

## SECTION OF CLINICAL MEDICINE #5 (NEONATOLOGY, PEDIATRY)

### СЕКЦІЯ КЛІНІЧНОЇ МЕДИЦИНИ № 5 (НЕОНАТОЛОГІЯ, ПЕДІАТРІЯ)

#### REACTIVE ARTHRITIS OF YERSINIOUS ETHIOLOGY IN CHILDREN

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**Actuality.** *Y. enterocolitica* is a well-known trigger for reactive arthritis (ReA). Its frequency in people who have had this infection reaches 15%. Such arthritis has a severe, sometimes progressive course with the need for long-term treatment and the risk of transformation into juvenile idiopathic arthritis (JIA).

**Aim of the research.** To determine the features of the clinical and laboratory manifestations of ReA of the yersineous etiology in children.

**Materials and methods.** Cases of ReA were analyzed in 9 patients; the observation duration was 4 months. A clinical examination, laboratory studies of the activity of the pathological process, molecular biological, serological tests for yersineosis, ultrasound of the joints. EULAR-PRES and the 10th ICD criterion were used to diagnose ReA and JIA.

**Results.** The average age of the patients is  $9.38 \pm 4.56$  years. The older age prevailed by age: 12-16 years old - 5 children (55.5±16.5%), young children 1.5-3 years old – 44.4 ± 16.5% and 1 child 8 years old – 11.1±10.4%. All children were hospitalized with severe manifestations of reactive arthritis, febrile fever (77.7±13.8%), high activity of the pathological process (ESR 6-54 mm/h, CRP 6-48 g/l), no rash. When conducting tests for yersiniosis, positive results of *Y. Enterocolitica* O3 DNA level were found in 55.5±16.5% of patients: in 75±14.4% of young children and in 40±16.3% of older children. An increase in antibodies to *Y. Enterocolitica* O3 was detected in all children and ranged from 1:100 to 1:800. Only in two patients (22.2±13.8%) reactive arthritis was preceded by diarrhea. Articular syndrome was represented by oligoarthritis, which prevailed (55.5±16.5% of patients) and polyarticular lesions (44.4±16.5%), one child had monoarthritis. The younger group was characterized by oligoarthritis with severe synovitis. Among older children, oligoarthritis was diagnosed in 60%, and polyarthritis in 40%. Arthritis of the knee, hip, ankle joints prevailed. Rare was the defeat of the proximal interphalangeal joint by the hands and joints of the wrist. Children received therapy (antibiotics, NSAIDs). However, after the third month of illness in 8 children (88.89%), the diagnosis was revised in favor of juvenile idiopathic arthritis, which required the appointment of basic therapy (methotrexate). All these patients continue treatment until now (the average duration of methotrexate is 1 month).

**Conclusions.** Yersiniosis infection is associated with a high incidence of arthritis, which tends to become chronic. The mechanism of virulence and genetic control of the microorganism promotes the activation of autoimmune reactions and the development of juvenile idiopathic arthritis, which requires correction of therapy at an earlier stage.

#### ADAPTIVE CAPABILITIES OF THE CARDIOVASCULAR SYSTEM IN CHILDREN WITH SYSTEMIC LUPUS ERYTHEMATOSUS

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**Actuality.** Adaptation is a form of adjustment in which the activity of functioning systems is aimed at maintaining relative homeostasis and optimal forms of interaction between the body and the environment under changing conditions. The functional tension of the cardiovascular system (CVS) is one of the main adaptive reactions that determine the adaptive capabilities of the child's body. Adaptation to changing environmental conditions is associated with the body's tolerance to physical activity. One of the early manifestations of heart failure at the preclinical stage is a decrease in the body's tolerance to minimal physical activity and the tension of the CVS with impairment of its adaptive capabilities.

Systemic lupus erythematosus (SLE) is a systemic autoimmune disease of unknown etiology, which is based on a genetically determined immune regulation disorder, characterized by the formation of organ-specific autoantibodies against nuclear and cytoplasmic antigens, leading to the development of immune inflammation in many organs and tissues of the body.

**Aim of the research.** To study the adaptive capabilities of the cardiovascular system in children with SLE.

**Methods and materials.** Were investigated 12 patients with SLE (comprising 1 male and 11 females). The comparison group consisted of 33 adolescents without any chronic diseases (26 from them were males, 7 – females). The average age of patients with SLE was  $14.0 \pm 0.71$  year, in control group  $14.91 \pm 0.40$  years. The study was conducted in the cardiorheumatology department of the State Institution "Institute for Children and Adolescents Health Care at the National Academy of Medical Sciences of Ukraine". The blood pressure was measured and the resting heart rate was calculated. From the data obtained, the index of functional changes of the circulatory system, or adaptive potential (AP) was determined. The results of AP were evaluated as follows: less than or equal to 2.59 CU - satisfactory adaptation, from 2.60 to 3.09 CU - tension of adaptation mechanisms, 3.10-3.49 CU - unsatisfactory adaptation, more than 3.50 CU - failure of adaptation mechanisms.

**Results.** Analyzing the functional state of CVS in children with SLE, significantly higher values of adaptive potential (AP) were revealed ( $11.09 \pm 0.77$ ,  $p < 0,001$ ), which corresponds to a failure of the adaptive mechanisms of CVS, while in the control group, AP corresponded to a satisfactory body adaptation ( $2.40 \pm 0.38$ ,  $p < 0,001$ ).

**Conclusion.** In children with systemic lupus erythematosus, higher values of adaptive potential are determined, which indicates a failure of adaptive capabilities of the circulatory system in this category of patients.