

TREATMENT THROUGH BACK PAIN MOVEMENT

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Abstract. Back pain is the main cause of disability in many countries. It is believed that it affects 60 to 80 percent of the middle-aged people at some point in their lives.

All recommendations for treatment of lumbalgia have changed significantly today. These changes may be summarized as a transition from passive to active treatment.

The exercises associated with treatment help to strengthen weak muscles, stretch muscles and ligaments whose mobility is reduced due to pain, or to increase endurance and physical health. Recent trends have classified exercises into three categories—flexion exercises, traction exercises and exercises for stability. The treatment duration depends on the chronicity of the disease. The bio-psycho-social approach can prevent chronicity by providing rehabilitation for patients with persistent pain after the acute phase. Multidisciplinary treatment programs are often laborious and require better collaboration between patients' rehabilitation team on the one hand and appropriate working environment on the other.

Key words: back pain, treatment, movement

Introduction

Back pain does not represent a separate disease but is a symptom of many different diseases, in most cases the exact cause of them being unknown. These are some of the most common complaints. They occur at any point on the back - the cervical, thoracic or lumbosacral area, but in the majority of cases are localized in the waist [1].

The first symptoms of back pain may often appear in adolescence and usually worsen with age, if not diagnosed and treated promptly. The differential and diagnostic process is further hampered by the poor connection made between the complaint, the outcome of the medical check-up, the visualization techniques and pathological findings due to which about 85% of the cases remain unexplained. [2]

There have been many attempts to clarify the causes of back pain. Instability in the lumbar segment is considered an important prerequisite.

Panjabi determines instability as "inability to excessive movement within the neutral zone of the spinal segment, which is caused by injury, degenerative disc disease or muscle weakness" [3].

For establishing prompt control and improvement of the overall condition of the patients and for their return to professional duty, it is essential to implement an adequate interdisciplinary therapeutic approach with a long-term promotive orientation strategy, train patients into taking individual responsibility and also include the participation of specialists from various fields. Kinesitherapy takes centerstage in the complex therapy and prevention with its rich diversity of methods and tools [4].

Principles of active reeducation. Improvement of the neuromuscular structures abilities.

The exercises contribute to strengthening

of the weak muscles, stretching of muscles and ligaments, whose mobility is reduced as a result of pain, or to increasing resilience and physical health [5].

Recent trends have classified exercises into three categories-flexion exercises, traction exercises and exercises for stability [6].

The duration of treatment depends on the chronicity of the disease. According to Maniche it takes 2-3 weeks of active treatment so that an improvement of the functional status could occur [7].

A basic principle of neuromuscular rehabilitation is achieving an optimal neuromuscular function so as to improve strength, resilience and coordination, without compromising the connective tissue [8].

The functional interaction between the muscles and the fascia of the lumbar-pelvic area serves as the basis for the exercises for stability. These exercises are used to increase the capabilities of the musculo-fascial system and are designed to train patients with lumbalgia [9].

The kinesitherapeutical plan includes exercises to improve tone and coordination of the muscles that support and control the straight posture in patients [10].

Systemic kinesitherapy, aiming at relaxation and strengthening of the spine, is essential for the therapy only if the patient is trained to assume its "dose of responsibility" in the kinesitherapeutic process [11].

A dynamic tracking by a multidisciplinary team of specialists is necessary, including: a neurologist, an orthopedist, a specialist of physical and rehabilitation medicine, a kinesitherapist, an occupational therapist and a psychologist to improve and maintain quality of life. The treatment plan must comply with the type and activity of the disease process and must include: medication treatment, preformed physical factors, active and passive physical therapy [12].

Determination of the functional deficit and tasks of kinesitherapy in different phases of lumbalgia.

Kinesitherapy has a wide application in

treating functional injuries of the spinal cord and in chronic joint, ligament and muscle processes.

Becheva describes assays for determining functional deficiency in patients in the chronic stage of lumbalgia and report the results of the applied kinesitherapeutic methodology in these patients [13-18]. Becheva has found that, as a result of applied kinesitherapeutic methodology in patients in the chronic stage of lumbalgia, a significantly reduced pain syndrome is observed [13], flexibility [14] and the extensional [15] and flexional durability of the dorsal muscles improve [16], and there is an increase in durability in efforts [17] and a reduction of the index of disability by Oswestry [18]. Reported correlations by the author have shown that the lower results of the functional tests are a predictive factor for a higher degree of disability in subjects [19].

Kinesitherapy in subacute stepwise lumbalgia aims to reduce pain, to overcome muscle imbalance, to increase mobility in the lumbar, adjust posture and contribute to the prevention of recurrences [20].

