



concerning the level of fatigue, dizziness, blood sugar level and weight.

We agreed that physical exercise should be part of the daily routine of the patient and the secure interval of blood sugar for physical exercise is between 100 and 250 mg/dL.

After finishing the proposed kinetic programme, at the final testing, it was found that in 6 cases the level of fatigue was 1, in 3 cases it was 2 and in only one case the was none at all.

Concerning the level of dizziness, we have obtained the following results: 8 cases reported a level of 1 and only 2 cases no longer had this symptom.

Concerning the level of blood sugar, the average between initial and final test levels was 116 mg/dL which confirms the fact that the kinetic programme used has had beneficial effects on the health of the patients. After finishing the kinetic programme, the patients had lost in average 6,8 kg.

#### Conclusions

In current society, untreated diabetes represents one of the main causes of blindness, renal failure or amputation of lower limbs.

Also, conditions associated with diabetes such as high blood pressure or dyslipidemia represents risks of cardiovascular diseases.

The level of fatigue was lowered through kinetic programmes, in all patients at all times of evaluation, with a significantly low level in the experimental group.

The kinetic programme has had positive results in reducing dizziness as well as blood sugar levels and improving the state of health.

Through these results we have managed to underline the role of the kinetic therapist in evaluating and treating the effects of diabetes in order to establish the kinetic objectives, methods and means within the complex health recovery programme.

The early use of kinetic therapy through regular physical exercise is a good method to treat diabetes and to reduce the risk of developing such a condition.

Using kinetic exercises by overweight people keeps their blood sugar in check and the can lose weight. The loss of weight together with the physical exercise prevents the onset of type 2 diabetes in overweight people and quite often helps regulate blood sugar without any medication.

In conclusion, healthy people as well as diabetics can benefit from regular physical activity in order to maintain their weight within reasonable limits, help the body adequately assimilate sugar in the blood which will be efficiently used in the cells and tissues.

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## KINETIC THERAPY IN THE TREATMENT OF CERVICAL DISCOGENIC PAIN SYNDROME

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#### Abstract

*Purpose.* Cervical discogenic pain syndrome is a disease of the arthrosis localised in the cervical segment of the spine, characterised by pain which limits mobility and causes discomfort.

*Methods.* For this purpose, we have identified two clinical cases of cervical discogenic pain syndrome who accepted to use the specific recovery programme and also we have elaborated a set of methods of recovery from this syndrome. The main therapeutic methods we used in the recovery process from this syndrome are: medical, kinetic, balneo-physical.

*Results.* For every case of cervical discogenic pain syndrome, it is necessary to establish an individual treatment plan which is to be discussed in detail with the patient. The diagnosis and the therapeutic options must be specified, as well as the time necessary for the therapeutic effect to appear, the spectre of adverse reactions, monitoring them, the cost of therapy as well as the patients preferences.

Kinetic therapy consists in a series of movements, physical exercises, vertical positions which lead to an improvement of the two studies.

*Conclusions.* Following the research we undertook and the analysis of the results of the experiment in the two clinical

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studies and the use of initial and final testing, we can state that the hypotheses initially stated have been confirmed. We support this with the following conclusions:

The patients have consciously and actively taken part in the proposed kinetic programme and have managed to correctly understand the proposed exercises and to easily do them.

*Key words:* kinetic therapy, cervical discogenic pain syndrome, pain, mobility, inflammation.

## Introduction

Cervical discogenic pain syndrome is a disease of the arthrosis localised in the cervical segment of the spine, characterised by pain which limits mobility and causes discomfort (Cotman, 2006)

Cervical pain is often due to degenerative diseases of intervertebral discs and posterior tubercles of traverse process and the hypertrophy of the apophyses at a vertebral level.

Pain irradiates locally or at a distance and leads to contraction of skeletal muscles, which itself could produce pain over time and the positioning of fibre locally. (Cretu, 2003)

## Methods

### Obiectivele cercetarii

- fighting inflammation and articular pain
- improving articular mobility
- correcting and recovering motor ability
- preventing deformations, stiffness and muscular atrophy
- maintaining functional capacity of usual movement and work;
- improving quality of life;
- slowing the evolution of articular lesions.

## Research tasks

- Consulting the literature, in order to establish how new this topic is in the field of research;
- Establishing research hypotheses as well as ways of checking them.
- Selecting the two experimental cases in compliance with the purpose of the research and application of the necessary tests in order to establish their functional state;
- Structuring and applying the kinetic programme, by respecting pedagogic principles in a logical and progressive manner;
- Recording and interpreting the results;
- Completing research by drafting this study in order to highlight the effects of the kinetic programme in cases of cervical discogenic pain syndrome;
- Establishing the conclusive elements concerning the results obtained after the experiment and in applying the methods of exploration and evaluation.

