THE EFFECTS OF COGNITIVE DYSFUNCTIONS ON THE ELDERLY PATIENTS WITH LOW BACK PAIN

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ABSTRACT:

The aim of this study is to estimate the importance of the mental factor in the functional regression of the elder patient, alongside the usual evaluation of the musculoskeletal system (assessment of joints, muscle testing, functional assessment) a psychological examination is needed which enables the accurate evaluation of the state of the cognitive functions. If these functions are intact, we can state that the functional regression is exclusively due to the decompensation of the musculoskeletal system, and the physical and kinetic treatment applied according to the classic methodology shall be sufficient and efficient for the functional recovery. However, if the cognitive functions are deteriorated, even in the slightest amount, the same recovery method is inefficient to help the patient regain his prior autonomy.
The aim of this study is to emphasize the negative effects of cognitive disorders, depression and anxiety in the evolution of pain, physical dysfunction, disabilities, drug intake and quality of life.
The efficiency of the rehabilitation program for elderly with low back pain in improving the pain, the physical dysfunction, disabilities, drug intake and quality of life depending on the psycho-sensorial compliance.

BACKGROUND:

The aim of this study was to assess the efficiency of the physical-kinetic rehabilitation program of elderly patients with low back pain and also to emphasize tha negative effect of cognitive disorders, depression and anxiety in the evolution of pain, physical dysfunction, disabilities, drug intake and quality of life.

In patients with low back pain is necessary, from early stages of evolution, a simultaneous treatment – therapy and rehabilitation.

Treatment and rehabilitation programs must be precocious conceived and applied immediatly after specifying the clinical-functional diagnosis.

It is also necessary to establish clear objectives; to accomplish those objectives adequate therapeutic methods must be used: pharmacological, physical-kinetic, surgical, psychological, social and educational methods.

OBJECTIVES:

Carying out a randomized, prospective study regarding the efficiency of the programme for physical and kinetic recovery using two groups of elderly patients with: LBP, radiculopathy, canal stenosis and operated disc herniation, with or without cognitive dysfunctions; usage of complex clinical and functional assessments and of social, according to the model of research based on evidence.
Identification of links between pain, physical dysfunction, cognitive dysfunction, disabilities, drug intake of elderly with low back pain; the role that the decrease of mental and cognitive compliance plays in emphasizing the decline of the physical functional ability, of gait, of the quality of life of these patients.

MATERIAL AND METHOD:

Having as model the recent studies corresponding to the demands of the "proof-based medicine", we used a series of numeric scales for each important clinico-functional parameter, which enabled us to calculate some initial scores at admission and final scores at discharge of patients. By comparing these partial and global scores and the difference between them, we were able to appreciate, as objective as possible, the results obtained after the treatment administered during the hospitalisation.

The clinico-functional parameters evaluated for all patients in all studied groups were represented by:

Pain

Since it is a defining basic parameter in this disease category, the following were evaluated in a particular way, using the visual analogue scale VAS (0-10):

- Intensity of dominating pains indicated by the patient in the moment of the test, by granting points (0-3): 0 – absence of pains, 1 point for 1-3 VAS values, 2 points for 4-7 VAS values, 3 points for 8-10 VAS values.
- Intensity of pains at rest, calculating the average between the values for sitting, clynostatism, with same evaluation mode with 0-3 points.
- Intensity of pains in orthostatism, with the same evaluation with 0-3 points.
- Intensity of pains upon movement, calculating the average between movements of the lumbar spine in flexion, in extension and during walking, with evaluation with 0-3 points.
- Intensity of pain at night.
- Intensity of pain on walking.

By the addition of the 6 values, we calculated a pain score which can be: between 0 and 18 points.

Physical dysfunctions

They were appreciated based on the evaluation of 5 clinical examination parameters:

- Muscular force, evaluated by testing the muscles in the affected territory, the resulted values (0-5) being evaluated with 0-3 points (value 5 = 0 points, value 4/4 plus = 1 point, values 3/4 minus = 2 points, values below 3 = 3 points);
- Lasègue (or similar) test, evaluated with 0-2 points (0 – negative, 1 – diminished between 45-90°, 2 – diminished below 45°)
- Static changes of the lumbar spine, including, scoliosis, disappearance of lordosis or lumbar hyperlordosis, evaluated with 0-1 points (0-absent, 1-present);
- Mobility of the lumbar spine in flexion, evaluated by the toe-ground contact index (IDS), with 0-3 points (0 – below 5 cm, 1 – between 6 and 10 cm, 2 – between 11 and 30 cm, 3 – over 30 cm);
- Achilles and patellar reflexes, appreciated together with 0-2 points (0-normal, 1-diminished or 2-absent at least one of them).

By the addition of the 5 evaluated parameters, we calculated for each patient the score of the physical dysfunctions, which can amount to 0-11 points.

Cognitive dysfunctions

They were appreciated based on the following tests:

- Cognitive function assessment using MMSE (Mini Mental Status Examination); the seriousness of the cognitive dysfunctions is indicated by scores: light difficulties – over 21 points; moderate difficulties – between 10 and 20 points; severe difficulties – below 9 points; the resulted values were evaluated as follows: 0 = no disorder (24-30 points), 1=light disorder (20-23 points), 2=moderate disorder (10-19 points); 3=severe disorder (<9 points).
- Depression was assessed using the Geriatric Depression Scale GDS (annexe 7.) GDS scale is a self-appreciation instrument, used for the assessment of the depression in the elderly, with no dementia; the resulted values were evaluated as follows: 0=no depression (<15 points); 1=light/moderate depression (15-22 points); 2=severe depression (over 22 points).
- Anxiety was assessed using the Zigmond-Snaith anxiety scale, the following scores being established: 0=no anxiety (<7 points); 1=light/moderate anxiety (8-10 points); 2=severe anxiety (over 11 points).

Disabilities

- Tinetti gait scale (annexe 6); the obtained scores were evaluated as follows: 0=normal (16 points), 1=light dysfunction (10-15 points); 2=average dysfunction (5-9 points); 3=severe dysfunction (<4 points).
- ADL was evaluated using a simplified scale (ADL_{24}). Based on the obtained score, ADL dysfunctions were evaluated with: 0=normal (60 points); 1=light dysfunctions (50-59 points); 2=average dysfunctions (35-49 points); 3=severe dysfunctions (< 35 points) (annexe 5).

Drug intake was evaluated with 0-1 points: on admission with 0 – no medicine, 1 – normal intake of anti-inflammatory drugs, on discharge with 0 – reduced intake or no intake, 1 – continuous intake.

Quality of life index

Considered as one of the most expressive indicators of the results obtained following a treatment programme, it was used in our prospective studies by cumulating the scores related to pain, disabilities, physical dysfunctions, drug intake.

General score

It sums up partial scores of pains, physical dysfunctions, disabilities, cognitive dysfunctions, drug intake , allowing the appreciation of results on admission, through the comparison of its final value, after the treatment, with that of the initial one (difference of final general score).

