

Impact Of Modern Types Of Treatment Dorsalgia Lumbosacral Spine On The Emotional Background Of Patients

Yulduz M. Isamukhametova^{1*}, Adibakhon A. Usmankhodjaeva², Rustam J. Matmurodov³

Tashkent Medical Academy

^{1*}Doctoral student of the Department of Rehabilitology, Traditional Medicine and Physical Culture of the Tashkent Medical Academy, Republic of Uzbekistan.

²MD, PhD, Associate of professor, Head of the Department of Rehabilitology, Traditional Medicine and Physical Culture of the Tashkent Medical Academy, Republic of Uzbekistan.

³Associate professor of the Department of Neurology, Tashkent Medical Academy, Republic of Uzbekistan.

Abstract

The aim of the study as part of a clinical trial, to assess the level of emotional status of patients against the background of modern types of treatment for dorsopathy of the lumbosacral spine. Materials and methods. The study involved 152 patients diagnosed with dorsopathy of the lumbosacral spine, among the participants there 54 (35.8%) men and 97 (64.2%) women, the age of the patients ranged from 21 to 71 years, the average age of the patients was 52 ± 8.4 years. Among the types of dorsopathy in patients, lumbago syndrome was recorded in 35 (23.2%) cases, vertebrogenic lumbodynia – 28 (18.5%), discogenic lumbar ischialgia – 25 (16.6%), chronic discogenic radicular syndrome – 19 (12.6%), acute recurrent discogenic radicular syndrome – 22 (14.6%), and discogenic radiculopathy – 22 (14.6%). All patients in the process of preparation for the study divided into groups depending on the format of therapy. So in group I – 50 (34.0%) patients who received a standard type of drug therapy in combination with Korean traditional methods for the treatment of dorsopathy. in group II – 51 (33.5%) patients who received the standard type of drug therapy in combination with transcranial magnetic stimulation. Group III – 51 (33.5%) patients who received methods of traditional Korean therapy for dorsopathy in combination with transcranial magnetic stimulation. As tools for analyzing the emotional status of patients with dorsopathy before and after treatment, the Beck questionnaire used to identify signs of a depressive state and the Sheehan questionnaire to identify the level of anxiety. Results. The emotional status of patients suffering from dorsopathy before the start of the course of treatment had no statistically significant differences between the groups of study participants. However, when analyzing the emotional status after the course of therapy, statistically significant differences in the indicators of the emotional background revealed. Thus, the lowest level of anxiety and depression observed in patients who received traditional Korean methods for the treatment of dorsopathy in combination with transcranial magnetic stimulation. It was possible to establish that the restoration of the normal level of the emotional state of a patient with dorsopathy can be achieved without the use of popular drugs included in the list of standard therapy for severe pain syndrome. Conclusion. Patients with dorsopathy are a rather complex and unresolved problem of modern medicine. This category has significantly reduced indicators of emotional status, which is directly related to the presence of dorsopathy. The traditional methods of treating chronic pain of the musculoskeletal system are gaining more and more popularity, this does not mean at all the abandonment of the use and use of drug therapy. However, the analysis of the emotional status of patients suffering from dorsopathy demonstrated the effectiveness of the Korean traditional method of treating dorsopathy in combination with transcranial magnetic stimulation, compared with combinations of treatment methods that include standard drug therapy.

Key-words: back pain, dorsopathy of the lumbosacral spine, emotional status, Becks depression inventory, Sheehan index, traditional Korean medicine, transcranial magnetic stimulation.

Introduction

Disorders and diseases of the musculoskeletal system are the leading factor of disability throughout the world, and dorsopathy of the lumbosacral spine remains one of the main causes of disability among multidisciplinary pathologies of the musculoskeletal system [1]. Dorsopathy of the lower parts of the posterior surface of the body in the majority (80.0%) of cases is presented in clinical practice as nonspecific pain and is the most common phenomenon among calls both directly to neurological specialists and to rheumatologists, traumatologists,

surgeons and therapists [2]. Nonspecific lower back pain is one of the main causes not only of disability, but also of a significant decrease in the physical and psycho-emotional parameters of the quality of life and performance of the population [3]. In this regard, modern trends in the treatment of nonspecific pain in the lumbosacral region imply a multidisciplinary approach using various methods of intervention [4, 5].

