SJIF Impact Factor (2023): 8.574| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 8 | Issue: 5 | May 2023 - Peer Reviewed Journal

USING KINESIOTHERAPY IN THE REHABILITATION PROGRAM OF CHILDREN WITH CEREBRAL PALSY

Ibragimova M.Sh, Burkhanova G.L.
Samarkand State Medical University, Samarkand, Uzbekistan

Article DOI: https://doi.org/10.36713/epra13382
DOI No: 10.36713/epra13382

SUMMERY

The article presents the results of the use of decompression trainer and parter articular gymnastics exercises in rehabilitation of children with various forms of cerebral palsy (PTSD), formation and development of basic movement skills, physical fitness and endurance. The rehabilitation program for children diagnosed with PTSD was planned taking into account individual capabilities and needs. In order to increase the effectiveness of the rehabilitation program, the method of replacing training sessions was used. All treatment procedures are based on forms of play. The rehabilitation procedure is adapted to the level of personal development of the child, focusing on his strengths and needs. Passive, active and combined training methods were alternately used. Due to the introduction of the method of using the decompression trainer and parter articular gymnastics in the complex rehabilitation program, the volume of active movements and manipulative activity in patients increases, while the achieved results are preserved for a long time.

KEY WORDS: *children; cerebral palsy; rehabilitation; kinesiotherapy*

Today, the problem of diagnosis of children's cerebral palsy (PTSD) is very relevant for our country. In recent years, the incidence rate of PTSD in the world is on average 2.5 per 1000 newborns. PTSD is a severe disease associated with perinatal damage to the central nervous system (CNS) and is one of the causes of disability in children today. This disease is the cause of the formation of pathology of the locomotor system, which does not pass in a progressive form, which persists throughout a person's life, but of various severity, and leads to the development of pathological structures in the central nervous system, as well as to the violation of the functional functioning of vital internal organs. Experts say that with timely diagnosis, the earliest and long-term rehabilitation treatment of cerebral palsy, it is possible to significantly improve the general condition of patients, and at the same time, it is possible to improve the quality of life and socialization of the child. However, it should be emphasized that today there are no single standard methods of treatment and rehabilitation of this serious disease.

In recent years, kinesitherapy with the help of decompression trainers has taken an important place in the complex rehabilitation system of children with paresis of arms and legs in various forms of PTSD.

Kinesiotherapy (in English - kinesiotherapy) is considered a direction of physical therapy, and at the same time it is being formed independently as a new system in the field of medicine. Kinesiotherapy is derived from the Greek word kinesis "movement" + therapy "healing" or treatment through movement. Kinesiotherapy is a field of physical rehabilitation in which certain human body conditions, movements - positions, active and passive exercises are used as the main means of treatment.. Kinesiotherapy is a scientifically based set of exercises aimed at improving overall strength, endurance and mobility. In PTSD, kinesiotherapy plays a special role, with its correct and systematic application, the results of treatment of MAT pathologies can be high and stable. Practical experiments and theoretical studies have shown that the therapeutic effect of movements in PTSD does not reduce reflex mechanisms, but is carried out at the level of the spinal cord. In patients diagnosed with PTSD, correctly selected exercises and positions activate the affected brain structures with a beneficial effect. A set of special positions and exercises that affect the nervous structures of the head and spinal cord can be described as neurokinesiotherapy.

GOAL OF RESEARCH

to study the effectiveness of the kinesiotherapy method using decompression trainer and parter articular gymnastics exercises in the rehabilitation of children with various forms of PTSD.

SJIF Impact Factor (2023): 8.574| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 8 | Issue: 5 | May 2023 - Peer Reviewed Journal

MATERIALS AND METHODS

We analyzed the rehabilitation cards of 37 children who underwent a rehabilitation course with the help of a decompression trainer and parter articular gymnastics. Children diagnosed with various forms of PTSD took part in the training: PTSD with bilateral hemiplegia - 7; with spastic diplegia - 21; with spastic-hyperkinetic form - 9 children.

Treatment of children diagnosed with PTSD in a rehabilitation program should be tailored to the child's age and changing needs. The skills necessary for a 2-year-old child to learn about the environment are the skills necessary for a school-age child or the aspirations and needs of an adolescent to be free and independent. is very different. Accordingly, the children undergoing rehabilitation were divided according to age structure: 6 children aged 1-3 years; 3-7 years old - 15 children; 7-10 years old - 6 children; 10 children older than 10 years.

