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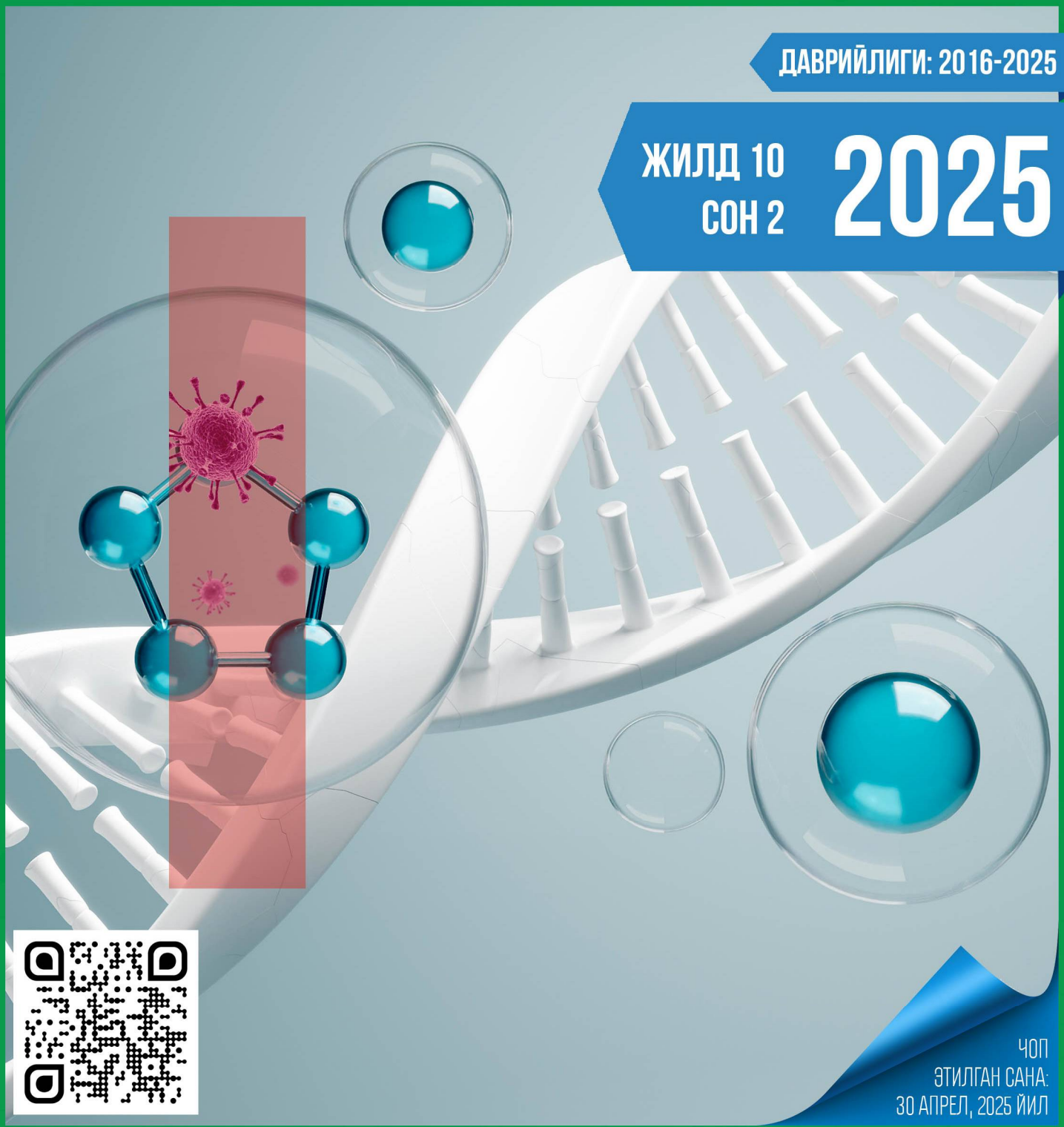

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EXAMINATION OF CHILDREN WITH NEUROPATHY, TIMELY DIAGNOSIS, TREATMENT AND REHABILITATION MEASURES AFTER ILLNESSES

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ABSTRACT

Objective: Treatment of children with neuropathy by maximizing their quality of life using effective treatment methods. Timely implementation of rehabilitation processes after treatment.

Methods. This study used observational, prospective and cohort methods. Based on the goals and objectives of the study, the main and control groups were formed. The comparison groups were comparable by gender and age. The scope of the study included: collection of anamnesis, somatic and neurological examination, balance assessment (Standing Balance R, Bohannon Scale), assessment of quality of life impairment according to the Rankin scale, assessment of physical capabilities according to the Rand scale, assessment of pain due to the disease, pain assessment according to the visual analog scale (VAS), assessment of the severity of the asthenic state (according to L.R. Krupp), assessment of perceived barriers and motivators of maintaining physical activity.

