Original Article

Study on the importance of physical exercise in recovering children with Mucopolisaccharidose type B by means specific to physiotherapy

TATARU ANA – MARIA

¹Department of Medical Assistance and Kinetotherapy, University of Pitesti, ROMANIA

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Abstract

Exposing the problem: the importance of physiotherapy in recovering rare diseases that began in the meantime to have a very high impact in our country. Through this work I will try an approach in terms of physiotherapy in the recovery of mucopolysaccharide type B. Method: We wanted to achieve a case study aimed at demonstrating the effectiveness of physiotherapy programs in the recovery of nerve patients with type B mucopolysaccharide. Results: The statistics indicators present an improvement in all test parameters, so that our proposed objectives have been achieved. Conclusions: Following the application of the recovery programme, patientul V. T. Improved pulmonary capacity, apneic episodes decreased in intensity, increased spine mobility,, static and dynamic balance recorded much better values.

Key words: Type B mucopolisaccharidosis, obstructive syndrome, scoliosis in S, physiotherapy.

Introduction

Mucous membrane type B is a genetic transmission malady, in which the body does not possess the appropriate enzymes for the breakdown of complex molecules, called mucopolysaccharide.

They accumulate in excess at the cellular and tissue levels, leading to the damage to the various organs and systems. The first symptoms of the disease are not present from birth, usually occurring at the end of the first year of life.

Subsequently, general symptoms of hepatosplenomegaly, cardiac insufficiency, respiratory dysfunction occur. If they do not intervene early for their relief, they may even be fatal to the patient. (Puiu, M., 2007 pp 25-28). Hunter type B syndrome is much more difficult to identify and is often recognized only after the relatives on the maternal line are examined. For both types, the diagnosis of certainty can be put on the basis of a blood test indicating the specific enzyme deficiency. Regarding the treatment of Hunter syndrome, there is no etiological treatment. However, the existing therapy is considering the improvement of the main symptoms:

- ✚ Decreased respiratory complications
- ✚ Treatment of skeletal and connective tissue problems
- ✚ Treating complications at heart level
- ✚ Correction of sleep impairments
- ✚ Addressing behavioral problems.

Context of approach

After studying bibliographical materials related to mucopolisaccharidosis type B (, causes, symptomatology, clinical picture, treatment modalities and recovery program of this patient we can formulate the following premises of research:

✚ By applying physiotherapy programs in the pathology date of the installation of Mucopolisaccharidosis type B (, it can be obtained as quickly and efficiently as possible recovery of this patient.

✚ through a daily practice of physical activities under the careful supervision of specialists, a quicker recovery of the affected components will be obtained: spinal mobility, obstructive morning syndrome, increased mobility Decreased effects due to the installation of scoliosis in., S.,

By applying the specific programs physiotherapy attempts to correct the side effects due to the induced changes on the patient diagnosed with the type B mucopolisaccharidosis (Installation of scoliosis, decrease in joint mobility, Onset of obstructive syndrome). The daily performance of physical exercise, under the careful supervision of specialists will be obtained an improvement in the parameters affected by this disease in the small child diagnosed with mucopolysaccharide type B.

Working hypothesis

We considered that by establishing as early as possible recovery programmes, by means of physiotherapy and under careful supervision and specialised monitoring, an improvement in the affected parameters will be achieved: joint mobility, Respiratory parameters and a correction of the spine position.

Research approach

Research was based on a case study of a V. T boy, aged 4 years and 9 months, diagnosed mucopolisaccharidosis type B (having as a personal history: repeated episodes of colds and scoliosis in,, S,,.

The causes of its internarration were the frequencies of colds that it presented, the inability to breathe correctly, the fact that the mother noticed that it shows frequent episodes in which it accuses joint pain and the mobility of the limbs It has diminished, also accuses pain in the spine and its position is,, poor,,. Going to the family doctor this was told that he should be seen by a specialist doctor because the child also shows other signs that are not due, his predisposals to the colds, plus he also shows a behavior,, agitated,

The research was done at home, where the family made a recovery space, fulfilling all the conditions of recovery. For 3 months we worked together at home with a frequency of 4 days a week, the research contained and currently within the Kineto Promedica Life Center where it comes with a frequency of 3/week

A series of tests have been applied to the research subject:

- ✚ BPOC Evaluation Test (COPD Assessment Test, CAT)
- ✚ 6-minute test.
- ✚ Modified dyspnea Medical Research Council Scale (MRC)
- ✚ Scale FIM (functional Independence Measurement)
- ✚ Scala WOMAC
- ✚ Scala Berg (Balance Assessment)
- ✚ Scala VAS – Pain
- ✚ Incliners test to previous (Adam test)
- ✚ Schober Test
- ✚ Ott Test
- ✚ Stibor Test

Table 1. Value Initial Test, CAT

Nr crt	Name and surname	Value Initial Test, CAT
1.	V.T.	50

Table 2. Value Initial Test, 6 min

Nr crt	Name and surname	Value Initial Test, 6 min
1.	V.T	0

Tabel 3.Value initial Scale MRC

Nr crt	Name and surname	Value Initial Scale MRC
1.	V.T.	3

Tabel 4.Value initial AdamTest

Nr crt	Name and surname	Sex	Age	T.I
1	V.T	M	4 years and 9 months	-4

Tabel 5. Value initial Schober Test

Nr crt	Name and surname	Sex	Age	T.I
1	V.T	M	4 years and 9 months	3

The objectives of the recovery programme have been established following the main diagnosis and associated conditions as well as following the initial evaluation.

