

## REHABILITATION THERAPY VERSUS DRUG THERAPY IN PATIENTS WITH LUMBAR DISC DEGENERATION

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### Abstract

*Lumbar disc degeneration is a disorder whose clinical manifestations are represented by episodic pain in the lumbar spine, without lumbar blockage and minor muscle contraction. Because lumbalgia caused by lumbar disc degeneration is not always very high intensity pain, the easiest to apply treatment is drug therapy. The aim of this study was to analyze the potential role of rehabilitation treatment in the recovery of patients and the prevention of complications compared to drug therapy alone. The study included 28 patients (17 women and 11 men) aged between 23-60 years, assigned to two groups: 20 patients who received rehabilitation treatment (consisting of massage, kinesiotherapy, hydrokinesiotherapy, electrotherapy and medication) and 8 patients who received drug treatment consisting of anti-inflammatory and analgesic drugs. The treatment duration was 10 days. For the evaluation of pain, the visual analogue scale was used, for the degree of disability, the Oswestry questionnaire, and for joint mobility and muscle strength, articular and muscular testing. At the end of treatment, the study group compared to the control group had a statistically significant result for pain ( $p=0.001$ ), as well as for the Oswestry score ( $p=0.030$ ). The mean age of the patients was  $35.51\pm 3.026$ , which shows an increased incidence among young adults. A possible connection between the development of the disease in women and age less than 45 years was also investigated, but the result was not statistically significant,  $p=0.22$ . Our data suggest the fact that rehabilitation treatment plays an important role in the reduction of pain and the improvement of the quality of life of patients with lumbar disc degeneration by decreasing the degree of disability. In the future, it can be proposed to monitor patients with lumbar disc degeneration over a longer time period in order to see the effects of kinetic rehabilitation programs in relation to the delay of chronicization. As studies show, genomic medicine is gaining ground and in the future we will probably witness genetic testing for lumbar disc disease and lumbosciatica, which will allow for personalized treatment.*

### Keywords

low back pain, lumbar disc degeneration, drug therapy in lumbar pain, medical rehabilitation in lumbar disc degeneration

## Introduction:

Lumbalgia is a major health problem, with medico-social as well as economic implications. One of the diseases that cause lumbalgia is lumbar disc degeneration, in which pain is not very intense, but annoying, followed by a remission episode and later, an acute lumbar blockage phase, with intense pain and significant functional loss [1-3].

The prevalence of low back pain is 60-80%, so an individual will have at least one lumbalgia episode during the course of life [4, 5].

The increasing incidence of lumbalgia in the young population has oriented researches towards finding generating factors of the disease, by moving from a biomechanical, psychosocial and economic level to a genetic level. Thus, recent studies show associations between lumbar disc disease and the mutation of genes encoding the  $\alpha$ -2 and  $\alpha$ -3 subunits of collagen IX. The  $\alpha$ -2 sequence variation has been associated with dominantly inherited lumbar disc disease and the  $\alpha$ -3 variation with an increased risk of sciatica, being the first genetic factor for lumbar disc disease [6, 7].

The efficiency of both drug therapy and rehabilitation therapy on low back pain is known, so there is a wide basis for fighting pain [8]. All this leads to searching for the best treatment method with the most effective results in delaying the onset and development of disability.

**The objectives of the study** were to show the importance and the role of administering rehabilitation therapy compared to drug therapy and to improve the medical education of patients.

## Material and method

The study included 28 patients (17 women and 11 men) aged between 23 and 60 years, diagnosed with lumbalgia caused by lumbar disc degeneration, which were assigned to two groups. The study group consisted of 20 patients with a mean age and SE of  $37.65 \pm 2.76$ , who received rehabilitation therapy and drug therapy, and the control group comprised 8 patients with a mean age and SE of  $33.37 \pm 3.11$ , who only received drug therapy. The environment of origin was in a proportion of 85% urban and 15% rural for the study group, and 100% urban for the control group. This was a prospective study, carried out at the Clinical Rehabilitation Hospital in the period January 2013 – July 2013.

In order to assess the disability degree, the Oswestry questionnaire was used, and for the evaluation of pain, the Visual Analogue Scale (VAS). For joint mobility, articular testing was performed for flexion, extension, lateral inclinations and rotations, and for muscle strength, muscular testing was carried out. Evaluation was performed two times, before the initiation of treatment and after its completion.