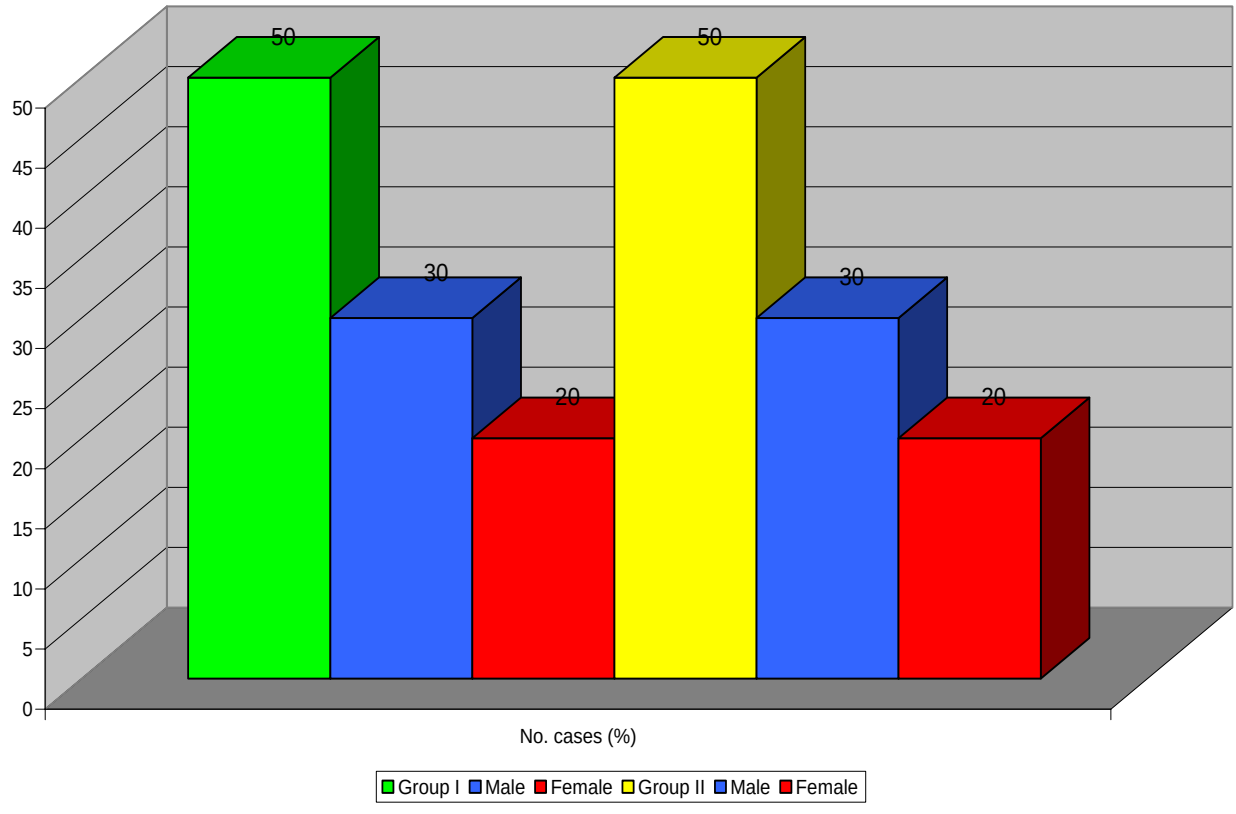
RESULTS AND DISCUSSIONS

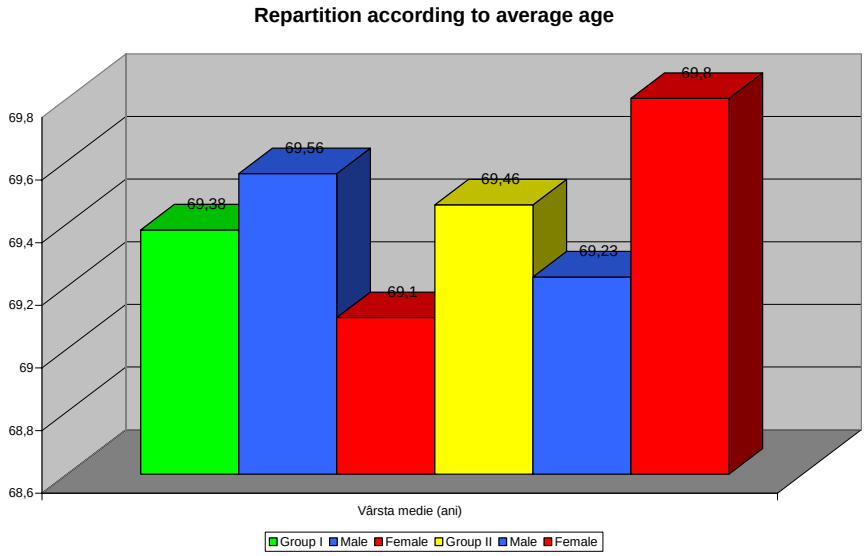
The two groups (group 1 – of study and group 2 – control group) include 50 patients each of both sexes, from different age groups and with diseases in the LBP group similar in terms of structure.

Group structure according to the average age and sex

	No. of cases (%)	Average age (years)	Minimum age	Maximum age
Group I	50 (100%)	69.38	61	83
Men	30 (60%)	69.56	62	83
Women	20 (40%)	69.10	61	81
Group II	50 (100%)	69.46	60	82
Men	30 (60%)	69.23	60	82
Women	20 (40%)	69.80	60	80

Repartition according to sex





The distribution of patients in the 2 groups, according to diagnostic groups, is presented in next table.

Group structure according to diagnostic groups

DG\ Group type	Study group No. - %	Control group No. - %	Total No. - %
Radiculopathies	13 – 26.0	14 – 28.0	27 – 27.0
L.B.P.	18 – 36.0	18 – 36.0	36 – 36.0
Operated disc herniation	10 – 20.0	9 – 18.0	19 – 19.0
Canal stenosis	9 – 18.0	9 – 18.0	18 – 18.0
Total	50 – 100.0	50 – 100.0	100 – 100.0

Group structures according to diagnostic groups were similar, the radiculopathies included 13 patients in group I, 14 patients in group 2; LBP included 18 patients in each group; the case of operated disc herniation were in number of 10 (group I), respectively 9 (group II), lumbar canal stenosis included 9 patients in each group.

Bearing in mind these characteristics concerning the repartition according to age and sex groups, average age and diagnostic groups in the 2 groups, it can be considered that they comply with the conditions of a randomised study, allowing the comparison of the results to be obtained.

In this prospective study, the discrimination between the 2 groups was realised following a screening based on the Folstein test: the control group (group 2) included the patients with a score higher than 15 points, the study group including the patients with a score lower than 15 points.

Treatment and recovery methodology was identical for the 2 groups, including electrotherapy applications of medium and low frequency which is antialgic and decontracting – miorelaxing (stereofrem, diadynamic currents, ultrasound), kinetotherapy based on Williams technique according to the clinical form and symptomatology, massage and, whenever considered indicated, anti-inflammatory and analgesic medication. Psychological counselling was also added to all patients selected according to the existence of some psychosocial risk factors, individual behavioural education with elements from the "back school" and social counselling for those with this type of problems.