Objectives of the obstructive Syndrome recovery program	Exercises
Airway clearance by educating the cough and guided expectoration; Reeducation of the expiry in such a way that it becomes an active component of the Respiratory Act; Achieving high volume ventilation and reduced frequency; Reeducation of the diaphragm and the creation of localized breathing technique to ensure the growth of pulmonary ventilation; Relaxation and mobilisation of the thoracic box; Strengthening the musculature of the abdominal wall; Prevention and correction of vicious attitudes of the spine and thorax; Readaptation to effort.	Stand apart, drive the arms through the side up, I, and lower the arms through forward down with E Stand: Carrying the arms forward with the left foot, I, return with prolonged. Repeat with the right foot. Stand: Carrying the arms through forward up the left leg back top supported, I, comeback with E. Repeat with the right. Stand – Carrying forward side arms, I, carrying forward arms, squashing with the laying of palms on the ground, beard in the chest, E,. Return to initial position. Stand, lateral arms lifting the knee left/right with the apeccation and pulling to the chest, E, return with I Stand apart the cane in front of the bent heads, taking the cane through forward, with the kneeling of the trunk to the left/right, I, return with E. Stand, trunk gently bent forward, bason at the knees of the knee bent, lunge forward up, arms stretched over the head, I, return with E.

The objectives of recovering scoliosis in., S.,	Exercises
General objectives of the programme Correction and maintenance of the entire body alignment; Shortening of the attacks muscles on the side of the convexity; Correction of vicious posture; Maintaining the alignment of the entire body; improving the respiratory deficit; Increased coordination and balance; Specific objectives: Toning muscles on the side of convexity in shorting mode AutoCorrect-The position of the viciose and the toning of the musculature in the elongation mode on the side of the concavity; Maintaining balance and coordination maintaining stability;	Corrective exercises from the position of orthostatism (standing) and its derivatives: Walk on the peaks with small steps, with the taking of the left arm stretched up and the right down and back, with arching at the pace of the steps; Walk with the left side of the OBLIIC-upper arm and the straight down-back, with arching at the rhythm of the steps; Walk on the peaks with a ganterum of 0.5-1 kg in the right hand, simultaneously with the carrying of the left arm through the forward up, with arching; Walk on the peaks with a medical ball on the head, backed from the side with the left hand, the head in the extension; Walk with the right knee to the chest at each step, with arching, left hand on the head and the right one on the hip; Walk, with the left hand on the hip, and with the right touch the left knee at each step; Walk on the peaks, with small steps, with a stick sitting diagonally at the back, grabbed with the upper left hand and with the bottom right; Walk, with both hands on the hips, is made arching; Walking on the gymnastics bench, the left hand supports a medical ball on the head;

Results, discussions

Table 6. Testing of MRC Scale

Nr crt	Name and surname	T.I	T.F
1.	V.T.	3	2

Fig. 1. MRC Scale testing

If at the beginning of the recovery program, the patient V.T. obtained high values on this test, indicating the presence of dyspnoea in the conduct of activities that did not demand a sustained effort (dressed, stripped, feeding, making the toilet). The final tests they obtained the value of 2, which indicates that it has developed over time a much better physical capacity. He was able to perform daily activities without being accompanied by dyspnoeic episodes. All values at final testing have increased by applying a more targeted assessment of an individualised recovery programme that took into account all clinical signs, the stage of the disease, the age of the child, the way of intervention, and in particular The degree of its involv

Conclusions.

Through this work I have tried to create a program for recovering patients diagnosed with this rare, Hunter, disease, and which is based on methods and means specific to kinetotherapy. The proposed programme seeks to bring improvements to the most important clinical signs that a sick person diagnosed with mucopolysaccharidosis presents: obstructive syndrome, tracheomalacia reducing motor capacity, by a rapid decrease in mobility Preventing them from being transformed into invalid persons. Thus the first recovery program is aimed at rehabilitating respiratory function, preventing the extension of the pathological process, preventing the appearance of complications but also increasing the quality of the patients diagnosed with COPD.

Therapeutic indications in respiratory gymnastics are applied in relation to the stages of disease evolution for each patient, taking into account the whole clinical picture. By applying physical therapy programs

to the patient V.T. a series of improvements have been obtained on all test parameters as well as on the entire body. The programs applied first followed to correct and recover the changes that occurred in the spine and thoracic box. Through the application of Kinetotherapy programs was obtained primarily the release of air horses through a systematic education of the cough and guided expectoration; By applying daily kinetotherapy programs, the reeducation of the expiry has been obtained in such a way that it becomes an active component of the Respiratory Act; By applying the complexes of breathing exercises and the creation of breathing techniques, the reeducation of the diaphragm has been achieved in order to increase pulmonary ventilation;ement.

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