On the territory of the Republic of Uzbekistan, both Western methods of treating nonspecific pain using popular medications and traditional methods of manual, acupuncture and physiotherapy are widely used. Such methods also include traditional Korean medicine, which has proven itself over a centuries-long history of development and successful use on patients with back pain [6]. Taking into account scientific studies declaring the high physical and psycho-emotional effectiveness of the use of traditional Korean medicine methods, it is important to assess the emotional status of patients with nonspecific pain in the lumbar region with the combined, parallel use of Western and traditional Korean methods of treating nonspecific low back pain [7].

Purpose of the research

The purpose of the study is to assess the level of emotional status of patients against the background of modern combined types of treatment for dorsopathy of the lumbosacral spine.

Materials and Methods

Study type and design

On the basis of LLC (Limited Liability Company) “Medical Impuls” private clinic, Tashkent city, Republic of Uzbekistan, from March 2019 to December 2022, an initial appointment was carried out with a comprehensive diagnosis of patients with complaints of pain in the lumbosacral region. The study included 152 patients diagnosed with dorsopathy of the lumbosacral spine, among the participants there were 54 (35.8%) men and 97 (64.2%) women, the age of the patients ranged from 21 to 71 years, the average age of the patients was 52± 8.4 years. Among the types of dorsopathy, patients had lumbago syndrome in 35 (23.2%) cases, vertebrogenic lumbodynia - 28 (18.5%), discogenic lumboischialgia - 25 (16.6%), chronic discogenic radicular syndrome - 19 (12.6 %), acute recurrent discogenic radicular syndrome - 22 (14.6%), as well as discogenic radiculopathy - 22 (14.6%).

In preparation for the study, all patients were divided into groups depending on the format of therapy. Thus, in group I there were 50 (34.0%) patients who received a standard type of drug therapy in accordance with Appendix 7 to Order No. 273 dated November 30, 2021 of the Ministry of Health of the Republic of Uzbekistan, in combination with Korean traditional methods of treating dorsopathy. In group II – 51 (33.5%) patients received a standard type of drug therapy in combination with transcranial magnetic stimulation. Group III – 51 (33.5%) patients who received methods of traditional Korean therapy for dorsopathy in combination with transcranial magnetic stimulation (see Table 1).

Table 1
Categorical data among study participants

Indicators	Categories	Abc.	%	95% DI
Sex	Male	54	35,8	28,1 – 44,0
	Female	97	64,2	56,0 – 71,9
Diagnosis	Lumbago	35	23,2	16,7 – 30,7
	Vertebrogenic lumbodynia	28	18,5	12,7 – 25,7
	Discogenic lumbar ischialgia	25	16,6	11,0 – 23,5
	Recurrent discogenic radicular syndrome	19	12,6	7,7 – 19,0
	Exacerbation of discogenic radicular syndrome	22	14,6	9,4 – 21,2
	Discogenic radiculopathy	22	14,6	9,4 – 21,2
Groups	Group I	50	34,0	25,3 – 41,4
	Group II	51	33,5	27,0 – 42,6
	Group III	51	33,5	27,0 – 42,6

The list of drugs used as part of standard therapy included: Nonsteroidal anti-inflammatory drugs (“Diclofenac” in the form of an injection drug with a dosage of 75 mg/ml, in tablet form at a dosage of 25-50 mg; “Ibuprofen” in tablet form at a dosage of 200 mg; “Ketorolac” in tablet form at a dosage of 30 mg; “Meloxicam” in the form of an injection drug with a dosage of 75 mg/ml, in tablet form at a dosage of 7.5-15 mg; “Tenoxicam” in the form of an injection drug with a dosage of 20 mg/ml); Muscle relaxants (Tolperisone hydrochloride

"Mydocalm" in tablet form at a dosage of 50-150 mg; Antidepressants ("Amitriptyline" in tablet form at a dosage of 25 mg); Preparations of B vitamins (Thiamin in the form of an injection drug with a dosage of 100 mg/ml; Pyridoxine; Cyanocobalamin in the form injection drug with a dosage of 1 mcg/ml); Antiepileptic drugs (Carbamazepine in tablet form at a dosage of 200 mg); Peripheral vasodilators (Pentoxifylline in the form of an injection drug with a dosage of 400 mg/5 ml, in tablet form at a dosage of 400 mg); Anticholinesterase drugs ("Neuromidin" in the form of an injection drug with a dosage of 5 mg/1 ml, in tablet form at a dosage of 20 mg). The dosage of drugs and the timing of their administration were adjusted privately, individually for each patient. However, the period of drug therapy did not exceed 7 days.

Transcranial magnetic stimulation (TMS) was carried out in a neurological hospital using a Neuro-MS/D device with an intensity of a perpendicularly directed electromagnetic wave of 1.5 - 2 Tesla (T), a depth of action of 1.5-3.0 cm, with a duration of 100ms. The course of TMS was carried out daily, in the amount of one procedure per day for 15 days.