Results: As with some patients in the comparison group, small changes in the length of the right and left legs were observed after rehabilitation, and some patients developed scoliosis on the right or left side of the body depending on the length of the legs. Patients with scoliosis are treated with lechebnye meropriyatiya. Complex therapeutic physical culture (ThPC) is aimed at strengthening the spine and preventing scoliosis. The training includes space, basic training and groundwork. Complex physical training helps to restore the balance of the muscles and ligaments, remove the izbitochnoy gruzki and the spine, improve and strengthen the muscles and spine, and has a toning effect on the whole organism.

Conclusion: It is necessary to start medical rehabilitation for neuropathies as early as possible, to fully monitor sick children through a continuous, comprehensive, unified systemic program of medical rehabilitation, to prevent exacerbations of complications of diseases by

conducting a planned process of medical rehabilitation individually, continuously, in stages within the established timeframes.

Key words: children, peripheral nervous system, skeleton, movement, treatment, rehabilitation, central nervous system.

1. Introduction

As the child grew older, the number of complaints about pain in the joints of the legs, as well as hypoesthesia in the legs, increased. The table below presents the results of our clinical and neurological examination (Table 1).

Table 1

Results of clinical and neurological examination of children.

Clinical indicators	Results	Neuropathy of the feet, %	p
Swelling of the right leg	There is	100	<0,01
	There is not	0	
Swelling of the left leg	There is	97,7	<0,07
	There is not	2.3	
Right-sided discriminatory sensation	There is	72,1	
	There is not	27,9	<0,05
Left-sided discriminatory sensation	There is not	53,5	
	There is	46,5	<0,001
Pain in the right leg	There is not	97,7	
	There is	2,3	<0,001
Pain in the left leg	There is not	100	

Correlation analysis (Spearman's rank correlation coefficient) for leg neuropathy showed that the main neurological complaints (dysesthesia, paresthesia in the legs, numbness, pain along the nerve), age, cerebrovascular accident, dysesthesia (numbness) were associated with leg joint pain (correlation coefficient 0.526), but were weakly correlated with hip pain (correlation coefficient 0.269) and age (correlation coefficient 0.082). It was found that leg pain was moderately correlated with heel pain (0.360) and weakly correlated with age (correlation coefficient 0.124). It was analyzed the presence of correlations between the main clinical signs of peripheral nervous system pathology (dysesthesia, pain in the joints of the legs and the age of the child). Clinical manifestations of peripheral neuropathy in the observed patients depended on the stage of the disease.

In the acute phase of the disease, 71.2% of patients experienced spontaneous pain in the compression zone. The irradiation of pain along the damaged nerves is less than local pain in the area of compression – 40%. In 68.8% of our patients, pain was noted in the damaged nerve fiber upon palpation. The pain syndrome was characterized by burning, pressing, sometimes sharp pulling pain. The intensity of pain is greatest during neurosurgical interventions on nerve trunks. Pain syndrome in the residual period was less pronounced than in the acute period, but was more constant and, as a rule, was of a centralized nature. This was observed in 67.5% of cases in clinical trials. In this case, irradiating pain is often encountered - in 41.8% of cases. Pain in the affected nerve fiber during palpation was observed in 47.9% of cases. The pain syndrome was burning, stabbing and aching. Almost all patients with peripheral neuropathy experience sensory disturbances. Subjective sensory disturbances manifested as paresthesias. It was found that 72.9% of patients periodically experience tingling, tingling sensations reminiscent of “ant walking”, and numbness occurring in the innervation

zone of the damaged nerve. Seven percent of patients had difficulties performing fine, targeted movements — "afferent paresis." Along with subjective manifestations of sensory disturbances, objective disturbances of peripheral pain sensitivity were detected in the form of hyperesthesia, less frequently irritation and hypoesthesia. Thus, in the acute phase of the disease, 64.2% of patients had hypoesthesia of pain sensitivity, and 27.3% had hyperesthesia. In the residual phase, 31.9% of patients had descending sensitivity disorders, and 7.2% had irritation-type sensitivity disorders. At the same time, no differences in sensory disturbances and the main pathogenetic form were revealed. In axonotmesis, pronounced disturbances were detected in 57.6% of patients with the descent type (with neuropraxia - only in 10.1%), and with the irritation type - in 39.9% of patients (with neuropraxia - in 14.9%). In the acute phase of the process, 72.3% of patients showed the effect of movement disorders in the form of paresis of the muscles innervating the affected nerves. The most dramatic, threefold decrease in muscle strength was observed in 30% of patients. Less common muscle paresis up to 4 points was observed in 21.2% of patients. Some patients had motor disorders: 0-1 point – 12.7% and 2 points – 15.8%. The frequency of movement disorders in the chronic period of the disease is higher than in the acute period - 80.9%. However, the degree of paresis of the affected muscles was somewhat lower. Pronounced movement disorders (immobility) were detected in 10.3% of patients. Paresis in patients was assessed as 4 points in 41.7%, 3 points in 14.9% and 2 points in 13.9%. Motor disorders were more common in cases of partial axonal rupture - axonotmesis was associated with lack of movement in 44.9% of patients, and neuropraxia - in 10.1% of patients. It amounted to 18.9 percent. Of the trophic disorders, hypotrophy of normal tissues was observed in 28.6% of cases. In the acute phase of the process, vegetative vasomotor disorders are characteristic: cyanosis, edema of the distal parts of the legs, a decrease in temperature in the innervation zone of the affected nerve. In the residual period, dystrophic processes localized in the innervation zone of the affected nerves caused the occurrence of dystrophic diseases such as impaired skin trophism, brittle nails, hair loss, and osteoporosis. The degree of reflex impairment was largely related to nerve fiber damage. Absence of reflexes was observed in 34.2% of patients with axonotmesis and in 15.2% of patients with neuropraxia. Hyperreflexia was detected in some patients (5.4%).

