

CURRENT CONCEPTS ABOUT THE IMMUNE SYSTEM

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Abstract

An important role in protecting a person from the aggression of the external environment performs immunity. When an antigen - a foreign agent - enters the body, antibodies begin to be produced in the blood. Antibodies or immunoglobulins are specific proteins that are secreted by B-lymphocytes. Their task is to eliminate exactly that "aggressor" that threatens the body at the moment. This means that they act selectively [1,2,3].

Keywords: Immunity, B-lymphocytes, antibodies, specific proteins, a foreign agent.

Introduction

Periodontitis of permanent teeth in children and adolescents is one of the most common Antibodies, attaching to antigens, immobilize them, and at the same time signal other cells - participants of the immune process, about the need to start a reaction, and where exactly to direct it. There is immune memory for some infections - antibodies to a certain antigen remain in the blood [5,6,7].

The presence or absence of a certain class of immunoglobulins can tell us a lot about the state of the human body. There are five classes of immunoglobulins: G, A, M, D. Depending on their number and combination, it is possible to judge the state of health of a person and the nature of the disease [8,9,10].

Immunologic study of blood allows you to get a clear picture of the state of the immune system of the body, the presence of immunodeficiency, both congenital and acquired, to identify the presence and nature of chronic diseases [11,12,13].

Sometimes the immune system malfunctions and the body attacks itself (autoimmune diseases). These are also easy to detect using immunologic serologic testing [4,5,6].



This type of examination is indicated in the following cases if:

- the infectious disease is long-lasting and difficult to treat;
- there is a suspicion of congenital immunodeficiency;
- Acquired immunodeficiency is possible, including that caused by HIV;
- autoimmune diseases are likely;
- there are allergic reactions;
- there is a suspicion of oncologic processes
- a complex surgical procedure is planned;
- it is necessary to determine the causes of male or female infertility;
- the results of hormonal drugs or immunosuppressants need to be monitored;

The following diseases can be diagnosed by immunologic laboratory testing:

- immunodeficiency conditions, both congenital and acquired, including AIDS;
- autoimmune diseases: rheumatoid arthritis, systemic lupus erythematosus;
- diseases of the gastrointestinal tract;
- sexual infections;
- malignant neoplasms;
- Thyroid diseases; thyroid gland dysfunction;
- allergies with identification of allergens;
- toxoplasmosis;
- hepatitis B and C;
- herpes;
- maternal-fetal Rh conflict;
- candidiasis;
- cytomegalovirus infection;
- glomerulonephritis;
- myocarditis;
- osteomyelitis.

Examination of the immune system includes determining the cellular composition of the blood and determining the presence of antigens and antibodies in the serum [1,2,3].

Stage 1 looks at the cellular composition of the blood:

- - total number of lymphocytes;
- - the ratio of T-lymphocytes and B-lymphocytes;
- - phagocytic activity of neutrophils;
- - apoptosis of lymphocytes;
- - productivity of B-lymphocytes by the total amount of immunoglobulins.
- This study allows to determine the general state and tension of immunity.

At the 2nd stage the humoral activity of immune cells is investigated:

- the concentration of cytokinins is determined;
- - the amount and ratio of immunoglobulin species are measured;
- When diagnosing specific diseases, the presence of an antigen or antibodies to it in the blood serum is determined.
- Let's consider the main parameters of the immunologic study.

Immunoglobulin A (IgA) is involved in the protective reaction of the mucous membranes of human organs. Exceeding the norm for this parameter can indicate:



- about arthritis;
- glomerulonephritis;
- myeloma disease;
- inflammatory processes in the liver.

Immunoglobulin A deficiency is seen:

- cirrhosis of the liver;
- toxic conditions;
- radiation disease

Immunoglobulin M (IgM) is secreted as an emergency response to the penetration of antigen.

Its numbers increase dramatically:

- in viral or bacterial infections;
- parasitic infestations;
- autoimmune processes;

Decreases occur:

- in acute or cumulative poisoning;
- radiation sickness;
- taking immunosuppressants.

Immunoglobulin G (IgG) provides passive defense.

Excess of the indicator above the norm is detected:

- in rheumatoid arthritis;
- systemic lupus erythematosus;
- AIDS;
- myeloma disease;
- chronic infectious diseases.

The index drops dramatically:

- in poisoning;
- immunosuppressant therapy;
- radiation sickness;
- liver cirrhosis.

To detect allergic diseases, it is important to know the level of immunoglobulin E (IgE) [8,9,10,11].

A sharp increase in the value occurs:

- In pollinosis;
- urticaria;
- food allergies;
- the presence of parasites;
- allergies to medications.



Decreased levels are indicative of:

- Acquired viral and non-viral immunodeficiency;
- congenital immunodeficiency;
- immunosuppressant medications [11,12,13,14].

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