Methods of traditional Korean therapy (TKT) - based on acupuncture, manual therapy and physiotherapy. Predominantly, when exposed to TKT, acupuncture points and Shinsu meridians (BL23) were used; Gihesu (BL24); Daejangsu (BL25); Gwanwonsu (BL26); Sangre (BL31); Chare (BL32); Zhungre (BL33); Hare (BL34); (GB30), as well as pairs of remote acupuncture points. The TKT course was carried out for 12 days, one session per day.

As a tool for analyzing the emotional status of patients with dorsopathy before and after treatment, we used the Beck Questionnaire, which includes a scale from 0 to 63 points, where from 0 to 9 points is the absence of depression, from 10 to 15 points is a mild stage of depression, from 16 up to 19 points – moderate depression, from 20 to 29 points – severe depression, from 30 to 63 points – severe depression [8]. In order to identify signs of an anxious state, the Sheehan questionnaire was used, which includes a scale from 0 to 80 points, where a value from 0 to 30 points is the absence of clinical signs of anxiety, from 31 to 80 points is a severe anxiety disorder, from 81 points and above is severe anxiety disorder [9].

Results

Based on the results of a survey of patients regarding the assessment of depressive disorder before the start of treatment for dorsopathy of the lumbosacral region, it was revealed that the majority of patients from the study had a severe form of depression. Thus, among the 3 groups in the study, the average index on the Beck scale was 29 points, which characterizes the presence of a severe form of depression in the patient (see Table 2).

Table 2
Analysis of the level of depression among patients participating in the study according to the Beck scale depending on the group of patients depending on the type of therapy

Indicators	Categories	Groups			p	
		Me	Q ₁ – Q ₃	n		
Beck scale 1/2 (points)	Drug therapy + TKT	29	28 – 52	50	0,086	0,006*
	Drug therapy + TMS	29	19 – 54	51		
	TKT + TMS	29	28 – 59	51		
Beck scale 2/2 (points)	Drug therapy + TKT	6	3 – 10	50	0,118	
	Drug therapy + TMS	9	2 – 16	51		
	TKT + TMS	5	4 – 8	51		

* – differences between indicators are statistically significant ($p < 0.05$) methods used: Kruskal–Wallis test

However, after completing the course of combination therapy, a significant decrease in the Beck index was recorded. In group III of patients, the average Beck index value was 5 points, which reduced the level of depression by more than 70.0% after the combined use of TKT + TMS. In groups I and II, the average value of the Beck index was 6 and 9 points, which is also perceived as a significant decrease in the patient's depressive state by more than 50.0% after a course of combination therapy for dorsopathy of the lumbosacral region (see Figure 1-2).

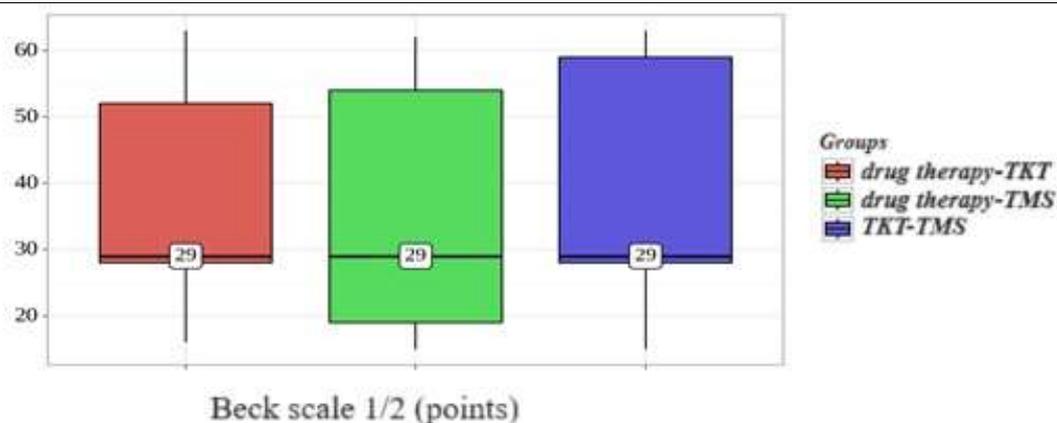


Figure 1 – Analysis of the assessment of the level of depression on the Beck scale before the start of therapy, depending on the type of therapy