Patients and Methods

1. 1. Patients

The study involved 100 children with peripheral nervous system diseases aged 3 to 17 years. They were divided into control, main and comparative groups depending on the type, duration and severity of the disease. When distributing into groups, the children's gender, diagnosis of diseases and practical methods of rehabilitation were taken into account.

1. 2. Treatment methods

Patients in the main group received planned complex restorative treatment for an average of 45–50 days.

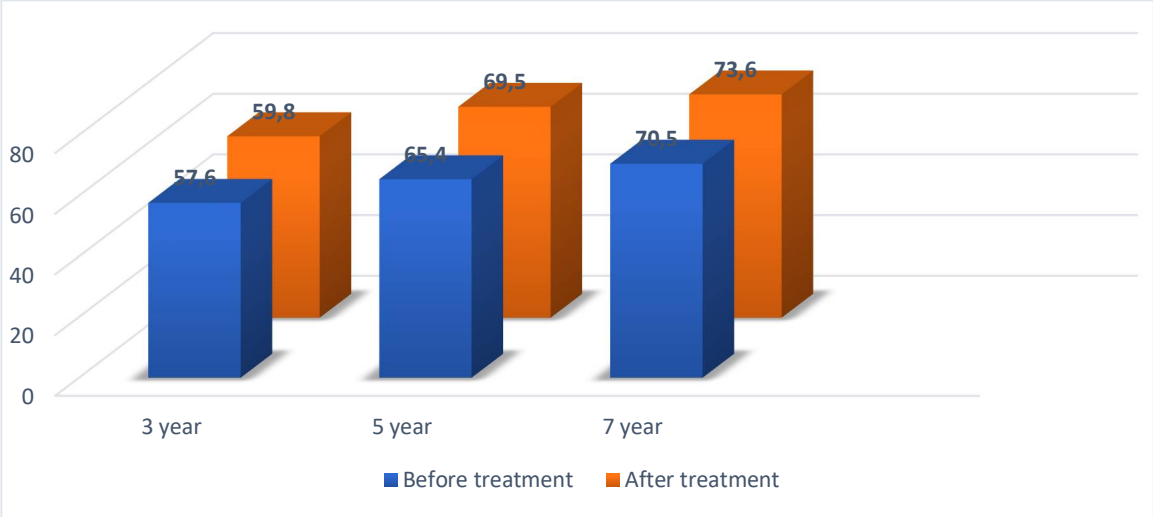
In the main group, almost all children (97%) showed improvement after the rehabilitation treatment. Thus, in the main group of 8-year-old children, the height increased by 2.6±0.3 cm, reaching 82.5±0.5 cm in 92% of the examined children of this age group, while 8% showed minor changes at the level of 80.7±0.3 cm. In the comparison group, 76% of 8-year-old children showed a slight change of 79.3 ± 0.7 cm, while 34% of children showed no change. In the main group, 91% of children under 10 years of age showed significant improvements, with the average increase in leg length being 2.3 ± 0.4 cm, and the overall increase being 91.6 ± 0.4 cm, while 9% of the examined children showed minor changes and the leg length was 88.3 ± 0.5 cm. In the comparison group, only 10% of 10-year-old children showed minor changes and the leg length was 87.8 ± 1.0 cm, and 38% of children showed no positive changes at all. In the main group, in 11-year-old children who received rehabilitation treatment, the length of the legs increased by an average of 2.8±0.3 cm and amounted to 93.0±0.4 cm (95%). At the same time, 5% of children in the main group showed a slight improvement in their condition, and the indicator reached 90.6±0.4 cm. Only 69% of children in the comparison group showed improvement. Thus, after rehabilitation, the leg length of 11-year-old children reached 90.4 ± 0.5 cm ($p<0.05$). No positive changes were found in 31% of children in the comparison group.

