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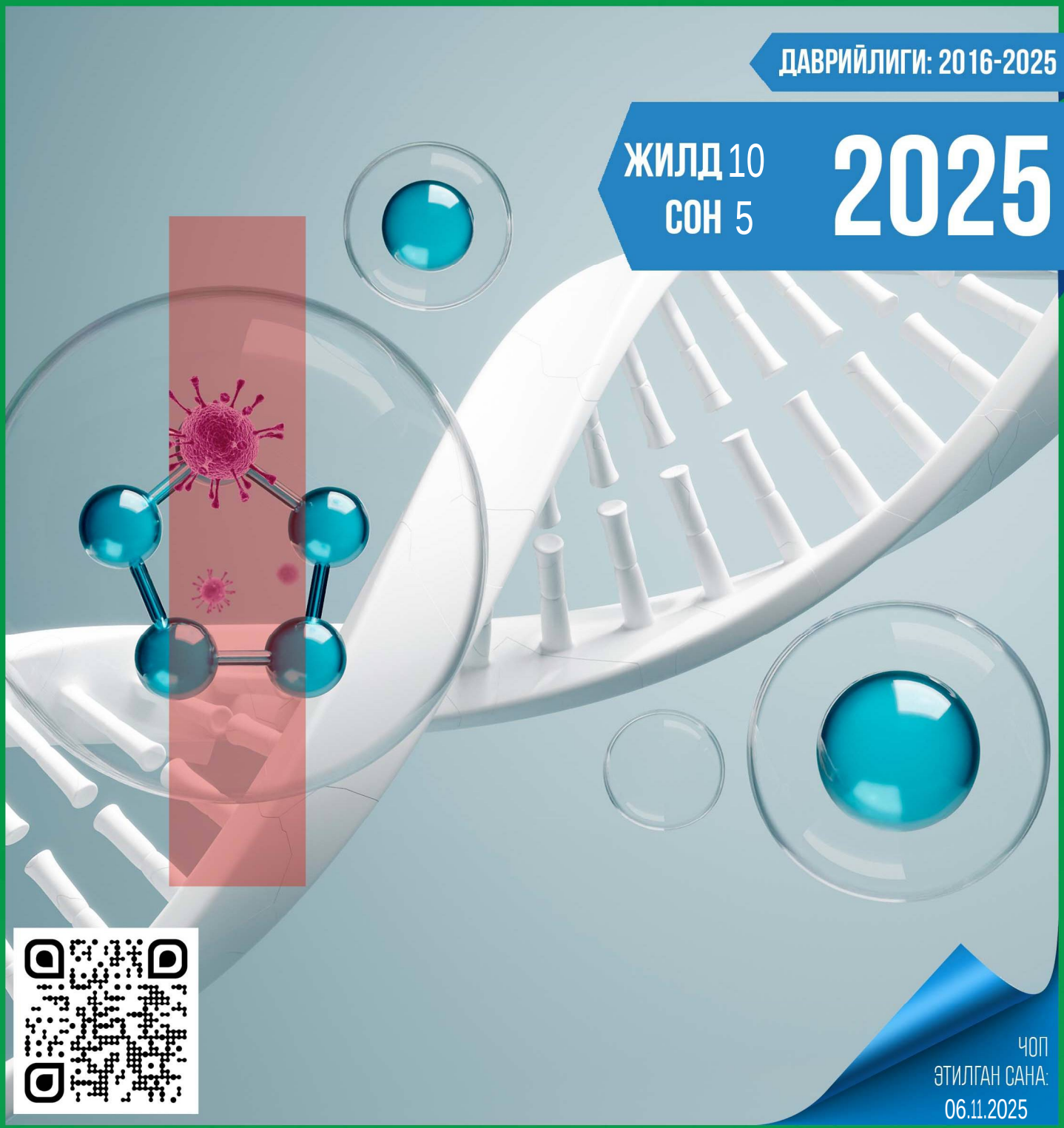

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ЖУРНАЛ БИОМЕДИЦИНЫ И ПРАКТИКИ | JOURNAL OF BIOMEDICINE AND PRACTICE

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DIAGNOSIS, TREATMENT AND COMPREHENSIVE REHABILITATION OF CHILDREN WITH DISEASES OF THE PERIPHERAL NERVOUS SYSTEM

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ABSTRACT

Objective: The research was carried out to improve the criteria for rehabilitation including drug Ipigrix of sick children with limited movement as a result of damage to the neuromotor system. **Methods:** All patients underwent clinical-neurological, anthropometric and electrophysiological examination. Clinical research methods included analysis of patient complaints, life and disease Anamnesis, general and neurological conditions. The complaints analysis provided information on the intensity, nature and degree of localization of the pain syndrome, the side of the lesion, the degree of movement restriction, the factors that cause or aggravate the pain syndrome, changes in muscle strength and sensitivity. Clinical and neurological examination aimed at detecting sensitivity, movement, reflex and trophic disorders in patients was carried out according to universally established methods. **Results:** After rehabilitation measures with the use drug Ipigrix we noted that in almost all children the condition of the ankle has become normal. After all the rehabilitation (course of rehabilitation for 45 days), the pre-treatment scoliosis of children decreased, 90% of children returned to normal, indicating the high effectiveness of the rehabilitation. After extensive rehabilitation in the main group, there was a decrease in movement restrictions in BDS by 6.6 times, an increase in muscle strength in the legs by 3.5 times, a decrease in response reactions to functional tests by 11.5 times, as well as a recovery in clinical and neurological indicators. Changes in reflexes, muscle strength and sensitivity in the legs were not observed. **Conclusion:** An objective examination revealed different levels of muscle tension in the legs, positive reactions to functional tests and restrictions on active movements. In patients in the comparison group after treatment, the average acute pain decreased, persistent painand periodic pain decreased.

Key words: Ashner test, Kerdo index, comparison group, muscle hypotrophy, physical rehabilitation, tremors, hypesthesia, dysesthesia, Phallena test

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ДИАГНОСТИКА, ЛЕЧЕНИЕ И КОМПЛЕКСНАЯ РЕАБИЛИТАЦИЯ ДЕТЕЙ С ЗАБОЛЕВАНИЯМИ ПЕРИФЕРИЧЕСКОЙ НЕРВНОЙ СИСТЕМЫ

АННОТАЦИЯ

Цель исследования: Исследование было проведено с целью совершенствования критериев реабилитации, включающей применение препарата Ипигрикс, у детей с ограничением двигательной активности вследствие поражения нейромоторной системы. **Методы:** Все пациенты прошли клинико-неврологическое, антропометрическое и электрофизиологическое обследование. Клинические методы исследования включали анализ жалоб пациентов, анамнеза жизни и заболевания, общего и неврологического статуса. Анализ жалоб позволил получить информацию об интенсивности, характере и степени локализации болевого синдрома, стороне поражения, степени ограничения движений, факторах, вызывающих или усугубляющих болевой синдром, изменениях мышечной силы и чувствительности. Клинико-неврологическое обследование, направленное на выявление нарушений чувствительности, движений, рефлексов и трофических расстройств у пациентов, проводилось согласно общепринятым методикам. **Результаты:** После проведения реабилитационных мероприятий с применением препарата Ипигрикс было отмечено, что практически у всех детей состояние голеностопного сустава нормализовалось. После завершения полного курса реабилитации (продолжительностью 45 дней) выраженность сколиоза у детей уменьшилась, у 90% детей наблюдалась нормализация состояния, что свидетельствует о высокой эффективности реабилитационных мероприятий. После проведения комплексной реабилитации в основной группе отмечено уменьшение ограничения движений в нижних конечностях в 6,6 раза, увеличение мышечной силы в ногах в 3,5 раза, снижение реактивных реакций на функциональные пробы в 11,5 раза, а также восстановление клинико-неврологических показателей. Изменений рефлексов, мышечной силы и чувствительности в нижних конечностях не наблюдалось.**Заключение:** При объективном обследовании выявлены различные уровни мышечного напряжения в нижних конечностях, положительные реакции на функциональные пробы и ограничения активных движений. У пациентов группы сравнения после лечения отмечено снижение средней интенсивности острой боли, уменьшение постоянной и периодической боли.

