Features Of Rehabilitation of Children with Childhood Cerebral Palsy

Toshmatova Zuhra Abdurahimovna

Fergana Medical Institute of Public Health
Ferghana Regional Children's Multidisciplinary Clinic

ABSTRACT

Children with cerebral palsy have weak adaptive reserves and decreased immunity. An analysis of 24 outpatient records of children with cerebral palsy showed frequent respiratory infections and chronic somatic diseases. This article deals with the problems of rehabilitation of children with cerebral palsy.

Keywords: cerebral palsy, rehabilitation, complex treatment, resort treatment

Introduction. Current trends in socio-economic development have not been reflected in the best way in the process of the sanatorium-resort stage of rehabilitation of children with cerebral palsy. The planned trip to the choice of the season and terms of stay at the resort was violated. In recent years, most specialized sanatorium-resort institutions operate only in the summer season. Often, the costs of sanatorium treatment, in whole or in part, are compensated at the expense of the personal funds of the family of a disabled child. Due to the fact that the duration of the resort stage of rehabilitation has decreased, it is not always possible to allocate a period for acclimatization and adaptation to new conditions. At the same time, the intensity of rehabilitation has increased, in addition to traditional methods, new types of rehabilitation have appeared. For children with cerebral palsy, these are anti-gravity therapy, manual therapy, animal therapy (hippotherapy and dolphin therapy), new types of apparatus massage, ultrasonic and laser apparatus treatment, new types of balneotherapy .

According to the appeal to the children's clinic and the hospital of the DTMO of children with cerebral palsy who arrived in various sanatorium-resort institutions of the city, it can be concluded that intensive sanatorium-resort rehabilitation is a powerful burden on the body of children with cerebral palsy and often leads to a breakdown of adaptive mechanisms , the development of acute conditions or exacerbation of chronic extracerebral pathology. The most common causes of deterioration in the condition of children with cerebral palsy during rehabilitation at the resort are acute respiratory or intestinal infections, acute diseases of the ENT organs or exacerbation of chronic foci of infection; acetonemic conditions; epileptic seizures recurring or for the first time in life , up to status epilepticus.

Among the most common reasons for the failure of adaptation of a child with cerebral palsy at the resort, the following were identified: 1) change of time zone, long stay on the road by plane, train or car; 2) a change in the usual regimen of the day and nutrition, a change in the nature of food consumed, including unusual fruits and berries; 3) high intensity of the rehabilitation process in the form of a combination of several types of

treatment due to the limited duration of the patient's stay at the resort.

The development of certain reactions of disadaptation in children with cerebral palsy interrupts specific neurological rehabilitation or makes it impossible for the child to continue to stay at the resort. In this regard, the study of the adaptive capabilities of children with cerebral palsy is an urgent and promising task of pediatrics and child neurology.

We have analyzed the scientific literature on cerebral palsy and, especially, the problems of adaptation and immunity in children with cerebral palsy. The medical documentation of children with cerebral palsy observed in the children's clinic of resort centers was also studied. With the development of pediatric neurology, the understanding of the etiology and pathogenesis of cerebral palsy has improved significantly. Great importance is attached to maternal urogenital infections [4,5,8,9,12,21], which cause premature birth, which contributes to ischemic damage to the child's brain. In addition, maternal infections cause the activation of pro-inflammatory cytokines that easily penetrate the blood-brain barrier of the fetus and cause damage to the white matter of the brain even in utero [10,14,17,18,19,20]. We study violations of other organs and systems in children with cerebral palsy, causing additional disability , such as vision and hearing problems; chronic muscular - joint pain; dysfunction of the digestive organs, dysfunction of the pelvic organs, chronic lung diseases [13]. The presence of multiple chronic somatic disorders in children with cerebral palsy reduces the adaptive resource and commitment to specialized neurological rehabilitation.

We set the task to study the state of health of children with cerebral palsy, who are constantly undergoing treatment in sanatorium resort centers, and its changes in the process of specialized neurorehabilitation .

From the analyzed 24 outpatient records of children with cerebral palsy it followed that in the first year of life 100% had episodes of acute infectious diseases. In 4 (16%) children - once, in 15 people (61%) from 2 to 4 episodes under the age of one year, in 6 (25%) five or more episodes. The total duration of acute conditions ranged from 1 to 10 months per year, averaging 5.3 months (160 days) per year. At the age of 1 to 3 years, the number of episodes of acute respiratory diseases was: once a year - in 4 (16%) children, from 2 to 4 episodes per year - in 13 (54%) people, from 5 episodes and more - in 7 (29%) children with cerebral palsy. In 15 people (62.5%), acute infectious diseases were accompanied by an acetonemic state.