## Hypotheses

1. We consider that kinetic methods could be used to treat inflammation and articular pain and improve muscle force.

2. We propose that the kinetic programme has a key role in improving the functional state of persons with cervical discogenic pain syndrome.

## Methodes

Reading the specialised literature

## Investigation

### Observation

Examination (exploration and evaluation)

Methods of exploration and evaluation used:

- scale of numerical evaluation
- scale of evaluation articular morning stiffness

### Experiment

Recording, processing and graphically representing the data

Finishing the experiment

The experiment consists in applying the specific methods for the important elements as well as using certain kinetic programmes in order to:

- Treat pain and inflammation
- Improve mobility and articular stability
- Combat articular morning stiffness

For this purpose, we have identified two clinical cases of cervical discogenic pain syndrome who accepted to use the specific recovery programme and also we have elaborated a set of methods of recovery from this syndrome.

The main therapeutic methods we used in the recovery process from this syndrome are: medical, kinetic, balneo-physical.

For every case of cervical discogenic pain syndrome, it is necessary to establish an individual treatment plan which is to be discussed in detail with the patient. The diagnosis and the therapeutic options must be specified, as well as the time necessary for the therapeutic effect to appear, the spectre of adverse reactions, monitoring them, the cost of therapy as well as the patients preferences.

Educating the patient is essential in order to establish the doctor-patient relation, the kinetic therapist significantly contributes to the patients independence. Physical medicine, recovery and re-education, occupational therapy and psychology are all intended to contribute to preserving the functional integrity of the locomotor system.

Kinetic therapy and re-education are extremely important in recovering the articular function post-operation. A certain strategy is necessary in order to maintain a good state of health generally.

## Results

Examining the patient suffering from cervical discogenic pain syndrome involved a detailed medical

history, a complete body check as well as highlighting any change in the spinal column, as well as possible extra-articular problems, as well as a full set of medical and imagery tests.

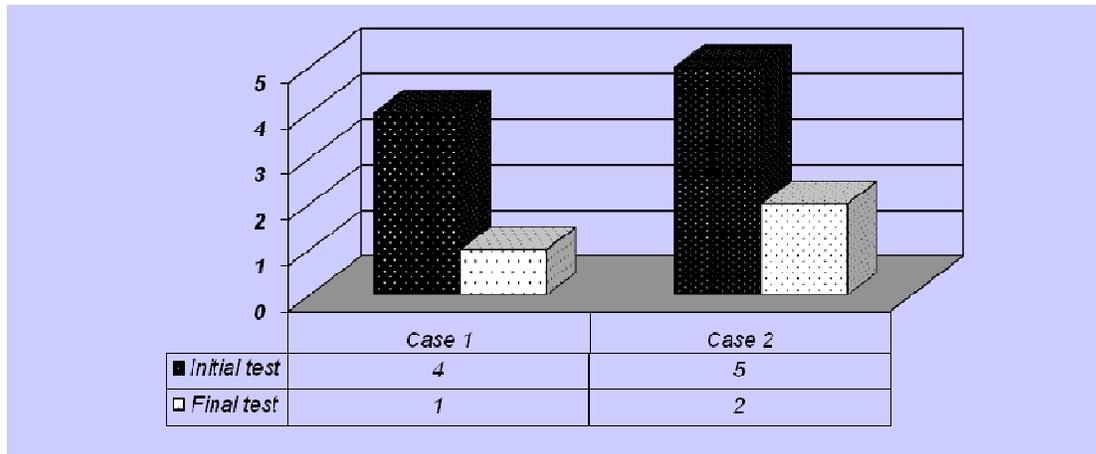
We have evaluated:

- The amount of pain;
- Articular mobility;
- Morning articular stiffness.

**1. Establishing the amount of pain;**

Establishing the amount of pain was done by using a Numerical evaluation scale which is the most used method. Patients evaluate their pain level on a scale from 0 to 5, where 0 represents “no pain” and 5 “most acute pain”.

Initial pain in the first case was registered at 4 and the second case at 5, after finishing the kinetic programme supported by the medical treatment we registered a degree of 1 in the first case and a degree of 2 in the second case.

