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Research Article

CLINICAL AND NEUROLOGICAL FEATURES OF COVID-19 IN CHILDREN

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N.M. Azimova
Doctor Of Medical Sciences, Associate Professor Tashkent Pediatric Medical Institute. Uzbekistan

M.K. Temirova
Student Tashkent Pediatric Medical Institute. Uzbekistan

D.A. Khasanov
Student Tashkent Pediatric Medical Institute. Uzbekistan

ABSTRACT

This article presents information about the clinical and neurological features of COVID-19 in children. A new coronavirus infection, COVID-19, caused by the SARS-CoV-2 virus, along with damage to the respiratory system, can lead to involvement of the central and peripheral nervous system and the muscular system. There is a relationship between the severity of COVID-19 and the severity and frequency of neurological disorders. The course of COVID-19 in children depends on age, premorbid background, the development of neurological complications that negatively affect the clinic of the disease.

KEYWORDS

COVID-19, polyneuropathy, myalgia, rhabdomyolysis, cellular reaction, central nervous system, blood-brain barrier.

INTRODUCTION

SARS-CoV-2 infections among children and adolescents usually cause less severe diseases and are less likely to lead to death compared to adults. Although less severe infection is a positive aspect, milder symptoms may have led to fewer tests, resulting in fewer cases of SARS-CoV-2 in children and adolescents. If children and

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adolescents with mild or absent symptoms also transmit the infection, they may contribute to community-based transmission. However, starting in March 2020, reports began to arrive from a number of European countries and the United States about children with a new disease with signs of Kawasaki disease (CD) and toxic shock syndrome (TSS), which received one of the names — children's multisystem inflammatory syndrome (DMVS) associated with COVID-19. Coronavirus in children is insidious in that its signs are often less pronounced than in adults, and more similar to SARS. Parents think that the baby has a common cold, and do not consult a doctor. And on the 5-7 day, the child rapidly develops complications: pneumonia, bronchitis, neuritis, myocarditis, etc. D. Chronic diseases and damage to the nervous system may also worsen.

The purpose of the study: To study the clinical and neurological features of COVID-19 in children.

MATERIALS AND METHODS OF RESEARCH

We conducted the generally accepted clinical and neurological, instrumental, laboratory methods of studying children hospitalized with coronavirus infection in the specialized hospital of Zangiota No. 1 in the period from 2020-2022. To fulfill the tasks of scientific research, a sample was created with the allocation of two groups of clinical observation: 30 children with severe coronavirus infection with neurological disorders.

Results

The study showed that boys in the study group numerically prevailed over girls, and accounted for 58% (29) of boys and 42% (21) of girls.

All children underwent a generally accepted clinical examination, including the collection of complaints and anamnesis, clinical and neurological, instrumental and laboratory methods of research, also confirming the presence of caronovirus infection.

One of the objectives of our study was to study the features of an unfavorable premorbid background in young children of the examined groups of young children. The most frequent clinical syndromes of perinatal CNS damage in the group of children with were vegetative-visceral disorders syndrome (53%), hypertension-hydrocephalus syndrome (60%), syndrome of increased neuro-reflex excitability (50%). In all children of the main group, a combination of syndromes of perinatal central nervous system damage was noted, which leads to a decrease in adaptation mechanisms in somatic pathology.

It should be noted that the children belonged to the group of frequently ill children with low immunity. Frequent acute respiratory infections were observed in 24 (80%) children, sepsis was observed in 4 children (13%), lacunar angina - 7 children (23%), intestinal infections - 16 children (53%).

Upon admission to the hospital, the main complaints made by parents of children with coronavirus infection, in addition to complaints about the underlying disease, were anxiety (13; 43%), capriciousness (7; 23%), sleep disturbance (16; 53%) or lethargy (12; 40%), decreased activity (15; 50%), refusal to eat (18; 60%). All patients were hospitalized due to deterioration of their condition.

On examination, 18 children had predominant symptoms of central nervous system arousal. The children were conscious, there was strong motor anxiety (12; 67%), hyperesthesia of the skin (10; 56%), excited crying (17; 94%), a negative reaction to the examination (16; 89%). During the examination, 10 children (33%) had symptoms of central nervous

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system depression, all children were sluggish, drowsy, reacted poorly to the examination, usually not pronounced crying and painful grimace. In 2 children (7%), depression of consciousness in the form of a soporotic state was noted: all reactions were reduced. 8 children (27%) had febrile convulsions with hyperthermia, were tonic-clonic in nature. In 14 children (47%) there were signs of cerebrospinal vascular distension: swelling of the fontanel, restless crying with throwing back of the head.

There were no meningeal symptoms in neurostatus. Cranial nerve damage was noted in 6 children (20%): in 3 children (10%) - convergent strabismus, in 1 (3%) child horizontal nystagmus, central paresis of the facial nerve in 1 (3%) child, bulbar disorders in 1 (3%) child - choking, dysarthric speech was noted in 3 children. In the motor sphere, 12 children (40%) had hyperreflexia and revival of tendon reflexes, 10 children (33%) with central nervous system depression had a diffuse decrease in tendon reflexes and hypotension. Pathological reflexes and signs were not noted.

When examining children in somatic status, we identified multisystem inflammation with the development of multiple organ damage: toxic hepatitis was noted in 6 (20%), carditis in 7 (23%), nephritis in 5 (17%).

CONCLUSION

Thus, the course of caronovirus infection in children is accompanied by signs of infectious and toxic encephalopathy with the development of multiple organ damage.

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