Ключевые слова: проба Ашнера, индекс Кердо, группа сравнения, мышечная гипотрофия, физическая реабилитация, тремор, гипестезия, дизестезия, проба Фаллена

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ПЕРИФЕРИК НЕРВ ТИЗИМИ КАСАЛЛИКЛАРИ БИЛАН ОҒРИГАН БОЛАЛАРНИ ТАШХИСЛАШ, ДАВОЛАШ ВА КОМПЛЕКС РЕАБИЛИТАЦИЯ ҚИЛИШ

АННОТАЦИЯ

Тадқиқот мақсади: Тадқиқот нейромотор тизим зарарланиши натижасида ҳаракат чекланиши бўлган болаларни Ипигрикс препаратини қўллаган ҳолда реабилитация қилиш мезонларини такомиллаштириш мақсадида амалга оширилди.**Усуллар:** Барча беморлар клиник-неврологик, антропометрик ва электрофизиологик текширувдан ўтказилди. Клиник тадқиқот усуллари беморларнинг шикоятлари, ҳаёт ва касаллик анамнези, умумий ва неврологик ҳолатини таҳлил қилишни ўз ичига олди. Шикоятларни таҳлил қилиш оғриқ синдромининг интенсивлиги, характери ва локализация даражаси, зарарланиш томони, ҳаракат чекланиши даражаси, оғриқ синдромини келтириб чиқарувчи ёки кучайтирувчи омиллар, мушак кучи ва сезувчанликдаги ўзгаришлар ҳақида маълумот берди. Беморларда сезувчанлик, ҳаракат, рефлекс ва трофик бузилишларни аниқлашга қаратилган клиник-неврологик текширув умумқабул қилинган усуллар бўйича амалга оширилди. **Натижалар:**

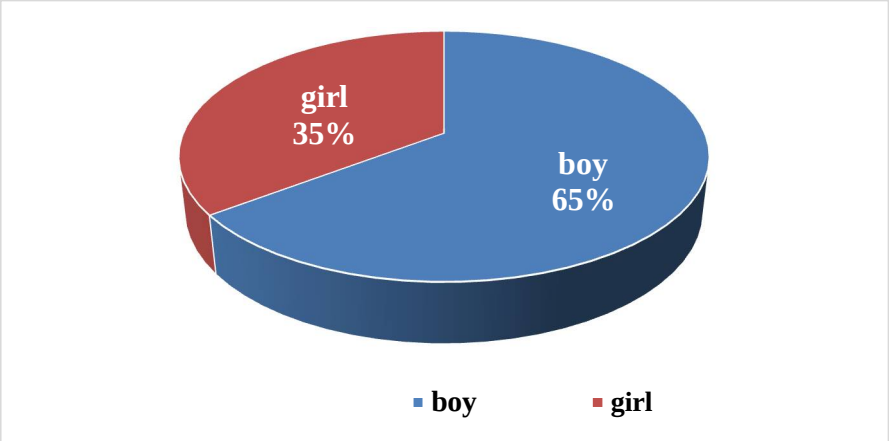
Ипигрикс препаратини қўллаган ҳолда реабилитация тадбирлари ўтказилгандан кейин деярли барча болаларда тобиқ бўғими ҳолати меъёрга келгани қайд этилди. Тўлиқ реабилитация курси (45 кунлик реабилитация курси) тугагандан кейин болаларда даволашгача бўлган сколиоз камайди, 90% болаларда ҳолат меъёрга қайтди, бу реабилитациянинг юқори самарадорлигидан далолат беради. Асосий гуруҳда кенг қамровли реабилитациядан кейин қуйи оёқларда ҳаракат чекланишининг 6,6 марта камайиши, оёқлардаги мушак кучининг 3,5 марта ошиши, функционал синамаларга реактив реакцияларнинг 11,5 марта камайиши, шунингдек клиник-неврологик кўрсаткичларнинг тикланиши кузатилди. Оёқлардаги рефлекслар, мушак куч ва сезувчанликда ўзгаришлар кузатилмади.**Хулоса:** Объектив текширувда оёқларда мушак таранглигининг турли даражалари, функционал синамаларга ижобий реакциялар ва фаол ҳаракатларнинг чекланиши аниқланди. Даволашдан кейин таққослаш гуруҳидаги беморларда ўртача ўткир оғриқ камайди, доимий ва даврий оғриқ камайди.

Калит сўзлар: Ашнер синамаси, Кердо индекси, таққослаш гуруҳи, мушак гипотрофияси, жисмоний реабилитация, тремор, гипестезия, дизестезия, Фаллен синамаси

1. Introduction

In a clinical neurological examination, patients complained of wheezing - paresthesia, loss of cartilage in the legs, pain in the direction of the affected nerve. Complaints in younger children were reported to consist of loss of cartilage (53.1%) and in the heel area of the ankle (42.2%), pain in the legs (31.5%). Children aged 7-11 years had a significant decline in the number of above complaints between 41.6% and 32.8% respectively with (p= 0.05), pain from the affected leg nerve accounting for -23.4%. In the age group of the last Category “11-18 years”, complaints decreased to 26.2% - 34.5%, less than the previous indicator, while the increase in pathology does not correspond to age. Thus, the fact that children's complain of pain in the palm of the foot is correlated with the disease, and the loss of cartilage is accompanied by the appearance of hypesthesia in the ham [2]. With increasing age, the number of complaints in girls about pain in the affected leg and the spine, as well as hypesthesia and dysesthesia in the leg, maximized. Among the main indicators, body mass indices (BMI) were evaluated. The average BMI for boys was 26.5 (minimum 17.1, maximum 41.6, standard deviation 4.2), for girls 27.2 (minimum 17.1, maximum 38.7, standard deviation 4.5). Unlike boys, the incidence of postinjective mononeuropathies in girls was lower (6 times higher than in boys) and higher in the older age group (1.8 times higher than in boys). At the same time, in the middle age group (ages 7-11), it was noted that the prevalence among girls is much lower than among boys (Figure 1).

Figure 1. Major neurological complaints in accordance with gender



2. Patients and Methods

2. 1. Patients

One hundred children with damage to the peripheral nervous system from 3 to 18 years old were taken, who were being treated in the Department of neurology rehabilitation of the Republican

Center for the rehabilitation of diseases of the musculoskeletal system. The duration of treatment in the center was on average between 45 and 50 days. Of the 100 children studied, 80 are children with neuropathy that appears after the use of anti-inflammatory nonsteroidal drugs (injections), ten are children with neuropathy that arises from long-term use of orthopedic items, ten are sick children with neuropathy of various etiologies of origin.

2. 2. Treatment methods

The diagnosis of nerve damage was carried out in the following way: stimulation of the nerve was carried out when measuring the rate of impulse conduction in the nerves of movement, but with the subsonic values of the current values.