For both groups, the treatment duration was 10 days. The treatment of the study group consisted of antiinflammatory and analgesic medication and massage, kinesiotherapy, hydrokinesiotherapy, electrotherapy procedures (interferential currents/ultrasound/Tens), and for the control group, medication comprised analgesics and antiinflammatory drugs.

In order to help the patients better understand the importance of the exercises, they were informed through informative flyers about rules for back protection from the school of the back.

Statistical analysis was carried out with SPSS 20.0 for Windows, using the  $\chi^2$  test for qualitative data and Student t test for quantitative data.

## Results

After the completion of treatment, the mean  $\pm$  SE of the Oswestry questionnaire score in the study group was  $22.4 \pm 0.81$  compared to  $26.75 \pm 1.01$  before the initiation of treatment. In the same group, the visual analogue scale values were  $3.5 \pm 0.25$  compared to  $5.4 \pm 0.26$ .

In the control group, the results of the Oswestry questionnaire were  $32.25 \pm 0.59$  compared to  $31.75 \pm 0.958$  before the beginning of treatment, and for VAS,  $6.25 \pm 0.31 - 5.87 \pm 0.22$ .

Articular testing and muscular testing had normal values in both groups both before and after treatment.

The Oswestry questionnaire values were statistically significantly higher in the study group compared to the control group,  $p=0.030$  (Fig. 1) and VAS values were statistically significant,  $p=0.001$  (Fig. 2).

The mean age and SE of the two groups was  $35.51 \pm 3.026$  (Fig. 3).

A correlation was made between the development of the disease in women and age less than 45 years, but the result was not statistically significant  $p=0.22$  (Fig. 4).

The urban environment and female sex were the most frequently affected by lumbalgia.

## Conclusions

The reduction of pain and the improvement of the physical status of the patients were the main benefits of treatment.

This study attempted to show that drug therapy associated with medical rehabilitation therapy has a better effect on the improvement of the quality of life of the patients. In order to see whether there is a connection between the early administration of rehabilitation treatment and the delay of complications in lumbar disc disease, further investigations are proposed.

Young adults are the most affected by lumbar disc disease.

The urban environment proves to be the place where lumbar disc disease is the most frequent, probably because of the diversity of professions found here.

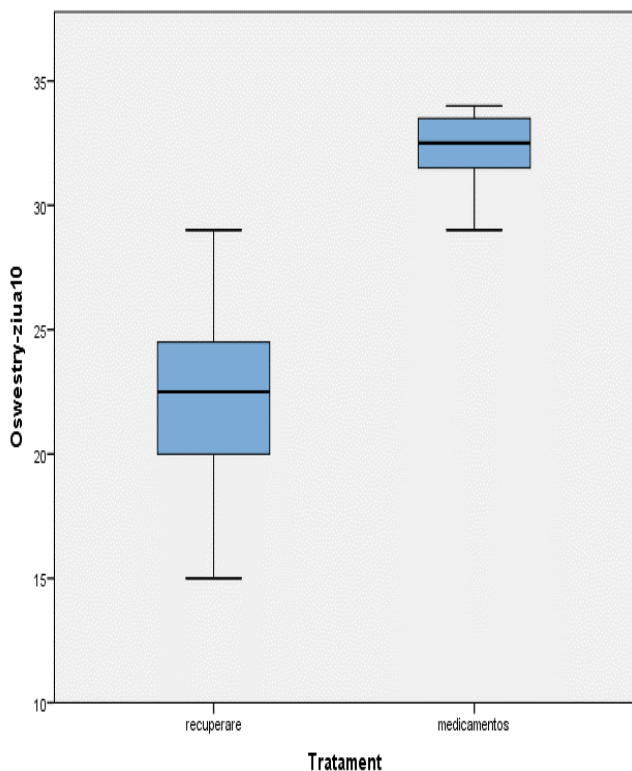
As studies show, genomic medicine is gaining ground and in the future we will probably witness genetic testing for lumbar disc disease and lumbosciatica, which will allow for personalized treatment.

