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Research Article

THE CLINICO-CLASSIFICATION OF IMMUNOLOGIC ASPECTS OF JUVENILE RHEUMATOID DISEASES IN TEACHING STUDENTS CLINICAL SCIENCES IN MEDICAL EDUCATION

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ABSTRACT

The article deals with the clinic and classification of immunological aspects of juvenile rheumatoid arthritis in students while teaching clinical sciences in medical education, acute rheumatic diseases, etiopathogenesis, classification, clinical signs, diagnostic criteria, comparative diagnosis, treatment methods, prevention and dissemination. Rheumatism, immunological aspects and its classification considered related to treatment methods, etiology and pathogenesis of the disease, infectious factors. Causes of rheumatism, solution of therapeutic and methodical tasks necessary in medical educational institutions, in classes, based on medico-didactic approach outlined.

KEYWORDS

Juvenile rheumatoid arthritis, the spread of rheumatism, treatment methods, clinical symptomatology, diagnostic criteria, comparative diagnosis, medical and didactic approach.

INTRODUCTION

Teaching clinical sciences in medical education methodically improve the quality of medical education, paid attention to quality medical education, introduce clinical innovative technologies to methodically develop practical professional skills in real medical environment, social training of medical professionals - pay attention to the development of methodical professional competencies in cultural, inclusive prism and scientific research. As consequence of globalization and technological progress, innovative strategies based on digital transformation of medical education are widely implemented in the world. The integration of the educational process supported, improving individualized trajectories of need-based

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medical education, providing infrastructural and technological resources that serve to develop the universal competencies, creative and critical thinking skills necessary for the training and performance of future pediatricians. This, in turn, allows for effective work on the practical use of medical-methodological opportunities for the implementation of collaborative and learning models of clinical sciences.

Further improvement of educational services in medical education, expansion of opportunities for quality education, training of highly qualified personnel in accordance with the needs of medical organizations, introduction of dual education model based on practice and medical education. To this regard, the priority of higher medical education is to determine the task of increasing the academic and innovative potential of universities. Fundamental development of the medical sphere in our country in 2020-2030, introduction of international standards in the field of medicine, improvement of the processes of personnel training and professional development in the field of medicine through the introduction of credit-modular system, introduction of positive international experience. Effective work carried out in the field of medical education, science, practice and innovation.

METHODOLOGY

In 2018, Ashurova D.T., Tursunova O.A., Akhrarova N.A., Mambetkarimov G.A. published the textbook "Propedeutics of pediatric diseases", in 2012. Daminov A., Khalmatova B.T., Boboeva "Children's diseases", in 2014. Akhmedova D.I., Shamansurova E.A. G.G. Makhkamova, N.G. Ishniyazova. The publication of the doctor's textbook "Nutrition of infants and young children" is important.

In 2010, foreign scientists published a textbook Lezhnina I.V., Podlevskikh T.S., Tokarev A.N. "Clinical and functional features of the newborn", in 2011 the textbook "Propedeutics of pediatric diseases" V.A. Kelsev, in 2006 "Propedeutics of pediatric diseases with care" children" was created by the textbook T.V. Kapitan 'Propedeutics of pediatric diseases' Mazurin A.V., Voronsov I.M. in 2009. Important for medical universities is the creation of the textbook "Propedeutics of pediatric diseases" Geppe N.A., Podchernyaeva N.S. in 2008.

Immunologic aspects. The pathologic process that develops in patients with JRA has two stages. The development and manifestation of the exudative phase based on the disruption of microcirculation and damage to the cells of the synovial membrane. It contributes to an increase in the permeability of cell membranes and increases the penetration of plasma proteins and a number of cellular elements into the joint. As consequence of this remodeling, chronic inflammation (second stage) develops, manifested by mononuclear infiltration in the structures of the synovial membrane of joints and cartilage. The inflammatory process characteristic of JRA lasts for many years and has the character of autoimmune inflammation. When studying the etiology of JRA, it was indicated that polymorphism of 4 KLA haplotypes lies behind the clinical diversity of forms, which is probably associated with immune "defects" in the body of a child with a predisposition to the disease phenotype. All forms of JRA united by the fact that the main target organ is the structures of the joint apparatus, primarily the synovial membrane.

The main properties of autoantibodies are cross-reactions and formation of antigen-antibody complexes in the bloodstream. Antigen-antibody reactions accompanied by activation of complement system proteins, which manifested by a decrease in its titer in the synovial membrane, an increase in vascular permeability, release of hydrolytic enzymes, active oxygen radicals, acid metabolites (supplier).