In the chronic stage kinesitherapy improves the functional recovery of spinal cord by restoring aspects of motor control muscle functions, the strength and endurance of the movements of the spine without aggravation of pain symptoms, optimizes the patients' functionality by reducing pain symptoms and the degree of disability [21].

Overview of physiology of exercises affecting lumbalgia and kinesitherapeutical treatment plan.

Kinesitherapeutic programs affecting lumbalgia, focus on stabilizing the body and maintaining the neutral position of spine. More work for mobility of the hip joint is recommended. The mobility of the hip joints is extremely important because it minimizes the load on the spine, thus facilitating it in performing different activities. [22]

Four active processes are used in lumbalgia in the training to improve mobility - dynamic exercises, active or passive static stretching

and active tension stretching. Stretching via neuro-muscular facilitation (retention-relaxation, tension-relaxation or contraction-relaxation and contraction of the antagonist). In chronic lumbalgia, achieving a good lumbar-pelvic muscle mobility releases muscular tension and contributes to increasing pain threshold and to articular amplitudes for a treatment period of 15 days [23].

Twenty years ago, as a result of research on the mechanics and physiology of the body flexion exercises, a change in the protocol for training the abdominal muscles was made. Nachemson studies the effect on intradisc pressure in various body positions. In a study of flexion exercises of the trunk he finds that intradisc compression is larger in taking semi-sitting position from occipital leg with folded extremities, in comparison to the same position - unfolded limbs both in lighter loads and in taking kyphosing positions [24]. This suggests that the use of semi-sitting positions with folded or unfolded limbs is not recommended in cases of lumbalgia.

Zhelev determines the training of flexor muscles of the body as a priority in the treatment for strengthening the same muscles [25]. This view is based on the theory that strengthening the abdominal muscles increases intra-abdominal pressure and maintains a favorable balance between the strength of the abdominal muscles and the extensors of the body. Intra-abdominal pressure increases during the contraction of the abdominal muscles [26], and after strengthening exercises.

Morphological changes such as atrophy of mm. multifidi [27] are observed in chronic lumbalgia. These changes can persist long after the symptoms disappear while the risk of relapse remains. Therefore, a workout with a progressively rising load extensors is recommended, resulting in a reduced fat infiltration [28], increased power [29] and endurance [7], reduction of pain [30] and improved psychosocial functions and reduction of absenteeism [31].

In chronic lumbalgia there is a specific dysfunction of mm. multifidi, as well as of the deep abdominal muscles [30], which is a cause

of poor coordination of the body muscles. Global muscles tend to substitute and dominate over weaker local muscles [32].

Exercises from initial upright position on unstable terrain are conducive to the strengthening of the muscles of the lower limbs [33].

The gluteus muscles play an important role in lifting weights as they maintain the normal curves of the spine to transport more weight in an upright position by reducing the articular and ligament stress [34]. A recovery program aims at activating all external- and proprioceptive afferents to obtain postural, dynamic, tailored and preformed motor responses. The sensory-motor reprogramming achieves uniformity in the lumbar-abdominal-pelvic musculature by a multidirectional method. Its techniques are not relevant to a preferential lesion type or source of lumbalgia, especially since it is often difficult to fine-tune which anatomical structures are the cause of the patient's complaints [35].

The techniques used in sensory-motor reprogramming have many advantages because this concept focuses on the activation of sensory and sensory afferents. Training should be progressive, on the pain threshold, including early static exercises followed later by dynamic exercises with open and closed eyes.

Massage is a very useful agent that activates the sensory receptors and is used at the beginning of the session. Contact and skin stimulation represents two important elements in the proprioceptive reeducation.

Goranova reports on the effectiveness of a complex methodology, applied in pain syndromes in the lumbar-sacral region comprising point massage, cupping therapy, medicinal patches, auricular therapy in combination with therapeutic exercises [36].

Conclusion

Chronic low back pain is a major cause of disability in middle age in many countries. Training the patient in the chronic stage of this condition is a priority for WHO. Healthcare spending keep growing in many countries,

which is the reason to create programs in which the patient is a "partner", well informed, trained and able to take control of their health problems when drugs are not sufficient, as is the case with chronic lumbalgia. A balanced management of physical activities serves well as a goal in those programs [37].

A properly drawn up kinesitherapeutical plan, suiting the patient's individual features and the stage of recovery, leads to pain relief, normalization of working and daily activities, improving the quality of life and the self-esteem. Treatment by movement once again proves its role in both the prevention and the therapeutic stage. Adequate patient behavior is essential. Without the latter participation and active treatment, the desired result would not be achieved [38].

All the work carried out by a team of physiotherapists, general practitioners and other medical professionals not only improves the patient's overall physical condition but influences the latter psychosomatic condition. The improvement of physical activity and enhancing working capacity increase the self-confidence and quality of life of patients with low back pain [39].

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