The evaluation of nerve function was carried out according to the following indicators: delay along the sensory and motor fibers, amplitude and pulse transmission rate the amplitude of the response obtained in v was measured from the top of the negative peak to the zero range the speed of the electrical impulse in m/sec was estimated between the proximal and distal points [3, 4]. The method of studying motion fibers consists in stimulating the motor parts of the peripheral nerves (areas closest to the skin surface) with quadruple pulses 0. 05-0. 5 mc long with a bipolar stimulating electrode away from the cathode to the anode (antidromic electro stimulation method) [5].

3. Results

To improve the diagnostic algorithm, we examined a child with 100 different mononeuropathies between the ages of 3 and 18. From 100 children studied, 80 are children with post-use neuropathy of nonsteroidal anti-inflammatory drugs (injections), 10 are healthy children who arise from overuse of orthopedic ligaments, 10 are sick children with neuropathy of various etiologies [6]. All children were divided into 2 groups: the main group and the control group. The primary age group of 3-7 consisted of 26 children, 7-11 years old – 20 children, 11-18 years old – 18 children, 15 children in the control group of children under 3-7 years old, 7-11 years old – 13, 11-18 years old-8 children.

As the main complaints, numbness in the legs, hypesthesia, dysesthesia, pain in the direction of the affected nerve of the legs were received. In the younger age group, there were low complaints of hypesthesia (3.1%) and pain in the calf area (9.2%). Among boys, there was a significant increase (36%) between children aged 7-11 in the above complaints of 29.0% and 29.5%, and between children who complained of pain in the leg ($r<0.05$), and a reliability factor was confirmed ($r < 0.05$). In this case, children aged 7-11 years are a statistically significant risk factor for the development of pathology of the peripheral nervous system (relative risk 3,2-9,4). The most common neurological complaints among children occurred mainly at the age of 11-17 years. The relative risk (by first group indicators) was from 4.0 to 12.8 (Table 1).

Table 1. The main neurological complaints encountered when examined with age

Age	Hypesthesia, %		Pain caused by improper injection (Antibiotics,), %	
	Boys	Girls	Boys	Girls
3-7 years	3,1	17,6	9,2	23,5
7-11 years	29,0	16,1	29,5	32,3
11-17 years	39,8	28,6	36,8	44,2
Avarage	29,5	30,9	31,3	40,9

Thus, the prevalence of complaints from young children is directly related to the age of hypesthesia in patients with the usual performed injection technique: with age, complaints increase

in boys. It should be noted that there was found to be a direct correlation between the prevalence of complaints from improperly performed injection among girls, but was not statistically significant [7, 8]. With an increase in the age of the child, the number of complaints about pain in the joints of the legs, as well as hypesthesia in the legs, went back (Table 2).

Table 2.

Results of clinical and neurological examination of children.

Clinical indications	Results	Neuropathy of the legs,%	P
Right leg tumors	Not available	100	<0,01
	There is a breakdown	0	
Left leg tumors	Not available	97,7	<0,07
	There is a breakdown	2. 3	
Right-sided discriminatory intuition	Not available	72,1	
	There is a breakdown	27,9	<0,05
Left-sided discriminatory intuition	Not available	53,5	
	There is a breakdown	46,5	<0,001
Rubbing on the right leg	Not available	97,7	
	There is a breakdown	2,3	<0,001
Rubbing on the left leg	Not available	100	

According to the main group data using developed rehabilitation complexes, the following changes occurred: movement disorders of children up to 85.6 ± 3.4% decreased moderately ($p \leq 0.05$); the ability to climb the first and second floors of stairs increased by 25.7 ± 6.0%, without the use of additional support (barrier, belt) in the main group ($p \leq 0.05$); 68.3 ± 3.8, %, was noted to be 21.8 ± 4.5% in the control group. In the main group, a statistically significant improvement was achieved in the form of pain reduction of 73.2 ± 6.4% ($p \leq 0.05$), and dependence on relatives decreased from 45.4 ± 3.7% to 4.2 ± 1.6% ($p \leq 0.05$).

According to neurological examination data, statistically significant results were achieved: leg tremors stopped in 57.3 ± 4.0% of children ($p \leq 0.05$; The number of children with no limit on foot performance in the main group was 61.6 ± 5.8% compared to the control group (21.8 ± 3.4%, $p \leq 0.05$). In the main group,the weight level of muscle hypotrophy (heel, calf) decreased by 68. 5 ± 7. 2% (24.3 ± 3.8%, $p \leq 0.05$) (Figure 2).

Figure 2. Expression of disorders on neurological examination in the main group before and after treatment

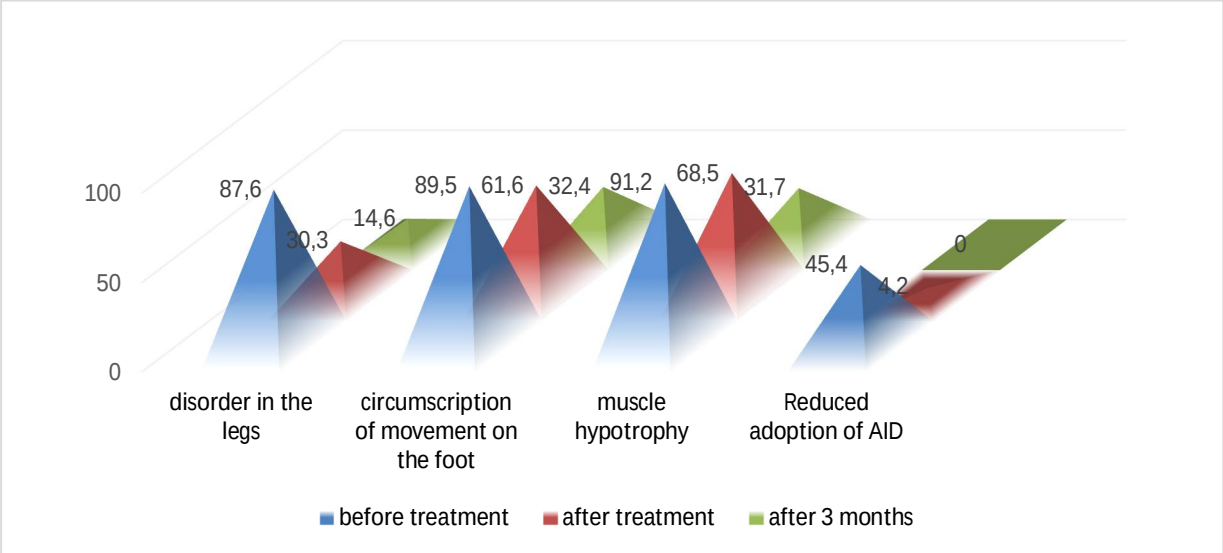
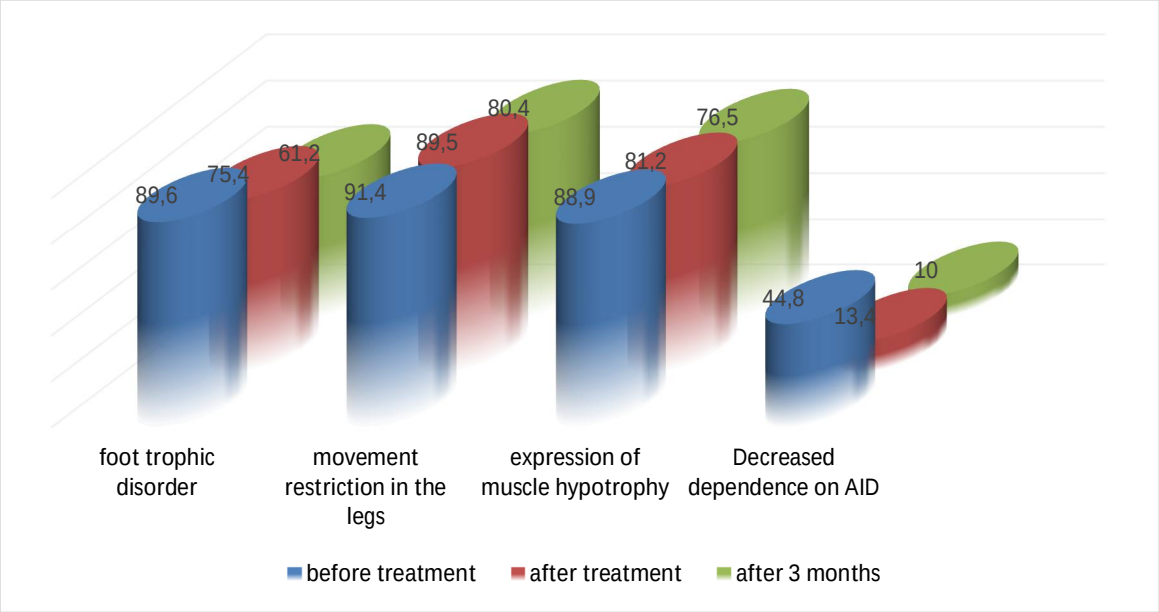


