

Importance of Muscle Strengthening in Treatment of Cronical Lumbal Pain

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Abstract:

Most suffers in our research have been selected from 40 to 49 years old, both genders males and females so the average age of all patients included in research was 41. Average age of patients treated with muscular strengthening of back and abdomen region including electrotherapy and thermotherapy was 43, while group of patients treated with muscular strengthening only for back region including electrotherapy and thermotherapy had an average age of 41. Material and methods: for realization of this study was used partial method of research that was executed through a questioner prepared for this reason, taken from different international researches of this kind in lots of other countries adopted for this reason. This research was performed in physical therapy and rehabilitation clinic "THERAPY" in Prishtina a period of time January-April 2012. Total number of patients is 52, from 20 to 65 years old that suffer from chronic back pain. This research was short term with duration of four months and it was prospective study. From 52 patients, 26 were treated with strengthening only for back muscles together with electrotherapy and thermotherapy (control group); and other 26 patients were treated with muscular strengthening for back and abdominal region incorporating electrotherapy and thermotherapy (experimental group) Acquired data were grouped according to submitted questions and statistical processing was made with software SPSS, to calculate statistical parameters like structure, median and variable masses. Verification of this trials was made by level of reliability for $p < 0.01$, with error level respectively from 99.7 and $p < 0.05$ and reliability from 95%.

Key words: Chronic Lumbalgy, Muscular. Strengthening

Introduction:

Pains of the lower part of the back (LUMBALGY). Pain is a feeling conveyed by the nervous system. The pain can be useful in diagnosing problems. Without pain, you can seriously injure yourself without knowing, or may not understand that we have a medical problem that needs treatment.

Treatment of pain varies depending on the cause of pain. Pain in the back is part of normal everyday people and despite all technical aids and physical burdens falling during work, no less suffer from pain in the back than before. By pain in the back are affected both sexes, but slightly more women and almost all ages, but mostly middle age (between the ages of 30 and 50 years old), due to physical constraints faced by this age. It can occur in children and generally cause is clearly speaking of the presence of other pathologies mainly urinary, neurological, etc. However, an overburdened spine students with textbooks can lead to strain the back and cause muscle fatigue. The pains of the lower part of the spine may have originated from these structures: skin, muscles, ligaments, spinal cord cells, intervertebral disk, spinal cord and internal organs. It often happens that we do not think twice before you raise a heavy weight to put on the shoulders. A large part of the damage caused not by raising heavy weights, but by the way how we do such action.

Some acts are wrong at the wrong time, during our daily activities. On the basis of their length pains of the back are divided into: acute and chronic. The definition of the term is not always unique. The pain of acute crosses worth a duration less than 6 weeks, while chronic over 6 weeks. Acute back pain last for several days, until a few weeks. Chronic can last for months, or even years. Most acute back pain is caused by trauma to the lower part of the back or disorders like arthritis.

The pain from trauma caused primarily by sports injuries, different works, unexpected shocks, such as car accidents or different printing exerted on the bones and tissues of the spine. Symptoms vary as muscular pain, limitation of flexibility and amplitude of movements, so unable to stand upright. While chronic back pain is when the pain lasts more than three months. One of the most common causes of back pain is disc hernia.

Purpose of study

The main aims of this working paper are:

1. To assess the degree of efficiency of Kinesiotherapy, compared with other physiotherapy procedures.
2. To argue Kinesiotherapy role in preventing and eliminating back pain.
3. To identify the risk factors that influence the emergence and re-emergence of the back pain or - LUMBALGY.
4. To compare the effectiveness of different methods of physiotherapy treatment for eliminating back pain and return as quickly as possible to the daily life activities.

The main hypotheses

Hypothesis 1:

Applying a kinesiotherapy is a decisive effect in the treatment of LUMBALGY.

Hypothesis 2:

Application of other therapies without Kinesiotherapy will have a lower and incomplete effect.

Alternative hypotheses

Hypothesis 1: Kinesiotherapy is the decisive role in strengthening muscles, increasing amplitudes articular mobility (AEL's), and the elimination of LUMBALGY pain.

Hypothesis 2: Patient Counseling (positions that provoke and progressing problem, except during working hours in household conditions), are important for patients with back pain.

Methodology and Reproduction of Work

The research was conducted in the Clinic for Physiotreatment "Therapy" in Pristina in duration within 4 months (January-April 2012). Each patient is treated for a period of three weeks with 5 initiate hearings a week, then for each patient are applied a total of 15 therapy sessions. This study was conducted through questionnaires obtained from similar international research, published and performed in many countries, the problems of the spine. The research has been short- duration 4 months and prospective. The total number of patients is 52, ages 20 to 65 who suffer from chronic back pain who were divided into two groups:

- a. Group One: With only strengthen mm.of the spine, with thermotherapy and Electrotherapy, has been rehabilitated 26 patients who constituted the control group and
- b. Group Two: With simultaneously mm. Strengthening the back and abdomen, with thermotherapy and Electrotherapy are rehabilitated over 26 people that make up the experimental group.

