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CLINICAL CHARACTERISTICS OF EXAMINED PATIENTS WITH PAIN IN THE LOWER BACK BASED ON THE INTERNATIONAL CLASSIFICATION OF FUNCTIONING

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Mehridin M. Usmonov

Researcher, Bukhara State Medical Institute Neurologist Of The General Therapeutic Department Of The Gijduvon District Medical Association, Bukhara Region, Uzbekistan

Muso B. Urinov

Doctor Of Science, Professor, Department Of Neurology, Bukhara State Medical Institute, Uzbekistan

ABSTRACT

The high urgency of the problem of degenerative changes in the spine in the lumbar region is determined by neurological manifestations, changes in psychological and personal characteristics, and a decrease in the quality of life, which attracts close attention of the scientific and medical communities. In particular, it is associated with the peculiarities of the course of the disease, the high frequency of exacerbations and the occurrence in females of the most able-bodied age, unsatisfactory results of treatment and rehabilitation measures, the transformation of the pain syndrome into a chronic form and progressive disability (1,2,3,4,5 ,6,7,8).

KEYWORDS

Personal characteristics, vertebrogenic lumbosacral radiculopathy, lumbosacral spine, neurological manifestations, psycho-emotional disorders.

INTRODUCTION

Aim of the research: To scientifically substantiate and test in practice the effectiveness of the application of

the international classification of functioning in patients with vertebrogenic lumbosacral radiculopathy.

MATERIAL AND RESEARCH METHODS

The study included 125 patients aged 24 to 67 years (mean age 38.7±9.2 years) with moderate to severe vertebrogenic lumbosacral radiculopathy (VCR), from 5 to 9 points on the visual analog scale (VAS).

All patients were divided into groups (depending on gender) and subgroups (depending on the nature of the course). The main group (MG) consisted of women - 69 (55.2%) people; .8%), the ratio of the number of women to the number of men was 1.2:1.0. Each group was divided into three subgroups depending on the nature of the flow. OG-1 were 17 women (24.6%) with acute LBP, OG-2 were 23 women (33.3%) with subacute LBP and OG-3 were 29 women (42.0%) with chronic LBP. GS-1, GS-2 and GS-3 were 26 (46.4%), 17 (30.4%) and 13 (23.2%) men, respectively (Table 1)).

Tables 1

Distribution of patients by groups and subgroups

course of LBP	subgroups	OG women, n= 69		HS-men, n= 56		Total, n= 125	
		abs	%	abs	%	abs	%
Acute LBP (up to 6 weeks)	1	17	24,6%	26	46,4%	43	34,4%
Subacute LBP (from 6 to 12 weeks)	2	23	33,3%	17	30,4%	40	32,0%
Chronic LBP (more than 12 weeks)	3	29	42,0%	13	23,2%	42	33,6%
Total		69	55,2%	56	44,8%	125	100,0%

In our work with patients with vertebrogenic lumbosacral radiculopathy, we used the International Classification of Functioning (ICF), which allows us to assess the level of functioning and the dynamics of

changes as a result of rehabilitation measures in patients in the following domains: activity and participation, body functions and structures, as well as environmental factors [9]. In this article, the category

of the IFF “STRUCTURES OF THE ORGANISM” was chosen.

Statistical processing of the results of clinical and instrumental studies of our patients was carried out using the methods of variation statistics in the Microsoft Office Excel-2019 software package with the determination of the mean and mean arithmetic errors by the method of moments ($M \pm m$), standard deviation (2).

Statistical significance of the results was assessed using Student's test of significance (t) for parametric distribution and Fisher's test (F) for nonparametric data distribution. Differences were considered significant at 95% confidence interval ($P \leq 0.05$).

Results. In accordance with modern international recommendations, the clinical characteristics of patients with LBP are presented taking into account the provisions of the International Classification of Functioning (ICF), disability and health. Using the set of

ICF domains we have chosen to describe patients with LBP, together with generally accepted tests, scales and questionnaires, presenting the clinical characteristics in this way simplifies the subsequent assessment of the quality of the medical rehabilitation performed.

Clinical characteristics of the category “body functions”. Emotional stability (b1263 according to the ICF) of patients with LBP was assessed using the Spielberger–Khanin situational anxiety scale. The results are presented in table 2.

41.4% of all examined patients did not have emotional stability disorders, among which the maximum number (56.3%) was presented in the main group 1 subgroup and the minimum (20.0%) - in the comparison group 3 subgroup. High anxiety was observed only in 12 patients with subacute and chronic BNS from subgroups 2 and 3 of OH and HS, which, in accordance with the literature data [], confirms the development of psycho-emotional disorders during chronic pain syndrome.

Table 2.

