

COMPLEX PHYSIOTHERAPEUTIC PROGRAM FOR IMPACT ON INDIVIDUALS WITH CHRONIC PAIN IN THE BACK AND LOW BACK

(Professional paper)

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Abstract

The purpose of this report is to offer a comprehensive complex physiotherapeutic program for impact in individuals suffering from chronic pain in the back and low back. The program is scheduled to include two periods. During the first period, patients are acquainted with the anatomical data of the lumbar spine, the reasons for getting pains in the back and the low back, clinical appearances and the proper execution of basic activities of everyday life. During the second period, the physiotherapeutic program itself is carried out including vibromassage (also called vibratory massage, vibra-massage, vibration therapy) and physical therapy equipment followed by a complex of remedial gymnastic done twice a week. The goal is to reach a state in which the patient with ease performs actions related to daily tasks and activities, including self-service, leisure and work.

Keywords: *vibromassage, ergotherapy, remedial gymnastic, electrotherapy equipment, electrotherapy, massage, kinesitherapy*

INTRODUCTION

Back pain is second only to headache as a cause of pain with prolonged and chronic course (Shtrian, 1999).

Studies show that about 70-80% of the people experience back pain at some point in their lives. These problems are sometimes so serious that they upset the labor process of the patient and lead to huge material losses, both for him and his family as well as for the state. In some countries these losses occupy the third, fourth place of all the diseases. (Želev (Желев), 2004).

The large number of affected is a cause for considerable concern on one hand and on the other hand is the large percentage of sufferers who develop chronic (recurring) pain (Cassidy & Wedge, 1988).

Pain syndromes can be due to a variety of pathological and mechanical reasons and originate from different structures (bone structures, apophyseal joints, ligaments, fascia, muscles or intervertebral disks with or without the subsequent involvement of the spinal roots and peripheral nerves). In 85% of the cases it appears to be impossible to clarify the specific reason of the pain during the first fit (Deyo, 1987). Only in 4-8% of the cases, there are changes in the intervertebral disc present.

The causes of the back pain are also associated with the gender of the patients. Spondyloarthropathies, vertebral osteomyelitis, benign and malignant neoplastic, Paget's disease of bone, peptic ulcer and mechanical

back pain associated with the work done are characteristic for men. Polymyalgia rheumatic, fibromyalgia, osteoporosis and diseases of parathyroid glands are characteristic for women (Borenstein, 1998). Generally speaking, about 70 various diseases can cause back pain (Borenstein, 1995).

Methods: a complex physiotherapeutic program for the impact on individuals with chronic pain in back and waist consisting of two periods.

During the first period, the participants are acquainted with the goal and content of the examination, anatomy of the lumbar spine, biomechanical data, possible causes of the pain, clinical manifestation of the disease and proper execution of basic activities of daily life. Lectures are held once a week for 2 hours in the course of one month.

In the second period, the participants perform the physiotherapeutic program. During ten consecutive days (except Saturday and Sunday), a vibratory massage and physical therapy equipment are applied whose aim is to decrease the pain symptomatic and to improve the circulation of blood and lymph in the affected area. After that, a complex of remedial gymnastic is done twice a week in order to recover the muscle balance, increase the mobility of the spine and strengthen the lumbar muscle corset.

Vibratory massage

Massage means – portable vibro massager.

Massage method:

Starting position of the patient is lying on the stomach. If the patient experiences discomfort, put a pillow under the abdomen. Vibrational fluctuations penetrate deep into the tissues of the body and cause a number of distinct reflex reactions (they stimulate skin-visceral, motor-visceral and visceral-visceral reactions). Vibromassage causes contractions of muscle fibers and has a relaxing effect as well as removes muscle fatigue by activating redox processes and eliminates fatigue products. Leads to a number of vasomotor reactions and has a strong analgesic effect. Massage is applied at low speed for 5-7 minutes.

Physical factors

Physical therapies are particularly important tools in the rehabilitation of the patients with pain in the back and waist.