2. Results

It has been shown that in children aged 3 to 7 years, the length of the foot depends on the age and sex of the child. As is known, the length of the leg is measured from the anterior iliac crest to the medial malleolus. Thus, before rehabilitation, 56% of three-year-old children ($p<0.05$) had a foot length of 57.6 ± 1.5 cm (hypotrophy), and 44% of children had a foot length of 51.8 ± 1.6 cm (atrophy), while in children under 5 years of age, 63% of children before rehabilitation had a foot length of 65.4 ± 1.7 cm ($p<0.05$) (hypotrophy) and 37% of children were found with a height of 61.3 ± 1.4 cm (atrophy). Before rehabilitation, 58% of 7-year-old children had a leg length of 70.5 ± 1.6 cm (hypotrophy), and 42% of children had a leg length of 68.4 ± 1.4 cm (atrophy). In the main group, almost all children (96%) showed an improvement in their condition after a set of rehabilitation measures. Thus, in 3-year-old children, the leg length increased by an average of 2.4 ± 0.2 cm, and in 90% of children of this age, the leg length was 59.8 ± 1.2 cm, while in 10% of children, the leg length decreased and the leg length was 58.6 ± 1.1 cm ($p <0,05$). In the comparison group, where traditional rehabilitation methods were used, improvement occurred in only 71% of children. Thus, in the comparison group, leg length increased slightly and amounted to 58.2±0.8 cm in 3-year-old children, while in the main group, leg length increased by an average of 3.7±0.1 cm and amounted to 69.5±0.5 cm in the children studied (92%) ($p <0,05$). In 8% of children, the leg length increased slightly and amounted to 67.8 ± 1.3 cm. Among children under 5 years of age, an improvement in the indicators was noted in 68% of children in the control group. The leg length partially increased and amounted to 66.5 ± 1.5 cm, while in 32% of legs the length remained unchanged, which indicates the presence of hypotrophy or atrophy of the legs. In the main group, the leg length of 7 year old children increased by an average of 2.8 ± 0.2 cm and was 73.6 ± 0.3 cm in the study group (90%) ($p < 0.05$). Insignificant changes occurred in the comparison group. Thus, among the examined 7 year old children, 64% of them had an increase in leg length by 71.6 ± 0.4 cm ($p <0.05$). In 36% of children in the comparison group, no positive changes were detected (Figure 1).

Figure 1

Leg length indicators in children of the main group aged 3-7 years before and after treatment



2. 1. Improvement of treatment group after 45 day complex rehabilitation.

Before rehabilitation, it was found that in 62% of 8 yearold children the average leg length was 78.5 ± 1.7 cm (hypotrophy) ($p<0.05$), and in 38% of children the leg length was 76.4 ± 1.5 cm (atrophy). In 70% of 10 year old children, the average leg length was 87.3 ± 1.7 cm (hypotrophy) ($p < 0.05$), and in 30% of children, the leg length was 85.7 ± 1.3 cm (atrophy). Before rehabilitation, in 11-year-old children, the average leg length was 90.6 ± 1.4 cm (hypotrophy) in 67% of children, and in 37% of children, the average leg length was 88.8 ± 1.2 cm ($p < 0.05$).

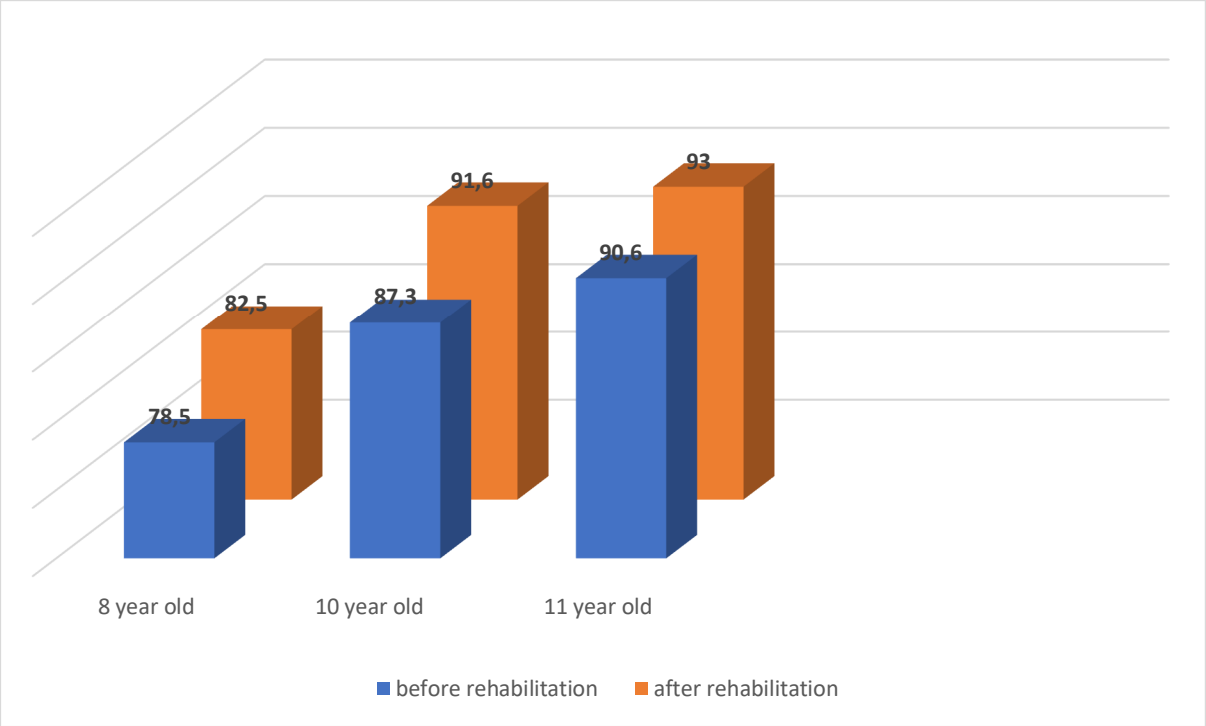
In the main group, almost all children (97%) showed improvement after the rehabilitation treatment. Thus, in the main group of 8-year-old children, the height increased by 2.6±0.3 cm,

