

Physical-therapeutic exercises to rehabilitate a boy with the syndrome

Guillan-Barré

Ejercicios físico-terapéuticos para rehabilitar a un niño con el síndrome

Guillan-Barré

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Date of reception: October 2, 2020.

Date of acceptance: November 15, 2020.

ABSTRACT

This article aims to develop physical-therapeutic exercises to rehabilitate a child with Guillan-Barré syndrome in the Caribbean Rehabilitation Room in Guantánamo province. Different scientific methods were used both at the theoretical and empirical level to develop it in order to collect all the necessary information. We obtained the expected results, since the degree of disability in which the child is (did not walk) was taken into account and they were applied as they evolved, facilitating greater independence in the activities of their daily life and others.

Keywords: Physical-therapeutic exercises; Rehabilitation; Guillan-Barré syndrome; Acute flaccid tetraparesis

RESUMEN

Este artículo tiene como objetivo la elaboración de ejercicios físico-terapéuticos para rehabilitar a un niño con el síndrome de Guillan-Barré en la Sala de Rehabilitación del Caribe de la provincia Guantánamo. Se utilizaron diferentes métodos científicos tanto del nivel teórico como empírico para desarrollar la misma en función de recopilar toda la información necesaria. Obtuvimos los resultados esperados, ya que se tuvo en cuenta el grado de discapacidad en que se encuentra el niño (no caminaba) y se aplicaron según fue evolucionando facilitándole una mayor independencia en las actividades de su vida cotidiana y otras.

Palabras clave: Ejercicios físicos-terapéuticos; Rehabilitación; Síndrome de Guillan-Barré; Tetraparesia flácida aguda

INTRODUCTION

Guillan Barré syndrome is the most common cause of acute flaccid tetraparesis in Western countries. It affects both sexes and all ages, although it is rare in childhood. There are two age groups in which the frequency increases, the first in late adolescence and in young adults and the second in old age. Its incidence in Spain is 40 / 100,000 inhabitants per year and constitutes 25-40% of adult polyneuropathies. At present the exact trigger of the syndrome is unknown, what is known is that the immune system begins to attack the individual himself, producing an autoimmune reaction. It can appear after a viral infection (respiratory, gastrointestinal), previous surgery or trauma, or as a reaction to a vaccine or in conjunction with viral infections such as: HIV, Herpes simplex and Mononucleosis. The first symptoms include fever, malaise, nausea, and muscle weakness. This is followed by paralysis accompanied by tingling and numbness. With the evolution of the clinical picture, mechanical ventilation may be necessary to avoid respiratory failure. Patients may notice tingling, pain in the leg or hand, and clumsiness. As muscle function worsens, the patient may require respiratory assistance. almost all cases (95%) survive.

According to Fonseca et al. (2012) Guillain Barré Syndrome (GBS) or demyelinating acute inflammatory polyneuropathy,

"It is the most common cause of acute acquired polyneuropathy in adults. In its classic form, it is characterized by transient sensory symptoms and ascending distal flaccid paralysis with hyporeflexia or areflexia, it frequently occurs with dysanthonomies and in severe forms it progresses to acute respiratory failure. Neurophysiological abnormalities and cytological albumine dissociation in CSF confirm the diagnosis. " (p.55)

Guillain-Barré syndrome is an autoimmune neurological disorder in which the body's immune system attacks a part of the peripheral nervous system, myelin, which is the insulating layer that lines the nerves. When this happens, the nerves cannot send the signals effectively; muscles lose their ability to respond to

commands from the brain, and the brain receives fewer sensory signals from the rest of the body. The result is the inability to feel heat, pain, and other sensations, in addition to progressively paralyzing various muscles in the body and causing breathing problems.

Taking this definition into account, we can infer that the best treatment in the recovery stage is aimed at the application of therapeutic physical exercises, due to the importance of them in the correction of different neuromuscular conditions.

That is why Martínez (2011) states that *"it is the reacquisition by appropriate treatment of the professional activity lost due to various causes: trauma or diseases. It is the process of recovery or improvement of the capacities affected by a certain pathology."* (p.13) As Renard and Urseau (2013) refer to physical rehabilitation as:

"A process put in place for people (and their close environment) who have deficiencies and disabilities, whether temporary or permanent, in order to restore or compensate for functional loss for optimal functioning in interaction with the environment, and to prevent or reduce functional impairment. " (p.35)

It does not differ from what is stated by Pérez and Gardey (2014) that physical rehabilitation "is linked to the treatment that a person develops to regain the condition or the state that was lost due to an illness or other type of health disorder." (p.1) The use of physical exercise for therapeutic and health purposes has been known since ancient times, according to Pehr Henrik Licht, but only in recent years has its true physiological, preventive and curative impact begun to be better established. Among the diseases that have benefited from the contributions of physical exercise are neurological ones.

This type of exercise is a means commonly used in specialized trauma and cardiovascular rehabilitation centers and in recent years it has been widely incorporated and also as a fundamental means in the rehabilitation of patients with neurological diseases or injuries that leave paralysis as sequels, motor disorders, disability etc.