Based on the data in the literature regarding the objective appreciation of the evolution of LBP-type vertebral diseases and sciatica radiculopathies (of the type of Oswestry, Roland – Morris, Waddel, Dallas or Quebec scales), in the performed prospective study, we intended to evaluate a large number of significant parameters for these diseases, which could allow the calculation of some general cumulated indices of pains, physical and cognitive dysfunctions, disabilities, to which we also added appreciations included

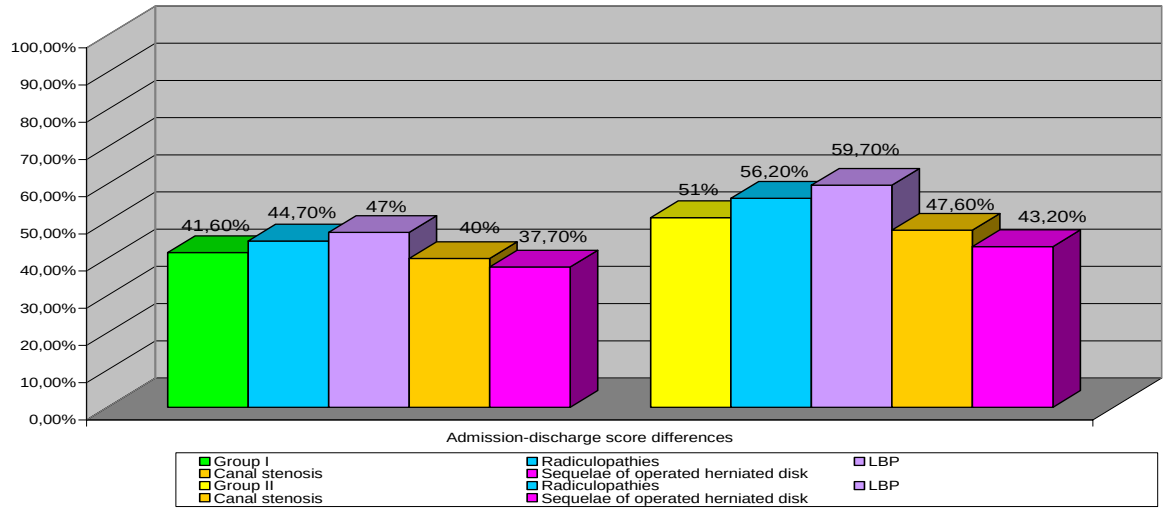
nowadays in the modern techniques of the proof-based medicine, regarding drug intake during the hospitalisation; finally, the result appreciation was made by the calculation of the difference between the general score on admission and the one on discharge, appreciated as a percentage, as well as some indices related to the life quality of the patients, calculated by adding the scores of pains, disabilities, physical dysfunctions and drug intake .

Pain

Evolution of the average pain score according to diagnostic groups

	No. of cases	Average scores		Admission-discharge score differences	Statistical significance
		Admission	Discharge		
Group 1	50	16.10	9.40	6.70 (41.6%)	p<0.001
Radiculopathies	13	16.07	8.87	7.20 (44.7%)	p<0.001
LBP	18	16.16	8.52	7.64 (47%)	p<0.001
Canal stenosis	9	16.11	9.60	6.51 (40%)	p<0.001
Sequelae of operated herniated disk	10	16.00	9.94	6.06 (37.7%)	p<0.001
Group II	50	15.92	7.80	8.12 (51%)	p<0.001
Radiculopathies	14	15.78	6.90	8.88 (56.2%)	p<0.001
LBP	18	15.94	6.42	9.52 (59.7%)	p<0.001
Canal stenosis	9	16.00	8.35	7.65 (47.6%)	p<0.001
Sequelae of operated herniated disk	9	16.00	9.06	6.94 (43.2%)	p<0.001

Pain – admission-discharge score differences



A comparative evaluation of the pain score showed an amelioration of 41.6% for group I, while for group 2, the amelioration reached 51% (a difference of 9.4%).

In patients with radiculopathies, pain amelioration was 44.7% (group 1), compared to 56.2% (group 2), (a difference of 11.5% in favour of group 2), a pain amelioration bigger than the group average being registered for both groups. In patients with LBP, pain score amelioration was 47% (group 1), compared to 59.7% (group 2), (a difference of 12.7% in favour of group 2). In patients with operated disc herniation, the pain amelioration score registered lower values reaching 37.7% (group 1), respectively 43.2% (group 2), (a difference of 5.5% in favour of group 2). In patients with canal stenosis, the pain score amelioration was of 40% (group 1), respectively 47.6% (group 2), (a difference of 7.6% in favour of group 2). In the diagnostic groups, the registered amelioration rates were, in decreasing order, for: LBP, radiculopathies, canal stenosis, operated disc herniation; in each diagnostic group, the amelioration was bigger than for group 2.

Physical dysfunctions

Muscular force

The amelioration rate amounted to 18.7% (group 1), compared to 27.7% (group 2), (a difference of 9%).

In patients with radiculopathies, the amelioration of muscular force was 14.9% for group 1, compared to 26.1% for group 2 (a difference of 11.2% in favour of group 2). Patients with LBP registered an amelioration rate of 31.7% for lot 1 and 44.1% for group 2 (a difference of 12.4% in favour of group 2). In patients with operated disc herniation, the amelioration was 4.5% for group 1 and 9.9% for group 2, a difference of 5.4% being registered in favour of group 2. In patients with lumbar canal stenosis, the amelioration rate was 15.3% for group 1 and 20.3% for group 2 (a difference of 5% in favour of group 2). For the muscular force, the biggest amelioration rates were registered for LBP, radiculopathy, canal stenosis, operated disc herniation, in decreasing order.

Static disorders of the lumbosacral spine

The amelioration rate of static disorders reached 51.2% - group 1 - and 62.7% - group 2, a difference of 11.5% being registered in favour of group 2. Patients with radiculopathies registered amelioration rates of 47% - group 1 and 58% - group 2 (a difference of 11% in favour of group 2). In patients with LBP, the amelioration was 73% for group 1, respectively 84% for group 2. In patients with operated disc herniation, the rates were 20% - group 1, respectively 33% - group 2. In patients with canal stenosis, the amelioration had 28% for group 1, 40% for group 2 (a difference of 12% in favour of group 2).

IDS

The registered amelioration rate was 37.3% - group 1, compared to 48.2% - group 2 (a difference of 10.9% in favour of group 2). Patients with radiculopathies registered an amelioration of 55.8% for group 1 and 67.5% for group 2 (a difference of 11.7% in favour of group 2). Patients with operated disc herniation had ameliorations of 23% for group 1, compared to 34.9% for group 2. Patients with lumbar canal stenosis had an amelioration of 29.2% for group 1 compared to 40.9 for group 2.

Lasègue

The amelioration rate was 22.6% for group 1, compared to 30% for group 2 (a difference of 7.4% in favour of group 2).

