

ADAPTATION MECHANISMS OF LOCAL IMMUNITY OF THE MUCOUS MEMBRANE OF THE ORAL CAVITY DURING CORONAVIRUS INFECTION

F. U. Jabborova

Bukhara State Medical Institute

Abstract

The body's defenses are determined by systemic and local factors. Local protection is provided by the integrity of the oral mucosa, the microbicidal properties of saliva and lymphoid tissue. The integrity of the oral mucosa is the best physiological barrier to infection. Protective factors of saliva are determined not only by its mechanical properties, but also depend on the biological substances dissolved in it, which can cause the lysis of foreign agents. These substances include lysozyme, immunoglobulin A, and a large number of interleukins that have a bactericidal and antiviral effect. A powerful factor of local protection is the secretory IgA contained in saliva.

Purpose of research.

To study the features of adaptive mechanisms of local immunity of the oral mucosa against the background of coronavirus infection and to justify the principles of immunocorrective therapy based on the identified changes.

Non-specific immunity of the oral mucosa is provided by cellular elements-neutrophils and macrophages, as well as secretory elements — various chemotaxis factors for inflammatory agents (interleukins, leukotrienes, etc.). Specific immunity is provided by lymphoid tissue, which is contained in a significant amount around the oral cavity — in the form of diffuse infiltration or in the form of nodular clusters devoid of a closed connective tissue case. Cells that provide specific immunity are T-lymphocytes and plasma cells.

In response to the introduction of an infectious agent, an inflammatory process develops, which is characterized by a number of protective mechanisms: changes in the permeability of the vascular wall, increased blood flow, increased activity of macrophages and polymorphonuclear cell elements, the release of inflammatory mediators, free oxygen radicals. Macrophages, through the release of cytokines, play a major role in the defense mechanism, causing an increase in the level of T-lymphocytes. The occurrence of non-specific infectious and inflammatory diseases of the pharynx and upper respiratory tract is due to an imbalance of local and systemic immunity.

The leading role in local immunity is played by cytokines acting on biochemical messengers that regulate the stimulation and inhibition of inflammatory responses that initiate the immune response. Cytokines are produced by lymphocytes and macrophages embedded in the epithelium of the mucous membrane, the source of cytokines in saliva is serum transudate and salivary glands. Also, cytokines are produced by the epithelial cells of the mucous membrane themselves when they come into contact with a microbe. It is important

to note that the content of cytokines in saliva does not correlate with their level in the blood, which indicates the autonomy of local immunity. Viral infection can serve as an initiating factor for the attachment of a bacterial pathogen in the future.

From the point of view of modern clinical immunology, the state of oral immunity is a mirror that reflects the state of systemic that is, General immunity, which in particular is an indicator primarily of the state of immunity of the gastrointestinal and respiratory tracts.

The leading place in the structure of infectious diseases belongs to viral infections. Many respiratory viral infections have manifestations on the oral mucosa, recognizing which, the dentist can be the first to diagnose the disease. As for the coronavirus infection, we still don't know much. Unfortunately, there are more questions than answers. In this regard, we believe that a timely study of local immunity against the background of coronavirus infection during a pandemic will be able to answer many questions not only from dentists and immunologists, but also from doctors of related specialties.

All these factors explain the wide interest in the problem of correcting violations of local and systemic immunity. Immunomodulatory drugs include drugs that have immunotropic activity and restore the functions of the immune system in therapeutic doses. It is clear that immunocorrector drugs are needed that have the properties of a local vaccine-it stimulates the protective forces of the oral mucosa. Through a system of immunological mechanisms, causes effects such as increased activity of the phagocytes with quality improvement of phagocytosis; increases content in saliva lysozyme has antibacterial activity, induction of interferon; stimulation and increasing the number of immune cells responsible for antibody production; stimulation and increase in the content of sIgA, which plays a significant role in the protection of mucous membranes.

Literature

1. Melnichenko E. M. The state of the oral mucosa in influenza, parainfluenza, adenovirus infection and herpes: autoref. dis. ... candidate of medical Sciences-M., 1972. - 18 p.
2. Lesions of the oral mucosa in children with viral diseases: studies'.- method. manual / V. p. Mikhailovskaya, T. G. Belaya, E. I. Melnikova. - Minsk: BSMU, 2009. -38 p.
3. Antiviral drugs in pediatric practice: studies'.- method. manual / comp. A. A. Astapov, G. G. Maksimenya, A. A. Zborovskaya. 2nd ed., reprint. and extra. - Minsk : Belarusian state medical University, 2009. – 32C.
4. Arshinova S. S., Pinegin B. V., Stakhanov V. A., Simonova A.V., Mazurov D. V., Golubeva N. M., Perevezentseva E. O. polyoxidonium Immunomodulator in the complex therapy of patients with pulmonary tuberculosis. Immunology, 2001, 3: 35-40.
5. Diakonova V. A., Dambaeva S. V. et al. Study of the mechanism of action of the immunomodulator Polyoxidonium at the cellular and molecular levels on human peripheral

blood cells in invitro conditions. Physiology and pathology of the immune system, 2004, 8(2): 32-36.

6. Kologrivova E. N., RUF E. K., Bobkova N. V., Lebedev M. P. Cellular composition of mixed saliva sediment in patients with chronic inflammatory processes on the mucous membranes. Cytology, 2000, 5: 441-44.

7. Kryukov A. I., Kunelskaya N. L., Kunelskaya V. Ya., Gurov A.V., Shadrin G. B. et al. New opportunities in the treatment of pharyngitis. Method. recom. M., 2013: 12.

8. Pinegin B. V., Nekrasov A.V., Khaitov R. M. Immunomodulator polyoxidonium: mechanisms of action and aspects of clinical application. Cytokines and inflammation, 2004, 3(3): 41-47.

9. Roit A., Brostoff J. Mail D. Immunologiya. Per. s angl. M.: Mir, 2000: 582.