In the rehabilitation program, the decompression trainer and parter articular gymnastics trainings are alternately used. The average duration of the rehabilitation program is two months. Before starting the rehabilitation treatment, the motor skills of the children were significantly limited, 12 of the 39 children had severe motor movement disorders, these children could not walk independently, four of them could not sit independently. The used decompression trainer allows the patient to train voluntary movements and statics, as well as to perform partial tasks: to stimulate the functions of weakened muscles, to reduce muscle hypertonicity and to ensure normal joint mobility. With the help of a decompression trainer and parter articular gymnastics, you can teach the ability to measure and regulate the spatial, temporal and dynamic parameters of movements, develop the ability to coordinate balance, help the development of reflexes, on the basis of which movement skills are formed (sitting, sitting, standing, walking, crossing obstacles and other abilities) can be developed. Decompression trainer and parter articular gymnastics can perform exercises both horizontally and vertically. Before starting rehabilitation procedures, one of the important steps is to assess the mental abilities of the patients and the state of the nervous system together with the rehabilitator and neurologist. Somatic pathologies accompanying sick children are examined by pediatricians. An individual rehabilitation plan was created for each child, taking into account the patient's mobility skills, accompanying diseases and mental-psychological development. Each patient is comprehensively diagnosed. This allows for dynamic evaluation of patients in the current monitoring of treatment procedures, which is especially important for the analysis of the effectiveness of rehabilitation.

The structure of the training consists of two stages. The first warm-up stage: with the help of the instructor, the muscles were warmed up with light exercises, auxiliary equipment and toys were used to attract the child's attention and interest. In the second stage, decompression trainer and parter articular gymnastic exercises were carried out directly. The child was placed on a decompression simulator, and the main part of the training took place on the simulator. The level of exercise performed on the patient's decompression simulator is selected taking into account the severity of movement disorders and the task at hand. In all cases, and for safety purposes, the child is installed in a seat belt. When performing exercises on the horizontal plane, additional means of fixing the head, pelvis, arms or legs, if necessary, and the help of an instructor were used. In cases where the child could not perform the exercises independently, they were performed with the help of two instructors-methodists. After several repetitions, the child was asked to perform the set of exercises independently. Depending on the child's abilities, passive exercises are repeated until the child masters them, and after the ability to perform the task is formed, the next exercises are carried out.

The initial duration of the sessions was extended from 15 to 40 minutes, and the intensity of the loads gradually increased. The treatment course consists of 25 sessions. In severe patients, the method of individual training was used: therapeutic exercises, massage were performed together with decompression trainer and parter articular gymnastic exercises. Training in decompression simulators was carried out according to the principle of periodically repeating stereotypical locomotor system movements of arms or legs, helped to model the spatio-temporal organization of neuromuscular activity. This feature of the method is the basis for the formation and strengthening of "more physiological" in relation to the existing "pathology". In addition, regular exercises on the trainer helped to strengthen paretic muscles, increase their trophism, improve metabolic processes, restore impaired motor functions, and improve the emotional state of the patient. The average number of sessions in decompression trainers is 15, and the average duration of the session is 15-20 minutes. Taking into account the height, endurance and determination of children, the exercises performed by the legs and the lower part of the body were replaced by the exercises performed by the arms with the upper parts of the body. Therapy was conducted based on game forms. The rehabilitation program is tailored to the child's individual developmental level, focusing on their strengths and needs. Passive, active and combined training mode was used (using active-passive mode and "spasm control"). Passive therapy is a method of periodically repeating stereotyped movements of arms and legs with the help of an instructor, a rehabilitator. On the other hand, the active mode was implemented on the simulators, used in cases where the patient was able to independently resist the quantified loads of the simulator.

RESULTS AND DISCUSSION

Before starting and at the end of the treatment course, the state of the general musculoskeletal system, as well as changes in dynamics during training sessions, exercises and loads performed on decompression trainers were evaluated. As a result of a complex therapy course using decompression trainers, most of the patients with spastic forms of the disease improved the indicators of general motor activity, decreased stiffness of the joints. Also, it was found that the time of active training increased

SJIF Impact Factor (2023): 8.574| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 8 | Issue: 5 | May 2023 - Peer Reviewed Journal

by 3-4 times in children with poor independent mobility (less than 10% of the training time) during training on decompression simulators.

