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REVIEW ARTICLE

REHABILITATION OF LOWER BACK PAIN WITH MANUAL THERAPY AND ELECTROTHERAPY

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ABSTRACT

Definition-Introduction: Lower back pain is one of the most frequent musculoskeletal problems in physiotherapeutic clinical practice, with the most frequent incidence in the middle and later ages. Spondylarthrosis lumbalis is part of the osteoarthritis group and involves injuries to the articular cartilage level and it is associated with destructive and constructive phenomena (osteophytes). Spondylarthrosis can be developed in different parts of the vertebrae columns. Lumbal spondylarthrosis affects the vertebrae at level L1-L5. It is a degeneration of vertebrae and discs in the cervical region associated with aging. Physiotherapy can be used alone or combined with electrotherapy for the purpose of rehabilitation and muscular strengthening. **Aim:** The study aims to identify the effects of physiotherapy in the rehabilitation of Lower back pain. **Methodology:** Prospective study at the rheumatology department in "Mother Teresa" hospital, Tirana, from April to September 2018. Patients were selected randomly. The age of patients included in the study were from 25 to 55 years old. 40 patients were diagnosed with sub acute and chronic lumbago by the rheumatologist. The excluded criteria were: neurological problems (radiculopathy), orthopedic operations and polyneuropathy. Patients were divided into two groups: Group I of the study was treated for 15 days with electrotherapy (TENS, ultrasound). The second group of patients was treated for 15 days with combined therapy with manual, exercises and electrotherapy. Québec Questionnaire was used to evaluate daily activity of patients. **Results:** The therapy used are electrotherapy, manual therapy and exercises**. Group I:** The Quebec back pain disability scale of the patients on the first day of treatment was 3.81, while on the last day was 2.27. As a result, the electrotherapy has increased the functionality of patients in their daily activity. **Group II:** The Quebec back pain disability scale of the patients on the first day of treatment was 3.9, while on the last day was 1.36. As a result, the combined therapy has considerably increased functionality in daily activity of patients. **Conclusions:** By concluding, the most effective therapy for the rehabilitation of the lower back pain is combined therapy with manual therapy, exercises and electrotherapy. This conclusion is also supported by International evidence. **Key words:** Lower Back Pain, exercises, Ultrasound, Electrotherapy, Patients.

INTRODUCTION

Spondylarthrosis is part of the osteoarthritis group, which is related to the damage of the particular cartilage level and is associated with destructive and constructive phenomena (osteophytes) (Osman, 2000). Lumbalis Spondylarthrosisis a degeneration of vertebrae and discs in the cervical region associated with aging. Lumbalis spondylarthrosis affects the L1-L5 level of the vertebrae. (Kola Irena 2013, Exercises for back Painhttps://www.allinahealth.org/uploadedFiles/Content/Health_Conditions_and_Treatments/Service_lines/Rehabilitation_services/Back,neck,spine/Programs_and_services/spineNeckPain.pdf). Causes of Lumbalis spondylarthrosis are many, but some of the factors are considered more predisposing like the quality of the cartilage, genetic factor, congenital malformations, repeated microtraumas, degenerations caused by aging, mechanical trauma, inflammatory articular diseases, genetic predisposition, sedentary life (Blanpied, 2017; O'Sullivan, 2007; Fejer, 2008). The symptoms of Lumbalis spondylarthrosis are: back pain, limitation of movements, total reduction or loss of skin sensitivity (Steven, 2012; Blanpied et al., 2017; Fejer, 2008).

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In the diagnosis placement is included a wide medical team such as: rheumatologist, radiologist, neurologist, orthopaedist and physiotherapist. Treatment of Lumbalis spondylarthrosis includes: medication treatment and rehabilitation.