Patients with radiculopathies registered an amelioration of 22.4% for group 1 compared to 31.8% for group 2 (a difference of 9.4% in favour of group 2). Patients with operated disc herniation registered an amelioration of 16.7% for group 1, compared to 20% for group 2, and those with canal stenosis had an amelioration rate of 28.5% for group 1, compared to 33.3% for group 2.

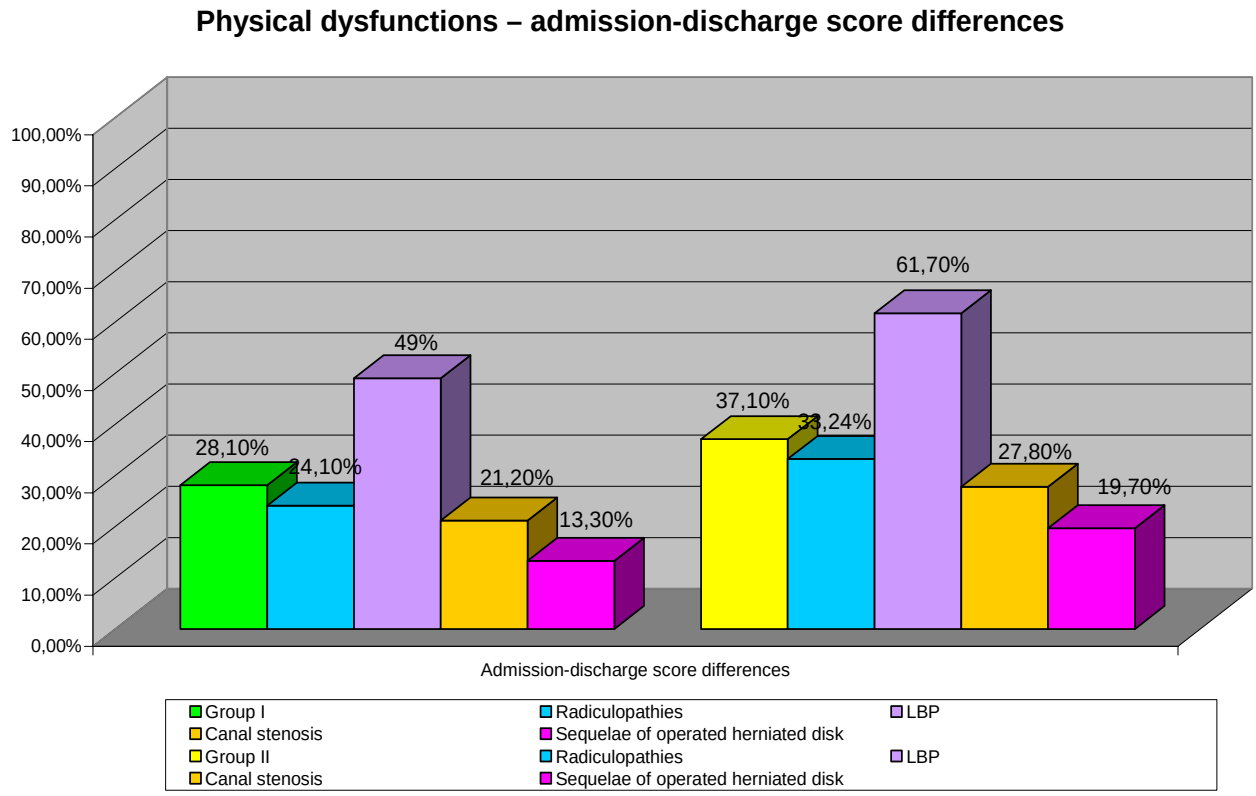
Osteo-tendinous reflexes

They diminished in 23 patients in each group, remaining unchanged following the treatment.

Score of cumulated physical dysfunctions

Evolution of the score of physical dysfunctions according to the diagnostic groups

	No. of cases	Average scores		Admission-discharge score differences	Statistical significance
		Admission	Discharge		
Group I	50	6.48	4.66	1.82 (28.1%)	p<0.001
Radiculopathies	13	7.98	6.05	1.93 (24.1%)	p<0.001
LBP	18	4.99	2.54	2.54 (49%)	p<0.001
Canal stenosis	9	6.17	4.86	1.31 (21.2%)	N.S.
Sequelae of operated herniated disk	10	7.30	6.40	0.90 (13.3%)	N.S.
Group II	50	6.30	3.96	2.34 (37.1%)	p<0.00l
Radiculopathies	14	7.76	5.18	2.58 (33.24%)	p<0.001
LBP	18	4.76	1.82	2.94 (61.7%)	p<0.001
Canal stenosis l	9	5.97	4.31	1.66 (27.8%)	N.S.
Sequelae of operated herniated disk	9	7.31	5.87	1.44(19.7%)	N.S.



The score of physical dysfunctions ameliorated by 28.1% for group 1, compared to 37.1% for group 2, after the hospitalisation period of 2 weeks (a difference of 9% in favour of group 2).

In patients with radiculopathies, the results were of 24.1% for group 1, compared to 33.2% for group 2, being lower than the group average. In patients with LBP, the amelioration was 49% for group 1, compared to 61.7% for group 2, values much bigger than the group average. In patients with operated disc herniation, the amelioration was 12.3% for group 1, compared to 19.7% for group 2, while the patients with lumbar canal stenosis registered ameliorations of 21.2% for group 1, compared to 27.8% for group 2.

Regarding the results obtained in the score of physical dysfunctions, the biggest amelioration rates were registered in patients with LBP, followed in decreasing order by those with radiculopathies, lumbar canal stenosis and operated disc herniation. A comparison between the 2 groups indicated superior ameliorations obtained for group 2.

Cognitive dysfunctions

MMSE

Patients in group 1 registered an amelioration of 35.6%, compared to those in group 2 in which the amelioration was 46% (a difference of 10.4% in favour of group 2).

Patients with radiculopathies registered an amelioration of 42.5% for group 1 and 52% for group 2; in patients with LBP, the amelioration rate was 50.3% for group 1 and 64% for group 2 (a difference of 13.7% in favour of group 2), these values being bigger than the group average. In case of patients with operated disc herniation, the amelioration was 12.5% for group 1 and 20% for group 2, and in patients with lumbar canal stenosis, the rates were 28.3% for group 1, compared to 36% for group 2 (a difference of 9.7% in favour of group 2).

Depression

Registered ameliorations were 33.9% for group 1, compared to 39.3% for group 2 (a difference of 5.4% in favour of group 2).

Patients with radiculopathies registered amelioration rates of 41.5% for group 1, compared to 47.3% for group 2 (a difference of 5.8% in favour of group 2). Patients with LBP showed ameliorations of 52% for group 1, compared to 60% for group 2. Patients with operated disc herniation registered values of 9.5 for group 1, compared to 13% for group 2. In patients with lumbar canal stenosis, the amelioration rate was 21.5% for group 1, compared to 28% for group 2 (a difference of 6.5% in favour of group 2).

