

ORIGINAL ARTICLE

INFLUENCE OF THE ORTOSANO RESTORATION METHOD ON CHRONIC PAIN SYNDROME IN DEGENERATIVE-DYSTROPHIC DISEASES OF THE SPINE

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The aim: Was to assess the influence and the effectiveness of complex physical rehabilitation using the ORTOSANO technique for people with degenerative-dystrophic diseases of the spine (DDS) on the severity of chronic pain (CHD).

Materials and methods: We studied the condition of 166 patients. The observation group included patients with chronic pain caused by DDS of the spine. The patients underwent a course of complex physical rehabilitation in the center using the ORTOSANO method.

Results: The following results were obtained statistically: pain with localization in the lumbosacral spine was registered in 67 patients (40.4%), in the cervical spine – in 42 patients (25.3%), in the thoracic spine – in 37 patients (22.3%). Pain in the shoulder joints was registered in 24 patients (14.5%), in the hip joints in 16 (9.6%), knee joints – in 12 (7.2%), in the ankle joints – in 9 patients (5.4%). Initially, the level of pain among all the group members according to the VAS scale was on average (7.6 ± 0.35) points in men and (6.4 ± 0.72) in women ($p < 0.05$).

Conclusions: 1. It was established that the proposed complex physical rehabilitation using the ORTOSANO method reduces the severity of chronic pain significantly, improves functional and daily activity, quality of life, and stabilizes the neuro-psychological state of patients. 2. The ORTOSANO method can be recommended to be used in the complex of rehabilitation exercises in physiotherapeutic departments of educational and medical establishments.

KEY WORDS: chronic pain syndrome, physical rehabilitation, quality of life, neuropsychological status

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INTRODUCTION

Today, degenerative-dystrophic diseases of the spine (DDS) are one of the most pressing problems of modern medicine around the world. Morbidity and associated disability have created a major social problem in the developed countries of the world, which can be proved by numerous recent reports by domestic and foreign vertebroneurologists [1–5].

The most common reason for limiting the physical activity of the adult population is the pain syndrome, which is experienced by almost every adult during their life. Depending on the severity of the pain syndrome, the quality of life of patients with DDS suffers to various extents. Thus, quality of life is recognized to be an integral part of a comprehensive analysis of new diagnostic methods, treatment, prevention, quality of treatment, and care. Improvement in patient's health, regression of clinical manifestations of the disease, improvement in functional parameters, the maximum approximation of the patient's quality of life to the level of a healthy person are the main tasks of the treatment and rehabilitation [6, 7].

The medical and socio-economic significance of the diagnostics and treatment of degenerative-dystrophic diseases of the spine can be explained by a number of rea-

sons. According to the World Health Organization (2018), from 30% to 87% of the most active working population at the ages from 30 to 60 suffer from spinal osteochondrosis. This disease accounts for 20-80% of cases of temporary disability [8-11].

The main triggers of chronic pain are myofascial syndrome and muscular-tonic syndrome resulted from degenerative-dystrophic changes of the spine [12 - 16]. According to the definition of the International Association for the Study of Pain (IASP), chronic pain is the pain that persists for more than 3 months without eliminating its cause. It is distinguished as an independent disease – chronic pain syndrome (CPS). Back pain requires its objectification, assessment of severity and intensity control.

THE AIM

Was to assess the influence and the effectiveness of complex physical rehabilitation using the ORTOSANO technique for people with degenerative-dystrophic diseases of the spine (DDS) on the severity of chronic pain (CHD), quality of patients' life and their neuropsychological status.

MATERIALS AND METHODS

To implement the tasks set, we studied the condition of 166 patients who were under supervision in the Centre of the Spine ORTOSANO (Zaporizhzhia). The observation group included patients with chronic pain caused by degenerative-dystrophic diseases of the spine. The patients underwent a course of complex physical rehabilitation in the center using the ORTOSANO method. The group included 92 men (55.42%) and 74 women (44.58%). The average age of men was 60.2 ± 9 years, of women – 54.6 ± 7.4 years. The group consisted of 111 employees (66.87%), 27 workers (16.27%) and 28 (16.86%) unemployed people including retirees. All of them underwent general clinical, clinical-instrumental, neurological and neuropsychological examination with the help of scales and questionnaires as well as methods of neurovisualization (x-radiography and magnetic resonance tomography of the spine).

During the rehabilitation all the patients received conservative non-surgical treatment based on the complex ORTOSANO method. The technique included massage, dosed spine stretching (tension relief, weight-support), breathing exercises, reflexotherapy, vertebral-joint gymnastics with elements of postisometric relaxation, joint gymnastics with the gradual development of a certain movement stereotype. The program of rehabilitation measures in patients with musculoskeletal disorders and CPS included almost all forms of kinesiotherapy as the main component of the therapeutic and recovery processes.