Figure 3 Expression of movement disorders in neurological examination in the comparison group before and after treatment



The motion function without auxiliaries rose to 73.2 ± 8.6% in the main group and 42.3 ± 4.4% (p≤0. 05) in the comparison group. The frequency of sharp disturbances decreased from 67.3 ± 4.5% in the main group to 13.8 ± 2.4% (p≤0. 05), and 44.6 ± 3.7% (p≤0.05) in the comparison group. 65.7 ± 7.6% normalized (P≤0.05) in the control group (34. 4 ± 4.7%, p≤0.05) compared to standing on the toes (comparison group). The ability to walk on the heel corresponds to 55.2 ± 6.4% in the main group and 29.6 ± 4.7% in the comparison group, with p≤0.05. The steppage ("cock walking") intensity decreased from 45.8 ± 4.9% in the primary group to 10.3 ± 2.4% and was 21.6 ± 4.3% in the control group (p≤0. 05).

Figure 4. Improvement in movement function detected in clinical and neurological examinations in children of the main group before and after treatment

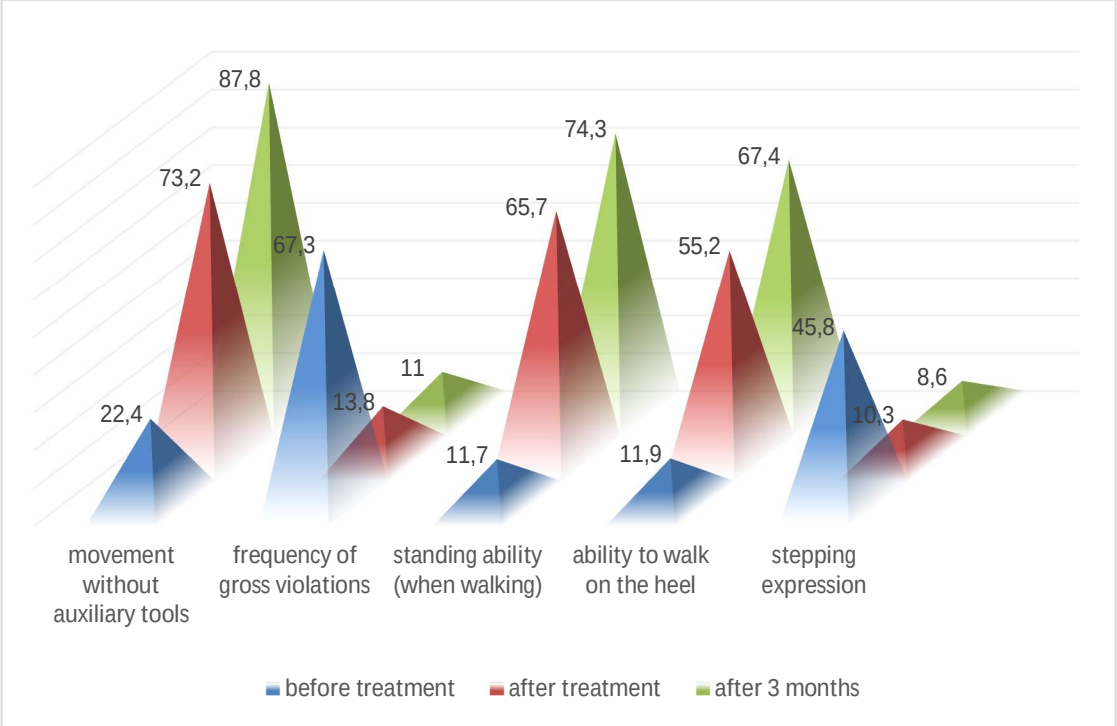
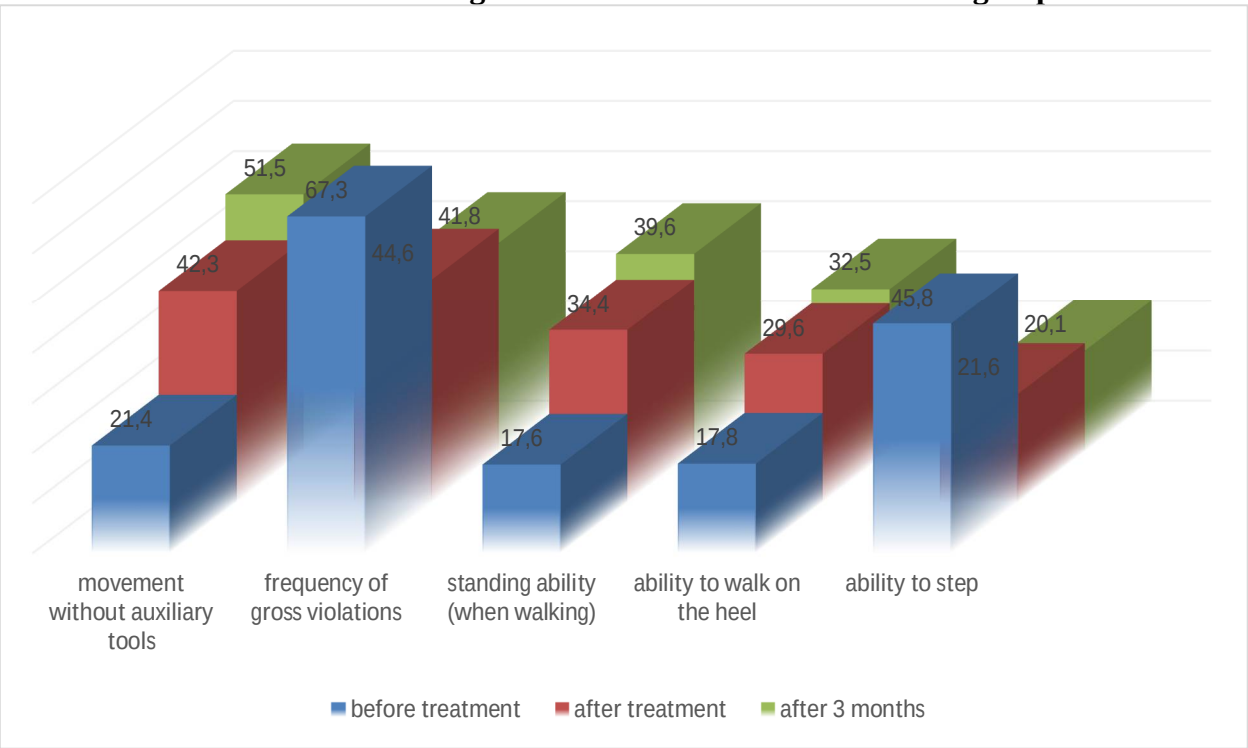


Figure 5. Comparison before and after treatment improvement of movement function detected in clinical and neurological examinations in children in the group



3. 1. Improvement of treatment group after 45-day complex rehabilitation.