Anxiety

Amelioration rate in patients in group 1 was 42.4%, compared to 55.9% in group 2, (a difference of 13.5% in favour of group 2).

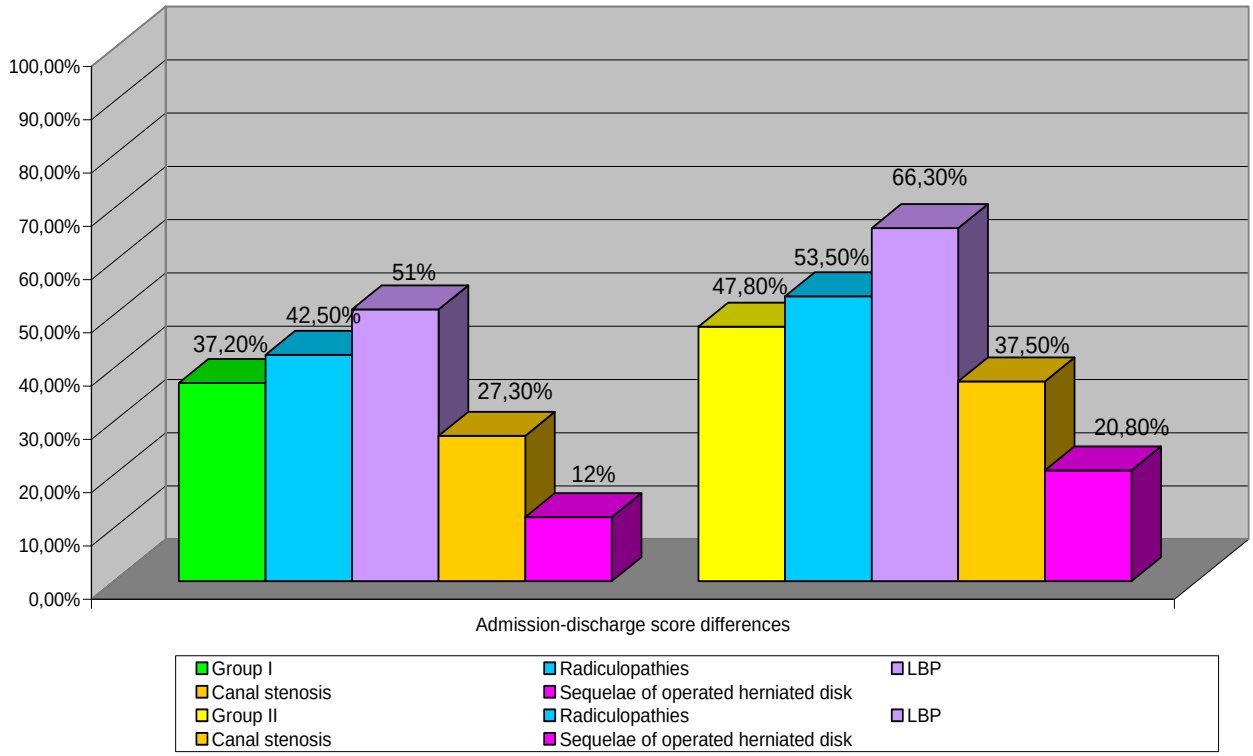
Patients with radiculopathies registered ameliorations of 46.9% for group 1, compared to 59% for group 2 (a difference of 12.1% in favour of group 2). In patients with LBP, ameliorations were 56.8% for group 1, compared to 72.2% for group 2 (a difference of 15.4% in favour of group 2). Patients with operated disc herniation showed an amelioration rate of 16.6% for group 1, compared to 32% for group 2 (a difference of 15.4% in favour of group 2). In patients with lumbar canal stenosis, the registered rate was 36.8% for group 1, compared to 48% for group 2 (a difference of 11.2% in favour of group 2).

Score of cognitive dysfunctions

Evolution of cognitive dysfunctions according to diagnostic groups

	No. of cases	Average scores		Admission-discharge score differences	Statistical significance
		Admission	Discharge		
Group I	50	3.82	2.40	1.42 (37.2%)	N.S.
Radiculopathies	13	3.76	2.15	1.61 (42.5%)	N.S.
LBP	18	3.65	1.78	1.87 (51%)	N.S.
Canal stenosis	9	3.99	2.89	1.10 (27.3%)	N.S.
Sequelae of operated herniated disk	10	4.00	3.51	0.49 (12%)	N.S.
Group II	50	1.80	0.94	0.86 (47.8%)	p<0.01
Radiculopathies	14	1.92	0.89	1.03 (53.5%)	p<0.01
LBP	18	1.55	0.52	1.03 (66.3%)	p<0.01
Canal stenosis	9	1.87	1.16	0.71 (37.5%)	N.S.
Sequelae of operated herniated disk	9	1.87	1.48	0.39 (20.8%)	N.S.

Cognitive dysfunctions - admission-discharge score differences



The score of cognitive dysfunctions registered an amelioration of 37.2% for group 1, compared to 47.8% for group 2 (a difference of 10.6% in favour of group 2).

Patients with radiculopathies registered amelioration rates of 42.5% for group 1, compared to 53.5% for group 2 (a difference of 11% in favour of group 2). Patients with LBP registered values of 51% for group 1, compared to 66.3% for group 2 (a difference of 15.3% in favour of group 2). In case of patients with operated disc herniation, the amelioration reached 12% for group 1, compared to 20.8% for group 2 (a difference of 8.8% in favour of group 2). In patients with lumbar canal stenosis, the amelioration was 27.3% for group 1, compared to 37.5% for group 2 (a difference of 10.2% in favour of group 2).

As regards the results obtained in the score of the cumulated cognitive dysfunctions, the highest amelioration rates were registered in patients with LBP, followed in decreasing order by those with radiculopathies, lumbar canal stenosis, operated disc herniation; higher ameliorations were registered for group 2.

Disabilities

Tinetti gait

The amelioration rate was 44.1% for group 1, compared to 51.6 for group 2 (a difference of 7.5% in favour of group 2).

In patients with radiculopathies, the amelioration rate reached 58% for group 1, compared to 67.3% for group 2 (a difference of 9.3% in favour of group 2). In case of patients with LBP, the amelioration was 74.6% for group 1, compared to 82.4% for group 2, with a difference of 7.8% in favour of group 2. In patients with operated disc herniation, the amelioration was 9% for group 1, compared to 15.7% for group 2 (a difference of 6.7% in favour of group 2). Patients with lumbar canal stenosis registered ameliorations of 22% for group 1, compared to 28% for group 2 (a difference of 6% in favour of group 2). The highest amelioration rates were registered in patients with LBP and the lowest in patients with operated disc herniation.