Positive dynamics of highly active movements of children's movement activity during general training in decompression simulators was noted. The most obvious positive dynamics of movement kinematics was noted in children with spastic forms of PTSD. In a survey conducted among parents of patients who received rehabilitation procedures, it was found that half of the patients out of 10 sessions of the treatment course tried to consciously control the movements of their limbs. After completing the training course, patients more actively mastered complex movements such as crawling and walking. As a result of the training, children's orientation towards objects and maintaining the vertical position of their body, leaning on their hands improved somewhat. As a result of increasing muscle strength, children began to maintain a straight spine, and their stature improved. Out of 9 children with severe mobility impairments, 4 children were able to jump. Children diagnosed with bilateral hemiplegia learned to stand on all fours, and positive dynamics were noted. With the help of the simulator, the children got a sense of support on their legs and they were able to take the first steps in their life, which would not have been able to move under normal conditions due to obvious hyperkinesis. No side effects were noted due to the fact that loads were properly dosed during the exercises performed on the simulators and performed in compliance with all safety rules. Positive motor activity results obtained from treatments performed following the principles of continuity and progression of rehabilitation at the time of discharge from the hospital were maintained for a long time in most children.

CONCLUSIONS

When using treadmills in the complex rehabilitation of children with PTS, 35 (89.7%) patients of the research group showed improvement in general motor activity, reduced friction in movements (as a result of reduced joint friction), stabilization of work ability, thus together, it is necessary to form the natural form of movement and the position of the body. Training on exercise machines allows patients to stand for the time that is most convenient for them. With the help of trainers, you can perform exercises that stimulate the functions of weakened muscles and joints.

Due to the regulation of the level of loads, children with different degrees of mobility impairments were able to move freely in any direction, as well as the ability to rotate around their own axis was formed. At the same time, the loads on the locomotor system are combined during training, as a result of which it is possible to maintain a vertical position, the movements of arms and legs are not restricted, while the child is protected from injuries and falls during movement. Implementation of the method of using a decompression trainer and parter articular gymnastics in the complex rehabilitation of children with PTSD significantly accelerates the recovery of basic movement skills. In the studied group of patients, the acquired skills were preserved for a long time during the follow-up.

REFERENCES

1. *Мавлянова З.Ф. Оценка уровня физического развития больных с детским церебральным параличом методов индексов // Журнал Проблемы биологии и медицины. - Самарканд, 2020. - № 2 (118). - С. 76-79.*
2. *Мавлянова З.Ф., Велиляева А.С. Влияние тяжести двигательных нарушений и уровня социально-бытовой адаптации на нутритивный статус детей с церебральным параличом // Журнал Неврология. - Ташкент, 2020. - №4 (84). - С. 32-35.*
3. *Мавлянова З.Ф. Тяжелые формы детского церебрального паралича: совершенствование тактики реабилитации // Журнал Проблемы биологии и медицины. - Самарканд, 2021. - № 1 (125). - С. 39-45*
4. *Мавлянова З.Ф. Особенности физического развития детей с церебральным параличом // Журнал биомедицины и практики. - Ташкент, 2021. - №3. - С. 400-404.*
5. *Мавлянова З.Ф., Мавлянов Ф.Ш., Мавлянов Ш.Х. Комплексная оценка нутритивного статуса у пациентов с детским церебральным параличом // Журнал биомедицины и практики. - Ташкент, 2021. - №5. - С. 111-118*
6. *Ботиров Ф.К., Мавлянова З.Ф., Алиева Д.А., Равшанова М.З., Худайкулова Ф.В. Физическая реабилитация в комплексном лечении больных с остеоартрозом коленных суставов // Спортивная травма: профилактика, лечение, восстановление. Минск, 2022, с. 9-11.*
7. *Джурабекова, А. Т., Шмырина, К. В., & Рашидова, С. И. (2019). Острые нарушения мозгового кровообращения у детей. Актуальные проблемы медицинской науки и образования (АПМНО-2019), 238-240.*
8. *Файзимуродов, Ф., Шмырина, К. В., & Вязикова, Н. Ф. (2021). ЛЕЧЕНИЕ ЭПИЛЕПСИИ У ДЕТЕЙ С ДЕТСКИМ ЦЕРЕБРАЛЬНЫМ ПАРАЛИЧЕМ. EDITOR COORDINATOR, 500.*
9. *Anatolevna, K. O., Akbarovna, A. M., & Mamasharifovich, M. S. Zhalolitdinova Shaxnoza Akbarzhon kizi, & Ibragimova Leyla Ilxomovna.(2022). the influence of risk factors on the development of cerebral strokes in children. open access repository, 8 (04), 179–182.*