reaching 82.5±0.5 cm in 92% of the examined children of this age group, while 8% showed minor changes at the level of 80.7±0.3 cm. In the comparison group

76% of 8-year-old children showed minor changes of 79.3 ± 0.7 cm, while 34% of children showed no changes. In the main group, 91% of children under 10 years of age showed significant improvements, with an average increase in leg length of 2.3 ± 0.4 cm and a total of 91.6 ± 0.4 cm, while 9% of the examined children showed minor changes, with a leg length of 88.3 ± 0.5 cm. In the comparison group, only 10% of 10-year-old children showed minor changes, with a leg length of 87.8 ± 1.0 cm, and 38% of children showed no positive changes at all. In the main group, the leg length of 11-year-old children who received rehabilitation treatment increased by an average of 2.8±0.3 cm and amounted to 93.0±0.4 cm (95%). At the same time, 5% of children in the main group showed a slight improvement and the indicator reached 90.6±0.4 cm. Only 69% of children in the comparison group showed an improvement. Thus, after rehabilitation, the leg length of 11-year-old children reached 90.4±0.5 cm ($p<0.05$). No positive changes were found in 31% of children in the comparison group (figure 2).

Figure 2

Anthropometric indicators of leg length in children aged 8-11 years of the main group before and after treatment



3. Discussion

In 12-year-old children, the average leg length before rehabilitation was 92.6 ± 1.3 cm (hypotrophy) in 88% of children, and 90.8 ± 0.3 cm (atrophy) in 12% of children. Among children aged 13 to 15 years, 92% of children whose leg length was checked before rehabilitation had an average length of 97.4 ± 0.5 cm (hypotrophy), and 8% of children had a leg length of 95.8 ± 0.2 cm (atrophy).

Among children aged 16–18 years, 83% of children whose leg length was checked before rehabilitation had an average leg length of 110.6 ± 0.8 cm (hypotrophy), and 17% of children had an average leg length of 108.3 ± 0.6 cm (atrophy).

After the rehabilitation course, significant changes were noted in 94% of the examined children of the main group under the age of 12: the increase in leg length was 3.5±0.4 cm, and on average – 99.5±0.5 cm. Significant changes were found in 6% of the examined children, which amounted to 97.7±0.3 cm, while in the comparison group among 12-year-old children, small positive changes were found in 68% of children. The average length of their legs was 95.6 ± 0.4 cm ($p < 0.05$). 32 percent of respondents did not notice any positive changes and did not see a significant

improvement in their indicators. After rehabilitation measures in the main group, the length of the legs of children aged 13–15 years was 105.5 ± 0.5 cm in 93% of the examined children. A slight improvement was observed in 7% of children: the length of the legs increased to 103.8 ± 0.6 cm. After rehabilitation treatment, only 66% of children in the comparison group achieved an increase in leg length to 100.5 ± 0.7 cm. No positive changes were found in 34 percent of the examined children. After rehabilitation procedures, 97% of children in the main group aged 16-18 years had a leg length increase of 3.8±0.3 cm and amounted to 113.5±0.5 cm, and 3% of children aged 16-18 years had a leg length of 110.6±0.4 cm ($p<0,05$). After the rehabilitation measures in the comparison group, 71% of children of this age showed an increase in leg length to 108.2 ± 0.4 cm, while the remaining 39% of children did not show any positive changes.

