



## CLINICAL AND IMMUNOLOGICAL CHARACTERISTICS OF ALLERGIC DISEASES AND THE PLACE OF HERPES VIRUS INFECTION IN THEIR DEVELOPMENT IN CHILDREN

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### ABSTRACT

*Herpetic infection is a constant companion of humans in modern civilization; it is completely unnecessary to talk about its prevalence. The frequency of contamination with different types of herpes viruses in the human population reaches approximately 67%. Allergic diseases also became a serious medical and social problem in the second half of the 20th century, and the trend towards an increase in the frequency of their manifestations in children and adults continues in the 21st century, so this pattern is already designated as an epidemic of the 20th and 21st centuries. It is not surprising that herpetic infection is very often combined with allergic diseases, which, apparently, cannot but influence both the course of the herpetic infection and the characteristics of the manifestation of allergic diseases such as allergic rhinitis, atopic bronchial asthma, and allergic urticaria.*

**RelevanceProblems.** The review is devoted to modern scientific data about Clinical and immunological characteristics of allergic diseases and the place of herpes virus infection in their development in children. In recent decades, allergies have become one of the most pressing medical and social problems due to the global prevalence and intensive growth of allergic diseases. Atopic diseases confidently occupy a leading place among other forms of pathology according to various criteria (prevalence, severity, complexity of diagnosis and therapy, rehabilitation, treatment costs, etc.) [1,4,12,13]. According to statistics, atopic diseases affect 10-30% of the world's population, and in industrialized countries - up to 50% [3,5,10,11]. The development of allergic diseases is influenced by many factors, among which one of the leading places is occupied by viral infection [7,8,9,12]. Among the viruses

According to world statistics, the prevalence of herpetic infections in the adult population has increased up to 20 times over the past 20-30 years. Back in 1984, the WHO European Bureau included cytomegalovirus infection in the group of new infections that determine the prospects for infectious pathology. According to forecasts from the World Bank



of Information, diseases caused by GVI are defined as a “global problem for humanity” in the near future. Some experts even use the term “herpetic disease,” emphasizing the polytropic nature of herpetic infection [6,12,13]. This is due to the diversity and polymorphism of the clinical manifestations of herpetic infections, of which there are currently about 100 species and 8 of them are pathogenic for humans. Infection with all types of herpes viruses, as well as other viruses,

A full-fledged specific antiherpetic immune response is formed only when the immune system comes into contact with herpesvirus antigens. However, virions themselves are weak signals to the immune system. For this reason, primary GVI initially occurs with complete superiority of viruses [1,12,13]. The unique properties of herpes viruses - tissue tropism, ability to persist, high mutability - make it possible not to respond to immunological surveillance and cause a chronic and latent infection in humans, and in the event of stressful situations - hypothermia, superinfection, decreased immune response, reinfect the patient “coming out of hiding” - from nerve ganglia, from macrophages and other immunocompetent cells. It is possible that the “guardian organ” may also be the main organ of immunity - the thymus. The course of any infectious viral immune process is determined by T-, B-lymphocytes, macrophages, and the influx of polymorphonuclear leukocytes into the site of inflammation. They (especially macrophages) absorb and destroy HSV [1,12,13]. Various populations of T- and B-lymphocytes can produce a large number of immune mediators, under the influence of which both the formation and activation of the body’s defenses occur.

Consequently, the quantitative and qualitative deficiency of these cells makes it possible to assess the degree of immunodeficiency [1,2,12,13]. The various clinical forms of herpetic infection depend primarily on the portal of entry and the characteristics of the child’s immune system. In typical cases, the diagnosis of herpetic infection is not difficult since symptoms of burning and itching appear at the entrance gate and the subsequent appearance of vesicles with transparent contents. Most often this is observed in the area of the borders of the lips, nose, ears and in the most unexpected places, since the infection spreads through contact to different parts of the body, parents caring for the patient can also become infected. In this case, symptoms of intoxication and fever are observed. After a few days, the contents of the vesicles become cloudy, they open, weeping and erosions form, which soon become crusted and epithelialized. It is important to prevent scratching and infection of erosive surfaces. As a rule, the course of the process is favorable and resolves in 10-14 days. The appearance of herpetic eruptions once every few years or no more than 2 times a year can be regarded as a favorable prognostic sign. According to A. Haldin, this is a mild course of the disease. If exacerbations occur 3-4 times a year, this is a moderate course of the process, and one should think about a severe course of the disease if there are relapses more than 6 times a year. [1,7,8,11]. According to A. Haldin, this is a mild course of the disease. If exacerbations occur 3-4 times a year, this is a moderate course of the process, and one should think about a severe course of the disease if there are relapses more than 6 times a year. [1,7,8,11]. According to A. Haldin, this is a mild course of the disease. If exacerbations occur 3-4 times a year, this is a moderate course of the process, and one should think about a severe course of the disease if there are relapses more than 6 times a year. [1,7,8,11].



Of course, the prevalence of the process should be taken into account. And even if for the first time numerous rashes, symptoms of fever, and intoxication occur, then it is not possible to attribute this case to a mild course. Moreover, this is impossible in case of complications - encephalitis, meningoencephalitis, which are not so rarely observed in children. Relapses that occur more often than once every 3 months indicate a failure of the immune system and require appropriate additional examination, in particular immunological, and treatment adjustment. In conclusion, allergic diseases are a common pathological condition in children, and herpesvirus infection may play a role in their development.

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