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Prostaglandins). Immunoglobulins and rheumatoid factor (RF) molecules gradually accumulate and accumulate in the superficial layers of articular cartilage, which promotes proliferation processes and the formation of panes in the synovial membrane. According to the systemic (articular-visceral) form, clinical manifestations and morphology, classical JRA referred to systemic vasculitis. It flows with the phenomena of polyserositis and organ damage. In patients with JRA, peculiarities detected practically at all stages of the immune response of the organism. They depend on the form and shape of the disease. In general, the leading role of immunopathology mechanisms in the pathogenesis of JRA considered proven.

The particular interest is the presence of proteins of the acute phase of inflammation, in particular SRB. It considered an early manifestation of JRA and together with high levels of IL-6 and a number of liposomal enzymes considered be prognostic factor (marker) of the progressive course and early development of the disease. Systemic osteoporosis. A special role in the diagnosis of JRA assigned to the determination of RF in serum and synovial fluid of patients.

Changes in cellular immunity are often subtle and often misdirected. It is often difficult to assess the nature of cellular immune responses in children with JRA. It is not always clear whether these changes related to the activity of the process. In most children with JRA, the total number of T-cells is low, but in patients with very active JRA, the level of T-cells may be normal or even elevated. Against this background, the subpopulation of activated T-lymphocytes is significantly increased. This especially manifested in systemic variants of the disease. Oligoarticular variants of JRA are characterized by a decrease in the level of cytotoxic T cells and an increase in the number of T-helper cells (especially type 2), especially in children with articular-visceral forms of the disease, of particular importance in the development of JRA is the impairment of the suppressor function of lymphocytes. Direct evidence of the involvement of cytotoxic T-cells is the detection of antibodies affecting these cells in the serum of patients with high activity of JRA. During remission of the disease, the functional state of lymphocytes restored.

Thus, the changes in cellular immunity in patients with JRA are heterogeneous, reflecting the polymorphism of the pathogenesis of different forms of the disease. Systemic forms of JRA characterized by impaired immune-regulation, which is associated not with a decrease in suppressive potential, but with activation of type 2 T-helper function. Perhaps in these cases there is a genetic determinacy of T-cell defect. It manifested by their functional incapacity.

Studies in recent years have shown that in children, especially in systemic forms of JRA, there is a significant impairment of the migration functions of effector cells, in particular polymorphonuclear leukocytes and mononuclear cells. In patients with JRA, their dysfunction manifested mainly by a decrease in the activity of leukocyte chemotaxis (migration of leukocytes to the site of inflammation) and chemokinesis (migration stimulated by the C5-component of complement). Primary (genetic) defect and has a significant impact on the immune-inflammatory process, immediately focusing on the time course of the process.

DISCUSSION

Clinic and classification. The clinical picture of JRA depends on many factors - the age of the child, heredity, sex, initial state of the immune system, the conditions of its external environment, the peculiarities of the psychoemotional state of life, the attitude to children. Disease of the patient and close

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relatives, timely diagnosis, adequacy of therapy. It noted that in 80% of cases JRA is a severe chronic disease with recurrent and progressive course, which soon or later leads to disability.

The main clinical manifestations of the disease are joint involvement, specific eye involvement and general rheumatoid syndrome characterized by fever, typical rheumatoid rash, polyserositis and internal organ involvement caused by systemic rheumatoid vasculitis. Joint syndrome is virtually the earliest symptom of JRA. Sometimes before arthritis occurs, the child bothered by arthralgia, and then the picture of synovitis develops, i.e. inflammatory process in the synovial membrane. In this connection, it swells (swells), becomes hyperemic, and secretes more fluid, the composition of which differs significantly from normal fluid. The fluid has low viscosity, may be light straw or turbid yellow in color, cytosis is increased, leukocytes, neutrophils may predominate, protein and lysosomal enzymes are reduced. This allows early diagnosis and adequate treatment.

Clinically, at the stage of acute synovitis, the child bothered by pain and swelling in the joint, its mobility is limited, and body temperature usually rises. As the process continues, there is an overgrowth of microvilli of the synovial membrane in the form of pannus (accumulation of granulation tissue). It spreads to the articular surface and penetrates the B-cartilage, causing dystrophic and destructive changes in it, which radiologically manifested by cellularity and periarticular osteoporosis. Fibrosis of the capsule and fibrous adhesions in the joint subsequently develop. The epiphyses of bone eroded and destroyed. This process usually increases, and further development of fibrosis leads to changes in the configuration of the joint, its mobility and limited because of ankylosis.

JRA characterized by the presence of rheumatoid nodules. They localized mainly along tendons, joints in elbow, knee and ankle joints. The nodules are usually dense, mobile and painful on palpation. They disappear when the acute process subsides. Involvement in the process of internal organs in patients with SRA always indicates a strong immune inflammation, i.e., the general manifestations of rheumatoid systemic vasculitis with high clinical and immunologic activity. The cardiovascular system is often affected. The clinical picture of myocarditis can usually develop with a torpid course, but in rare cases leads to the development of heart failure. Endocardium and pericardium may be involved in the process, which requires differential diagnosis of JRA with rheumatism. The lungs are rarely involved in the process. Most often, it manifested by pneumonitis and/or pulmonary pleuritis, which further leads to the formation of pleural adhesions.