The length of the left and right legs in patients of the main group did not change significantly ($p<0.05$). In the comparison group, the length of the right and left legs in children over 3 years old was 0.3 ± 0.02 cm ($p<0.001$). The length of the right and left legs in children aged 5 years in the comparison group changed by 0.4 ± 0.03 cm ($p<0.001$). In 7 year old children in the comparison group, it was noted that the length of the right and legs was 0.2 ± 0.02 cm ($p< 0.001$). The length of the right and left lower legs of the 8 year old children in the comparison group was 0.3 ± 0.01 ($p< 0.001$) cm, while the length of the right and left legs of the 9-10 year old children in the comparison group did not change in parallel. In children aged 11–12 years, the length of the right and left legs changed by 0.3 ± 0.02 cm ($p <0.001$). The length of the right and left legs did not change much in children in the comparison group aged 13-15 years. In this group of 16-18 year old children, the length of the right and left leg changed by 0.2 ± 0.01 cm ($p <0,001$) (Figure 3, 4).

Figure 3

Hip circumference indicators in children aged 3–7 years in the main group before and after rehabilitation measures.

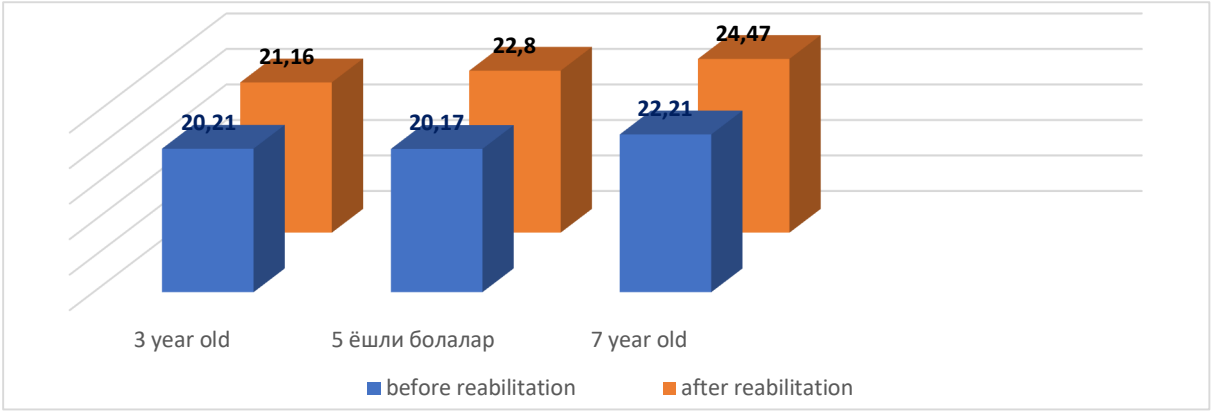
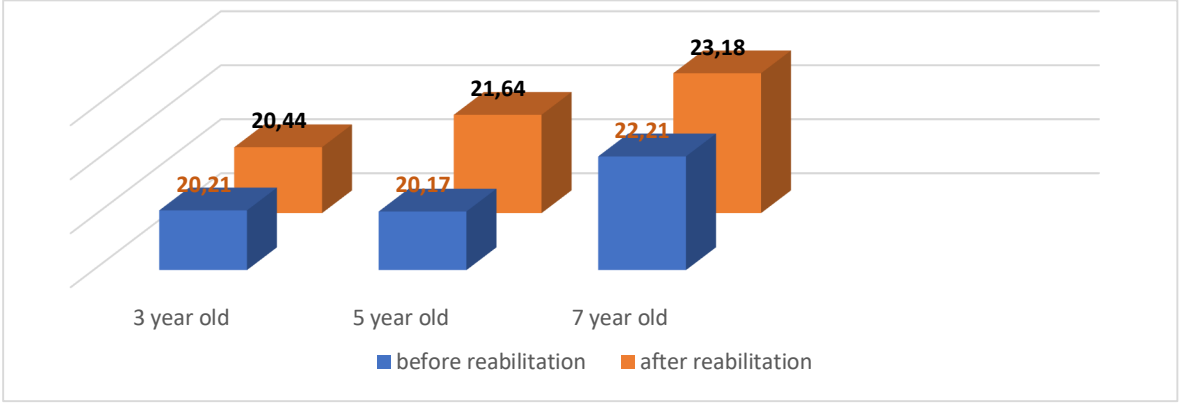