Patients at the beginning of the research completed a questionnaire about a pain in the back which is internationally recognized. In a questionnaire, was said about pain subjectively, duration and limitations that cause you pain during daily activities, etc. Objective examination, all necessary tests and measurements were done. Then from electro therapy are applied by: tens of pain sites for 20 min. From thermotherapy is applied: pelloidotherapy- with hot Prafango, and a light massage in mm. And at the end the Kinesiotherapy

(exercises) was applied. With this kind of treatment they were rehabilitated for 3 weeks with 5 sessions per week, and after the rehabilitation again have completed the same questionnaires that we used in the beginning which is still making an objective examination of both groups. Data were compared between the control group with the experimental group. Presentation of data is done through tables and graphics.

Criteria for inclusion in the research:

1. Men and women aged 20 to 65 years.
2. The patients with general state of good health, attested by history and clinical examination.
3. Back pain with duration over 6 weeks.

Avoidance criteria of research:

During the research will not be included:

- a) Back pain patients who have less than 6 weeks.
- b) Patients treated for a long time with only drug therapy.
- c) Patients treated with alternative medicine (traditional healers).
- d) Patients who have back pain referred from other pathologies.
- e) Patients who have nerve damage and are indicated by the neurosurgeon to surgical treatment.
- f) Pregnancy, lactation, the possibility of pregnancy.
- g) Diabetes, active TB, malignant diseases, AIDS, rheumatoid arthritis
- h) CNS disease, cerebrovascular disease, psychosis
- i) Cardiovascular diseases, myocardial infarction, etc.

Method of assessment

In the first and last visit, all patients have completed the questionnaire and were examined clinically.

These data are processed and compared to each visit.

1. The questionnaire used is taken from: "Fainbanks CT, Couper C, Davies JB, The Oswestry back pain disability questionnaire", which assesses pain questionnaires during the various activities that the patient performs a daily life.
2. On clinical examination were controlled:
 - Mobility,
 - Rigidity (muscle spasm).
 - Muscle strength.
 - sensibility

All the patients were informed and agreed to the manner and purpose of the research.

Statistical analyses of the data presentation is made through tables and graphs, data processing was done with SPSS and EXCEL program.

Results

General characteristics of the examined involved in research

The research included 52 patients with back pain (chronic LUMBALGY) who were divided into two groups according to the method of treatment:

In the first group are the patients treated with: strengthening mm. The back and abdomen, along with Electrotherapy and thermotherapy, which included 26 patients (50%), while in the second group were treated patients, only hardening mm. Of the spine, along with Electrotherapy and thermotherapy, are also included 26 patients (50%).

By sex and methods of treatment of 29 women, 14 of them or (53.84%) were treated with hardening mm. Off the back and abdomen, along with Electrotherapy and thermotherapy as far as 15 or (57.69%) with: only back

strengthening mm. Hardening only, along with Electrotherapy and thermotherapy as far as the 23 men, 12 of them, or (46.15%) was treated with strengthening mm. The back and abdomen, along with Electrotherapy and thermotherapy and 11 or (42.30%) with only hardening mm. of the back, along with electrotherapy and thermotherapy.

The average age of patients, which were treated were middle age 43 year olds, according to the treated groups, the average age of patients treated with hardening mm. abd. of the back and together with basic therapy the average age was 43 years; while for the group treated with only strengthening mm.of the back average age was 41 years.

According to employment – both groups the greater number of patients who have had back pain has been static those who work, because inactivity and staying in only one position is harmful to one's body.

The degree of pain when walking: in patients with hardening of mm. of the back and abdomen, along with Electrotherapy and thermotherapy before treatment was 15 patients with average pain, 10 patients with less pain, and 1 patient without pain and after this treatment only 1 patient remained painfully mediocre 25 or 96.15% of others have gone in group with no pain, until group of patients treated with only hardening mm.of the back, along with electrotherapy and thermoterapy 21 patients have undergone group with less pain and only 3 in the group without pain at all. (Table 1).