Rheumatoid rashes, macular or maculopapular, not accompanied by itching, brightness and distribution related to body temperature and inconstant. It appears and disappears within a short period, localized mainly in the joints, groin, lateral surfaces of the body, buttocks and extremities can be urticarial or even hemorrhagic. Hyperesthesia of the skin, widespread lymphadenopathy, hepatosplenomegaly, cardiac involvement such as myopericarditis, lung involvement in the form of pneumonitis or pleuropneumonitis, sensation of shortness of breath and ineffective cough are also characteristic. It is possible to develop serous peritonitis in the abdomen in a blunt child. In the systemic form of JRA often develops vasculitis. Palm and/or plantar capillaritis, local angioedema, most often on the hands, cyanotic coloration and marbling of the skin and distal parts of the lower and upper extremities. Often at the beginning of the disease, children are bothered by transient arthralgias for a few

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weeks (or days), then (more accurately) develop stable synovitis of one or more joints. There may be a single episode of clinical manifestation of this form without joint syndrome, which, with adequate therapy, has a completely reversible course and the child recovers.

RESULT

In addition to the most typical forms of JRA described above, occurring in about 80% of patients, there are less specific variants. In a large group of children of different ages, only mono-oligoarthritis (not associated with HLA-B27) is distinguished. Its course is usually very favorable, after 3-5 years, 50% of children recover or note very rare relapses without a clear progression of the process, which requires a revision of the diagnosis after years. Pathogenetic heterogeneity, clinical polymorphism of JRA, as well as different variants of the nature and outcome of the disease led to the development of a new classification. Its first version was proposed in 1972; E.I. Brewer, I.C. Bassou, and I.T. Cassidy. Currently, the Eastern European working classification JRA is still preferred in clinical practice (A.V. Dolgopolova, A.A. Yakovleva, L.A.Isaeva). Clinical classification of JRA and clinical and anatomical features of JRA

1. Rheumatoid arthritis, articular-visceral (systemic) form (with lesions of the reticuloendothelial system, heart, serous membranes, vessels, eyes, urine, nervous and Broncho pulmonary systems):

a) In limited visceritis;

b) Still's syndrome;

c) Allergic septic syndrome.

2. Rheumatoid arthritis, predominantly in the articular form (with or without eye involvement):

a) Polyarthritis;

b) oligoarthritis;

c) monoarthritis.

3. Combined with rheumatoid arthritis:

a) Rheumatism;

b) Immunologic features of diffuse connective tissue diseases of JRA

RF-test positive (seropositive), RF-test negative (seronegative).

Disease course: Fast growing, slow growing, without significant progression. Activity level: high (III degree), medium (II degree), low (I degree) remission. Radiologic stage. Stage I: per articular osteoporosis, effusion into the joint cavity, signs of compression of per articular tissues. II. Stage, against the background of the same changes, narrowing of the articular gap, usurer of one bone III. Stage: widespread osteoporosis, pronounced bone and cartilage destruction, dislocations, subluxations, systemic bone dysplasia. IV. Stage I-III changes and ankylosis. Functional capabilities of the patient

1. Saved.

2. The condition of the locomotors apparatus is impaired:

a) The possibility of self-care preserved:

b) Self-care ability is partially lost

c) The possibility of self-care is significantly lost.

3. Damaged, but the condition of the eyes or internal organs.

Symptoms of the development of JRA. Involvement of new participants in the process. Transition to a new radiologic stage of arthritis. Progressive functional disorders of the musculoskeletal system. Rapidly progressive course characterized by the presence of the above-described dynamics of the process in the first year of the disease. If these symptoms are present

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for 1.5-3 years from the onset of the disease, the course called gradually progressive. If the patient has no arthritis symptoms for 3 years, the course considered slightly progressive.

CONCLUSION

In general, JRA is an autoimmune disease, classically described as a pathologic condition that develops when the regulation of physiologic immune processes is disturbed, resulting in cellular and humoral immune reactions against components of one's own tissues, causes structural and functional abnormalities in target organs. An important feature of JRA as an autoimmune disease is the increased production of autoantibodies directed against antigens present on self-labels, within cells or in extracellular spaces of the human body. Autoantibodies can react with a wide range of molecules - components of the cytoplasm, nucleus, cell membranes, serum proteins, hormones, enzymes, HLA, nucleic acids, phospholipids, steroids, etc.

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