The Master in Physical Activity and Health Elena Alcázar Rueda states that therapeutic physical exercise is the prescription of body movement in order to correct, improve or maintain a function, be it that of a specific muscle group or of the entire body. Any disease in the human body is a factor that produces alterations or modifications in one way or another in all systems, because the human body works as a whole. (Alcázar, 2011, p. 2)

The assessment of these conceptualizations allows us to assume the last one proposed, as it is the one that best adjusts to the treatment of the patient from the Therapeutic Physical Culture and allows us to understand that therapeutic physical exercise leads us to correct, improve and maintain the functions, whether of a specific muscle group or whole body.

METHODS

The investigation was carried out in the Rehabilitation Room of the Caribbean Popular Council of the Guantánamo Province. As a population, a child with Guillain-Barré syndrome was chosen intentionally, which caused the loss of mobility, sensitivity and strength of his lower limbs and muscle strength in the upper limbs as a consequence. year old.

Different theoretical methods were used such as analysis-synthesis that made it possible to know some of the general characteristics that the child presents, having notion of the physical exercises and therapeutic massages that can be performed, the historical-logical allowed to reveal the theoretical background of Guillain syndrome -Barré and the inductive-deductive that was very useful for the transition from the general to the particular and vice versa, as well as for the establishment of the links between theory and practice in the care of children with Guillain-Barré syndrome, it facilitated arriving at particular analyzes and generalizations about the object of study and the applied activities.

The rehabilitation process was observed, which made it possible to verify the child's condition in the two stages evaluated during the investigation process. The limitations presented by the child with sequelae of Guillain-Barré syndrome, since he did not walk, did not stand, did not eat, nor could he maintain a correct posture, nor did he dress, or bathe alone because of what he did not respond to stimuli

sensitive that were performed, taking this into account, physical-therapeutic exercises were applied.

Through the interviews and surveys of the relatives (mother and grandmother), the pediatrician, and the Physiotherapist of the center, a greater knowledge was obtained about the pathology that affected the child, its characteristics and evolution. Without ceasing to consult the criteria of the specialists on the proposed physical-therapeutic exercises.

RESULTS

Initial indications for treatment

It will begin with a massage session, where the fundamental manipulations will be friction and rubbing in the selected areas, in addition to passive mobilizations in the joints. These will be worked on the lower limbs that have totally lost mobility, with the aim of improving muscle tone. Then passive, active and resisted exercises are carried out. These sessions should start with the lower limbs: ankle, knee and hip, always doing a combined work between the different body segments.

Organization of physical-therapeutic exercises for the rehabilitation of children with Guillain-Barré syndrome.

The physical-therapeutic exercises developed were organized as follows:

- Passive exercises: these are a set of techniques that are applied to the affected structures, without the patient making any voluntary movement of the area to be treated.
- Active exercises: they are carried out voluntarily and on few occasions you need the help of the physiotherapist, in them you acquire the ability to walk and strengthen the lower limbs.
- Resisted exercises: they will allow the patient to oppose the resistance of joint movement, thus strengthening weak muscles and restoring balance and muscle power.
- Exercises for the home: These are complementary exercises for the patient to do at home.

Passive Exercises

Objective: to bring each joint to its maximum joint range.

In the lower limbs

1. Supine position, massage the fingers (friction and rubbing) for 2 to 1 min.
2. Supine position, perform mobilizations in the toes, 4-5 series of 4 to 5 repetitions.
3. Supine position, perform flexion and extension of the feet, 4-5 series of 4 to 5 repetitions.
4. Supine position, apply massage (friction and rubbing) on the knees for 2 to 3 min.
5. Supine position, flexion and extension of both legs, 5 sets of 4 to 5 repetitions.
6. Supine legs extended and scissor movement, 2 sets of 2 to 4 repetitions.
7. Sitting with legs extended, leg flexion and extension, 7 sets of 3 to 4 reps.
8. Sitting with your legs extended, bend and raise your leg up, 7 sets of 4 to 5 reps.
9. Sitting with your legs bent, extend and raise your legs back to the starting position, 5-6 sets of 4 to 5 repetitions.
10. Sitting with your legs crossed, swing them from side to side to maintain your posture, 4 to 6 sets of 3 to 4 repetitions.
11. Sitting on a chair, hand on the back of the neck to do lateral flexion to strengthen the trunk, 4 to 6 sets of 3 to 4 repetitions.

In the upper limbs

1. Supine position, massage the fingers (friction and rubbing) for 2 to 1 min.
2. Supine position, perform mobilizations in the fingers of the hand, 4-5 series of 4 to 5 repetitions.
3. Supine position, flexion and extension of the fingers of the hand, 4-5 series of 4 to 5 repetitions.
4. Supine position, apply massage (friction and rubbing) on the elbow, 2 to 3 min.
5. Supine position, flexion and extension of the elbow, 5 sets of 4 to 5 repetitions.

Active exercises

Objective: to strengthen weak muscles and restore balance and muscle power.