ADL

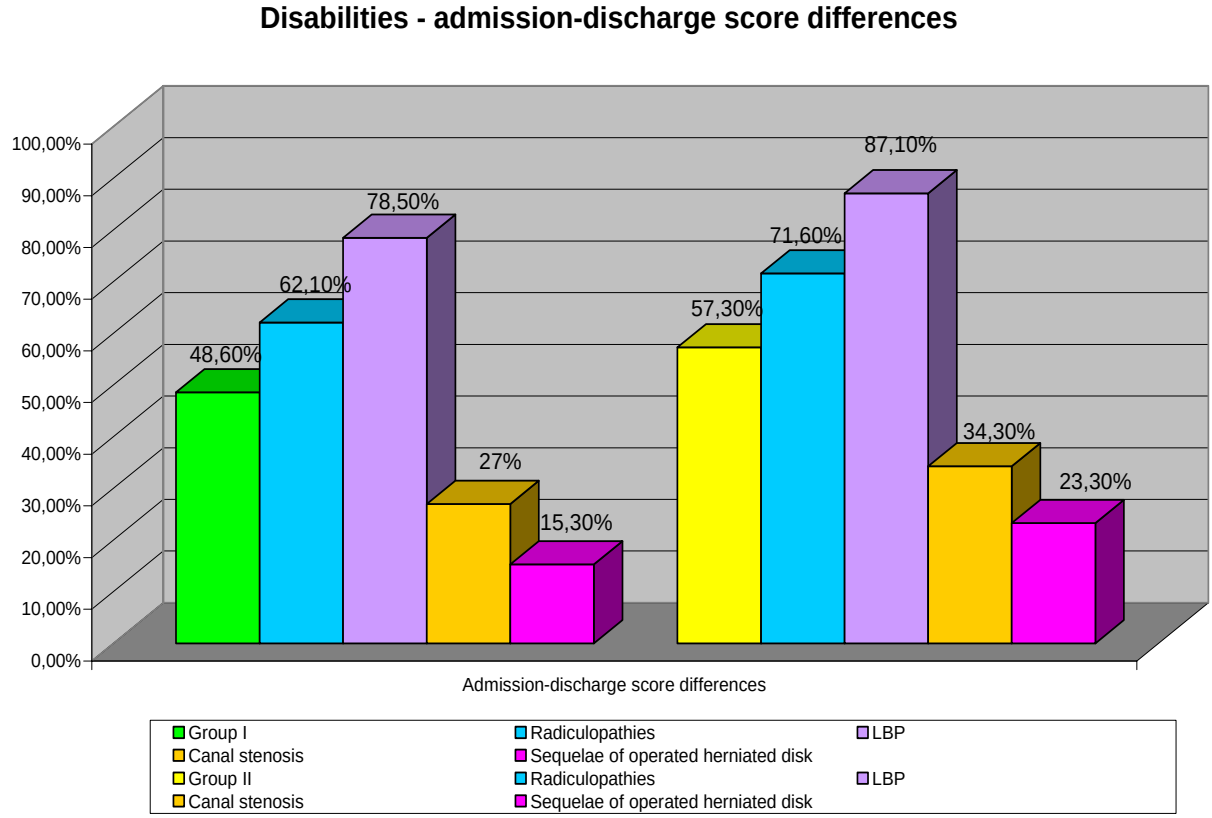
Patients in group 1 registered ameliorations of 53.3%, compared to patients in group 2 in which the registered value was 63.2% (a difference of 9.9% in favour of group 2).

Patients with radiculopathies showed an amelioration rate of 66.2% for group 1, compared to 75.4% for group 2; patients with LBP registered values of 82.7% for group 1, compared to 92.3% for group 2 (a difference of 9.6% in favour of group 2). Patients with operated disc herniation showed an amelioration of 21.8% for group 1, compared to 31.7% for group 2. In patients with lumbar canal stenosis, the amelioration was 31.5% for group 1, compared to 40.9% for group 2 (a difference of 9.4% in favour of group 2). As regards the ADL score, the highest ameliorations were obtained by patients with LBP and the lowest by patients with operated disc herniation.

Disabilities score

Evolution of disabilities score for the 2 groups according to diagnostic groups

	No. of cases	Average scores		Admission-discharge score differences	Statistical significance
		Admission	Discharge		
Group I	50	3.66	1.88	1.78 (48.6%)	p<0.001
Radiculopathies	13	3.92	1.47	2.45 (62.1%)	N.S.
LBP	18	2.94	0.62	2.32 (78.5%)	p<0.001
Canal stenosis	9	4.00	2.89	1.11 (27%)	N.S.
Sequelae of operated herniated disk	10	4.30	3.61	0.69 (15.3%)	N.S.
Group II	50	3.56	1.52	2.04 (57.3%)	p<0.01
Radiculopathies	14	3.49	0.99	2.50 (71.6%)	p<0.01
LBP	18	2.94	0.38	2.56 (87.1%)	p<0.01
Canal stenosis	9	3.88	2.55	1.33 (34.3%)	N.S.
Sequelae of operated herniated disk	9	4.33	3.32	1.01 (23.3%)	N.S.



The amelioration registered values of 48.9% for group 1, compared to 57.3 for group 2 (a difference of 8.7% in favour of group 2).

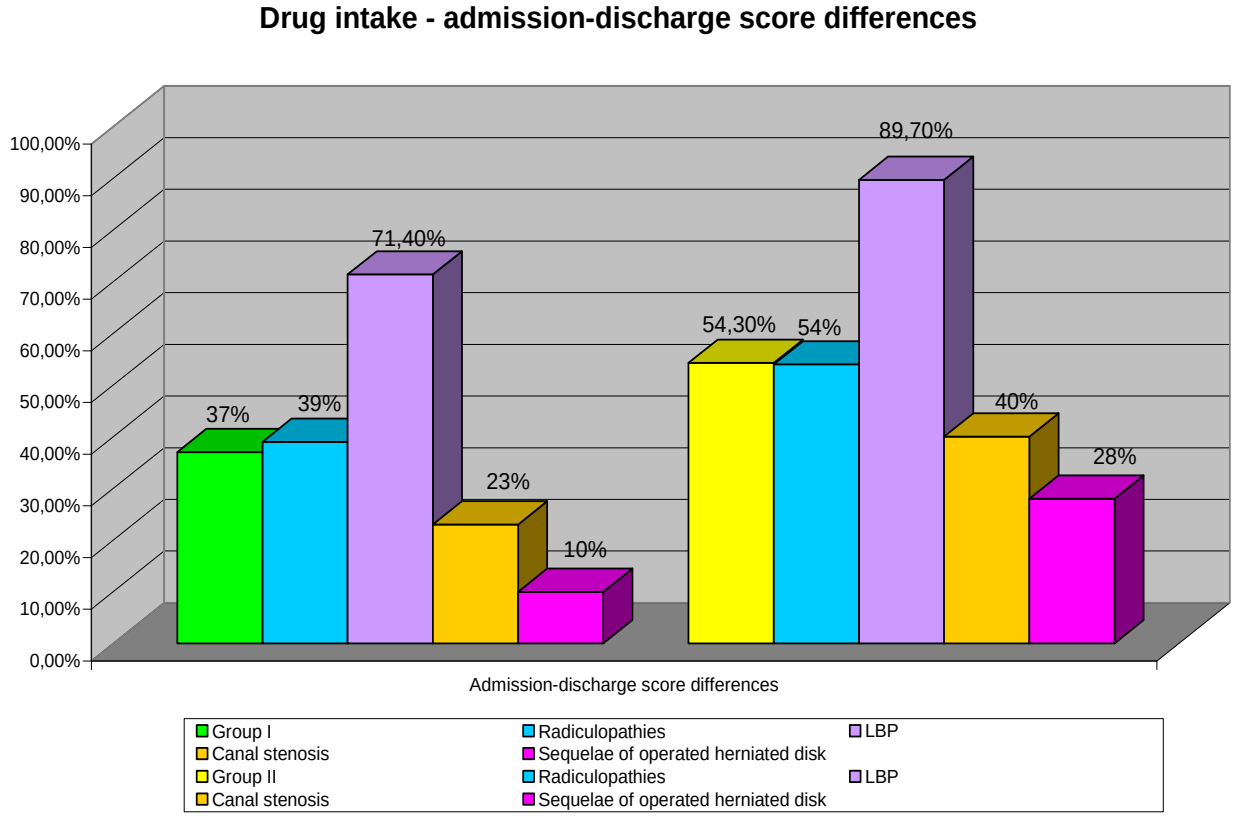
Patients with radiculopathies obtained ameliorations of 62.1% for group 1 and 71.6% for group 2; those with LBP obtained the highest ameliorations rates: 78.5% for group 1 and 87.1% for group 2. Patients with operated disc herniation registered ameliorations of 15.3% for group 1 and 23.3% for group 2 and those with lumbar canal stenosis registered values of 27% for group 1 and 34.3% for group 2.

