REHABILITATION FOR CHILDHOOD CEREBRAL PALSY

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Abstract
The relevance of the issue of treatment and rehabilitation of children with cerebral palsy is beyond doubt. It is especially important at the present stage, when the evaluation of therapy should be carried out using evidence-based methods. This article considers rehabilitation options for cerebral palsy

Keywords. Cerebral palsy, physiotherapy, hydrotherapy, ergotherapy , rehabilitation.

Introduction

Cerebral palsy (CP) is a group of stable disorders of motor development and postural maintenance, leading to motor defects caused by non-progressive damage and / or abnormality of the developing brain in the fetus or newborn child. Cerebral palsy develops, according to various sources, in 2-3.6 cases per 1000 live births and is the main cause of childhood neurological disability in the world. Among premature babies, the frequency of cerebral palsy is 1%. In newborns weighing less than 1500 g, the prevalence of the disease increases to 5-15%, and with extremely low body weight - up to 25-30%. Multiple pregnancy increases the risk of developing cerebral palsy: the frequency in singleton pregnancy is 0.2%, with twins - 1.5%, with triplets - 8.0%, with quadruple pregnancy - 43%. In Uzbekistan, the prevalence of registered cases of cerebral palsy is 2.2-3.3 cases per 1000 newborns [1].

Main Part

The optimal provision of care to the patient implies a multidisciplinary approach by a team of medical, pedagogical and social specialists who pay attention to the needs of not only the patient himself, but also his family members involved in the daily rehabilitation and social adaptation of the patient. Being a dysfunctional condition, the disease requires continuous daily rehabilitation from the first days of the patient's life, taking into account the following medical and social aspects of the task:

- Movement, maintaining posture and physical activity of the child;
- Communication;
- Treatment of concomitant diseases;
- Daily activity;
- Baby care;
- Quality of life of the patient and family members;
- Motivational and emotional support. [2]

After consultation of a patient entering for rehabilitation, a medical multidisciplinary team makes a rehabilitation diagnosis (in the categories of the international classification of functioning or ICF),

determines short-term and long-term goals of rehabilitation, and draws up an individual rehabilitation plan. There is a constant increase in the number and improvement of existing traditional and alternative methods of treating patients with cerebral palsy, however, the principal goal remains the same - timely compensation of functional disorders that have developed as a result of damage to the child's brain, and minimization of secondary biomechanical deformations and social consequences of the disease. If it is impossible to influence the pathogenetic cause of cerebral palsy, the task is to optimally adapt the child to an existing defect, based on the principles of plasticity of the nervous system. [3]

Therapeutic exercise (exercise therapy) is an extremely effective method, which must be included in the rehabilitation of children with cerebral palsy [4]. The objectives of treatment by exercise therapy are:

- Normalization of muscle tone;
- Normalization of motor skills;
- Increased joint mobility;
- Increase in strength and strength endurance of the main muscle groups;
- Optimization and prevention of muscle spasm . [1,4]

Massage is a manual effect on the skin and underlying formations of patients with cerebral palsy. The massage procedure is traditional and the most prescribed in the structure of complex therapy. Massage solves the same therapeutic tasks as exercise therapy, spasticity is at the head of these tasks . Massage techniques affect either the areas of the main lesion - the so-called trigger points, or the body as a whole - general relaxing massage, or reflex-segmental areas - reflex, paravertebral massage. Special attention deserves the dosage of massage for cerebral palsy. They are an order of magnitude higher than in other neurological diseases and amount to 5-7 massage units. [5]

Methods of physical rehabilitation are traditionally represented by mechanotherapy, and in a number of medical centers and clinics - by robotic apparatus therapy using specialized simulators, including those based on the principle of biofeedback (BFB). The most effective devices today are the devices of the Lokomat series (Locomat) - a robotic orthopedic simulator for restoring walking skills. The proposed device is used in different configurations, taking into account the characteristics of rehabilitated patients. The Armeo simulator (Armeo) is a robotic complex for functional therapy of the upper and lower extremities with biofeedback. One of the most effective mechanisms for diagnosing, monitoring and treating patients with cerebral palsy is a stabiloplatform , produced in different versions, which makes it possible not only to provide a therapeutic effect , but also to determine the patient's condition in a given period of time, that is, to determine the quality and dynamics of the rehabilitation process. Standers of various modifications are an important component in the system of complex rehabilitation treatment of children . These simulators create the possibility of creating and giving the correct gradual vertical position of the patient in space. A breakthrough technique in the treatment of patients with cerebral palsy was the emergence of various types of exoskeletons . These simulators allow the patient to create and develop a full sense of the walking pattern at extremely low physiological capabilities. Separately consider the training system " Motion Maker " (Motion Maker), which showed high evidence-based effectiveness. Domestic development, which has found wide application in the complex rehabilitation of such patients, was the use of the method of dynamic proprioceptive correction, carried out with the help of specialized suits ("Adeli", " Gravistat ", "Atlant"), systems consisting of supporting elastic adjustable elements, with the help of which purposeful posture

correction and a dosed load on the musculoskeletal system of patients are created in order to normalize the proprioceptive afferentations . [6]

To normalize the psycho-emotional status of families in which children with cerebral palsy live, in the program of complex rehabilitation, a specialist - a clinical psychologist solves the following tasks:

- Assessment of the psychological status of a child with cerebral palsy and family;
- In-depth assessment of the child's cognitive functions (memory, attention);
- Assessment of the emotional state, diagnosis of anxiety, depression;
- Provides counseling and psychological assistance and correction to the family and the child.