Among acute conditions, infections of the respiratory system prevailed - ARVI in 15 (63%) people, infections of the ENT organs in 5 (21%) people, acute bronchitis in 4 (16%) children. 3 (13%) patients had episodes of gastrointestinal infections, 2 (8%) had urinary tract infections. In 6 (23%) children with cerebral palsy, a combination of episodes of infections of two localizations was noted: the respiratory system and gastrointestinal infection in 3 (11%) people, the respiratory system and urinary tract infection in 4 (12%) people.

Before the start of the rehabilitation course, an examination of the cardiovascular system (ECG, Doppler echo CG, XM), neurophysiological examination (EEG, VZVV, ultrasound of extra- and intracranial vessels) is carried out. An individual rehabilitation program is formed taking into account the identified features - mechanotherapy and exercise therapy on simulators and with the use of individual simulators "Graviton", SMT, massage.Based on the results of the examination, children with somatic, cardiological, nephrological , ophthalmological and ENT diseases receive appropriate treatment.

To date, 8 children have been examined and treated. Given the insufficient number of observations for statistical processing, we cannot yet consider the identified trends to be reliable, however, it is necessary to report the following results.

According to the anamnesis, chronic somatic diseases were revealed. Chronic ENT pathology in all children, 5 (62.5%) - adenoiditis , 2 (25%) - tonsillitis, 1 (12.5%) -

sinusitis. Seven out of eight had acute bronchitis (87.5%), three of them (42.5%) two or more times. 3 (37.5%) had chronic pyelonephritis in remission, 1 child (12.5%) had glomerulonephritis in remission. 1 child (12.5%) has a congenital heart disease, a muscular defect of the interventricular septum. According to electroencephalography data, epileptiform activity was detected in 6 people (75%). In 3 of them, epileptiform activity was registered on the background recording and increased against the background of hyperventilation, in the rest it was absent on the resting EEG, registered against the background of provocation by hyperventilation and photostimulation . The parents of five of these children (83%) learned about this for the first time, since they had not noted epileptic seizures during their lives. Only one child had a single epileptic seizure; the child did not receive planned treatment with anticonvulsants. The study of visual evoked potentials for a flash revealed a dysfunction of the pre-chiasmal parts of the visual pathways in 4 (50%) people and a significant increase in the latencies of the intermediate (N2 and P 2) and late (N3 and P3) components of the potentials, which indicates a violation of the function of the visual analyzer at the level of postchiasmal pathways of the brain.

According to resting ECG data, bradycardia was detected in 2 children (25%), non-respiratory sinus arrhythmia in 3 (37.5%) children, and extrasystole in a child with congenital heart disease. According to the ultrasound examination of extra- and intracranial vessels in 4 (50%) children, structural features were revealed in the form of hypoplasia of one of the vertebral arteries in 2 (25%) people, excessive tortuosity of the internal carotid arteries in 2 (25%) children, blood flow asymmetry more than 30% in 3 (37.5%) examined. During the control electroencephalography after the course of treatment, an increase in epileptiform activity was revealed in the form of a significant increase in the number of registered epileptiform graphelements during the standard examination protocol . Among the three children with identified latent epileptiform activity (against the background of hyperventilation or photostimulation), all had epileptiform activity on the resting EEG.

A re-examination of visual evoked potentials revealed an increase in the latencies of intermediate and late peaks in comparison with initial , which may be associated with the progression of epileptiform activity and the corresponding deformation of the potential. A child with congenital heart disease slept after rehabilitation activities, which was not observed in everyday life outside of rehabilitation activities. However, according to the results of the assessment of the quality of life, the parents of all 8 children noted an improvement in the index of physical activity and rated the results of rehabilitation as good.

Conclusions . On the basis of the conducted studies, it is possible to draw hypothetical conclusions: 1. most children with cerebral palsy suffer from various chronic somatic diseases, 2. in a large part of children with cerebral palsy, structural variants of extracerebral vessels bordering on pathological ones have been identified, the hemodynamic significance of structural variants may increase with adaptive vascular reactions of the body (changes in heart rate and blood pressure), 3. children with cerebral palsy have insufficient adaptive reserves, which leads to a deterioration in the functioning of the central nervous system during rehabilitation . The identified trends require further more detailed study.

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