CRANIOCEPHALGIA AND PSYCHO-EMOTIONAL BACKGROUND OF SICK CHILDREN WITH JUVENILE RHEUMATOID ARTHRITIS

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Abstract. *Chronic progressive JRA disease requires regular examination and long-term treatment, and often leads to the development of psycho-emotional disorders in children and adolescents. Frequent headaches, anxiety, emotional stress, astheno-neurotic reactions contribute to the formation of difficulties in communicating with parents, teachers, healthy peers and, thus, cause social maladaptation.*

Keywords: *juvenile rheumatoid arthritis, psycho-emotional state, cephalgia, children.*

Relevance. Pediatric juvenile rheumatoid arthritis is a rapidly progressive inflammatory disease that affects the joints in children and adolescents under 16 years of age. The disease is characterized by destructive changes, severe pain syndrome, increasing limitation of motor functions. This condition is almost always associated with extra-articular pathology. Rheumatoid arthritis is diagnosed and treated in a complex way by rheumatologists, infectious disease specialists, pediatricians and other narrow specialists.

Juvenile rheumatoid arthritis remains the most frequently diagnosed disease in pediatric rheumatology. It is accompanied by total damage to the connective tissues, which leads to a narrowing of the joint space, the formation of erosive areas on the surface of the joints, and atrophic changes in the muscle fibers. Rheumatoid arthritis is a systemic disease, and almost all human organs and systems, including nervous tissue, are gradually involved in the pathological process. The pathology of the nervous system in RA leads to an aggravation of disability and a reduction in life expectancy, which is beyond doubt by the vast majority of researchers [1,4,6,7]. Being a chronic progressive disease that requires regular examination and long-term treatment, JRA often leads to the development of psycho-emotional disorders in children and adolescents. Anxiety, emotional stress, astheno-neurotic reactions contribute to the formation of difficulties in communicating with parents, teachers, healthy peers and, thus, cause social maladjustment. The study of the psycho-emotional characteristics of patients with JRA is very important, as it allows to identify their causes, maximally compensate or prevent their occurrence, as well as optimize the interaction of children suffering from this pathology with their immediate environment.

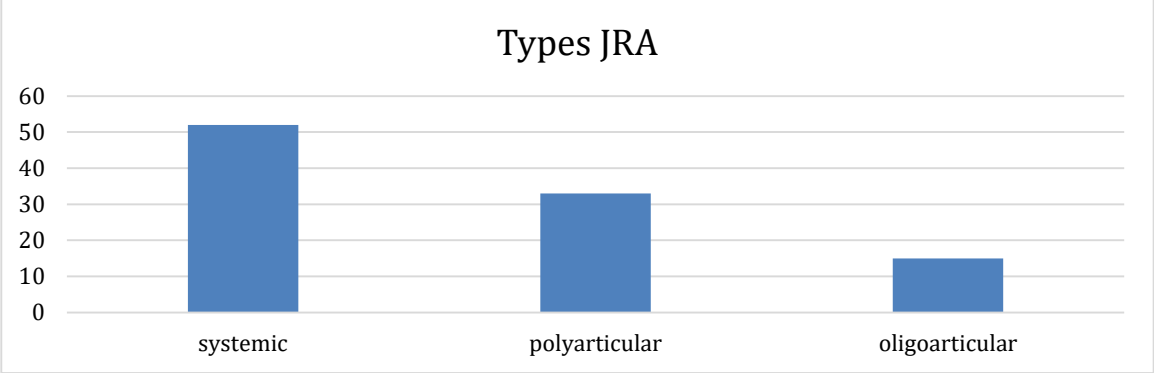
The aim of our study was to study the clinical manifestations of cephalalgia and the psycho-emotional state of sick children with juvenile rheumatoid arthritis.