The assessment is carried out according to special questionnaires and scales, which make it possible to objectively assess these conditions and carry out appropriate correction.

Methods with high evidence include alternative communication technologies and various options for play therapy (fairy tale therapy and other methods). [7]

Ergotherapy is a new direction in rehabilitation. In modern medicine, at the level of a multidisciplinary team, there is always an ergotherapist , especially when the motor abilities of patients in the structure of everyday skills are reduced or significantly impaired. These specialists help children to find comfort in everyday everyday activities. By training, an occupational therapist is a psychologist or an adaptive physical education specialist who has received appropriate training. The tasks of treatment facing the ergotherapist include:

- Assessment of stress on household activities;
- Assessment of the patient's activities at the household level;
- Assessment of anxiety in case of activity restriction;
- Restoring or developing activities that have been restricted or disrupted;
- Assessment of the possibilities of independent activity. Prevention of family overprotection ;
- Including the patient in self-care and relocation activities;
- Examination of the habitat and its adaptation for the further activities of the patient; [9]
- Restoration of motor abilities in the domestic sphere;
- Prevention of restrictions of household movements. [6,7]

An important and promising invention in modern hydro-rehabilitation technologies for the treatment of concomitant cerebral palsy syndromes is the method of underwater traction. The design of the water traction apparatus is a bath filled with water, with a special mechanism installed in it, into which the patient is immersed. At the same time, the lower limbs of the patient are fixed. For the shoulder girdle, with the help of a special device, traction is carried out , which has electronic adjustment of traction. Traction is carried out according to a specially developed technique, taking into account the disease and the individual characteristics of patients. The patient is brought to the apparatus by a special platform, which creates immobility in a horizontal position. The method of underwater traction has a therapeutic effect on chest deformities, posture disorders of varying degrees and pain syndromes caused by compression, which is often found in patients with cerebral palsy. The mechanism of action of water traction is aimed at reducing compression and traction of the spinal column, and with it the chest. Underwater traction has both a therapeutic and a preventive effect on diseases of the spine and on the condition of a patient with cerebral palsy in general. The method of underwater traction provides for the possibility of isolated traction of specified sections of the spinal column (you can act on any section of the spine). The procedure itself does not cause pain and negative sensations. A contraindication to

the appointment of underwater traction may be instability of various parts of the spine, mobility in the parts of the vertebrae, connective tissue dysplasia ("extension" of the ligaments). Also, water traction is not prescribed if there are general contraindications for rehabilitation. The course of treatment by underwater traction is an average of 15-18 procedures every other day as part of the complex therapy of children with cerebral palsy. It is recommended to conduct at least 3 courses during the year. The methodological features of the procedure include the strength and duration of traction in kilograms, determined individually. It is also individually necessary to determine the rate (speed) of traction. [8,10]

In the complex rehabilitation of children with cerebral palsy with movement disorders, a separate area of treatment is the use of water at a temperature of 36-38 ° C in the pool along with special exercises. These water gymnastics, or hydrokinesitherapy , contribute to a significant increase in joint mobility and muscle relaxation, which leads to the normalization of motor abilities in patients. Exercises are carried out in the water by an instructor, more often in a passive mode, along with special movements and gliding on the surface of the water. Diving and scuba diving can be used in the lesson . These movements are performed at different speeds in different planes and directions according to a strictly defined technique. At the beginning of the course of rehabilitation treatment, it is necessary to test a patient with cerebral palsy for exercise tolerance and, based on the results of the tests, make the correct dosage of exercises. [11,12]

An important point in the prognosis of patients with cerebral palsy is the possibility of maintaining motor skills throughout life and the actual duration of life itself. The mortality rate among patients with cerebral palsy is directly dependent on the degree of motor deficit and concomitant diseases. Another predictor of premature death is a decrease in intelligence and inability to self-service. Thus, it was shown that in European countries, patients with cerebral palsy and an IQ of less than 20 in half of the cases did not reach the age of 18 years, while with an IQ of more than 35 - 92% of patients with cerebral palsy lived for more than 20 years. As for the forecast of motor abilities, it is not so optimistic. Unfortunately, it has been proven [5] that motor function and walking deteriorate in adolescence and adulthood, and only half (!) of children with motor function level III according to the GMFCS scale (Global Motor function classification System) continue to walk with assistive devices as adults. [13]

Level V - bedridden patients, and they reach the maximum of their motor development by 3 years. For children of IV-V levels, rehabilitation should be carried out according to "palliative" principles.

Conclusion

In general, the quality of life and the prognosis of social adaptation of patients with cerebral palsy largely depend on the timely provision of medical, pedagogical and social assistance to the child and his family. Social deprivation and unavailability of comprehensive care can have a negative impact on the development of a child with cerebral palsy, perhaps even more significant than the initial structural brain damage.

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