Electrotherapy equipment: low frequency pulsed electromagnetic field (PEMFT), also called pulsed magnetic therapy, pulse magnetotherapy, or (PEMF) and interferential current (IFC).

Electrotherapy methods.

Interferential currents also known as „cross-currents“ influence inhibitory upon sympathetic part of the autonomic nervous system and have a pronounced effect on peripheral blood vessels with objectively proven vasodilative action. Analgesic action of IFC is emphasized as an expression of removal of tissue anoxaemia - one of the most common causes of pain syndromes. An increase in localized blood flow can explain the resorptive, anti-inflammatory and tissue metabolism-improving action. In addition to determined vascular pain-relieving effect, it is assumed that IFC also functions as analgesic through direct impact on the nerve as well as through reflexes from dermatomes and myotome in the area between the electrodes. The endogenously low-frequency current with the modulated amplitude and frequency from 0 to 100 Hz forms deep in tissues by means of the interference phenomena.

The use of the magnetic field results in slowing down the bio-chemical reactions rate, changes the permeability of the cell membrane, changes the valence link of the molecules, and changes the configuration of water molecule. It inhibits the increased nerve excitability and results in analgesia; relaxes the spasm of the internal organs smooth muscles; improves trophism, metabolism, and as the result the tissue regeneration has anti-inflammatory and analgesic effects. Magnetotherapy is applied with the help of so-called inductors – electric magnets placed longitudinally on the back. The used healing power is 10 Hz.

The magnetic therapy is used in combination with the IFC, in which case first the magnetic field is applied and then the interferential current. Their combined action create constantly changing complex physical factor and thus prevents the habituation of the body. In this case,

the action of both factors is one-way – strong painkilling and trophic effect. The duration of the procedure is 10 minutes per day for 10 days.

Kinesitherapy

Kinesitherapy instruments – breathing exercises; exercises for the abdominal muscles; spine muscles strengthening exercises; exercises for gluteal muscles, as well as the exercises to help improve posture, sitting, bending, lifting, etc.

Kinesitherapy methods.

In case of chronic pains, the priority is given to the exercises aimed at training the abdominal muscles, the lumbar flexion and the hip joint extensors strengthening. Kinesitherapy's aim is to build muscles and improve the flexibility of the entire spine. All the exercises aim at the improvement of the extension of the hip joints, help restore the normal lumbar lordosis and hence achieve normal posture. Strengthening of the abdominal and back muscles as well as recovery of the balance between them creates conditions for the normalization of the spine. This is the best way to prevent micro-traumas in the intervertebral space. The pain aggravation in the lumbar region both during the kinesitherapeutic procedure and 1-2 hours after it is an indicator if its disappearance. Measurements of pulse and blood pressure are taken at the beginning and at the end of each set of exercises.

Occupational Therapy

The role of the occupational therapy in our physiotherapeutic complex comprises functional evaluation of the activities of daily living (ADLs) of a patient. It refers to such ADLs as dressing, toileting, bathing, self-care activities, bed making, sitting down on bed, sofa, chair, meal cooking, use of stove and fridge, climbing up stairs while carrying bags, work and simulated job actions. Quite often the patient is aware of the words „spare your spine“, but does not respect them while performing ADLs (he just does not think of them).

Occupational therapy techniques should include the following:

- Training how to save body energy when moving and walking as well as during self-activities, work and leisure time.
- Repeated rehearsal of tasks to help increase the strength and endurance for specific actions in order to reduce the strain to the spine.
- Discussions of the wrong body movements and posture (positions) and training how to perform them correctly.
- Training with the use of aids to increase the ADLs independence despite pain and limited mobility as well as to dilute the unpleasant symptoms.
- Simulating real work tasks exercises in order to increase tolerance when performing real daily tasks.

The purpose of all the exercises is to achieve a condition in which patients easily perform the actions related to their roles, including self-care, free time and work.

In our country the issue of the treatment and prevention of vertebral disease has become pressing both in medical and social-economic terms. There is no doubt that physical therapy has a responsible task in creating harmonious etiopathogenetic system of curative and medical preventive measures with a wide usage of physical tools.

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