

Tratamiento por ejercicios físico-terapéuticos a paciente hemipléjica

Treatment by physical-therapeutic exercises to hemiplegic patient

Leonardo Borrero-González¹

¹M.Sc. Profesor Auxiliar. Dirección Municipal de Deportes. Guantánamo, Cuba.
leonardobg2@nauta.cu

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RESUMEN

La investigación se enmarca en la rehabilitación del adulto mayor hemipléjico, del hemicuerpo derecho. Se presenta un complejo de ejercicios físicos terapéuticos en función de mejorar su salud, utilizando para ello las actividades físicas y de rehabilitación teniendo en cuenta el grado de discapacidad en que se encuentra el paciente. Se emplearon métodos del nivel teórico como el de análisis y síntesis, la inducción y deducción, el histórico - lógico y el análisis documental. Del nivel empírico se empleó la observación, la entrevista y la encuesta, mientras que del nivel estadístico matemático el cálculo porcentual.

Palabras clave: Rehabilitación; Autovalidismo; Ejercicios físico-terapéuticos; Movilizaciones; Paciente hemipléjica

ABSTRACT

The research is part of the rehabilitation of the hemiplegic older adult, of the right hemibody. A complex of physical therapeutic exercises is presented in order to improve their health, using physical and rehabilitation activities, taking into account the degree of disability in which the patient is. Methods of the theoretical level such as analysis and synthesis, induction and deduction, historical - logical and documentary analysis were used. The observation, interview and survey were used from the empirical level, while the percentage calculation was used from the mathematical statistical level.

Key words: Rehabilitation; Autovalidism; Physical-therapeutic exercises; Mobilizations; Hemiplegic patient

INTRODUCTION

It is often stated that in neurology the diagnosis is accurate, however, there is no treatment. The truth is that the neurological treatment consists mainly of physiotherapy, adaptation to changes imposed on posture and movements, and reeducation.

When the doctor is faced with a hemiplegic patient, first of all he tries to establish the cause of the illness. Having established and treated the state that caused the hemiplegia, treatment is indicated, which may consist of preventing the deterioration of the brain injury. The doctor usually chooses to induce the patient to use the hemiplegic limbs and reeducate their affected side. On the other hand, the doctor can tell the patient to forget the hemiplegic side and use the healthy side to do all the tasks he used to do with the extremities on both sides.

These alternatives are only applicable to the upper limbs and the general posture of the patient. In relation to the lower limbs, the patient has no other recourse than to learn how to use it. That being the case, it will be more convenient for you to learn how to use it well. If the patient gives in to his neurological disorder, he becomes an invalid.

There are several research such as those of Baza Farjat, A. (2013), Arrúe Martínez, P. (2014), Leyva Campuzano, A. (2014), among others, which address issues related to the therapeutic and prophylactic physical culture, but they do not affect patients with hemiplegia on the right side.

In our research, the total family dependence of the patient due to the hemiplegic affective state was detected as insufficiency, the rehabilitation process is interrupted due to instability of the rehabilitation room, and there is a lack of a plan of therapeutic physical exercises adapted to the characteristics of the hemiplegic patient.

The present research has the objective of elaborating a complex of therapeutic physical exercises for the rehabilitation of a hemiplegic adult patient belonging to the Rehabilitation Room of the Emilio Daudinot northern polyclinic in Guantánamo

province. As a sample, a patient who suffered a Vascular Brain Accident was intentionally chosen, which caused a right hemiplegic as a sequel. The patient is 48 years old.

DEVELOPMENT

Within physical rehabilitation, exercise plays a very important role in the recovery of the patient and in their incorporation into society in an active way, bringing the patient closer to the maximum limits of their capacity and at the same time distancing them from the minimum limit of their disability (Junco Corte, N. & Col. s/a).

Physical exercise, as the central nucleus of physical rehabilitation, has a great importance in the development of the human being, since it acts positively in all the systems and organs of the body.

In the case of people with hemiplegia, plays an essential role, since they are usually people who may have been bedridden for a long time, who have a high degree of dependence, who do not perform walking, who have psychological problems as a result of their disability.

When hemiplegic people perform physical exercises in a systematic way, directed by the rehabilitator, the results begin to be observed in a short time. This is very helpful for their recovery, as it encourages them to continue working to incorporate themselves as soon as possible into the activities of daily life.

Hemiplegia is defined as the paralysis of a hemibody. This can be caused by different causes such as: infantile cerebral palsy, a cranioencephalic trauma, or a cerebral vascular accident, the latter being the one with the highest incidence in the appearance of the hemiplegic syndrome (Hopki A. 1993).

