EPOSTER 10

Which Exercise can Influence the Pain Characteristics of Patients with Fibromyalgia?

Sotiria Vrouva[1*], Vasileios Papatsimpas[2], Alexandra Nikolopoulou[3], Evangelia Koutsioumpa[4], Varvara Sopidou[5]

[1] Dr./Academic Fellow, Department of Physiotherapy/LANECASM, University of West Attica, Head of Department of Physiotherapy, 401 General Army Hospital of Athens, Greece

[2] PhD Candidate Academic Fellow, Department of Physiotherapy/LANECASM, University of West Attica, Greece

[3] MSc/Physiotherapist, Department of Physiotherapy, 401 General Army Hospital of Athens, Greece

[4] Dr./Physiotherapist, Department of Physiotherapy, General University Hospital of Larissa, Greece

[5] MSc/Physiotherapist, Faculty of Health Sciences, University of West Attica, Greece

[*]Corresponding Author

Synopsis

Patients with fibromyalgia experience chronic pain. The aim of this study is to investigate the possible influence and change of the pain characteristics of these patients, if we add to the exercise program that they follow, breathing exercises. This is a double-blind randomized trial. The sample consisted of 112 outpatients suffering from fibromyalgia, while the referral orthopaedic had suggested physiotherapy. Assessment of pain characteristics in patients was achieved through completion of three questionnaires (FIRST, BRIEF PAIN INVECTORY, and PAIN QUALITY ASSESSMENT SCALE) once before starting the exercise, once one month later and the final, after a three-month period of exercise. The patients were divided into 2 groups. Both groups followed the same 10-minute warm-up program of active mobilization and joints stretching. The first group of patients implemented a program of active exercises up to the limits of pain lasting 30 minutes with repetition 2 times a week. Patients of the second group followed the same program with the addition of diaphragmatic breaths, when they reached the pain limit. In the first (control) group, the characteristics associated with neuropathic pain appear persisting while in the second, they appear to be in remission. Both exercise groups demonstrated a significant improvement in all pain scale characteristics but the improvement of the second group, was significantly higher.

Keywords: Fibromyalgia, Neuropathic pain, pain characteristics, Brain Pain Inventory, Pain Quality Assessment Scale

Background

Patients with fibromyalgia experience chronic pain. Exercise is often recommended, either in combination with medication treatment or without, in order to improve patients' physical condition and quality of life.

Purpose

We investigate the possible influence and change of the pain characteristics of these patients, if we add to the exercise program that they follow, breathing exercises.

Methods

This is a double-blind randomized trial. The sample consisted of 112 outpatients of 401 General Army Hospital of Athens, suffering from fibromyalgia, while the referral orthopaedic had suggested physiotherapy. We used equal randomization such as 1:1 for the two groups based on order of entry to the study. Assessment of pain characteristics in patients was achieved through completion of 3 questionnaires (FIRST, BRIEF PAIN INVECTORY, and PAIN QUALITY ASSESSMENT SCALE), once before

ISBN: 978-81-957605-6-5 DOI: 10.21467/abstracts.140

starting the exercise, once three weeks later and once after a three-week period of exercise. All questionnaires were translated and validated in the Greek Population [1]-[2] except PQAS which the present study served as an opportunity for its translation in the Greek language [3]. Both groups followed the same 10-minute warm-up program of active mobilization, big joints stretching with each stretch lasting on average for 30 seconds [4]. The first group of patients implemented a program of active exercises up to the limits of pain lasting 30 minutes with repetition 2 times a week for deltoids, quadriceps, trunk extensions, hip extensions, elbow flexors and gastrocnemius. For each muscle, the patient did a set of 10 repetitions [4]-[5]. Patients of the second group followed exactly the same programme with the addition of diaphragmatic breaths [5], when they reached the pain limit. The patient performed the first exercise, discovering what the limit of the trajectory is, the point when the movement becomes painful. At this point, he was instructed to repeat three breaths and then start the program described in the first group.

Analysis

The independent student t-test and Mann Whitney-U test were used to compare the two groups before starting the treatment. The effect of the therapeutic intervention was examined using both types of exercise with repeated measurements analysis of variance (ANOVA) among the primary assessment (baseline), after physiotherapy sessions (three weeks later), and after the completion of the therapeutic intervention (three months after the initial assessment). To examine the differences between the two methods of exercise F-between-subjects tests were carried out for all the mentioned variables. Data are presented as means and standard deviation (SD). The statistical significance was set at $P < 0.05$.

Results

A statistically significant improvement in pain was found on all scales, which occurred at the end of the third week and seems to increase but not significantly with the completion of the exercise. There is also a statistically significant difference in the magnitude of the improvement between the two groups despite the fact that in the beginning they presented the same levels of pain.

Conclusions and Implication

Both groups demonstrate a significant improvement in all pain scale characteristics but the improvement of the second group that practiced diaphragmatic breathing, was significantly higher. Analysis of the categorical variable BRI severity scale showed that there was dependence between the intensity of pain and the type of exercise. The fact that the second group presented the higher improvement in pain in such a short period of just three weeks' time is worth mentioned.

Competing Interests

The authors declare no conflict of interest.

Ethics Approval

All patients provided written informed consent for the study. Approval 9/4/2021 (5/2021) from the bioethics committee (Declaration of Helsinki) of 401 GAHA

References

[1] Panagiotis Zis et al. Validation of the Greek Version of the Fibromyalgia Rapid Screening Tool *Pain Practice*, 17(7): 925–929. 2017 DOI. 10.1111/papr.12545

[2] Kyriaki Mystakidou et al. Greek brief pain inventory: validation and utility in cancer pain *Oncology* 60(1):35-42, 2001doi: 10.1159/000055294.

[3] Mark P Jensen, Galer BS, Gammaitomi AR, et al. The Pain Quality Assessment Scale (PQAS) and Revised Pain Quality Assessment Scale (PQAS-R): Manual and User Guide; 2010. Mapi Research Trust website (http://www.mapi-trust.org)

ISBN: 978-81-957605-6-5
Series: AIJR Abstracts
DOI: 10.21467/abstracts.140

[4] 4.ACSM 2013 American College of Sports Medicine. ACSM's Guidelines for Exercise Testing & Prescription. 9th Edition. Baltimore, MD: Lippincott Williams & Wilkins, 2013.

[5] Soo Y Kim et al. Flexibility exercise training for adults with fibromyalgia.*Cochrane Database of Systematic Reviews* Issue 9. 2019 Art. No.: CD013419. DOI: 10.1002/14651858.CD013419

ISBN: 978-81-957605-6-5

Series: AIJR Abstracts

DOI: 10.21467/abstracts.140