Table 1. The degree of pain when walking before and after treatment in both groups

Pain when walking	Treatment: Strengthen the back muscles only				Treatment: to strengthen the muscles of the back and abdomen			
	Before		After		Before		After	
	N	%	N	%	N	%	N	%
Without pain	1	3.84	3	11.53	1	3.84	25	96.15
Less pain	7	26.92	21	80.76	10	38.46	1	3.84
Average pain	13	50	2	7.69	15	57.69	0	0.0
Severe pain	1	3.84	0	0.0	0	0.0	0	0.0

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Extreme	0	0.0	0	0.0	0	0.0	0	0.0
Total patients	26	100.0	26	100.0	26	100.0	26	100.0

Source: Authors calculations

The degree of pain during the sitting position – Group of patients treated with hardening mm. of the back and abdomen, along with Electrotherapy and thermotherapy before treatment had 3 patients with extreme pain, now, after treatment, we have none, with severe pain had 19 now only 1 patient, with an average pain we had 4 now and now we have 2. While after group treatment with less pain we have 19 and painless group have 4 patients, while in the group treated with only hardening mm.of the back, along with electrotherapy and thermoterapy, with severe pain were 22 now we have 13 patients, 4 patients with pain average and now we have 12, and only 1 patient with less pain. (Table 2).

Table 2. The degree of pain during the sitting position before and after treatment in both groups

The pain in sitting position	Treatment: only strengthen the muscles of the back				Treatment: strengthening the muscles of the back and abdomen			
	Before		After		Before		After	
	N	%	N	%	N	%	N	%
Without pain	0	0.0	0	0.0	0	0.0	4	15.38
Less pain	0	0.0	1	3.84	0	0.0	19	73.07
Average pain	4	15.38	12	46.15	4	15.38	2	7.69
Severe pain	22	84.61	13	50	19	73.07	1	3.84
Extreme	0	0.0	0	0.0	3	11.53	0	0.0
Total patients	26	100.0	26	100.0	26	100.0	26	100.0

Source: Authors calculations

Discussion

Pains in the lower spine (LUMBALGY), are part of normal everyday people and despite all technical aids and physical falling burdens during work, we don't suffer less from pain in the back than before.

Kinesio therapy - adequate muscle strengthening the role of creating balance in the body muscular forces

When talking about Kinesiotherapy, we should note that some exercises, depending from the stage of the disease, can worsen the patient's condition and not every exercise is useful for a particular pathology. From the research that has been done by us clearly proved that strengthening the of muscles the back and abdominal muscles along with thermotherapy and electrotherapy are more effective than just strengthening the muscles of the back, along with thermotherapy and electrotherapy.

Strengthening mm. the abdomen was given little attention in most cases, but their strengthening along with mm. of the back provides adequate stability and strength because the strengthening of both groups muscular body becomes an object that is protected and reinforced by all sides. On the other hand strengthening only one muscle group creates instability and disproportionate force in our body, and the possibility of further damage to other surrounding structures. The essence of strengthening the muscles of the back and abdomen lies in the distribution of the load from the backbone, and distributed it to the muscles of the back, abdomen, lower and the upper limbs. Regarding the effect of Kinesiotherapy are made many works and publications worldwide. A study that was done by the American Association of Physiotherapy (American Physical Therapy Association - APTA), and published in the Journal of the American Academy of Orthopedic Surgery, in February 2009, conclude that patients with back pain should consider physical therapy as a first line of treatment for their condition. The review also concludes that exercises - Kinesiotherapy and anti-inflammatory drugs are the "foundations" of non-surgical treatment. According to the study physical therapy should include, strengthening core muscle groups, including mm.of abdominal wall and of the back muscles, which have positive effects in patients with this condition. From research conducted

by us from 52 patients treated with both methods of treatment, the group treated with hardening mm. of the back and abdomen, along with electrotherapy and thermotherapy 26 patients or 50% who at the end of rehabilitative treatment had significantly better improvement in both subjective examination, as well as the objective examination.

Conclusions:

From the results of our research after 3 weeks of treatment of patients with chronic lumbalgy treated with hardening mm. of the back and abdomen, along with electrotherapy and thermotherapy compared with hardening only mm. of the back, along with electrotherapy and thermotherapy, we concluded that strengthening mm. of the back and abdomen has significant effect in improving symptoms and clinical signs of chronic lumbalgy.

Strengthen mm. of the back and abdomen, along with electrotherapy and thermotherapy has been shown effective in reducing pain, elimination of muscular spasm, releasing the amplitude of mobility and improving muscle function.

By comparing the results of the first visit where there was no significant difference between the two groups, thing which allowed to start the research, then in the last visit significant improvement is achieved in the group of patients treated with hardening mm. of the back and abdomen, along with electrotherapy and non significant thermotherapy and improvement of the group treated with only hardening mm.of the back, along with electrotherapy and thermotherapy.

The improvement was achieved after 3 weeks of treatment in the group with hardening mm. of the back and abdomen, along with electrotherapy and thermotherapy, in all parameters according to the questionnaire "Back disability index" but with greater significant difference in reducing the intensity of pain. There has been significant improvement in

clinical signs, such as: mobility, muscular spasma and muscular strength.

Subjective improvement of the diseased was significant in the group with hardening mm. of the back and abdomen, along with electrotherapy and thermotherapy and no significant improvement in the group with only hardening mm. of the back, along with electrotherapy and thermotherapy.

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