Other authors express it as a paralysis on only one side of the body, an arm, a leg, the trunk and sometimes the face. It can affect more than one part of the body simultaneously. When the affected muscles become rigid, it is called spastic hemiplegia; if they are flaccid and weakened, that of flaccid hemiplegia, according to Álvarez Sintes, R. (2002).

Arboix, A. (2002), states that hemiplegia *“... is the paralysis of one side of the body, which appears as a result of injury to the nerve impulse conduction pathways of the*

brain or spinal cord” This usually happens as a consequence of an arterial block that deprives the brain of blood supply.

Dávalos A. (2001), defines hemiplegia as “... a condition in which the vertical half of the patient's body is paralyzed; For example, an arm and its corresponding leg do not work. It is usually the result of a stroke, although it can also cause pathologies that affect the spine or the cerebral hemispheres”.

Proposal of therapeutic physical exercises.

General objective of the therapeutic physical exercises: to improve the selfvalidation.

Stages:

1. Basic physical preparation stage.
2. Motor responses consolidating stage.
3. Improvement stage.

Diagnosis of the current state of the hemiplegic adult.

The observation made shows that, with the healthy side, the patient performs the motor actions, although it shows a certain level of incoordination in the movements. This limits him to develop the motor task with the usual efficiency of the healthy side. In the same way, the execution takes longer than normal, and generally shows crossed laterality, as a symptom of this pathology.

With the affected side, the patient is not able to perform any of the planned actions, since her/his disability does not allow it.

In the first stage of the research, the patient could not move around the bed, or inside the house alone. He only managed to do it with the help of another person. Similarly, the patient the results are completely negative at the time of trying to undress. Also, from the position of lying on the bed, she could turn around and sit up with her legs out of the bed.

When performing an analysis of the initial observation, the muscle contraction degree was verified as a sequel to the cerebrovascular disorder. In this examination, the patient presented with a description of "0 degree" in the affected lower right limb, and "grade 1" in the affected upper right limb, presenting evidence of contractions and joint movements in the fingers.

The patient expresses that with the healthy hand she can take all kinds of objects. However, she can not move them or perform the activities she usually developed, such as combing, eating, brushing, among others. In addition, the affected side is the right side, so there were very few motor actions she does with the left side, so it is difficult to develop motor tasks with the left side.

In the survey applied to the patient, the same alleges that she wants to improve her health status, and at the same time perform her normal domestic tasks.

On a scale presented to the patient, from 1 to 10, she opts for number 10, which reflects a high level of disposition towards her recovery and social incorporation.

Exercises for the affected side applied to the patient. The exercises are taken from the program, adapted to the conditions of the patient.

First Stage: February 2014 - June 2014.

1. From the sitting position in the bed, the therapist with the hands performs stimulation in ears and head (6-10 seconds).
2. From the sitting position, stimulation of the right upper limb (affected) (6-10 seconds).
3. From the sitting position in the bed, massage the fingers of the affected hand (rubbing and rubbing) (2-3 minutes).
4. From the sitting position in bed, make passive, resisted movements and isometric contractions in the fingers of the affected hand (flexion-extension, adduction-abduction and circumduction) (40 seconds-1 minute).
5. From the sitting position in the bed, perform massage, passive and resisted mobilizations in the wrist of the affected hand (40 seconds-1 minute).
6. From the sitting position in the bed, make passive, combined and resisted movements in fingers and wrist of the affected hand (1-2 minutes).
7. Massage on the elbow (friction and rub) (1-2 minutes).
8. Passive mobilizations in the elbow (flexion-extension, supination-pronation and circumduction) (2-3 minutes).
9. From the sitting position in the bed, shoulder massage (friction and rub) (1 minute).

10. From the sitting position in the bed, on affected shoulder perform passive mobilizations in all directions. (4-5 minutes).
11. From the sitting position in the bed, perform stimulation of the right lower limb (10-20 seconds).
12. From the sitting position on the bed, perform massage on the affected toes (friction, rubbing and passive mobilizations on the fingers) (2 minutes).
13. From the sitting position in the bed, massage the ankle (friction and rub) and passive mobilizations (flexion-extension, supination-pronation and circumduction) (3-4 minutes).
14. From the sitting position in bed, perform knee massage (friction and rub), and passive mobilization (flexion-extension) (3-4 minutes).
15. From the lying position and the legs hanging out of the bed, perform assisted passive movements in the hip. All the movements and those combined with knee (4 sets of 10 repetitions).
16. From the sitting position in the bed, perform stimulation massage on the back (1 minute).
17. From the of lying down position and the legs hanging out of the bed, with the help of the rehabilitator who holds the patient by both hands, perform trunk flexion and extension (2-4 series, 10-15 repetitions).
18. From the lying position, legs hanging out of the bed, with the help of the rehabilitator who holds the patient by the right hand (affected), the left hand of the patient resting on the bed that helps the therapist to perform the flexion and extension of the trunk, then alternate with the other hand. (2 series, 5 repetitions).
19. Idem to exercise 18, but with support from the right hand (affected) (4 series, 5 repetitions).
20. From the sitting position with the legs hanging out of the bed, perform exercises to strengthen the left leg, with and without weight (4 sets, 10-15 repetitions).

