INFLUENCE OF INFECTIONS AND INSECTICIDES ON THE IMMUNE SYSTEM OF CHILDREN

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Аннотация. *Изменения в экологии приводят к тому, что экопатогены, включая различные виды инфекций и целевые инсектициды, атакуют молодой организм и вызывают развитие иммунодефицита. В совокупности это может привести к ослаблению функционального состояния иммунной системы и даже к летальному исходу. Поскольку в результате ослабления естественных физиологических особенностей ребёнка изменяется функциональное состояние защитной памяти. В этом случае естественные защитные функции не могут реагировать на чужеродные элементы.*

Ключевые слова: *Аллергия, аллерген, гуморальный иммунитет, антиген, антитело, патоген, слабый,, инсектицид, микроорганизм, ингибр, вирус, механизм, лейкоцит, интерферон, терапия, изоляция, кровь, иммунопатология.*

Abstract. *Changes in the environment lead to ecopathogens, including various types of infections and targeted insecticides, attacking the young organism and causing the development of immunodeficiency. Taken together, this can lead to a weakening of the functional state of the immune system and even death. Because as a result of the weakening of the child's natural physiological characteristics, the functional state of the protective memory changes. In this case, natural defense functions cannot respond to foreign elements.*

Keywords: *Allergy, allergen, humoral immunity, antigen, antibody, pathogen, weak, insecticide, microorganism, inhibir, virus, mechanism, leukocyte, interferon, therapy, isolation, blood, immunopathology.*

Infections are pathogens of various infectious diseases in the tissues of the body with the participation of pathogens.

Insecticides are agents that ensure the healthy life of a living organism in a favorable environment and improve its vital functions. They are used to destroy pests that are carriers of various diseases in the body. However, failure to comply with the rules for their use can lead to the development of pathological conditions associated with a violation of the immune system.

Environmentally conditioned ecopathogens – infections and insecticides – have a specific effect on age-related physiological characteristics of immunity in children. In combination, they can weaken the functional state of the immune system and even lead to death.

Microorganisms and abiotic factors polluting ecosystems affect the humoral and cellular immunity of the child. As a result, organs and tissues cannot perform their natural protective functions.

Any living organism has innate, acquired and adaptive immunity. Each of them includes humoral and cellular elements of immunity.

Humoral immunity differs from cellular immunity. Humoral immunity produces antibodies specific to antigens. Thus, it provides natural protection of the body with antibodies. It is also called antibody-mediated immunity, in contrast to cellular immunity. Humoral immunity is formed due to substances contained in biological fluids.

Humoral immunity includes processes that involve antibodies. For example, it performs specific functions in the creation of memory cells. Memory cells perform

the functions of destroying pathogens, as well as inhibiting the action of ecopathogens and toxins.

The cellular immune system carries out its specific functions through cells. It is a specialized class of immune cells that do not depend on antibodies and directly attack and destroy infected cells. These immune cells perform vital functions such as cleaning, i.e. destroying, infections caused by various microorganisms, insecticides, serious viruses and fungi from within the cells. This cellular immune system includes T-lymphocytes.

The humoral and cellular immune systems ensure the adaptation of organ tissues to the environment. They have to go through critical periods to control the body's natural defenses. They regulate the balanced nutrition of breastfed children. The protection of a living organism from environmental factors, the protection of natural and acquired, as well as adaptive immunity, is carried out with the help of both systems. They are in contact with each other in any situation.

However, there are situations where both systems cannot perform their functions. This may be due to the loss of ecosystem function, uneven atmospheric temperature, or an increase in pollutants in the environment. As a result of the synergistic effect of such eco-factors on the organs and tissues of a living organism, the immune system cannot cope with its natural protective functions. For example, processes caused by infectious agents, cells infected with viruses, cells altered by xenobiotics, and other antigenic substances cannot be eliminated from the body.

The child's immune system is formed in the first days of pregnancy, that is, in the womb. This development continues until adulthood. To ensure that environmental pathogens do not influence the development of the immune system, it is necessary to undergo regular medical examinations. Since the immunity of newborns is much weaker than that of adults, it is necessary to use therapeutic exercise to prevent this.

In the first days of life, the child is susceptible to diseases, since protective barriers such as skin and smooth muscles are actively permeable. Under the influence of various pathogens, the child's gastric juice is unable to reduce the concentration of abiotic factors and protect against gastric acid. As a result, the child's immune system, associated with innate immunity, is disrupted. Natural defense mechanisms are called innate immunity. This mechanism serves as a barrier against various environmental factors and also quickly responds to pathogen attacks.

Various pathogens associated with the environment have a more pronounced effect on children than on adults. At the same time, the activity of leukocytes decreases. To prevent this, it is necessary to switch to artificial feeding.

Laboratory studies have found abnormal white blood cell counts in children with inflammatory diseases, respiratory diseases, and children living in areas with increased radiation exposure. This may lead to an increase in seasonal diseases caused by certain pathogens.

Due to the weakness of the immune system of children, the number of cases of interferon deficiency syndrome associated with exposure to microorganisms and insecticides has increased. The lives of children who were diagnosed with this disease at an early stage were saved by the use of interferon therapy.

Interferons are proteins with various properties that help create a healthy environment in the child's body and also have the ability to activate fighters against external factors.

The inability of the child's body to respond to an attack by infectious agents may be expressed in the immaturity of its innate and acquired immunity. In some cases, the activity of infectious agents increases due to the child's immunodeficiency syndrome. To prevent the spread, development and reproduction of this activity, the child must be isolated.

In medicine, isolation is a protective measure against pathogens that multiply and spread rapidly without any effect. It serves as a precautionary measure to prevent the spread of infections. In this case, the patient is placed in a separate room.

The following immunological indicators of blood lymphocytes are given in the literature: in a newborn child, physiological lymphocytosis is observed from 4-5 days, by 4-6 years the lymphocyte content is 40-45%.

Under the influence of various infections and insecticides, children develop iron deficiency, rickets, respiratory diseases, anemia and other pathological conditions. Memory cells weaken, the immune system cannot perform its functions.

According to Internet sources, the incidence of severe immunopathological syndromes in children has increased in recent years. In this regard, scientists are looking for ways to reduce the number of natural killer cells that attack the immune system of newborns. This means increasing the body's response to antigens and stimulating the synthesis of natural antibodies.

Currently, children aged one month to one year are experiencing the development of seasonal allergic diseases caused by exposure to environmental factors and pathogens. Laboratory studies have revealed previously unknown antigens provoked by food exposure of the fetus.

Some allergic diseases observed in children manifest themselves as infections. Pathogens entering the gastrointestinal tract through the mouth and respiratory tract increase the sensitivity of organ tissues to allergens. This can also contribute to increased activity of helminthiasis and parasitic infections.

In general, it is necessary to control the vaccination of newborns to maintain their immune activity. This restores immune memory and strengthens the immune response to infectious antigens. This prevents the development of certain diseases in children associated with adaptation to the environment, such as whooping cough, diphtheria, tetanus, poliomyelitis and hepatitis. As a result, local immunodeficiency rates in children decrease.

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