As regards the results obtained in the general disabilities score, the highest amelioration rates were registered in patients with LBP, followed by those with radiculopathy, canal stenosis, operated disc herniation; in group 2, the amelioration rate was superior to the obtained in group 1.

Drug intake

Evolution of drug intake according to diagnostic groups

	No. of cases	Average scores		Admission-discharge score differences	Statistical significance
		Admission	Discharge		
Group I	50	0.92	0.58	0.34 (37%)	p<0.001
Radiculopathies	13	1.00	0.61	0.39 (39%)	N.S.
LBP	18	0.77	0.22	0.55 (71.4%)	p<0.001
Canal stenosis	9	1.00	0.77	0.23 (23%)	N.S.
Sequelae of operated herniated disk	10	1.00	0.90	0.10 (10%)	N.S.
Group II	50	0.92	0.42	0.50 (54.3%)	p<0.01
Radiculopathies	14	1.00	0.46	0.54 (54%)	p<0.01
LBP	18	0.77	0.08	0.69 (89.7%)	p<0.01
Canal stenosis	9	1.00	0.60	0.40 (40%)	N.S.
Sequelae of operated herniated disk	9	1.00	0.72	0.28 (28%)	N.S.



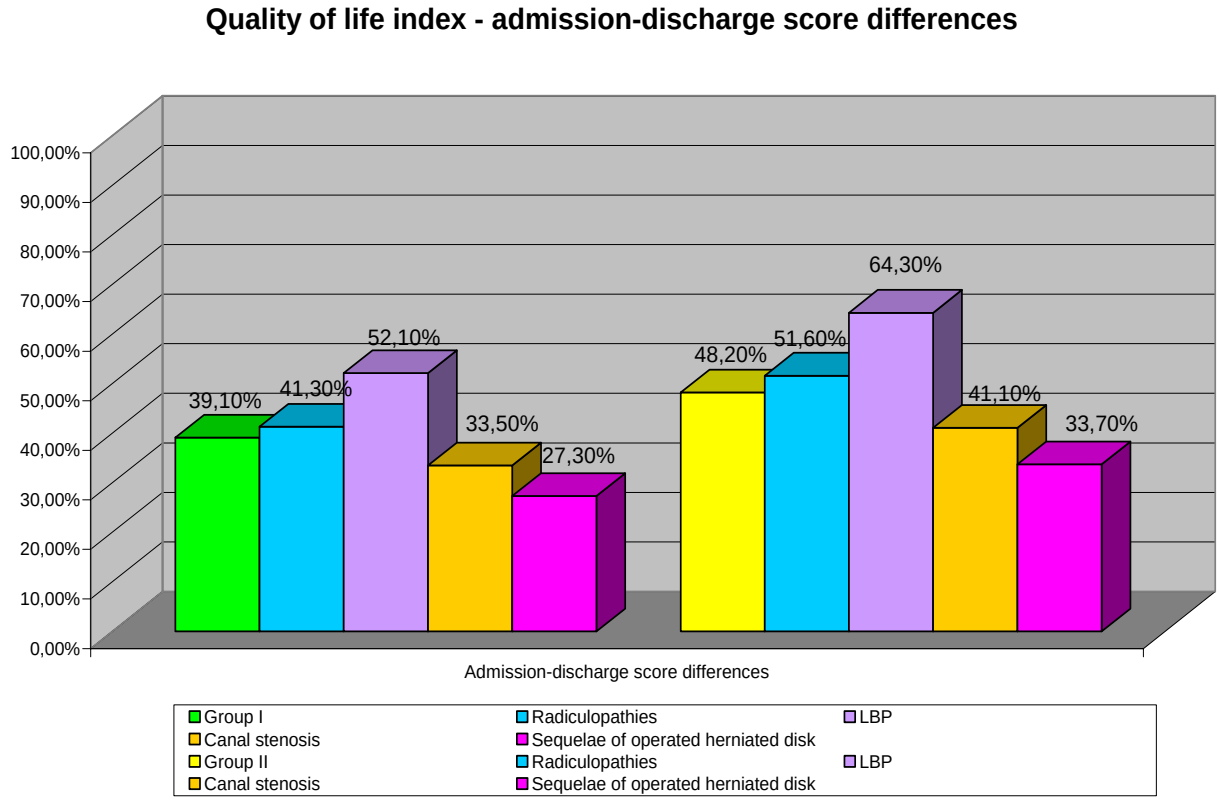
In patients with radiculopathies, the best results were obtained - ameliorations of 71.4% for group 1 and 89.7% for group 2; in patients with LBP, the results were 39% for group 1, compared to 54% for group 2. In those with operated disc herniation, the amelioration was 10% for group 1, compared to 28% for group 2; patients with lumbar canal stenosis showed an amelioration rate of 23% for group 1 and 40% for group 2. The lowest amelioration regarding the drug intake was obtained by patients with operated disc herniation in group 1.

Due to the fact that all patients were using NSAIDs and antialgic drugs before the admission, the reduction of used drug dose or the cession of drug intake in 37% of the patients in group 1 and in 54.3% of the patients in group 2 is a significant indicator of clinico-functional ameliorations.