21. From the sitting position in the bed, with interlaced hands, twist the trunk with turns of the head to the same side alternately. With the twisting of the trunk and turning the head to the right, hold the position between 3 and 4 seconds.
22. From the sitting position in the bed, hands interlaced, in a self-assisted way, raise the arms up (4 sets, 5 repetitions).
23. From the sitting position with the legs hanging out of the bed, perform flexion and extension of the left arm with a sand knob (4 sets, 15 repetitions).
24. From the sitting position with the legs hanging out of the bed, performing exercises for fine motor skills of the hand affects.
 - Pick up a towel with the fingers of the hand.
 - Insert and remove the fingers on a table with holes, in different ways, imitating the action of playing the piano.
 - Interweave a stick with a thread through a table with holes.
 - Open and close her hands by squeezing a soft rubber ball.

Partial evaluation of the results of the first stage.

The patient with the healthy side has gained mobility and ability to manipulate objects, although she still struggles with some daily tasks. With the affected upper limb she performs various self-assisted movements and by the therapist. Likewise, she is already able to move with more confidence and stand up for several minutes. The movements in the bed are done with greater freedom and independence.

Second Stage: September 2014 - December 2014.

1. From the sitting position in the bed, the therapist with the hands performs stimulation in ears and head (6 -10 seconds).
2. From the sitting position in the bed, stimulation of the right upper limb (affected) (6 -10 seconds).
3. From the sitting position in the bed, massage the fingers of the affected hand (friction and rub) (30 seconds - 1 minute).
4. From the sitting position in bed, make passive, resisted movements and isometric contractions in the fingers of the affected hand (flexion-extension, adduction-abduction and circumduction) (40 seconds-1 minute).

5. From the sitting position in the bed, perform massage, passive and resisted mobilizations in the wrist of the affected hand (40 seconds-1 minute).
6. From the sitting position in the bed, make passive and resisted movements combined in fingers and wrist of the affected hand (2 minutes).
7. Massage on the elbow (friction and rubbing) (40 seconds).
8. Passive and active elbow mobilization (flexion-extension, supination-pronation and circumduction) (3 minutes).
9. From the sitting position, shoulder massage (friction and rub) (2 minutes).
10. From the sitting position, perform passive and active mobilizations in affected shoulder (4-5 minutes).
11. From the sitting position, perform stimulation of the right lower limb (affected) (10-20 seconds).
12. Sitting on the bed, massage the affected toes (friction, rubbing and passive mobilizations on the fingers) (1 minute).
13. From the sitting position in the bed, perform ankle massage (friction and rub) and passive mobilizations (flexion-extension, supination-pronation and circumduction) (2 minutes).
14. From the sitting position in the bed, massage the knee (friction and rub) and passive mobilization (flexion-extension) (2 minutes).
15. From the lying position and the legs hanging out of the bed, perform passive assisted hip movements combined with knee (6 minutes).
16. From the sitting position in the bed, perform stimulation massage on the back (1 minute).
17. From the lying down position and the legs hanging out of the bed, with the help of the rehabilitator who holds the patient by both hands, perform flexion and extension of the trunk (1 series, 10 repetitions).
18. From the lying position, legs hanging out of bed, with the help of the rehabilitator who holds the patient by the right hand (affected), the left hand of the patient resting on the bed, which helps the therapist to perform trunk flexion and extension. Then alternate with the other hand (2 sets, 5 repetitions).

19. Idem to 18, but with support of the right hand (affected) (2 series, 10 repetitions).
20. From the sitting position with the legs hanging out of the bed, perform exercises of flexion and extension of the left leg, with weight (2 sets, 15 repetitions).
21. From the standing position, with support in a chair, raise the affected leg to a step of 30 millimeters in height (4-6 series, 5-10 repetitions).
22. From the standing position, with support in a chair, raise the affected leg to a step of 60 millimeters in height (6 series, 15 repetitions).
23. From standing with support on a chair, raise the affected leg to a 90-millimeter high step (6 sets, 15 repetitions).
24. From the standing position with support on a chair, raise the affected leg to overcome an obstacle of 90 mm in height (4-6 series, 5-10 repetitions).

Specific exercises to develop at home to perform 2 times a day.