Figure 4

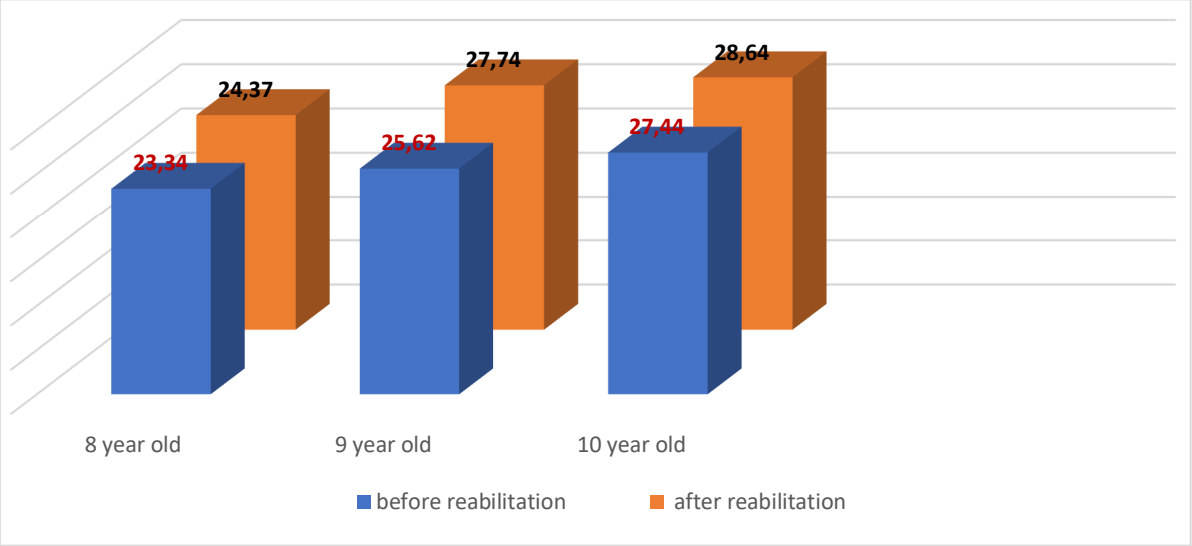
Hip circumference indicators of children aged 3-7 years in the comparison group before and after rehabilitation measures.



The average circumference of the lower leg in 8 year old children before the start of rehabilitation treatment was 23.34 ± 0.04 cm (p≤0.002), which corresponds to hypotrophy. After the rehabilitation procedures in the main group, significant positive changes were noted in 94% of children, and the average calf circumference was 25.46 ± 0.03 cm (p≤0.002). Minor changes were noted in 6% of children, the average thigh circumference was 24.78 ± 0.04 cm (p≤0.001). After rehabilitation, only 58% of children in the comparison group showed some improvement in the form of an increase in the average circumference of the lower leg by 24.37 ± 0.03 cm (p≤0.001). The remaining 42% showed no positive changes. In children under 9 years of age, the average calf circumference before rehabilitation was 26.65 ± 0.02 cm (p≤0.001). After the rehabilitation measures, positive dynamics were noted in 93% of children, and the thigh circumference indicators reached 28.01 ± 0.03 cm (p≤0.001). In the comparison group, only 66% of children showed minor changes, their thigh circumference was 27.74 ± 0.02 cm. In 34%, no positive changes were found. In children under 10 years of age, the average calf circumference before rehabilitation was 27.44 ± 0.01 cm (p≤0.001). After rehabilitation treatment in the main group, in 97% of children, the thigh circumference was 29.22 ± 0.02 cm (p≤0.001). Minor changes were observed in 3% of children, the values of the calf circumference after rehabilitation treatment were 28.79 ± 0.03 cm (p≤0.002). After rehabilitation, the calf circumference in the comparison group was 28.64 ± 0.02 cm (p≤0.002) (Figure 5).

Figure 5

Indicators of calf circumference in children aged 8-10 years in the comparison group before and after rehabilitation measures



In children aged 11–12 years, the circumference of the lower leg before rehabilitation was 28.37 ± 0.02 cm. After treatment, 91% of children in the main group had a calf circumference of 30.04 ± 0.04 cm (p≤0,002). A slight improvement was noted in 9% of children: the circumference of the lower leg increased to 29.93 ± 0.03 cm (p≤0.001). In the comparison group, a slight improvement was noted in 72% of those examined: the circumference of the lower leg increased to 29.75 ± 0.02 cm (p≤0.002). There were no found positive changes in 28 percent of children. The average lower leg circumference before rehabilitation in children aged 13–15 years was 30.04±0.03 cm (p≤0.003). In the comparison group, 69% of children after rehabilitation had lower leg circumference values of 31.94±0.06 cm (p≤0.001). No positive changes were found in 31% of the examined patients. The average lower leg circumference in children aged 16–18 years before the start of rehabilitation treatment was 32.52±0.03 cm (p≤0.001). In the main group, after rehabilitation measures, the lower leg circumference in 90% of children was 35.02±0.03 cm (p≤0.002). 10% showed a slight improvement with an increase in lower leg circumference to 34.78±0.02 cm (p≤0.001). Only 78% of patients in the comparison group showed a slight improvement in lower leg circumference, which increased to 34.33±0.02 cm (p≤0.002).