## Limitations of the study

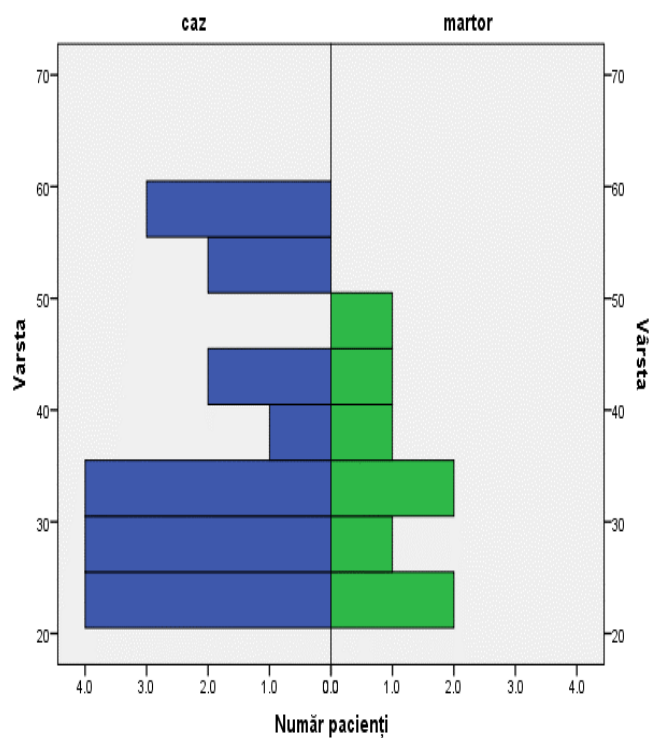
The main limitation of the study consists of the small group of patients and the location of the clinic in an urban area, which may lead to a poor representation of patients from the rural environment, in the absence of occupational heterogeneity, which must be corrected in the future by multicenter studies.

## References

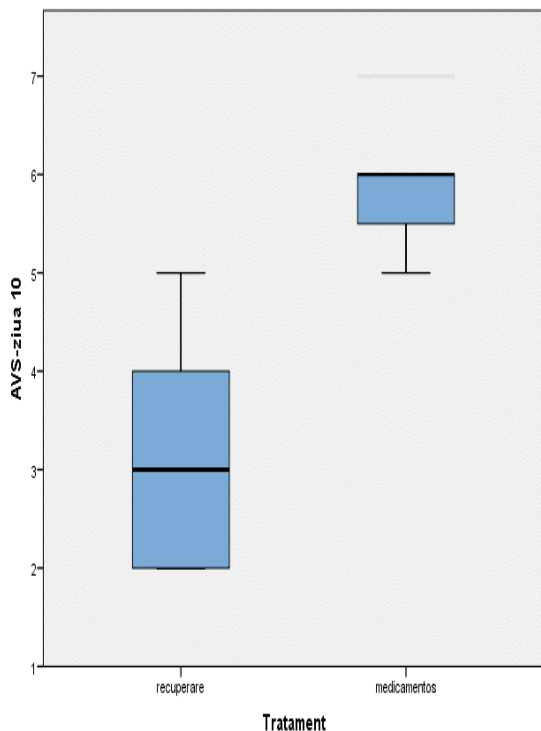
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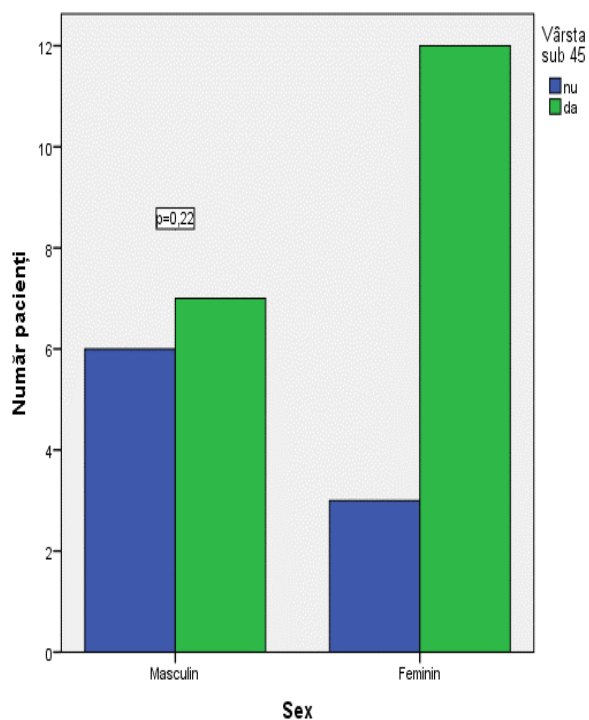
**Fig. 1.** Mean Oswestry score on day 10 in the two groups.



**Fig. 3.** Age distribution of the study groups.



**Fig. 2.** Mean visual analogue scale score on day 10 in the two groups



**Fig. 4.** Correlation between age less than 45 years and sex