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COMPARATIVE IMMUNOBIOLOGICAL CHARACTERISTICS OF PRIMARY AND SECONDARY TUBERCULOSIS WITH MULTIPLE AND EXTENSIVELY DRUG RESISTANCE

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Abstract: The human respiratory system is constantly and directly in contact with the external environment, carrying out gas exchange and at the same time being exposed to a wide range of various antigens of plant and animal origin. For a reason, the acrogenic mechanism of transmission of infection is considered one of the most common and fastest ways of transmitting infectious diseases caused by pathogenic microorganisms. The stages of development and formation of specific adaptive immunity of tuberculosis infection are widely and in detail covered in the scientific literature, however, the issues related to the participation of the immune system in the pathogenesis of the occurrence of clinically significant tuberculosis lesions, as well as various forms of the disease, remain poorly understood.

Keywords: drug-resistant pulmonary tuberculosis, diagnosis, treatment.

Mycobacterium tuberculosis, causing an immune response of the macroorganism, cause various forms of the disease process, the speed and direction of the course, as well as outcomes. This picture consists of many components, in which reactions associated with the mechanisms of natural and acquired immunity play an important role. The severity of these reactions depends both on the characteristics of the M. tuberculosis strain (virulence) so it is from the macroorganism itself.

Introduction

The main factors that contribute to the emergence of tuberculosis disease are, firstly, the infectious dose and duration of entry of pathogenic mycobacterium tuberculosis into the human body, as well as their virulence, and, secondly, the state of the protective properties of the body during the exposure to an infectious agent. At the same time, the pathogenesis of primary and secondary tuberculosis differs somewhat. So when primary infection in 88-90% of individuals does not develop clinical manifestations, and the onset of infection is indicated by the turn of tuberculin samples, that is, the transition of a negative tuberculin reaction to a positive one [1].Determination of the immune status of tuberculosis patients includes assessment of cellular and humoral immunity of patients. At the same time, specific surface antigenic CD markers are used to determine the quantitative ratio of different groups of lymphocytes. It is known that tuberculosis is closely related to CD4+ (T helper receptor) - lymphocytes that regulate the intensity and direction of the immune response to MBT [5]. It is interesting to identify the relationship between primary and secondary tuberculosis and the quantitative ratio of CD4 + receptor, as well as the concentration of various classes of immunoglobulins in blood serum. At the same time, it is worth focusing on the level of nonspecific resistance of tuberculosis patients.

Resistance can be characteristic of the whole organism or its individual systems, tissues and organs. Nonspecific resistance is the first protective barrier to the introduction of an infectious agent, for example, lysozyme contained in saliva and is a bactericidal factor for many microbes. The effect of the complement system and other factors of nonspecific humoral immunity on Mycobacterium tuberculosis is also poorly studied.

A very serious practical problem in tuberculosis infection is to determine the level of cytokines and their balance (intensity of production and perception). By the nature of their functions, cytokines can be distinguished: nonspecific and specific (adaptive). Nonspecific cytokines (interferons, TNF) are associated with protection against infections, they are produced by cells that determine the mechanism of natural resistance (neutrophil granulocytes, monocytes, macrophages, NK cells, dendritic cells). Adaptive (specific) cytokines are produced by T and B lymphocytes at later stages of infection (cellular, humoral links) [6]. Determining the concentration of individual cytokines as the main regulatory molecules that determine the type of immune response in tuberculosis infection is an important task in its significance [5,7]. Cytokines CD8+, IFNy, IL-6, IL-18, TNF-α often lead to systemic inflammation and pathological changes in organs and tissues. Identification of immunobiological characteristics of various links of cellular and humoral immunity of patients with primary and secondary tuberculosis with different drug resistance will help clarify the picture of the course of the disease.

In the future, the data obtained will be able to help in the development of diagnostic and prognostic criteria for the outcome of tuberculosis infection, depending on the form of drug resistance of pathogenic mycobacteria.Currently, much attention is being paid to the study of tuberculosis with multiple drug resistance (MDR), when Mycobacterium tuberculosis is resistant as a minimum to isoniazid and rifampicin. A high level of MDR-tuberculosis has a significant impact on the spread of tuberculosis through the accumulation of sources.

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