If there are 21 children with yatrogenic cause in diagnostics with Equinus installed on the leg before treatment (monoporesis as a result of an incorrectly performed intramuscular injection), after rehabilitation measures we noted that in almost all children the condition of the ankle has become normal. After all the rehabilitation (course of rehabilitation for 45 days), the pre-treatment scoliosis of children decreased, 90% of children returned to normal, indicating the high effectiveness of the rehabilitation we proposed [9]. However, when examined to assess the effectiveness of group-wide rehabilitation it was better to restore musculoskeletal functions in contrast to the severity of their Group I pathologies, with slightly improved Group II. In all patients, steppage, varus, recurvational deformities were present before treatment. After rehabilitation measures, including with the use of drug Ipigrix, a langeta link was installed to improve the functional condition of the joint [10]. Also damaged legs were corrected in the right position, with orthoses and orthopedic equipment. Orthopedic mode is set. After rehabilitation activities were conducted, leg varus deformity, joint sprains, recurvasia decreased by 89.4 ± 5.6% in children in the main group while (56.7 ± 4.3%, R≤0. 05) in the control group. It was noted that a statistically significant back bend appears in the calf-heel joints at 67.3 ± 4.6% in the main group and 35.5 ± 3.7% in the comparison group (r≤0.05). The increase in Plantar flexor and scribal muscle strength was achieved at 93.6 ± 5.4% in the main group and 65.2 ± 4.3% (R≤0.05) in the comparison group. In the main group, the strength of the 1-finger lengthening muscles increased (in scores from 0 to 5) and was 5 points during rehabilitation, 83.5 ± 4.4% in the main group and 67.8 ± 3.2% in the control group. A very increase in muscle strength is more observed in proximal parts compared to distal, and the strength of the muscles of the legs is better restored, which is probably due to more pronounced pathological changes in the floor groups of the muscles of the legs [11, 12]. The patillary reflexes were restored on both sides (in the main group 6.8 ± 3.7% to 75.6 ± 7.3%, comparison group 54.3 ± 5.6%, R≤0.05);In the main group, plantar reflexes ranged from 6.8 ± 3.7% to 80.4 ± 8.2%, compared to the comparison group of 49.8 ± 4.3% (R≤0.05;In the main group, the Achilles reflex ranged from 0.0% to 80.4 ± 8.2%, in the comparison group 56.7% ± 5.1% (R≤0.05). Joint-muscle sensitivity in the main group increased by 57.8 ± 7.1%, while that of the comparison group was 24.5 ± 3.7%. These indicators are explained by the complete or partial regeneration of afferent pathways under the influence of physical rehabilitation. As a result,

the rate of gait dependence from child-leading groups decreased from 23.5 ± 4.6% to 4.2 ± 1.7% in the primary group, and 6.7 ± 2.1% in the comparative group (r≤0.05) (Figure 6).

Figure 6. In the main group, reflex functions in the neurological examination before and after the treatmentinng recovery changes.

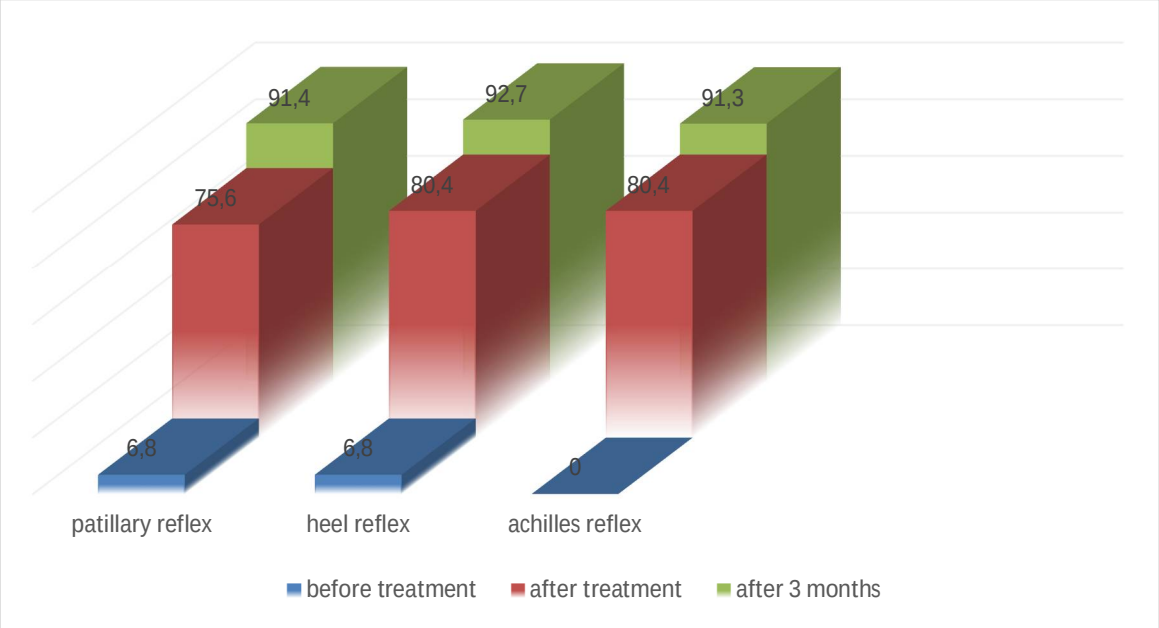
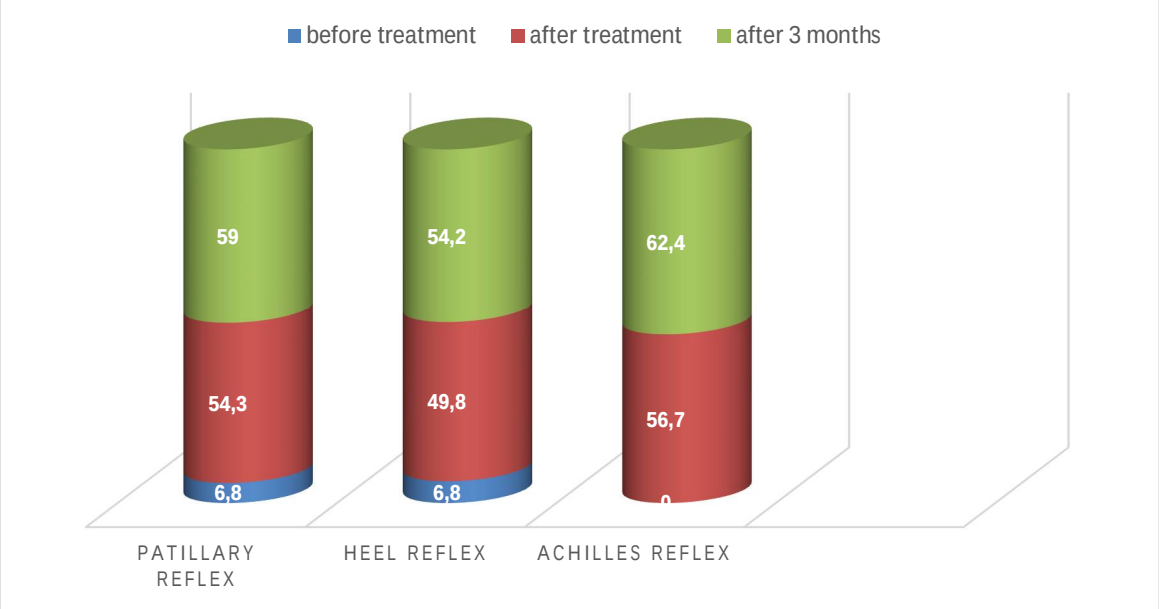


Figure 7. Recovery changes of reflex functions in the neurological examination before and after treatment in the comparative group.