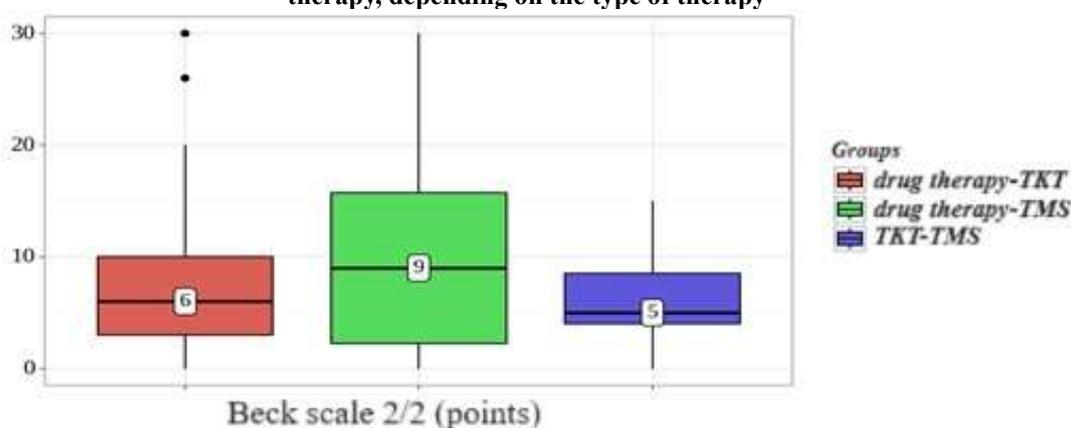


Figure 2 – Analysis of the assessment of the level of depression on the Beck scale after therapy, depending on the type of therapy

When comparing the obtained values for assessing the level of depression on the Beck scale before the start of therapy and after combination therapy, it was possible to identify statistically significant ($p = 0.006$) differences. As a result of analyzing the anxiety state of patients using the Sheehan scale before the start of combined treatment, statistically significant ($p < 0.05$) differences between the groups were obtained. Thus, the Sheehan index in group I was 80 points, which defines a severe anxiety state; in groups II and III, this indicator was on average 82 and 86 points, respectively, which defines severe anxiety disorder (see Table 2).

Table 3
Analysis of the level of anxiety among patients participating in the study using the Sheehan scale depending on the group of patients depending on the type of therapy

Indicators	Категории	Groups			p
		Me	Q ₁ – Q ₃	n	
Sheehan scale 1/2 (points)	Drug therapy + TKT	80	78 – 84	50	0,041*
	Drug therapy + TMS	82	76 – 86	51	
	TKT + TMS	86	78 – 90	51	
Sheehan scale 2/2 (points)	Drug therapy + TKT	20	10 – 30	50	0,037*
	Drug therapy + TMS	20	5 – 34	51	
	TKT + TMS	10	6 – 15	51	

* – differences between indicators are statistically significant ($p < 0.05$) methods used: Kruskal–Wallis test

According to the data obtained, when assessing the level of anxiety on the Sheehan scale after completing the course of combination therapy, statistically significant differences were established both between the groups ($p = 0.037$) and compared with the anxiety index indicators before the start of combination treatment ($p = 0.021$). It

is worth noting that the Sheehan Index after combined treatment in all groups tended to a pronounced decrease. The average values of the anxiety level index were 10 points for group I, and 20 points for groups II and III, which should be interpreted as an anxiety state from mild to severe (see Figure 3-4).