Materials and methods of the study: The study included 92 (76.3%) children aged 6 to 16 years with various types of headaches in the cardio-rheumatology department of the TashPMI clinic, with a clinical diagnosis of juvenile rheumatoid arthritis (JRA) according to the ICD- 10. These patients were divided into three groups depending on the JRA variant. The first group included 33 children with systemic JRA. The average duration of the disease in them was 5.70±3.85 years, and the duration of headache was 3.00±2.24 years. The second group consisted

of 19 children with polyarticular variant of JRA. The duration of the disease in this group averaged 5.21±3.20 years, and the duration of headache was 3.00±1.85 years. The third group included 5 children with oligoarticular variant, the duration of the disease and headache in groups 3 and 4 was 4.0±1.87 and 1.0±0.61, respectively. In the course of a comparative analysis by groups, a relationship was established between the duration of headache and the form of JRA. Thus, in children with the systemic variant of JRA, the duration of headache significantly exceeded that in patients with the oligoarticular variant of the disease ($p < 0.05$).

The examination included the study of clinical and neurological examination, psychological tests, the use of instrumental methods: cervical radiography, examination of the fundus, MRI of the brain and spinal cord according to indications.

Results and discussion: 92 patients with JRA were examined, including 58 girls and 34 boys. The incidence of headache in the examined children was 51% in the systemic variant of juvenile arthritis, 29% in polyarthritis, 8% in oligoarthritis and 12%. Thus, the most common headache occurred in the systemic variant of juvenile arthritis, and least often in the oligoarticular variant ($p < 0.05$). Analysis of the severity of JRA showed that patients with I and III degrees of activity of the inflammatory process suffered from headaches with approximately the same frequency - 23.1% and 26.2%, respectively. The most common headache-pain was noted in patients with II degree of activity (49.2%) ($p < 0.05$). Number of children; headache sufferers; those with a JRA duration of both less and more than 4 years did not differ significantly (52.0% and 48.0%, respectively).



When considering the entire sample of patients with headaches, it was found that children with JRA most often had headaches of frontal localization (76.9%), moderate frequency (50.8%) and intensity (89.2%), lasting several hours. ; (66.2%); About half of the patients with headache complained of neck pain, pain on palpation of trigger points, and had limitation of motor activity in the cervical spine. According to X-ray and Dopplerography of the neck vessels, from 30 to 50% of them had various changes in the cervical spine and changes in the fundus. In the fundus, angiopathy of the retinal vessels was detected by the type of venous congestion in 90% of patients.

Data of instrumental examination in patients with JRA suffering from headache.

Age groups	Juvenile arthritis variants, (%)			Total
	Systemic	Polyarthritis	Oligoarthritis	
Radiography				
straightening of the cervical lordosis	48,5	**73,7**	0	
hyperlordosis	33,3[1]	31,6	80	
dislocation of the vertebrae	**33,3[1]**	**63,2[1]**	0	

narrowing of the intervertebral fissure	**39,4[1]**	**73,7[1]**	0	
arthritis	15,2	26,3	0	
Dopplerography of the vessels of the neck				
Spasm of the vertebral artery	9,1	36,8	20,0	
Spasm of the spinal artery	6,0	31,6	20,0	
Dilatation of the vertebral artery	36,4	36,8	0	
Dilatation of the spinal artery	6,1	42,1	0	
Tortuosity of the vertebral artery	48,5	73,7	20,0	
Tortuosity of the spinal artery	12,1	31,6	0	
Asymmetry of blood flow in the vertebral artery	42,4	63,2	0	
Asymmetry of blood flow in the spinal artery	15,2	26,3	0	
Violation of the venous outflow	42,4	47,4	0	
Ophthalmoscopy				
Partial obscuration of the optic disc	23,7	26,3	0-	24,6
Plethora of veins	93,9	78,9	80,0	87,7
Vein dilatation	39,4	36,8	0	35,4
Tortuosity of the veins	33,3	47,4	20,0	32,3
Narrowing of the arteries	48,5	0	0	44,6
Spasm of the arteries	9,1	10,2	0	7,7

Based on the analysis of the anamnesis complaint, neurological examination data, laboratory and instrumental studies, we identified five types of headache (according to the ICGB) in children with various types of JRA:

- Tension headache (2);
- Headache associated with a noncommunicable inflammatory disease (7.3);
- Cervicogenic headache (11.2.1);
- Headache due to steroid hypertension;
- Headache associated with impaired homeostasis (10);

For groups of children with systemic and polyarticular variant of JRA, all four types of headache are characteristic, in the group with oligoarthritis, only tension headache and headache associated with a non-communicable inflammatory disease were found.

