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# IMPROVEMENT OF IMMUNOGENETIC CHARACTERISTICS AND PREVENTION OF JUVENILE IDIOPATHIC ARTHRITIS IN CHILDREN OF FERGANA VALLEY.

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**Abstract:**

Juvenile idiopathic (rheumatoid) arthritis (JIA) is a chronic, severe, progressive disease of children and adolescents, with unclear etiology and complex autoimmune pathogenesis, which is manifested by gradual destruction of joints, disrupts the growth and development of the child. , is considered a disease that negatively affects the quality of life[1]. The exact causes of this disease are unknown.

**Keywords:** Development, infections, arthritis, immunity, genetic immunity, lymphocyte, oligoarthritis, enthesitis arthritis.

The etiology of JIA is multifactorial, among which genetic and environmental factors such as infections are of particular importance. According to statistical data, the incidence of rheumatoid arthritis in relatives of the 1st degree of consanguinity is higher than in the general population. Associations of JIA with histocompatibility Ag (HLA) — A2, B27, B35 and HLA DR-5, DR-8 have been determined. The most common environmental factors are viral or bacterial-viral infection, trauma, insolation or hypothermia, psychological stress and even are preventive vaccinations. The basis of the disease is the activation of cellular and humoral immunity. A foreign or modified antigen is taken up and processed by macrophages or other antigen-presenting cells, which present it to T-lymphocytes, leading to T-lymphocyte activation and proliferation. Macrophages, activated T-lymphocytes, fibroblasts, and synoviocytes produce anti-inflammatory cytokines that cause a cascade of pathological changes with the development of progressive inflammation in the joint space and the systemic manifestation of the disease. The production of large numbers of autoantibodies indicates the involvement of B-cell communication of the immune system. Thus, uncontrolled reactions of the immune system lead to the development of chronic inflammation, irreversible changes in the joints, and the development of extra-articular manifestations. JIA can be considered a diagnosis of exclusion. It is defined as arthritis of unknown etiology, present for 6 weeks, under the age of 16 years, excluding other diseases. The following streaming options are available:[2]

Systemic arthritis is arthritis that is accompanied by or preceded by at least 2 weeks of documented fever and two or more of the following:

Transient, volatile erythematous rashes;

serositis;

General lymphadenopathy;

hepatomegaly;

Splenomegaly.

Polyarthritis : RF is defined when RF affects 5 or more joints during the first 6 months of the disease;

Polyarthritis: RF-positive is defined when 5 or more joints are affected during the first 6 months of the disease, the presence of positive RF in two tests within 3 months;

Oligoarthritis;

Enthesitis arthritis - is applied in the presence of arthritis and enthesitis;

There is no specific diagnosis for JIA. There are diagnostic criteria recommended by the American Rheumatism Association:

The onset of the disease before the age of 16;

Characterized by swelling of one or more joints or having at least two of the following symptoms: limitation of function, tenderness during palpation, increased local temperature.

Duration of articular changes is at least 6 weeks.

Exclusion of other rheumatic diseases.[3]

An increase in ESR, CRP, Ig M, Ig G was noted in the analysis. Antibodies to RF and cyclic citrulline peptide, symptoms of rheumatoid arthritis are detected in only 6% of cases. An important role is played by instrumental diagnostic methods - MRI, CT, X-ray examination, ultrasound [1].

The following medications are used to treat JIA:

non-steroidal anti-inflammatory drugs (diclofenac);

Glucocorticosteroids (prednisolone)

Main rheumatic drugs (methotrexate, sulfasalazine)

Genetically engineered biological drugs (etanercept, tocilizumab in systemic version) [1].

Monoclonal antibodies: golimumab

What are the forms of juvenile idiopathic arthritis?

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There are six types of JIA:[4]
Systemic JIA. This type of JIA affects the entire body, including the joints, skin, and internal organs.
Oligoarticular JIA. This type of JIA affects fewer than five joints. It occurs in about half of children with arthritis.
Polyarticular JIA. This type of JIA affects five or more joints. A protein known as rheumatoid factor may or may not be present. Juvenile psoriatic arthritis. This type of JIA affects the joints and occurs with psoriasis, so it is called juvenile psoriatic arthritis. JIA is associated with enthesitis. This type of JIA involves connecting the bones with tendons and ligaments. Undifferentiated arthritis. This type of JIA includes symptoms that cover two or more subtypes or none of the other subtypes. The more joints are affected, the more severe the disease. Juvenile How is idiopathic arthritis diagnosed? Your child's doctor can diagnose JIA by performing a complete physical exam and taking a detailed medical history. They may also order various diagnostic tests, such as the C-reactive protein test. This test measures the amount of C-reactive protein (CRP) in your blood. CRP is a substance that the liver produces in response to inflammation. Another test that looks for inflammation, sedimentation rate, or erythrocyte sedimentation rate (ESR) may also be done. Rheumatoid factor test. This test detects the presence of rheumatoid factor, an antibody produced by the immune system. The presence of this antibody often indicates rheumatic disease. Antinuclear antibody. An antinuclear antibody is an antibody to nucleic acid (DNA and RNA), which is mainly found in the cell nucleus. It is often created by the immune system in people with an autoimmune disease. An antinuclear antibody test can show the presence of a protein in the blood. HLA-B27 test. This test is related to enthesitis.
Conclusion:
Detects a genetic marker associated with JIA. X-ray or MRI. These imaging tests can be used to rule out other conditions that may cause joint inflammation or pain, such as infections and fractures. Imaging can also identify specific characteristics (signs) of subtypes of inflammatory arthritis. How is juvenile idiopathic arthritis treated? Various treatments can effectively control and minimize the effects of JIA. Health care providers usually recommend a combination of treatments to relieve pain and swelling and maintain mobility and strength.

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