Evaluation of the function of emotional stability in patients with pain in the lower back from the standpoint of the ICF

ICF Code / Points	Groups / subgroups (abs./%)						Total
	OG -1	OG -2	OG -3	HS -1	HS -2	HS -3	
b1263.0 (20-30)	27/56,3	12/52,2	16/45,7	7/43,7	11/25,0	4/20,0	77/41,4
b1263.1 (31-40)	11/22,9	6/26,1	10/28,6	5/31,3	9/20,5	8/40,0	49/26,4
b1263.2 (41-50)	10/20,8	5/21,7	6/17,1	4/25,0	18/40,9	5/25,0	48/25,8

b1263.3 (51-60)	0	0	2/5,7	0	6/13,6	3/15,0	11/5,9
b1263.4 (61-80)	0	0	1/2,9	0	0	0	1/0,5
p	0,94		0,78		0,37		

The quality of sleep (b1343 according to the ICF) in the examined patients was assessed taking into account the response to section 7 of the Oswestry Sleep questionnaire. The results of the survey presented in Table 2 indicate that 52.2% of patients had a sleep dysfunction.

The most pronounced sleep disturbance (b1343.3, b1343.4) was found only in patients of the 1st and 2nd

subgroups, which indicates pronounced psycho-emotional dysfunctions in the form of a violation of falling asleep and maintaining night sleep due to chronic pain in the lower back. This circumstance shows the need to evaluate this function in patients with LBP and take it into account when drawing up a comprehensive rehabilitation program.

Table 3.

Evaluation of sleep function in patients with low back pain based on the ICF

ICF code	Groups / subgroups (abs./%)						Total
	OG -1	OG -2	OG -3	HS -1	HS -2	HS -3	
b1343.0	25/52,1	13/56,5	17/48,6	8/50,0	17/38,6	9/45,0	89/47,8
b1343.1	16/33,3	8/34,8	7/20,0	4/25,0	9/20,5	4/20,0	48/25,8
b1343.2	7/14,6	2/8,7	11/31,4	4/25,0	13/29,5	5/25,0	42/22,6
b1343.3	0	0	0	0	3/6,8	2/10,0	5/2,7
b1343.4	0	0	0	0	2/4,6	0	2/1,1
p	0,78		0,86		0,85		

The results of the severity of the subjective sensation of pain (b28013 according to the ICF) by patients before treatment are presented in Table 3. OG-2 -56.2%) [p=0.78]; in men - HS (subgroup 1 -50.0%, subgroup 2 - 38.6%) [p=0.86]. Severe pain (6-8 points - b28013.3)

prevailed in 47.9% of patients, moderate pain syndrome (4-6 points - b28013.2) was typical for 63.6% of patients. Mild pain (1-3 points - b28013.1) was noted only by 10.0% of the patient.

Table 4

Severity of pain syndrome in patients with pain in the lower back based on the ICF.

ICF Code/VAS Score	Groups / subgroups (abs./%)						Total
	OG -1	OG -2	OG -3	HS -1	HS -2	HS -3	
* b28013.0 0	0	0	0	0	0	0	0
b28013.1 1--3	0	0	0	0	0	2/10,0	2/1,1
b28013.2 4--5	14/29,2	9/39,1	15/42,9	10/62,5	28/63,6	9/45,0	85/45,7
b28013.3 6--8	23/47,9	8/34,8	17/48,5	5/31,2	16/36,4	9/45,0	78/41,9
b28013.4 9--10	11/22,9	6/26,1	3/8,6	1/6,3	0	0	21/11,3
p	0,56		0,42		0,05		
* The results of the VAS score test (from 0 to 10) were encoded into the b28013 ICF domain “back pain” (with categories from .0 to .4) in the following ratio: 0 points (no pain) – b28013.0 1-3 points (mild pain)– b28013.1 4-5 points (moderate pain) – b28013.2 6-8 points (severe pain)– b28013.3 9-10 points (maximum possible pain) – b28013.4							

The data in Table 4 confirm that patients with an acute course of the pain syndrome are characterized by severe pain, with a chronic course - moderately severe pain.

The mobility function (b7108 according to the ICF) of the spinal motion segments (SMS) of the lumbosacral spine in the examined patients with LBP before treatment was assessed taking into account the

vertebral neurological and manual examinations and was coded into the ICF domain (joint mobility functions, others specified). The results are presented in table 5.

All 100% of the examined patients with LBP revealed the presence of functional blocking of one or more motor segments of the lumbosacral region.

Table 5.