The index of vegetative synapses (Ashner test, Kerdo index) was noted to be 81. 4 ± 7. 6% in the primary group and 56. 8 ± 5. 7% (R≤0. 05) in the comparison group.

An improvement in the main group after rehabilitation measures was found after 2-3 days, which was found to be reduced in leg neuropathy with swelling on the right side of the body (with 34.8 ± 5.6%). In addition, the left leg tumor in the main group decreased by 45.8 ± 4.7% compared to the control group (23.7 ± 3.8%). The sensitivity on the right increased by 56.8 ± 3.2% in the main group and 21.4 ± 4.1% in the group under comparison. In the main group, the sensitivity level on the left decreased by 41.5 ± 3.6%, and in the comparison-by 17.8 ± 2.1%. In the main group, the night-time level of right-hand flutter decreased by 43.9 ± 3.6%, and in the comparison group-by 23.8 ±

2.7%. In the main group, the night-time rubbing of the left side decreased by 43.2 ± 3.6%, and in the comparison group-by 25.6 ± 1.2%. Overall, the right-hand side's primary group flutter decreased by 45.6 ± 5.2%, and the control group by 27.1 ± 3.7%. It was found that the left-hand side rubbing in the main group decreased by 34.9 ± 3.3%, and in the comparison group-by 13.6 ± 1.8% (Figure 8).

Figure 8. Clinical neurological changes after treatment in the main group.

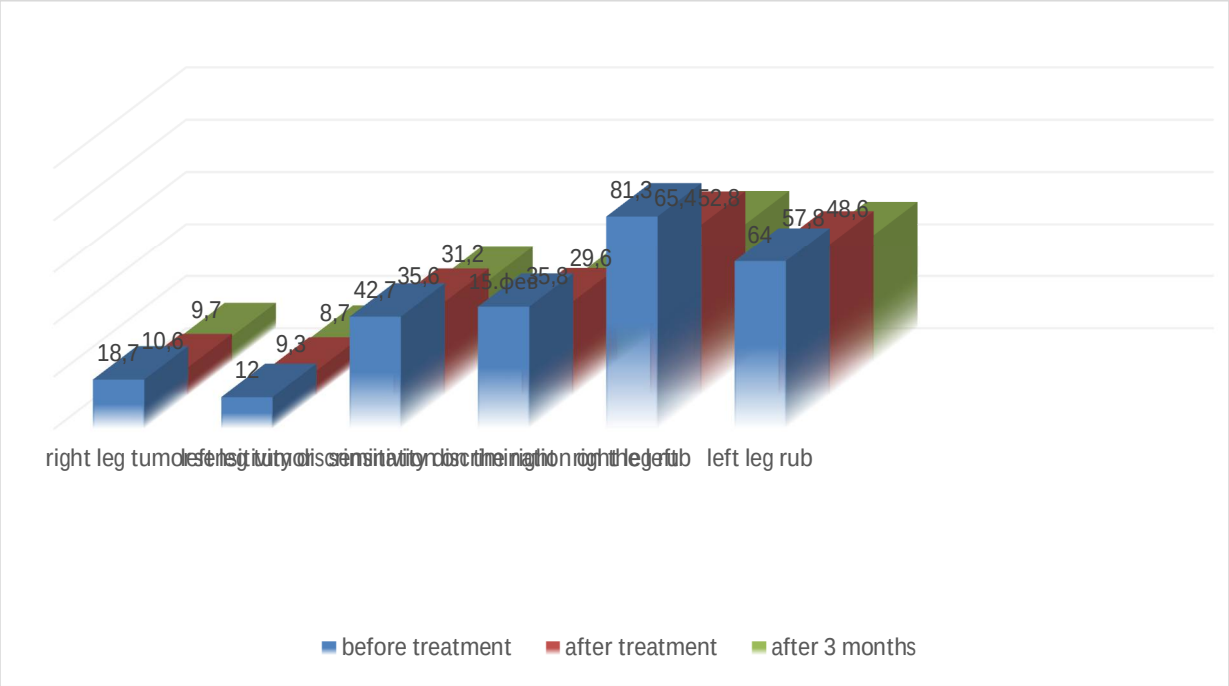
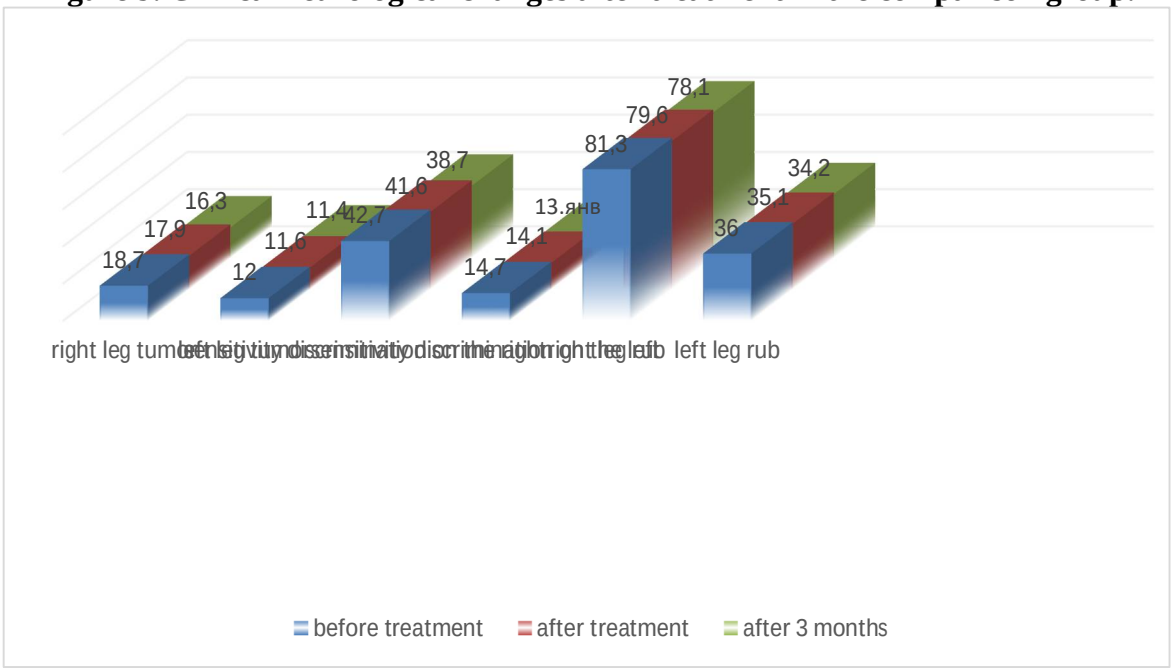


Figure 9. Clinical neurological changes after treatment in the comparison group.



Analysis of data on Anamnesis showed that in 42.9% of patients in the comparison group, the duration of the disease is more than 1 year, 40% per year, 17.1% per month. In treating 82.9% of these cases, 74.3% of patients had low efficacy, 8.6% of patients had no significant effect, and 17.1% of patients did not receive full treatment.

