



## STIMULATION OF THE IMMUNE RESPONSE BY CYTOKINE PREPARATIONS AND THEIR STANDARDIZATION

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**Abstract.** One of the main problems of modern immunology is related to the regulation of the immune response. The intensity of the immune response to the introduction of a foreign antigen (AG) depends on many factors, such as the functional state of the body, its genetic characteristics, as well as the properties of the AG itself, the dose and the scheme of its introduction (60, 71). The issues of regulating the immune response are of particular importance in connection with the need to ensure the formation of reliable post-vaccination immunity. At present, there is an increase in both acute and chronic infectious diseases. One of the main and reliable methods of preventing the spread of infectious diseases is vaccination. Persons with long-term diseases (chronic inflammatory and infectious diseases, hepatitis, tuberculosis, HIV infection, chronic renal pathology, persons on hemodialysis, etc.) constitute a risk group that is most susceptible to infections and should be vaccinated first. The need to vaccinate people with chronic pathology is also due to the fact that certain viral vaccines not only create anti-infective immunity, but also prevent the development of oncological diseases that occur under the influence of a viral infection (with vaccination against hepatitis B, primary liver cancer is prevented). It is known that people with manifestations of immunodeficiency are most at risk of developing viral infections (60, 91).

Over the past decades, its prevalence has increased worldwide, as well as the number of children with severe forms of the disease. Among schoolchildren in Russia, the incidence of asthma is 3-12%. Many specialists recognize the potentiating role of respiratory viral and bacterial infections in the aggravation of bronchial asthma and the development of its exacerbations. In particular, this applies to such pathogens as cytomegalovirus and *Mycoplasma pneumoniae*. *Mycoplasma* infection in children with asthma is 66-88%, and mixed viral-mycoplasma infection is observed in 40-42% of sick children. Infectious microorganisms often persist in the mucous membrane of the respiratory tract and can affect the functional state of the immune system of patients with bronchial asthma.

**Study objective.** Study of the immunostimulating properties of cytokine preparations in experimental models, including models with induced immunosuppression, during immunization of animals with hepatitis B vaccine.

**Research objectives.** To study the effect of cytokine preparations - "Betaleukin (rhIL-1 {3})", "Roncoleukin (rhIL-2)", "Affinoleukin" and the drug "Imunofan" on the initial immune level of animals during immunization with a vaccine against B. To

establish the doses and schedule of administration of vaccines and cytokine preparations during immunization of experimental animals.

**Research results.** People with immunodeficiency respond poorly or do not respond at all to the introduction of the vaccine. In addition, there are groups of people with strong and weak immune activity due to the genetic characteristics of the body. The issue of ensuring an adequate immune response to vaccination in people with weakened immune activity and with manifestations of immunodeficiency is relevant. The solution to this problem is facilitated by the search for and development of means aimed at increasing the effectiveness of vaccination. Increasing the effectiveness of vaccination is achieved by using adjuvants - substances that enhance the immune response when administered simultaneously with AG. It is known that with a high degree of purification of AG, its immunogenic activity decreases. Therefore, for vaccines created on the basis of highly purified homogeneous AG (anatoxins, recombinant and synthetic vaccines), it is necessary to use adjuvants.

**Conclusions** on animals with induced immunosuppression indicate the possibility of using cytokine preparations to stimulate the immune response during vaccination of individuals with manifestations of immunodeficiency.

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