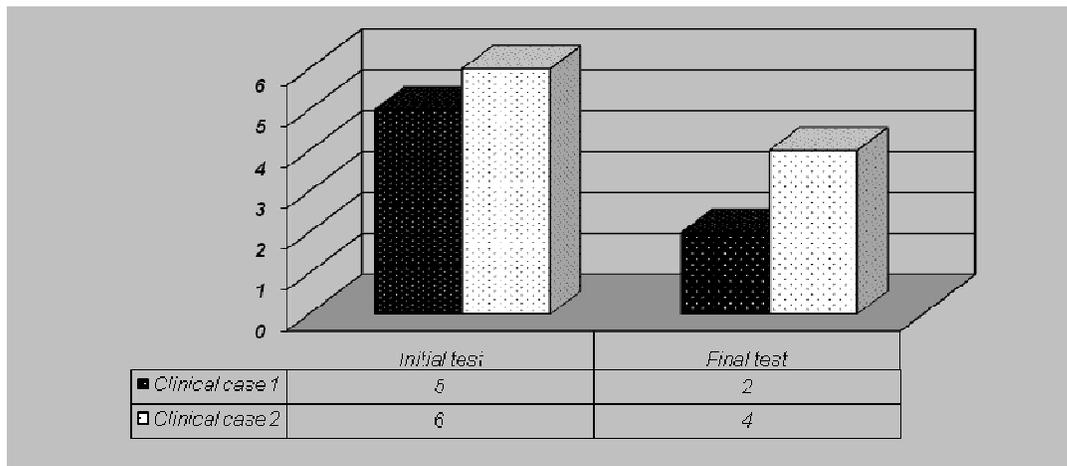


**Chart. 1 – Evaluating the amount of pain**

**2. Articular mobility**

Testing the articular mobility by using 3 tests:

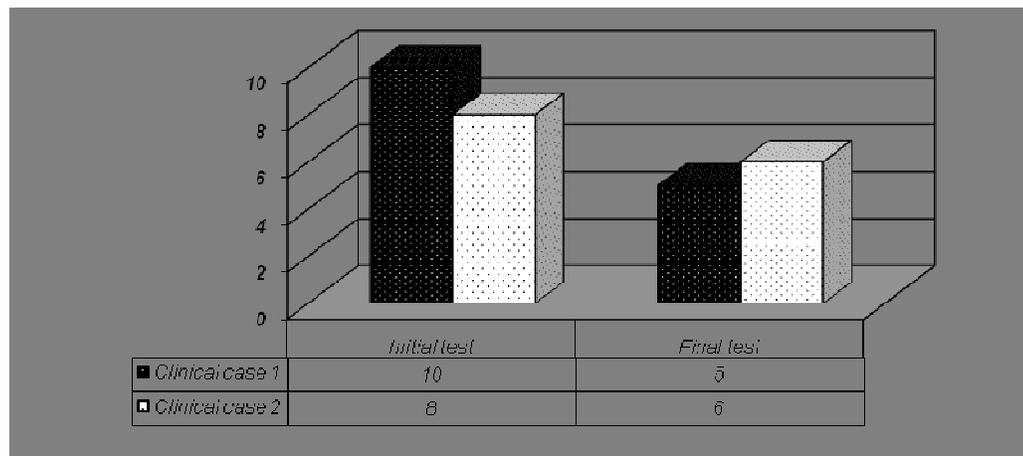
The Menton - Stern Test



**Chart. 2 – Evaluating the mobility of the cervical section of the spine**

Initial testing in clinical case 1 registered a value of 5 cm while in clinical case 2 this value is 6 cm, upon final testing case one registered 3 cm while case two registered 4 cm.

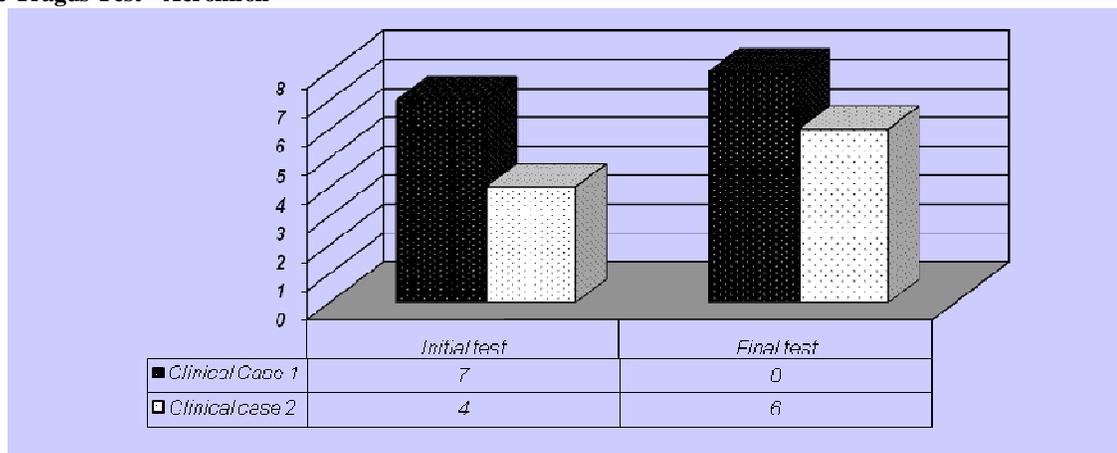
**The Wall Occiput Test**



**Chart. 3 – Evaluating cervical mobility in the spine**

Checking the distance between the occiput and the wall, we registered a value of 10 cm in case 1 and 8 cm in case 2, upon final testing case 1 registered 5 cm while case 2 registered 6 cm.