After treatment, the comparison group observed movement restrictions in BDS at 4.14 times, muscle strengthening in the legs at 2.6 times, reactions to functional tests at 7 times and no changes

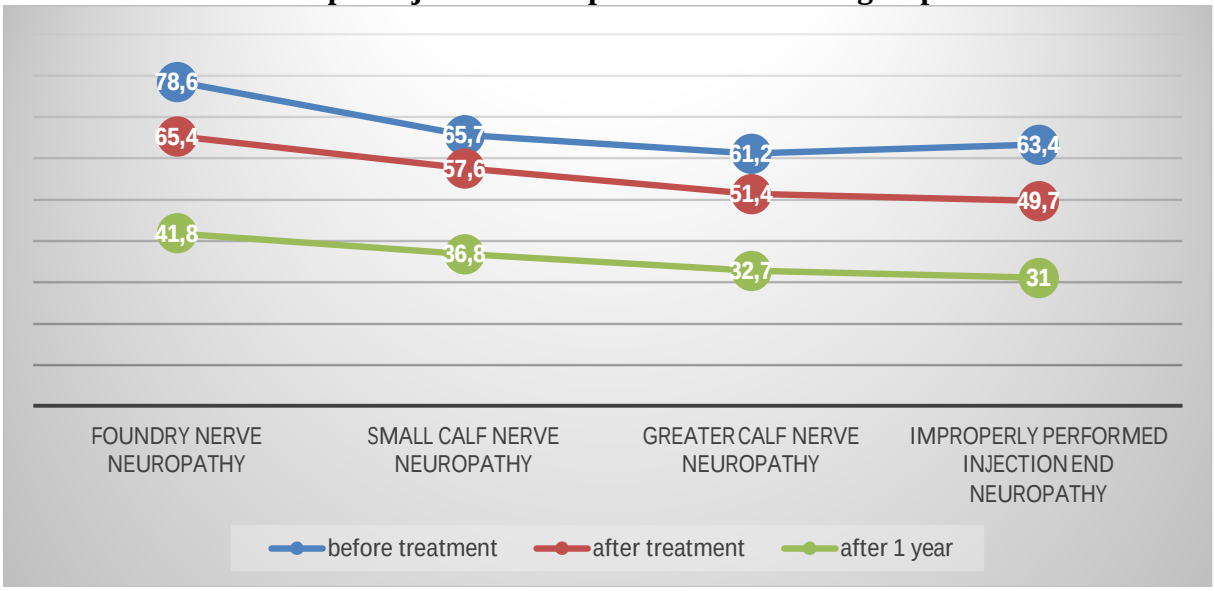
in reflexes, and a recovery of clinical and neurological indicators. Muscle strength and sensitivity in the legsincreased [13].

The dynamics of subjective information in the main group is characterized by improvementin a reliable (R<0.05) manner, shrinkage within the group, change in character, spread, reaction to trigger factors, movement restriction and decreased sensitivity disorders indicate the effectiveness of the taken measures.

After extensive rehabilitation in the main group, there was a decrease in movement restrictions in BDS by 6.6 times, an increase in muscle strength in the legs by 3.5 times, a decrease in response reactions to functional tests by 11.5 times, as well as a recovery in clinical and neurological indicators. Changes in reflexes, muscle strength and sensitivity in the legs were not observed [14].

The rate of neuropathy symptoms decreased by 46.8 ± 7.4%, in the comparison group by 23.5 ± 2.6%, in the leg neuropathy by 37.8%± 3.0%, in the comparison group by 15.6 ± 1.7%, as a result of improperly performed injections after the main group rehabilitation measures.

Figure 10. The frequency of occurrence of the main symptoms after rehabilitation measures in postinjective neuropathies in the main group.



Provocation tests were performed to confirm the diagnosis in all patients. Its results are in the figure 10 below.

A Phallen test was performed to diagnose postinjective mononeuropathies, with a positive test found in 44% of cases on the right (p<0. 001). Other positive provocation tests for the diagnosis of right – sided Foundry nerve neuropathy were found in 22.7% of children. Of the results obtained, a positive Tinel test was found in 5.3%, a positive elevation test in 6.7% and a positive Durkan test in 1.3% (Table 3).

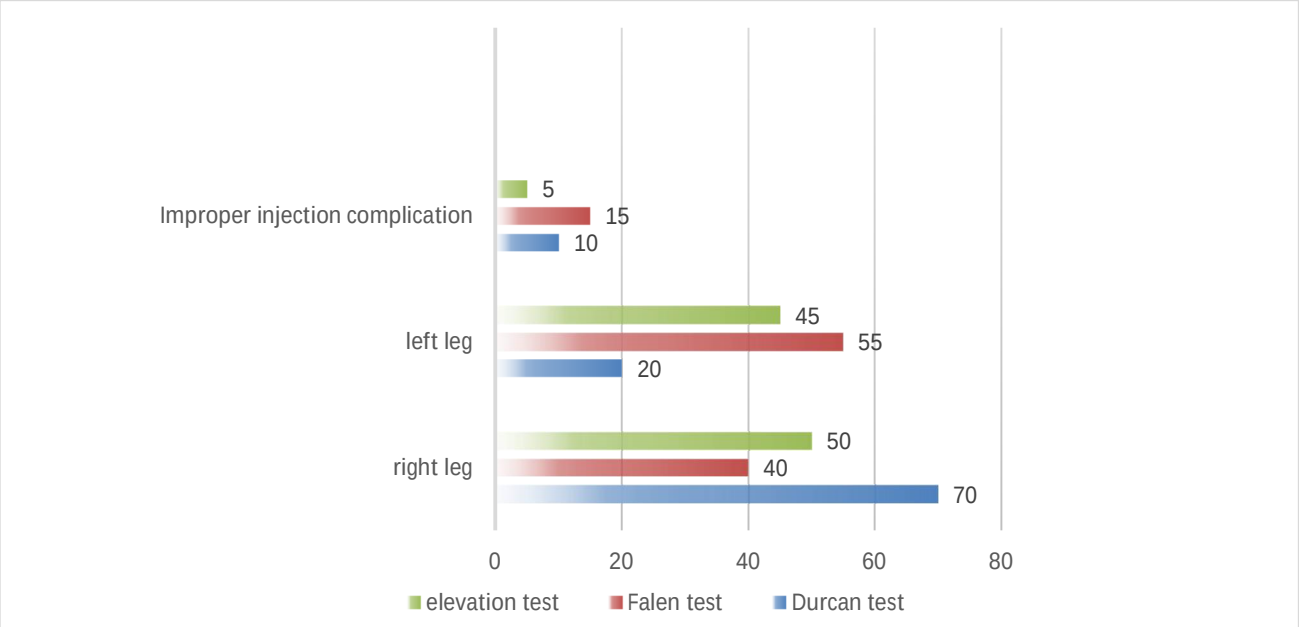
Table 3. Foot neuropathy, provocation in patients with diabetes results of tests. (n=80)

Provocation tests	Results	Neuropathy of the legs, %
Phallena test on the right	Negative	100*
	Positive	0
Tinel test on the left	Positive	9,3**
Durkan test on the left	Positive	0

Froman test on the left	Positive	0
Elevation sinama on the left	Positive	0
Wartenberg test on the left	Positive	4,7

*-p <0,001, **-p <0,01.

Figure 11. Positive provocation tests in childrenfrequency of occurrence



The detection of positive tests in leg neuropathy after rehabilitation events in the main group decreased by an average of 71.4 ± 6.0%. Specifically, the Duncan test decreased to 80.8 ± 3.5%, the Falen test to 35.7 ± 4.1%, and the Elevation sinama to 51.2 ± 4.8%.