Indicators of pain intensity were recorded during the first patient examination by a doctor and after a course of physical rehabilitation and kinesiotherapy. For two months the patients recorded the intensity of pain as well as the duration of pain, factors that contributed to the increase or decrease of pain daily. When collecting the medical history, the duration of the disease, the number and duration of exacerbations, the nature of causal factors, the number of hospitalizations associated with back pain, previously received therapy for the disease and its acceptability were taken into account. During the examination special attention was paid to changes in posture, manner of walking, the presence of contractures, deformities and asymmetry of the extremities; the configuration of the spine was assessed: preservation or change of physiological kyphosis in the thoracic spine and lordosis in the lumbar spine, their change (strengthening or smoothing\ decreasing), the presence of scoliosis in standing, sitting and lying position. The intensity of pain was assessed on a VAS numerological scale. The VAS scale quantifies pain as simple sensation of pain and the degree of its intensity [14, 17]. Pain was assessed in patients before, during and after the treatment according to the one-to-ten scale. To assess the quality of life, questionnaires were used, which contained a number of questions, answering to which a person provides as comprehensive information as possible about various aspects of their lives or health condition.

To detect neuropsychological status in patients with DDS, parameters such as cognitive status, anxiety level, and degree of depression were evaluated in this study. The diag-

nosis was substantiated by neurological examination and neurovisualization methods. The following questionnaires and scales were used for a comprehensive assessment: the Beck anxiety inventory, the Zung self-rating depression scale, and the Oswestry Low Back Pain Disability Index (ODI). The Oswestry questionnaire is used for chronic and recurrent back pain [18]. It makes it possible to assess in points the impact of pain on self-care, sleep, social life, walking, movement in space, the ability to lift heavy things, stand and sit for a long time.

Statistical analysis was performed by variation statistics methods as well as by factor, discriminant and multiple regression analysis using the STATISTICA 8.0. software.

RESULTS

The following results were obtained statistically: pain with localization in the lumbosacral spine was registered in 67 patients (40.4%), in the cervical spine – in 42 patients (25.3%), in the thoracic spine – in 37 patients (22.3%). Pain in the shoulder joints was registered in 24 patients (14.5%), in the hip joints in 16 (9.6%), knee joints – in 12 (7.2%), in the ankle joints – in 9 patients (5.4%). At the beginning of the study, the level of pain among all the group members according to the VAS scale was on average (7.6 ± 0.35) points in men and (6.4 ± 0.72) in women ($p < 0.05$).

The average duration of CPS in the examined patients was (6.7 ± 1.9) years. Headaches were reported by 93 people (56%), anxiety disorders were noted by 53 (34%), and asthenic disorders were noted in 121 (73%) patients. Symptoms of depression and mood disorders were found in 133 patients (80.4%); 36.2% of them met the criteria for major depression, 27.8% – the criteria of dysthymia. According to the Zung self-rating depression scale the level of depression was (62.2 ± 5.4); according to the Beck anxiety inventory the level of anxiety was 43.7 ± 3.4 . More than half of the patients, mostly females, had a strong correlation between CPS and depressive disorders ($r = + 0.72$). 148 patients (89%) had sleep disorders and insomnia; almost 67% of them were male patients. The severity of pain in the examined patients did not always depend on the degree of degenerative-dystrophic changes, but it strongly affected the quality of life and neuro-psychological status of the patients. According to the results of the Oswestry questionnaire of all the patients, the quality of life indicator was (41.2 ± 3.6)%.

DISCUSSION

According to epidemiological studies, from 7% to 64% population of the USA and European countries (including Ukraine) suffer from pain, and from 8% to 45% suffer from chronic pain. Chronic back pain has the highest rate among regional pain syndromes in the people of most working age (35 – 45 years). It is considered that about 80% of patients with acute back pain recover completely; in 17-20% the pain begins to persist [9-11].

On analyzing CPS in patients after treating them for 3 months, we obtained the following results. Pain in the

spine and large joints decreased significantly during the second / third week of physical rehabilitation using the ORTOSANO method. According to the VAS scale, the level of pain was on average (4.8 ± 0.14) points in men and (4.2 ± 0.64) in women. On the Zung scale, patients rated their level of depression at (52.2 ± 6.3), and on the Beck anxiety inventory, the level of anxiety was (34.1 ± 5.5).

The analysis of long-term results obtained during 6 months of physical rehabilitation showed that chronic pain decreased significantly in 130 patients (78.3%) ($p < 0.01$), and practically did not bother 45 of the examined patients (27%). According to the VAS scale, the level of pain was on average (3.2 ± 0.65) points in men and (2.92 ± 0.48) in women. After 6 months, we observed a tendency to further decrease the ODI (18.5 ± 1.4)%.

It should be noted that the emotional state of patients receiving a course of rehabilitation with the ORTOSANO has improved greatly. Quality of their life and sleeping improved noticeably and the manifestations of depression and anxiety disorders regressed ($p \leq 0.01$). Patients reported the appearance of positive motivation to achieve the end result, noted the improvement of household and social adaptation. 20 patients (12%), in whom rehabilitation was not effective, did not do exercises regularly and were wary of physical rehabilitation.

CONCLUSIONS

1. It was established that the proposed complex physical rehabilitation using the ORTOSANO method reduces the severity of chronic pain significantly, improves functional and daily activity, quality of life, and stabilizes the neuro-psychological state of patients.
2. The ORTOSANO method can be recommended to be used in the complex of rehabilitation exercises in physiotherapeutic departments of hospitals, ambulatories, rehabilitation centers, in educational and sports organizations, health centers and sanatoriums.

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The Authors declare no conflict of interest.

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