Assessment of the mobility of the spinal motion segments in patients with pain in the lower back based on the ICF

ICF code	Groups / subgroups (abs./%)						Total
	OG -1	OG -2	OG -3	GS-1	GS--2	GS--3	
b7108.0	0	0	0	0	0	0	0
b7108.1	7/14,6	2/8,7	3/8,6	1/6,3	7.15,9	1/15,9	21/11,3
b7108.2	28/58,3	16/69,6	26/74,3	12/75,0	23/52,3	9/45,0	114/61,3
b7108.3	10/20,8	4/17,4	5/14,3	3/18,7	10/22,7	7/35,0	39/21,0
b7108.4	3/6,3	1.4,3	1/2,8	0	4/9,1	3.9,1	12/6,4
p	0.81		0,87		0,44		

There was no significant statistical difference between the groups in terms of the degree of PDS mobility. It should be noted that in 72.6% of patients (135 people) a functional blockade of the SIJ was detected, in 68.1% (92 people) of them predominantly on the left side, and in 86.7% (117 people) of cases it was accompanied by the presence of one or more functional blockades of the PDS of the LI-SI level. The presence of one functional blockage was detected in 9.1% (17 people) of the examined patients. In 5.9% of patients (11 people),

the presence of 4 or more functional blockades was revealed. 61.3% of patients (114 people) had blockage of one SIJ and one PDS of the LIII-SI level.

The assessment of muscle strength (b7303 according to the ICF) of patients with LBP before treatment is presented in Table 6. The analysis of this criterion was carried out taking into account a six-point scale for assessing muscle strength.

Table 6.

Assessment of the function of muscle strength in patients with pain in the lower back from the positions of the ICF

ICF Code / Points	Groups / subgroups (abs./%)						Total
	OG -1	OG -2	OG -3	HS -1	HS -2	HS -3	
b7303.0 5	0	0	13/37,1	8/50,0	23/52,3	11/55,0	55/29,6
b7303.1 4	15/31,2	6/26,1	13/37,1	3/18,8	10/22,7	4/20,0	51/27,4
b7303.2 3	21/43,8	14/60,9	9/25,8	5/31,2	11/25,0	5/25,0	65/34,9
b7303.3 02. Jan	12/25,0	3/13,0	0	0	0	0	15/8,1
b7303.4 0	0	0	0	0	0	0	0
p	0,34		0,41		0,96		

The difference between the identified disorders in this domain in patients with an acute course (IA, IB) was established in comparison with patients with a chronic course (IIIA, IIIB), both in the main and in the control groups. All patients with an acute course (IA, IB) had a greater functional decrease in muscle strength due to intense pain, while more than half of the patients with a chronic course (IIIA - 52.3%, IIIB - 55.0%) did not have such disorders.

The indicator of muscle tone (b7353 according to the ICF) of the lumbosacral spine and lower extremities, as the most important component of the myofascial syndrome, in patients with LBP was assessed taking into account the muscle syndrome index (MIS) [42; 101] and coded into the ICF domain b7353 (Lower body muscle tone). The data are presented in table 7.

Table 7

Severity of myofascial syndrome in patients with low back pain based on ICF

ICF code / Points	Groups / subgroups (abs./%)						Total
	OG -1	OG -2	OG -3	HS -1	HS -2	HS -3	
b7353.0 0-1	0	0	0	0/0	0	0	0/0

b7353.1 2--3	8/16,7	6/26,1	19/54,3	9/56,2	15/34,1	2/10,0	59/31,7
b7353.2 4--5	19/39,6	8/34,8	11/31,4	6/37,5	22/50,0	15/75,0	81/43,6
b7353.3 6--8	21/43,7	9/39,1	5/14,3	1/6,3	7/15,9	3/15,0	46/24,7
b7353.4 9--10	0	0	0	0	0	0	0
p	0,64		0,0002		0,08		

There were no absolute disorders (b7353.4) in this domain among all examined patients. The subgroup with an acute course (IA - 43.7%, IB - 39.1%) became the leader in terms of the severity of myofascial syndrome (b7353.3). Moderate disorders (b7353.2) prevailed in patients with a chronic course (IIIA - 50.0%, IIIB - 75.0%). Mild disorders (b7353.1) were characteristic of 54.3% (IIA), 56.2% (IIB) of patients with subacute course (pIIA-IIIB=0.0002). Myofascial syndrome, as one of the leading components of the symptom complex of patients with LBP included in this study, was present in 100% of patients.

Thus, in patients with an acute course of LBP, a pronounced myofascial and pain syndrome was detected, in patients with a chronic course, psycho-emotional disorders predominated, which was taken into account when constructing a medical rehabilitation program.

CONCLUSION

Thus, structural disorders of the lumbar spine (s76002) were recorded in 85.5% of patients. Myofascial pain syndrome (b28013) was diagnosed in 100% of examined patients with pain in the lower back. In 95.7% of cases, pain was localized in the lumbosacral region; in 41.9% of cases, the pain radiated to the gluteal region, in 27.4% - to the thigh. Walking dysfunction (d4508) was observed in 97.3%, self-service (d5408) - in 96.8%, sitting (d4153) - in 88.2%. Functional limitation of mobility (b7108) in the joints of the lumbosacral region was detected in 100% of patients. Emotional disorders (b1263) were found in 58.6% of patients. The data obtained were taken into account when calculating the rehabilitation potential, establishing a rehabilitation prognosis, and developing an individual medical rehabilitation program.

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