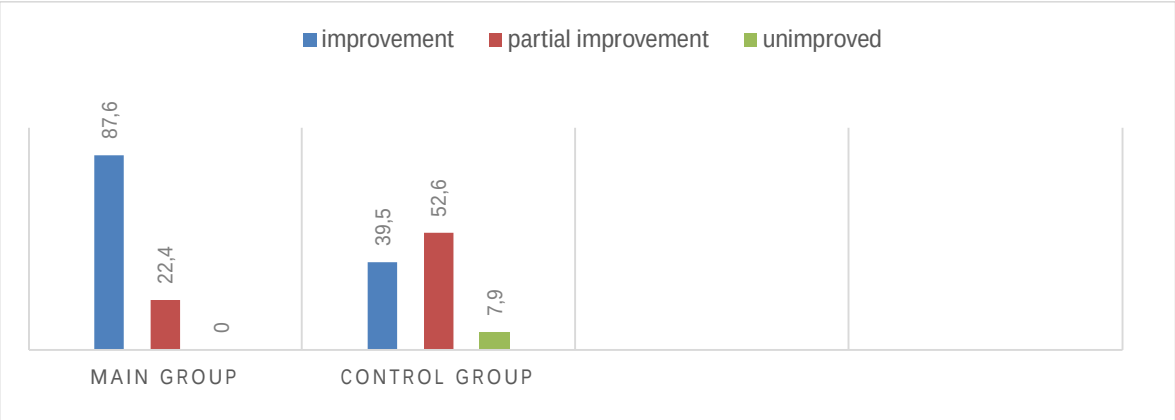
4. Discussion

The performedcorrelation comparison analysis (row correlation coefficient of Spirmen) was based on the characteristic of the main neurological complaints for neuropathy of the legs (dysesthesia, paresthesias in the paws, rubs, pain in the direction of the nerve), age, BMI, dysesthesia (rubs) associated with pain in the leg joint (correlation coefficient 0.526), but pain in the thigh area (correlation coefficient 0.269) and weakly correlated with age (correlation coefficient 0.082). In particular, with a decrease in the correlation coefficient (0.360), (0.124 correlation coefficient) with a decrease in the correlation coefficient (0.360). The main clinical signs of pathology of the peripheral nervous system were analyzed for the presence of correlations between dysesthesia, pain in the joints of the legs and the age of the child). The clinical picture of peripheral neuropathy in observed patients has been dependent on the stage of the disease.

In the acute stage of the disease, spontaneous pain in the area of compression was observed in 71.2% of patients. Pain irradiation along the affected nerves is less common in the area of compression than local pain – at 40%. In 68.8% of our observation, pain was observed in nerve fibers damaged during palpation. Pain syndrome was manifested by burning, suppressive, sometimes acute attraction. The intensity of pain is greatest in neuropraxia of the nerve desks. Pain syndrome in the residual period was less severe than in the acute period, but it was much more stable and usually had more centralized characteristics. This was observed in 67.5% of cases in a clinical trial. At the same time, irradiating pain occurs more often-in 41.8% of cases. Nerve fiber pain affected during palpation was observed in 47.9% of cases. The pain syndrome was in the form of burns, stings and sprains. In almost all patients with peripheral neuropathy, damage to the sensory area was observed. Subjective sensitivity disorders were manifested in the form of paresthesias. At the same time, 72.9% of patients

were found to have occasional prick sensation, like “Ant walk” sniffing sensation, scrubbing in the innervation area of the affected nerve. In 7% of patients, there were difficulties in performing subtle targeted actions – “afferent paresis”. In addition to subjective manifestations of sensitivity disorders, an objective violation of pain sensitivity of the peripheral type was found in the form of hyperesthesia in the form of a less irritating feature and in the form of hypesthesia. Thus, in the acute stage of the disease, 64.2% of patients had pain sensitivity hypesthesia and 27.3% of patients had hyperesthesia. In the residual phase, patients experienced – 31.9% with descent type – 7.2% irritable type sensory disturbances. At the same time, disorders of the sensory area and differences in the basic pathogenetic form were not identified. Disorders expressed in patients in axonotmesis – 57.6% in Descent type (in neuropraxia cases – only 10.1%), and 39.9% in irritation type (with neuropraxia – 14.9%) were found. In the acute stage of the process, the effects of disorders in the area of motion were found in 72.3% of patients in the form of muscle paresis that innervate the affected nerves. The greatest, triple decrease in muscle strength was observed in 30% of patients. In 21.2% of patients, the less common muscle paresis was up to 4 points. Movement defects were noted in some patients: 0-1 points – 12. 7% and 2 points – 15.8%. The frequency of occurrence of movement disorders in the chronic period of the disease is observed relatively a lot in the acute period – at 80. 9%. However, the expression of the affected muscle paresis was slightly lower. In 10.3% of patients, acute movement disorders (inactivity) were found. In patients, paresis were rated at 41.7% -4 points, 14.9% -3 points, and 13.9% -2 points. The rule was more pronounced in cases of injury with partial axonal interruptions of movement disorders – the absence of movement in axonotmesis was in 44.9% of patients and 18. 9% in neuropraxia. Normal tissue hypotrophy was observed in 28.6% of cases from trophic disorders. In the acute stage of the process, vegetative vasomotor disorders were most common:cyanosis, tumors in the distal sections of the legs, a decrease in temperature in the area where the affected nerve innervates. Dystrophic processes located in the innervation zone of damaged nerves during the residual period have caused dystrophic disorders such as skin trophic disorders, broken nails, hair loss, and osteoporosis. The extent of reflector disorders was to a large extent associated with nerve fiber damage. We have witnessed that 34.2% of patients with axonotmesis and 15.2% of patients with neuropraxia do not have reflexes. Hyperreflexia was found in some patients (5.4%) (Figure 12).

Figure 12. Children legs postinjective neuropathy rehabilitation effectiveness in movement disorders



Patients in the main group were patients who received scheduled complex medical rehabilitation treatments at RC for an average of 45-50 days.

Summarizing the data from the clinical and neurological examination of patients in the main group, these subjects have common characteristics: on average (77.1%) the prevalence of constant (22.9%) pain is mainly observed during movements, accompanied by daily loads, static stress and movement restriction in BDS. Data on Anamnesis showed that in 88.2% of cases, the disease is chronic. The objective examination revealed different levels of muscle tension in the legs, positive reactions to functional tests and restrictions on active movements.

After the patients in the main group were fully rehabilitated, a complete decrease in acute pain syndrome was noted, the average pain decreased by 78. 9%, the constant decreased by 92. 6%, the periodic decreased by 75%.

5. Conclusion

As for the conclusion, which summarizes the data obtained from the clinical and neurological examination of patients in the comparison group, it turned out that these subjects had common characteristics: moderate pain (65.7%) the prevalence of constant (71.4%) pain is mainly accompanied by movement during movements, daily loading, static stress and movement restriction in BDS. Data on Anamnesis showed that in 80% of cases, the disease is chronic and relapses more than twice a year in most patients. 60% of cases were associated with the effects of dynamic loading and 82.9% in cases where the degree of treatment was uncertain. An objective examination revealed different levels of muscle tension in the legs, positive reactions to functional tests and restrictions on active movements. In patients in the comparison group after treatment, the average acute pain decreased to 73.9%, persistent painto 92% and periodic pain decreased to 60%.

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БИОМЕДИЦИНА ВА АМАЛИЁТ ЖУРНАЛИ

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