4. Conclusion

During the examinations, patients with predominantly motor, sensory or mixed disorders were often identified. One patient had several types of complex lesions, representing pathological processes in different nerves. Differences in the sex and age of the examined patients depending on the type of nerve fibers were not taken into account. The majority of the subjects were included in the group of combined damage to several nerves in one patient (42%). The most common combination was damage to motor fibers, typical for ulnar neuropathy, with damage to the motor, mixed or sensory level. These infections are difficult to diagnose solely on the basis of patient complaints and clinical manifestations. It is important to study in detail the chronological sequence of the appearance of complaints and symptoms of the disease. The multi-stage nature of the lesion not only determines other treatment options, but may also influence the effectiveness of surgical treatment recommended for compression neuropathies. Referral from a local physician to a neurologist due to ineffectiveness of prescribed medications.

In the absence of adequate diagnostics, adequate treatment and rehabilitation programs, loss of mobility in this category of patients leads to a large number of disabilities. A thorough neurological examination and completeness of the ENMG examination allow us to identify neuropathy in a patient at different stages of the disease. It is necessary to regularly collect the results of orthoneurological examinations, ENMG, neuroimaging data (MRI, CT, ultrasound, radiography). Motor fiber damage was found to be significantly more common among both boys and girls (51.7% and 45.5%).

After treatment, positive dynamics of anthropometric indicators (leg length, shin circumference) were noted in children of the main group. Due to therapeutic exercise, massage and physiotherapeutic procedures, leg length increased by 4.5% ($p<0.05$), and thigh and lower leg circumference increased by 3.7%. ($p <0,05$). The control group showed fewer positive changes. Thus, the length of the legs increased by 0.7% ($p<0.05$), and the circumference of the thighs and lower leg increased by 1.3%. ($p <0,05$).

It is known that when physical exercises and muscle massage (therapeutic, segmental-reflex, point) are used as a therapeutic factor, the synthesis of glycogen and protein, and the consumption of nitrogen and oxygen are improved. Выполнение пассивных и активных движений является мощным афферентным и эфферентным стимулом, способствующим пролиферации нейронов в зоне функционального синапса и развитию новых путей передачи импульсов. A major advance in rehabilitation in recent years has been the recognition of the role of the phenomenon of “learned non-use” (“I forgot how to use it”). This term refers to anatomically intact neural circuits that disappear after long periods of inactivity. Like atrophied muscles, neural circuits lose their function if they are not used for movement.

At the same time, research shows that this is a reversible process: with the help of intensive training (physical education, occupational therapy), the functions of neural circuits can be restored even after decades of paralysis. Recently, methods of movement correction have been developed using multichannel functional electromagnetic stimulation of muscles, which is activated by mechanical movement in accordance with their natural excitation and contraction program.

5. References

1. Avdyunina I.A., Popova L.M., Dokuchaeva N.V., Bragina L.K., Dokuchaeva N.F. Videofluoroscopic study of swallowing in neurogenic dysphagia //Anesthesiology and Resuscitation. 2015.–№4.–P.64,
65-68.

2. Adler Yu.P., Markova Yu.V., Granovsky Yu.V. Planning an experiment to find optimal conditions. Moscow: Nauka, 2016 – P.279.

3. Agafonova A.V. Clinical, neurological and immunological aspects of leukoencephalopathy in children. Tashkent, 2016. – P.106.

5. Badalyan L.O. Children's neurology. 3rd ed., revised and enlarged. - M.: Medicine, 2015. – P.576.

6. Badalyan L.O., Skvortsov I.A. Clinical electroneuromyography. Moscow: Medicine, 2016. – P.368.

7. Baikushev S., Manovich Z.Kh., Novikova V.P. Stimulation electromyography, electroneuromyography in the clinic of nervous diseases.
M.: Medicine, 2014. – P.144.

8. Balaban Ya.M. Methodology of clinical assessment of the functional state of facial muscles // Poliomyelitis. Kyiv: State Publishing House, 2018. – P.138-142.

9. Barinsky I.F., Shubladze A.K. Etiology of chronic viral neuroinfections. Moscow: Medicine, 2014. – P.168.

10. Yu. Beloyartsev F.F. Electromyography in anesthesiology. M.: Medicine, 2013. – P.230.

11. Diseases of the nervous system: A guide for doctors / Ed. N. N. Yakhno et al. T. 1. - M.: Medicine, 2015. – P.654.

12. Bocharov E.F. Persistent Coxsackie virus infection: Abstract of Doctor of Medical Sciences dissertation. M., 2018. – P.39.

13 M.Vashchenko M.A. Infectious neuritis of the facial nerve in children. Kyiv: Health, 2014. – P.120.

14. Vermel A. E. Eosinophilic myalgia syndrome // Clinical. medicine. – 2019. – T. 77. – №2. – P. 4-7.

16. Vilnits A.A. The significance of the damaging effect of diphtheria toxin on the peripheral nervous system in experiment and clinical practice: Abstract of a PhD thesis. St. Petersburg, 2018. – P.22.

17. Vishnevskaya O.P. On the issue of histopathology of the nervous system in diphtheria//Issues of pathohistology of the nervous system. M. – JL, 2014. – P. 185-246.

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