1. From the sitting position with sandbags on the legs, perform flexion and extension, 3 sets of 3 to 4 repetitions.

2. Sitting with the legs extended, flexion and extension of the legs with resistance of the therapist, 4 series of 4 to 6 repetitions.
3. Sitting with your legs extended, flex and raise your legs up with resistance from the therapist, 4 sets of 4 to 6 repetitions.
4. Sitting with the legs bent, extend and raise them with resistance from the therapist, return to the starting position, 4 sets of 4 to 6 repetitions.
5. Sitting with your legs crossed, swing them from side to side to maintain your posture, 4 sets of 3 to 4 repetitions.

Active exercises resisted

Objective: to strengthen the lower limbs.

1. From the standing position, support the therapist's shoulder and move 4 to 6 meters away, for 4 to 6 repetitions.
2. From the standing position, support yourself on the therapist's shoulder and move around obstacles 4 to 6 meters apart, for 4 to 6 repetitions.
3. Stand leaning on the parallel bars for 2 to 5 min, 4 to 6 repetitions.
4. Standing supported by the bars and squatting, 4 to 8 series between 4 and 10 repetitions.
5. Perform a steady march of the bars, 4 to 6 series between 2 and 6 min.
6. Go up and down an incline for 3 to 4 repetitions.
7. Perform semi-squatting with 1Kg weights.

Exercises for home

- From a sitting position with a rubber ball in your hands, squeeze and release the ball for 5 min.
- Standing, swinging the arms with sandbags 4 series of 4 to 6 repetitions.
- From the sitting position receive and throw a ball 4 sets of 3 to 4 repetitions.
- Standing, extend your hands to the front and squat for 4 sets of 3 to 4 repetitions.
- Perform semi-squats and deep squats with sandbags attached to a stick up to 1Kg of weight for 4 sets of 3 to 4 repetitions.
- Standing exercise with the arms using the pulleys and combined with flexion of the legs 4 sets of 4 to 6 repetitions.

- From the sitting position with hands on the knees, alternate movement, raising bent legs, extending them in the air, knee flexions and return to the starting position. (With balloon). 4 sets of 3 to 5 reps
- Standing perform body oscillations 2 sets of 3 rd 4 repetitions
- Standing, perform gait simulation 4 sets of 4 to 6 repetitions
- Standing perform support with one foot 4 sets of 3 to 4 repetitions
- Standing, turn the body on top of the table 2 sets of 2 to 3 repetitions
- Standing, flexing the trunk and touching the tips of the feet 3 sets of 3 to 5 repetitions.

Methodological steps for the application of Physical-therapeutic exercises.

- Massage and exercises were applied with a frequency of three days a week.
- Duration of 30-45 minutes.
- They were held in the morning session.
- When applying they were supervised by the physiotherapist.
- These exercises range from the simplest to the most complex and were combined with discussions to keep the patient motivated and relaxed.
- Several visits were made to his house where it was found that the mother performed the exercises.
- The activities for the home were indicated to the child in the opposite session of the therapist's work and twice a day.

DISCUSSION

The proposed physical-therapeutic exercises constitute a tool that complements the rehabilitation of a child with Guillan-Barré syndrome because, as the process developed previously, there were fissures that are largely resolved with this proposal.

In the development of the research, the criteria of various authors were agreed that served as theoretical support for the study carried out. It agrees with the definition of Guillain-Barré Syndrome offered by Fonseca et al. (2012) since it clarifies the symptoms that the patient presents for their correct identification, as well as the

tests that are carried out to confirm the diagnosis. These aspects helped to check the progress of the patient.

The statement by Elena Alcazar (2011) regarding the definition of therapeutic physical exercise for which the proposal was developed is assumed. With regard to physical rehabilitation, Pérez and Gardey (2014) are considered the closest to the objective of this article.

After applying the proposal, notable advances are observed in the skills to be developed, since the child in his steps was firmer, when standing he no longer resists the physiotherapist maintaining balance and control of the trunk; When moving, he walked firmly in his steps, subordinated to the progress that was discretely perceived, the variants of the exercises increased whenever the enthusiasm, understanding of the activity and the achievement of the object of this was perceived in the child and under the criterion of the physiatrist. These elements demonstrate the novelty of the proposed exercises by complementing the existing ones and allowing greater progress in the patient's recovery.

Treatment began with the application of massage, which was intended for it, was always repeated in correspondence with the daily progress of the patient.

It is important to emphasize that, despite the child's motor difficulties, the development of the investigation with its respective results would not have been possible without the cooperation of the family members (mother) who trusted us all the time, they can now take the glass for what you can drink water, eat, comb and dress because the strength of the same that had been lost was strengthened with physical exercises and applied massages.

A great recovery has been seen because the child already wanders alone inside the house, maintains his posture and stands alone, responds to the sensitive stimuli that are carried out, highlighting the help of the family (mother) that served us great helps during treatment. Currently at home he is always in function of collaborating with activities, he plays with other children, runs and performs better when manipulating basic household objects.

From the application of the research methods, it was valued that the application of physical-therapeutic exercises is feasible, because it favors the rehabilitation and improvement of the quality of life of the child with Guillan-Barré syndrome treated.

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