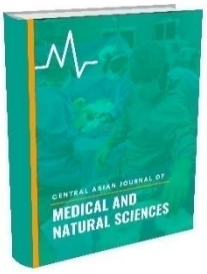
CENTRAL ASIAN JOURNAL OF MEDICAL AND NATURAL SCIENCES



Volume: 04 Issue: 02 | Mar-Apr 2023 ISSN: 2660-4159

http://cajmns.centralasianstudies.org

# Clinical and Neurological Disorders in Systemic Vasculitis in Children

1. **Iskanova G. Kh.**
2. **Egamova S. Sh.**

*Received 19th Jan 2023,*
*Accepted 20th Feb 2023,*
*Online 20th Mar 2023*

[1,2] Tashkent Medical Academy, Tashkent

**Abstract:** The article describes the features of clinical and neurological changes in systemic vasculitis. 14 children with various forms of systemic vasculitis were examined. Systemic vasculitis was more common in girls. Pronounced changes in the nervous system were found in children with aortoarteritis.

**Keywords:** aortoarteritis, polyarteritis nodosa, children, neurological disorders.

**Introduction** Systemic vasculitis (SV) is a systemic autoimmune disease of unknown etiology, pathogenetically associated with immunoregulatory disorders that cause hyperproduction of a wide range of organ-nonspecific autoantibodies to various components of the nucleus and immune complexes, causing immuno-inflammatory damage to blood vessels and dysfunction of internal organs [1, 6,8,9,10].

Vasculitis is characterized by multivariable manifestations, course and prognosis, exacerbations and remissions. Potential targets for immune aggression can be a variety of antigens of the nervous tissue [1, 2, 7]. Studies conducted in recent years have proven the commonality and interconnection of the nervous and immune systems, and the results of experimental developments have confirmed the similarity between their structures and functions, which contributed to the development of a new direction - neuroimmunology [1, 4, 5].

**The purpose** of the study was to evaluate the frequency of damage to the nervous system in vasculitis in children.

**Material and methods.** The study included 14 children (9 girls and 5 boys) who were hospitalized at the clinic of the Tashkent Medical Academy with a diagnosis of systemic vasculitis. The age of children is from 11 to 18 years, the duration of the disease ranged from 6 months to 3 years. 8 children were diagnosed with aortoarteritis and 6 with polyarteritis nodosa according to the ChHSK (Chapel Hill) 2012 classification.

Conducted clinical and laboratory-instrumental studies research: general and biochemical blood tests (hemoglobin, erythrocytes, leukocytes, ESR, C-reactive protein - CRP), antineutrophil cytoplasmic antibodies (ANCA), MSCT and duplex scanning of vessels. Examinations were carried out for 10 days in a hospital and then on an outpatient basis.

**Results.** Clinical manifestations of aortoarteritis and polyarteritis nodosa were characterized by night sweats 75% and 60%, loss of appetite 75% and 90%, weight loss 25% and 75%, fatigue 75% and 80%, myalgia 50% and 25%, arterial hypertension 90% and 100 %. A history of erythema nodosum 20% and 50%, myopericarditis 10% and 50%, rheumatoid arthritis 0% and 25%, and polymyositis 0% and 25% were observed. Against the background of the disappearance of the pulse on the hands, a characteristic noise was observed over the carotid and subclavian arteries in children with aortoarteritis. When interpreting laboratory tests, an increase in C-reactive protein, titer of ACCP, ANA, ANCA was observed in all patients. On ultrasound: changes in the liver parenchyma were minor. No changes were found in the kidneys. On echocardioscopy, sealing of the aortic and mitral valves. Hypertrophy of the myocardium of the left ventricle and an increase in the cavity of the left atrium and ventricle. Among the instrumental methods for diagnosing vascular lesions in Takayasu's arteritis, the leading position was occupied by multislice contrast tomography of the arteries. It made it possible to assess the degree of hemodynamic disturbances as well as the state of the arterial wall. As can be seen from the table, a more severe course and damage to the nervous system were observed in children with aortoarteritis (Tab.1).

**Tab.1.Clinical picture of patients with SV**

| Signs | SYSTEMIC VASCULITIS | |
|---|---|---|
| | Aortoarteritis (n = 8) | Polyarteritis nodosa (n = 6) % |
| Headache | 80% | 50% |
| visual disturbances | 50% | 50% |
| convulsive syndrome | 60% | 25% |
| Noise in my head | 95% | 50% |
| Hyperkinesis | 20% | 15% |
| Dizziness | 60% | 36% |
| General weakness | 80% | 45% |
| Cognitive decline | 80% | 60% |

Pathological signs of immune inflammation according to the results of the study were high in children with polyarteriitis nodosa (Tab.2). Detection of immune complexes, cellular immune responses is an indicator of endothelial damage.

**Tab.2. Results of laboratory tests**

| Variables SV | Aortoarteritis (n = 8) | Polyarteritis nodosa (n = 6) % | p value |
|---|---|---|---|
| *Serum laboratory* | | | |
| ACCP | 8.87 ± 0.54 | 9.07 ± 1.44 | 0.3 |
| ANCA | 15 ± 1.63 | 22.8 ± 4.89 | 0.6 |
| SRP | 14.52 ± 7,2 | 20.08 ± 7,4 | 0.001 |
| ANA | 3.20 ± 0.94 | 4.01 ± 0.32 | 0.4 |

According to the results of laboratory tests, signs of immune inflammation were present in all children, but they were more pronounced in patients with polyarthritis nodosa, Both hemodynamic disturbances resulting from Takayasu's arteritis and the degree (intensity) of edema of the vascular wall were assessed, which served as an indirect sign of vasculitis activity. It was the visualization and interpretation of the intensity of swelling of the aortic wall or the main arteries as an indicator of their inflammation that was the basis of our study. In all cases of MSCT interpretations, we visualized a

pronounced edema of the vascular wall, the disappearance of visualization of large arteries, which significantly correlated with the clinical and laboratory picture of the disease (Fig.).

