins in the blood, which makes it possible to judge the stage of the infectious process.

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