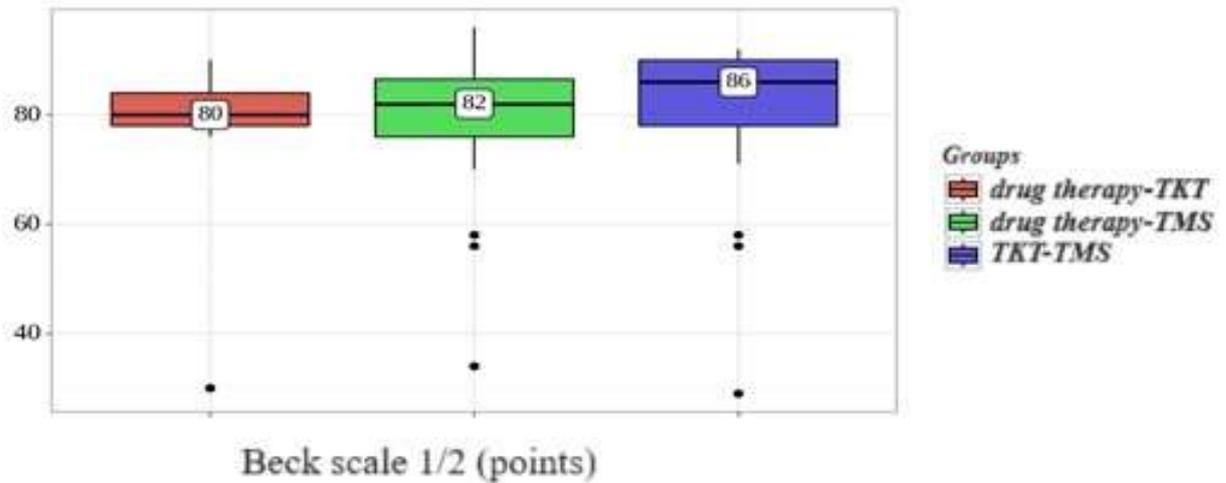


Figure 3 – Analysis of the assessment of the level of anxiety on the Sheehan scale before the start of therapy, depending on the type of therapy

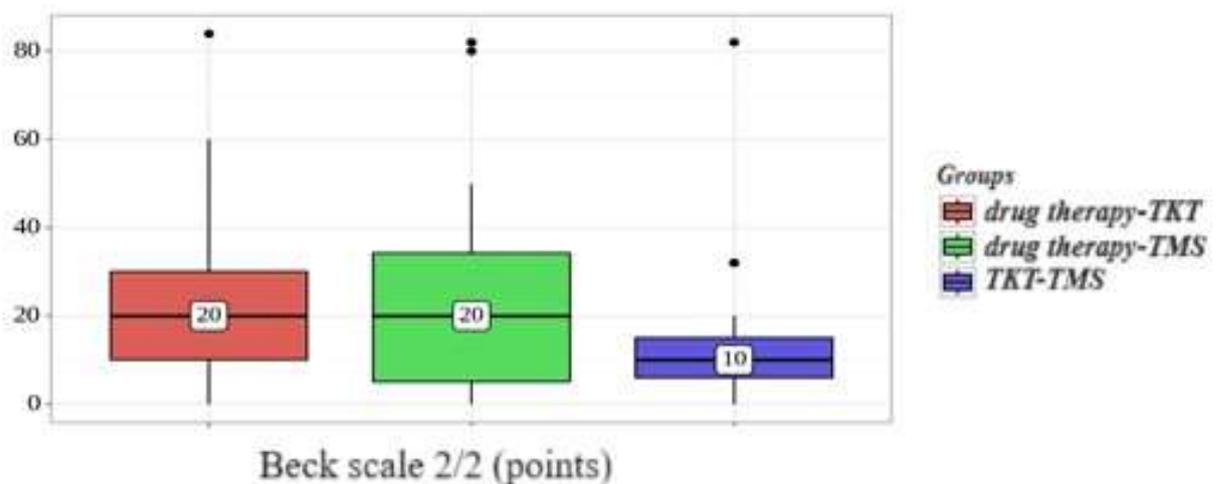


Figure 4 – Analysis of the assessment of the level of anxiety on the Sheehan scale after therapy, depending on the type of therapy

Discussion

A comparative analysis of the results obtained from assessing the emotional state of patients suffering from dorsopathy of the lumbosacral spine revealed that in most cases there is a high level of depression and anxiety. However, after applying a course of combination therapy, a significant improvement in the emotional state was revealed, both among patients who received combination therapy using drug therapy and manual, acupuncture and physiotherapy techniques, and without the use of drug therapy. It is worth noting that the combination of TKT and TMS had the best effect on the emotional background of patients with dorsopathy, according to the survey results. From the point of view of the effectiveness of the treatment on the emotional state of patients with lumbosacral dorsopathy, a positive effect of all treatment methods used was noted. This confirms the importance of using or combining drug therapy and physical influence on the emotional status of a patient with lumbosacral dorsopathy. Also, in this study, it was possible to establish that restoration of the normal level of emotional state of a patient with nonspecific chronic pain of the lumbosacral region can be achieved both with the use of medications included in the list of standard therapy, and without the use of drug therapy.

Conclusion

Patients suffering from lumbosacral dorsopathy have significant physical and emotional deviations compared to relatively healthy people. In this regard, the choice of treatment method for this category of patients can seriously affect the emotional status, which in turn directly affects the process of recovery, return to work capacity and quality of life. The study made it possible to assess the emotional status of patients in response to combination therapy. However, for a more detailed study of the algorithm for choosing one or another method of treating chronic pain associated with lumbosacral dorsopathy, further clinical studies of the effect of therapy on the health status of patients are necessary.

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