PATIENTS AND METHODS

The aim of this study was verify if the combination of therapeutic manual, exercises with electrotherapy with treated with only ultrasound and TENS. This study is a Comparative Study (Clinical Study) where subjects were divided into two groups:

- Group I is only treated with electrotherapy (ultrasound and TENS), was treated for 15 days
- Group II is treated with combined therapy manual, exercises and electrotherapy, was treated for 15 days

Prospective study, patients were selected randomly. The age of patients included in the study were from 25 to 55 years old. 40 patients were diagnosed with subacute and chronic lumbago by the rheumatologist. The excluded criteria were: neurological problems (radiculopathy), orthopedic operations and polyneuropathy. Patients were divided into two groups: Québec Questionnaire was used to evaluate daily activity of patients (Kopec, JA, Esdaile, JM, Abrahamowicz, M., Abenhaim, L, Wood-Dauphinee, S, Lamping, DL & Williams JI. (1995). The Quebec Back Pain Disability Scale. Spine, 20(3): 341-352.Davidson, M. & Keating, J.L. (2002). A comparison of five low back disability questionnaires: Reliability and responsiveness. Physical Therapy, 82(1)). Measurements of results were recorded before and after 15 weeks for treatment of 20 subjects. The first group is the with 8 patients, aged 25-55 age old (mean age 40), was treated only with electrotherapy ultrasound and TENS. The second group with 8 patients aged 25-55 age old (mean age 40), which was treated with ultrasound and TENS in combination with manual therapy. Other patients were withdrawn from treatment for personal reasons. The results were assessed with the Québec Questionnaire, which is a standardized questionnaire that includes assessing Back Pain and physical function during daily life activities, compiled into 10 questions divided into 10 sections (Kopec, JA, Esdaile, JM, Abrahamowicz, M., Abenhaim, L, Wood-Dauphinee, S, Lamping, DL & Williams JI. (1995). The Quebec Back Pain Disability Scale. Spine, 20(3): 341-352.Davidson, M. & Keating, J.L. (2002). A comparison of five low back disability questionnaires: Reliability and responsiveness Physical Therapy, 82(1)).

RESULTS

In this study we verified if the combination of therapeutic manual, exercises with ultrasound and TENS is more effective than just using only electrotherapy ultrasound and TENS. The results show that in the first group there is a statistically significant decrease in the level of disability. At the beginning of the study 4 patients had moderate disabilities and 4 patients had severe disabilities. After treating with ultrasound and TENS 1 patient had minimal disability, 5 patients had moderate disabilities and 2 had severe disabilities. The results show that in the in the second group there is a statistically significant decrease in the level of disability.

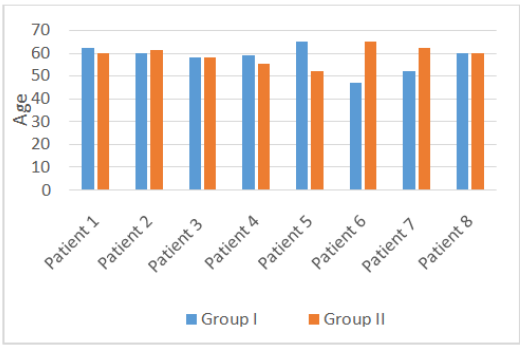
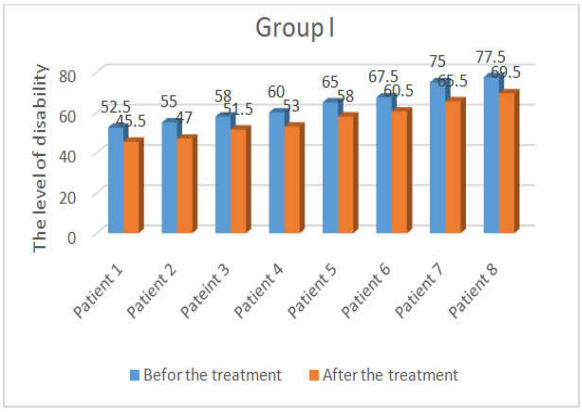
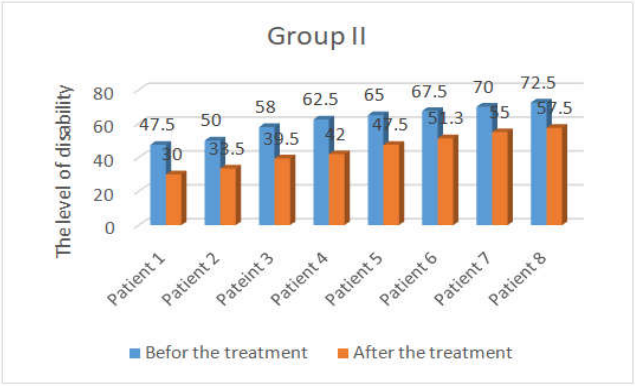