**The Tragus Test - Acromion**



**Chart. 4 – Improving cervical mobility in the spine**

While testing the distance between the tragus and the acromion, case 1 initial recorded a value of 7 cm while case 2 recorded 8 cm, upon the final test case 1 registered 4 cm while case 2 registered 6 cm.

**3. Articular Morning Stiffness**

In order to evaluate the level of articular morning stiffness we used the Womac (Western Ontario and

McMaster Universities) Likert subscale divided into 5 steps from 0 to 4.

Upon initial evaluation, case 1 was at level 3 while case 2 at level 2 and after finishing the experiment both cases registered the following progress:

- case 1 was at 1
- case 2 at 0

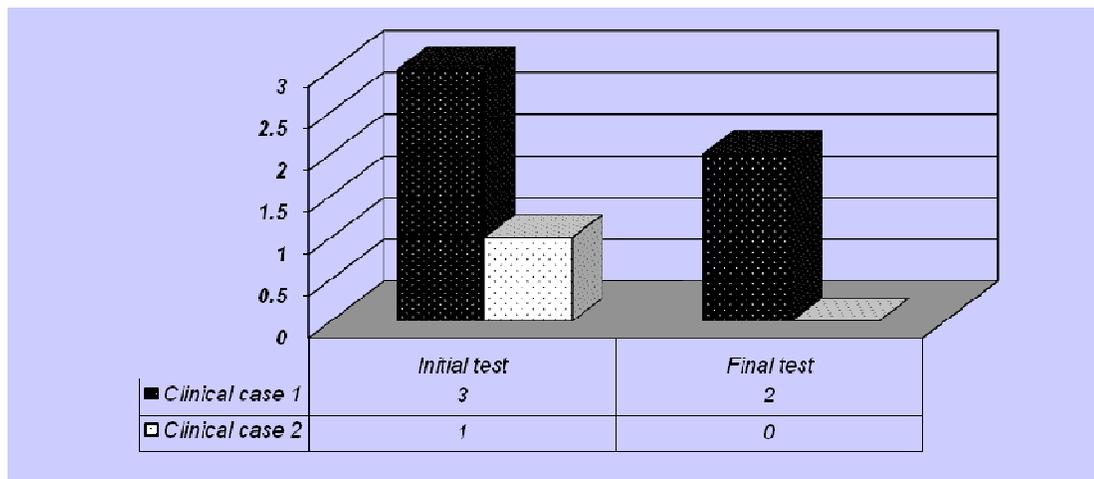


Chart 5- Distribution of stiffness in the two experimental cases

### Discussions

Among other authors who have carried out researches concerning the kinesitherapy role in the recovery from algo-functional cervical syndrome was Kiss (2004); in his book „Fizio-kinetoterapia si recuperarea medicala” (*Physiokinesitherapy and medical recovery*) he carried out a study on kinesitherapy’s role in the recovery from algo-functional cervical syndrome by kinetic means.

Windsor Robert also makes reference to this subject; he carried out a study in which he shows the incidence of this syndrome in his work “Cervical Discogenic Pain Syndrome”, which has been published in *Medscape* magazine.

Reducing pain and inflammation are the two objectives which must be met to use the optimum kinetic programme.

Kinetic therapy consists in a series of movements, physical exercises, vertical positions which lead to an improvement of the two studies.

Concerning the evaluation of the amount of initial pain, case 1 registered a value of 4 while case 2 a value of 5, after finishing the kinetic programme case 1 registered a drop to 1 while case 2 experienced a drop to 2.

The kinetic programme has had a positive effect and in the case in the Menton – Stern test both clinical cases registered a value of 2 cm.

Concerning the wall occiput test, clinical case 1 registered an increase of 5 cm while clinical case 2 had 4 cm.

In initial testing of the difference between the tragus and the acromion, case 1 registered a value of 3 cm while case 2 only 2cm.

Kinetic therapy has had an effect on the level of articular morning stiffness by reducing it to a value of 3 in case 1 and in case 2 the stiffness disappeared.

### Conclusions

Following our research and the results obtained from this experiment and application of initial and final tests with our two clinical cases, we may state that our original hypotheses have been confirmed. We base this on the following conclusions:

Finishing the kinetic programme has led to treating articular morning stiffness, increasing mobility and articular stability.

Well-selected, structured kinetic exercises, which efficiently play a part in reaching our objectives, contribute to optimizing the functional state and improving the health of people with cervical discogenic pain syndrome.

The patients consciously and actively took part in the proposed kinetic programme and have managed to acquire correctly and easily execute the kinetic exercises.

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