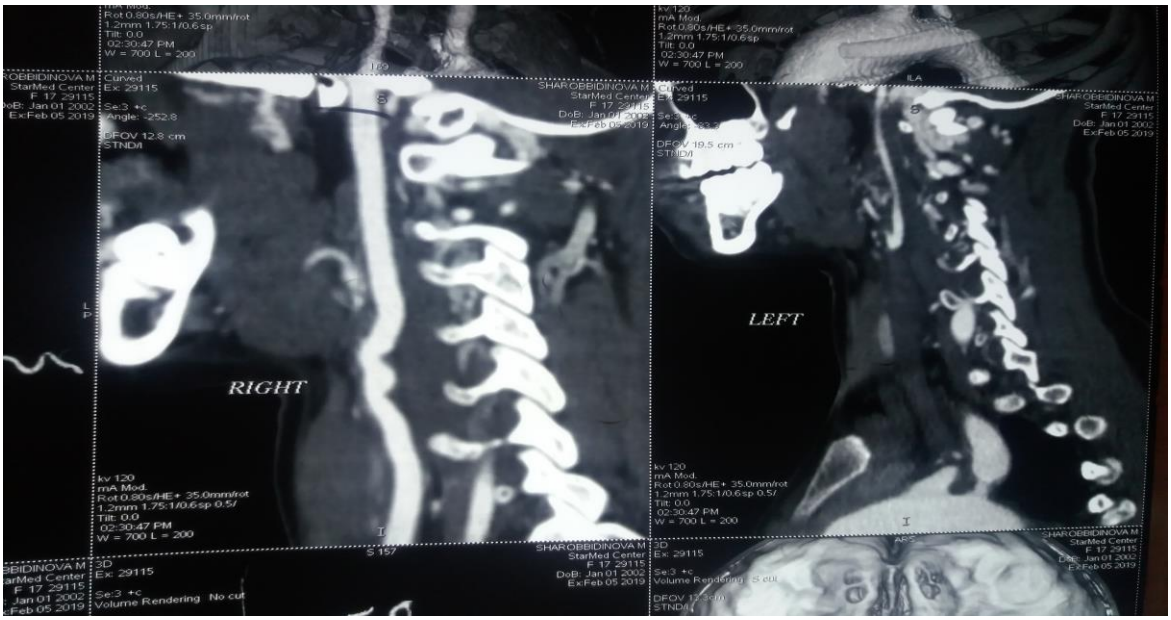



Fig. Multispiral contrast tomography with contrasting of the aorta and its branches. Child 16 years old. The left carotid artery is not visualized.

Mental disorders, including affective (anxiety-depressive spectrum) and psychotic disorders occur in more than half of patients suffering from vasculitis. The variety of neurological and mental symptoms is due to differences in immune disorders.

**Conclusions.** Systemic vasculitis was more common in girls. Progressive damage to vital organs and systems in vasculitis significantly reduces life expectancy, and also significantly limits the social and professional activity of patients. Nervous system disorders were found in all children, but they were severe in children with aortoarteritis. Neuromuscular disorders make a significant contribution to the polysyndromic clinical picture of vasculitis, however, the isolation of the "neuropathic" component in the complex of sensory and motor dysfunctions characteristic of these diseases is often difficult due to the severity of the vascular syndrome. To diagnose early neurological signs and prevent severe complications, it is advisable for all patients with systemic vasculitis to consult a neurologist.

**LITERATURE**

1. Balabanova R. M. New directions in the pharmacotherapy of rheumatic diseases. Scientific-practical conference "New in the diagnosis and treatment of rheumatic diseases", report. M., December 13-15, 2012.
2. Barnes K.G. "Clinical Rheumatology" edited by H.L. Carrey, Moscow 2009, p. 329.
3. Iskanova G.Kh., Suleimanov A.S., Egamova S.Sh. Systemic vasculitis in children. J. Scientific discussion: questions of medicine, 2016. No. 12. P. 5-9.
4. Kartashova V.I. Critical conditions and emergency therapy for diffuse connective tissue diseases in children. Moscow 2005, p. 236.
5. Karimdzhanov IA, Iskanova GH, Israilova NA, et al. Juvenile Idiopathic Arthritis: Etiopathogenesis. Therapy And Outcomes. Journal of Pharmaceutical Negative Results. 2022,13(8): 498-506. doi: 10.47750/pnr.2022.13.S08.65

6. Mukherjee D., Aguilar R.C. Between primary cilia assembly and Rac1-mediated membrane remodeling. Commun Integr Biol. 2012 Nov 1. 5(6):641-4. [Medline].
7. McCrea HJ, De Camilli P. Mutations in phosphoinositide metabolizing enzymes and human disease. Physiology (Bethesda). 2009 Feb. 24:8-16. [Medline].
8. Nasonova V.A., Bunchuk N.V. Selected lectures on clinical rheumatology. M.: Medicine, 2011.
9. Smitienko I.O., Atyasova E.V., Novikov P.I. Visualization methods of vascular inflammation in Takayasu's arteritis. RMJ "Medical Review" No. 9 (II), 2019
10. https://meduniver.com/Medical/Physiology/aortoarteriit-bolezn_takaiasu.html.