Quality of life index

Evolution of quality of life index according to diagnostic groups

	No. of cases	Average scores		Admission-discharge score differences	Statistical significance
		Admission	Discharge		
Group I	50	27.14	16.52	10.62 (39.1%)	p<0.001
Radiculopathies	13	28.97	17.00	11.97 (41.3%)	p<0.001
LBP	18	24.86	11.90	12.96 (52.1%)	p<0.001
Canal stenosis	9	27.28	18.12	9.16(33.5%)	p<0.05
Sequelae of operated herniated disk	10	28.71	20.85	7.86 (27.3%)	p<0.05
Group II	50	26.74	13.84	12.9 (48.2%)	p<0.001
Radiculopathies	14	27.90	13.49	14.41 (51.6%)	p<0.001
LBP	18	24.41	8.70	15.71 (64.3%)	p<0.001
Canal stenosis	9	26.85	15.81	11.04 (41.1%)	p<0.05
Sequelae of operated herniated disk	9	28.64	18.97	9.67 (33.7%)	p<0.05



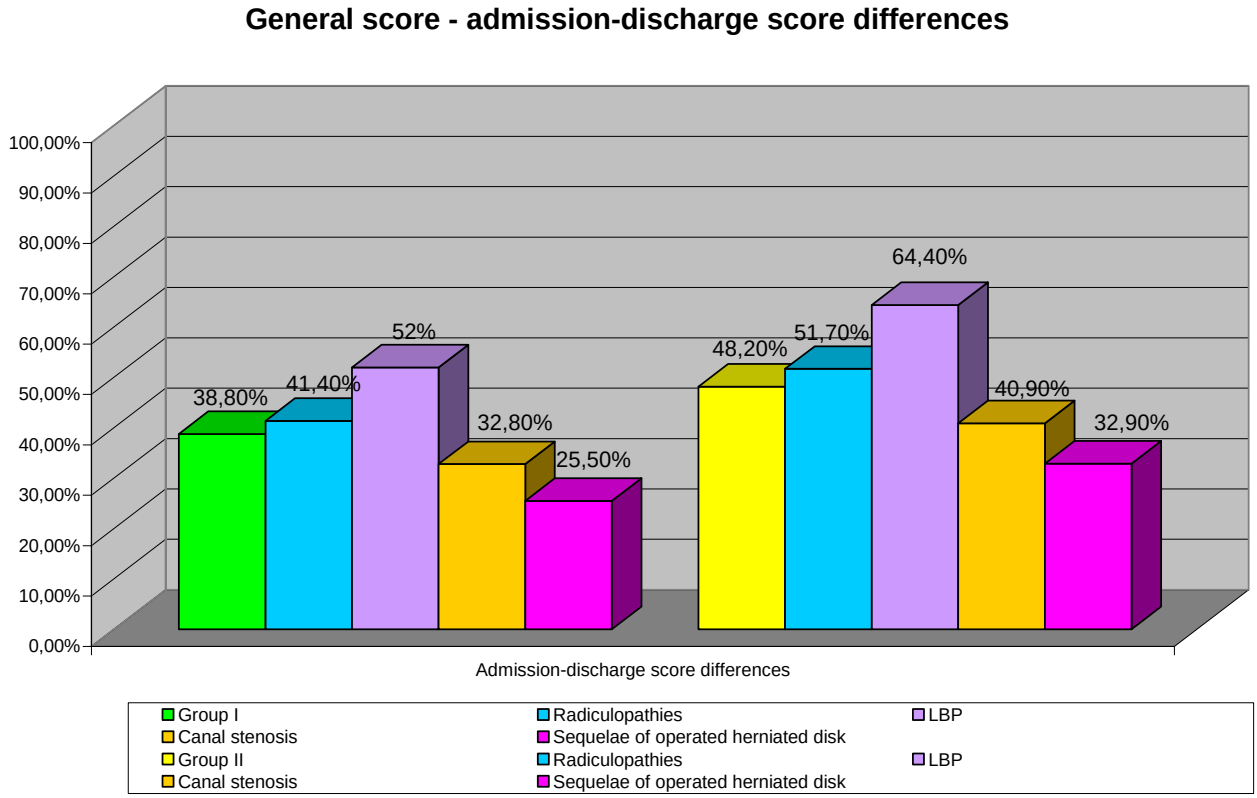
This index was improved significantly for both groups, with 39.1% for group 1 and 48.2% for group 2 (a difference of 9.1% in favour of group 2).

The highest amelioration of this indicator was obtained in patients with LBP: 52.1% for group 1 and 64.3% for group 2 (a difference of 12.2% in favour of group 2); patients with radiculopathy followed who registered ameliorations of 41.3% for group 1, compared to 51.6% for group 2 (a difference of 10.3% in favour of group 2). Patients with lumbar canal stenosis registered lower ameliorations: 33.5% for group 1, compared to 41.1% for group 2 (a difference of 7.6% in favour of group 2). The lowest ameliorations were shown in patients with operated disc herniation: 27.3% for group 1 and 33.7% for group 2 (a difference of 6.4% in favour of group 2).

General score

Evolution of general score according to disease groups

	No. of cases	Average scores		Admission-discharge score differences	Statistical significance
		Admission	Discharge		
Group I	50	30.96	18.94	12.02 (38.8%)	p<0.001
Radiculopathies	13	32.73	19.15	13.58 (41.4%)	p<0.001
LBP	18	28.51	13.68	14.83 (52%)	p<0.00l
Canal stenosis	9	31.27	21.01	10.26 (32.8%)	p<0.05
Sequelae of operated herniated disk	10	32.71	24.36	8.35 (25.5%)	p<0.05
Group II	50	28.52	14.78	13.74 (48.2%)	p<0.001
Radiculopathies	14	29.82	14.38	15.44 (51.7%)	p<0.001
LBP	18	25.96	9.22	16.74 (64.4%)	p<0.001
Canal stenosis	9	28.72	16.97	11.75 (40.9%)	p<0.05
Sequelae of operated herniated disk	9	30.51	20.45	10.06 (32.9%)	p<0.05



The amelioration rate was 38.8% for group 1, compared to 48.2% for group 2 (a difference of 9.4% in favour of group 2).

The highest amelioration rates were obtained by patients with LBP: 52% for group 1 and 64.4% for group 2 (a difference of 12.4% in favour of group 2). In decreasing order followed patients with radiculopathy who registered ameliorations of 41.4% for group 1 and 51.7% for group 2 (a difference of 10.3% in favour of group 2). In patients with lumbar canal stenosis, the obtained ameliorations were 32.8% for group 1 and 40.9% for group 2 (a difference of 8.1% in favour of group 2). The lowest ameliorations were registered in patients with operated disc herniation: 25.5% for group 1, compared to 32.9% for group 2 (a difference of 7.4% in favour of group 2).

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CONCLUSIONS:

The results obtained prove without doubt the significant improvement of gait disorders after applying some recovery programmes for elderly with LBP, this improvement being significant only for the group of elderly with no cognitive disorders. By observing a wide range of clinical and functional parameters, these studies bring reasons, proofs, in favour of the efficiency of recovery in elderly patients with low back pain.

Higher percentages recorded at the control group (without cognitive disorders) highlighted the negative effects of cognitive disorders, depression and anxiety in the evolution of the score for the parameters that we mentioned above.

The efficiency of the rehabilitation program for elderly with low back pain in improving the pain, the physical dysfunction, disabilities, drug intake and quality of life depending on the psycho-sensorial compliance

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