The most characteristic headache for the systemic variant of JRA was secondary headache associated with a violation of homeostasis,

Five types of headache occurring in children with JRA have been identified. These include tension headache, headache associated with a non-infectious inflammatory disease, craniocervicalgia, secondary headache due to steroid hypertension and homeostasis disorders. The most common of these were craniocervicalgia (54%) and HDN (50%). More than half of the patients had; a combination of several types of cephalgia.

When using MRI and/or CT methods, a change in the ventricular system was revealed in the form of its expansion or deformation and/or expansion of the subarachnoid space, as well as focal lesions of various brain structures, atrophy of the brain substance. Signs of external, internal or combined hydrocephalus were noted in all nosological forms. Focal changes in the brain substance included hyperdense zones with or without edema, single or multiple.

42 patients with JRA aged 13-16 years were tested, of which 13 (31%) children were diagnosed with the systemic variant of JRA, 16 (38%) with the polyarticular variant, 10 (24%) with the oligoarticular variant, and 3 (7%) - juvenile ankylosing spondylitis. The control group included healthy schoolchildren of the same age group (n=21). The average age of patients with JRA was 14.3±1.3 years, children from the control group - 13.1±3.1 years.

When studying the dependence of the psycho-emotional state of patients on the severity of the course of arthritis, the Spielberger-Hannin test scores and the level of subjective feeling of loneliness in subgroups of children with grades 1, 2, and 3 of JRA activity were analyzed and compared with the data of healthy schoolchildren.

The following regularities have been established:

■ a low level of personal anxiety in patients with the 1st degree of disease activity and in the control group was detected with approximately the same frequency (30% and 38%, respectively).

■ a low level of personal anxiety was significantly less frequently diagnosed in patients with grade 2 JRA activity compared to the control group ($p<0.05$) and did not occur in children with a high degree of disease activity.

■ a moderate level of personal anxiety occurred with approximately the same frequency in all three subgroups (70%, 77% and 60%, respectively).

■ a high level of personal anxiety was maximal in patients with the 3rd degree of disease activity (40%) ($p<0.05$) and was absent in children with minimal JRA activity.

■ low level of situational anxiety is significantly higher in patients with the 1st degree of disease activity and in the control group ($p<0.05$).

■ a moderate level of situational anxiety was determined with the highest frequency in children with the 3rd degree of JRA activity and significantly less frequently in patients with the 1st degree of disease activity and in the control group ($p<0.05$).

■ a low level of subjective feeling of loneliness significantly prevails in the control group (86%), compared with children with the 3rd degree of activity (40%) ($p<0.05$).

■ there is an inverse relationship in the form of a decrease in the frequency of detection of low and increase, moderate levels of subjective feelings of loneliness in JRA patients with an increase in the degree of disease activity.

Analysis of the degree of subjective feeling of loneliness in patients with JRA

Degree of anxiety	Activity 1	Activity 2	Activity 3	Control
Short	90%	64%	40%	86%
Moderate	10%	36%	60%	14%
High	0	0	0	0

Conclusions. Thus, headache is a significant manifestation in the clinical picture of JRA. It can be caused by various reasons, the identification of which is necessary, as this determines the further tactics of their treatment.

It can be concluded that the psycho-emotional state of patients with JRA, being a chronic progressive disease, causes the formation of personal and situational anxiety, regardless of the duration of the course of the disease. Possible additional factors in the development of psychological disorders in children with JRA are the use of GC therapy, as well as the presence of such stress factors as prolonged hospitalization, invasive manipulations and painful procedures.

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