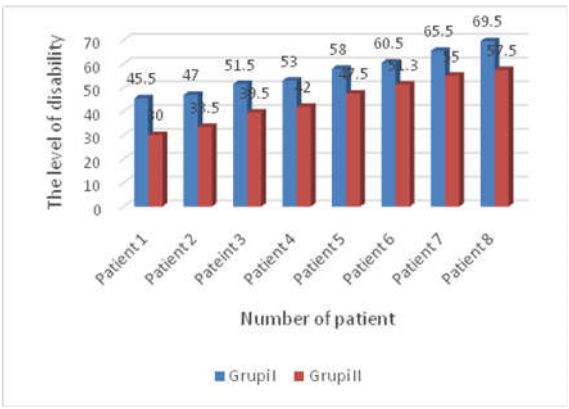
Figure 1. Age distribution histogram of patients



Graphic 1. Results of the Québec questionnaire of Group I before and after treatment with ultrasound and TENS



Graphic 2. Results of the Québec questionnaire to Group II before after treatment with exercises combined with ultrasound and TENS



Graphic 3. Comparison of the Québec questionnaire in Group I and II after treatment

In this group at the beginning of the study, 3 patients had moderate disabilities and 5 patients had severe disabilities. After treating with therapeutic exercises, ultrasound and TENS 3 patients had minimal disability, 5 patients had moderate disabilities. The results show that the treatment with a combination of exercises, ultrasound and TENS significantly reduces the incidence of patients with Lower back pain and with Lumbalis spondyloarthrosis, than just the treatment with ultrasound and TENS.

DISCUSSION

The aim of the study was to identify the effects of exercises combined with ultrasound and TENS in the rehabilitation of Lumbals pondylarthrosis. After data obtained from the questionnaire (Québec), which was supplemented by participants at the beginning of the study and after 15day of treatment, it was found that in the II group improvement of Lower back pain after therapeutic exercises and application for 15day of ultrasound and TENS was visible. The level of pain in this group decreased significantly, from 51.2% to 31%. In Group I, who did not apply therapeutic exercises *but only ultrasound and TENS*, the lower back pain situation changed easily from 41.8% to 39.7%. As seen, the combination of therapeutic exercises and ultrasound and TENS has a positive effect on improving lower back pain. The results of our study coincide with the results of this study as we have statistically significant improvement of lower back pain in the group I that was treated with only electrotherapy (ultrasound and TENS), Comparer with group II trade with therapeutic manual exercises and electrotherapy (ultrasound and TENS) .

Conclusion

The effect of therapeutic manual exercises combined with ultrasound and TENSare the most important part of the rehabilitation program in patients with Lumbalspondylarthrosis problems. As a conclusion, we can say that rehabilitation of the Lumbal segment and the application of therapeutic exercises and electrotherapy (ultrasound and TENS) significantly improve Lumbalspondylarthrosis. Reeducation of the back pain in Lumbal segment within physiotherapy provides satisfactory results regardless of the method used as it may be, therapeutic exercises or ultrasound and TENS. Also, the combination of these methods providesmore satisfying results than using just a single method. The study shows that physiotherapy has a key role in conservative treatment of lower back pain and in improving the quality of life of individuals. One of the limitations of this study is the small sample used, as it is necessary to carry out further studies with larger samples to reach clearer conclusions about Lumbal spondylarthrosis with lower back pain.

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