1. From the sitting position on the bed, with interlaced hands, twist the trunk with turns of the head to the same side alternately. With torsion of the trunk and turning of the head to the right, maintain the position (3 and 4 seconds).
2. From the sitting position in the bed, hands interlaced, in a self-assisted way, raise the arms up (4 sets, 5 repetitions).
3. From the sitting position with the legs hanging out of the bed, perform flexion and extension of the left arm with a sand knob (4 sets, 15 repetitions).
4. From the sitting position with the legs hanging out of the bed, perform exercises for the fine motor of the affected hand:
 - Pick up a towel with the fingers of the hand.
 - Insert and remove the fingers on a table with holes, in different ways, imitating the action of playing the piano.
 - Interweave a stick with a thread through a table with holes.
 - Open and close her hands by squeezing a soft rubber ball.
5. Ambulation inside the room, leaning on the bed and other obstacles that are inside.
6. Wandering inside the house, relying on the obstacles that are inside.

7. The active exercises without weight to perform independently directed to the healthy hemibody, were oriented in a first stage of adaptation that ranged between 4 and 6 weeks of treatment (2 series, 10-15 repetitions).
8. The active exercises with light weight to perform independently directed to the healthy hemibody, were applied the rest of the weeks of treatment (2-4 series, 10-20 repetitions).

General methodological indications.

The exercises will have a moderate character.

- 1) In conjunction with the execution of the exercises, postural reeducation and breathing exercises will always be taken into account.
- 2) Before each session, pulse and blood pressure indicators in normal state will be verified.
- 3) The attention is from Monday to Saturday systematically.
- 4) Rehabilitation sessions are mostly held in the afternoon session.
- 5) The sessions last between 60 and 90 minutes.
- 6) The rest time between the exercises is in correspondence with the possibilities of the patient.
- 7) The activities for the house are indicated to the patient in the session opposite to the work of the therapist, and twice a day.
- 8) In each of the sessions, educational work is carried out on the will for systematic work.
- 9) The explanation of the exercises is done briefly, but understandable to the patient.
- 10) In each of the exercises, the patient works as independently as possible.
- 11) In the case of general indispositions, the exercises are never performed.
- 12) The intensity of the exercises varied according to the evolution of the patient, especially from the first to the second stage, in which the series decreased, but the repetitions increased.
- 13) In the second stage of rehabilitation, more time was devoted to standing exercises and guidance to work at home in a systematic way.

Assessment of the feasibility of the system of physical therapeutic exercises for the rehabilitation of the hemiplegic adult patient.

After applying the exercises throughout this period, an evaluation was designed for the patient to compare the results, starting from an initial state. Therefore, it was found that the healthy side has contributed to improve the development of these basic motor actions of the house within their daily lives. In addition, as a consequence of the systematic work, it has increased its independence since the motor coordination had been affected, and currently it has improved considerably.

With the affected side is able to grab some objects and manipulate them freely, with a high level of difficulty still. This manifests a lot of imprecision and marked lack of coordination in the movements, which means that we must continue working on the toning of the muscles. However, he is able to use the affected upper limb quite frequently, as a support for the healthy side.

It is important to highlight the progress of the patient, since she is able to remove some clothes on her own, and in bed, with the support of the affected side, can perform various motor actions such as turning both sides, sitting, lying down, getting up the standing position from the bed, among others.

When performing a final observation analysis after several months of treatment, it was possible to verify the degree of muscle contraction, a consequence of long-term adaptive changes, as a response to systematic exercises. This test was presented with a description of "grade 2" in the affected lower limb (right), and "grade 4" in the upper right (affected) member, presenting a high degree of independence, contraction and mobility throughout the segment.

As a result of the interview, the patient stated that she feels very satisfied with the treatment and the evolution during the entire rehabilitation time. She believes that the sessions received are very productive, since they have guaranteed to be able to develop part of the normal daily activities that she carried out before her disability, which is the only form of her integral rehabilitation in society.

Within the daily activities, the patient communicates that she can perform almost all of them and with quality with the healthy arm, while stating that the affected arm

rather serves as a support to the healthy, that is, to attend many of the actions that she develops with the healthy arm. Poses to be satisfied by such an achievement. The patient is willing to go on with the treatment, in order to continue improving their condition of life and incorporation into daily activities, and society in general. She has a very high level of satisfaction in response to the work that has been done during all this time with her and the family.

CONCLUSIONS

Through the diagnosis it was possible to verify that there are serious motor difficulties and total dependence of the patient studied, which warrants an urgent and personalized intervention. The complex of therapeutic physical exercises proposed, contemplates the systemic methodological aspects for the treatment of hemiplegia, guaranteeing its rehabilitation and motor independence. For the results obtained in the application of research methods and techniques, to assess the effectiveness of the proposal, it was found that it is effective, promoting the rehabilitation and improvement of the quality of life of the treated hemiplegic patient.

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