**Original Paper**

# A comparative study of diclofenac phonophorosis and ergonomic instructions on neck and shoulder pain in women with myofascial trigger points in trapezius muscle

**Akbari A (PhD)*[1], Miri Torbagan M (BSc)[2], Pourghaz A (PhD)[3]**

**[1]Associate Professor, Department of Physiotherapy, School of rehabilitation Sciences, Zahedan University of Medical Sciences, Zahedan, Iran. [2]BSc in Physiotherapy, School of rehabilitation Sciences, Zahedan University of Medical Sciences, Zahedan, Iran. [3]Assistant Professor, Department of Psychology and Education, Faculty of Education and Psychology, University of Sistan and Baluchestan, Zahedan, Iran.**

## Abstract

**Background and Objective:** Myofascial pain syndrome is one of the painful conditions of the musculoskeletal system. There is controversy about the effectiveness of treatment strategy. This study was done to compare the effects of diclofenac phonophoresis with ergonomic instructions on neck and shoulder pain and disability in women with myofascial trigger points in trapezius muscle.

**Materials and Methods:** This clinical trial study was conducted on thirty female students with trigger points in trapezius muscle in Razmejo-Moghadam Physiotherapy Clinic, Zahedan University of Medical Sciences, Iran during 2009. Patients were randomly assigned to one of three equal groups: diclofenac phonophoresis, ergonomic instructions, and control groups. In phonophoresis group, after applying diclofenac gel, ultrasound with frequency of 1 MHz, continuous mode, intensity 1.5 W/cm2, and duration 4.5 min was used. Ergonomic group received instructions in order to maintain appropriate posture during activity of daily life. Control group received ultrasound without output. A 12 session treatment program, during 4 weeks, 3 sessions per week was performed. Neck pain was assessed before and after intervention with Northwick Park Neck Pain Questionnaire and shoulder pain and disability with Shoulder Pain and Disability Index. Data were analyzed using SPSS-17, Kolmogorov-Smirnov, paired t-test, One-way ANOVA and Tukey tests.

**Results:** Neck pain score decreased from 18±3.5 to 7.6±4.4 in phonophoresis group and from 17.8±3.5 to 10.5±3.4 in ergonomic group ($P<0.05$). Also, shoulder pain and disability score decreased from 106.2±28.1 to 36.76±30.7 in phonophoresis group and from 103.3±22.9 to 26.2±12.3 in ergonomic group ($P<0.05$). There was no significant difference between post and pretreatment results in control group. After treatment, there was no significant difference between two treatment groups regarding neck, shoulder pain and disability. However, after treatment there was significant difference between two treatment groups and control group regarding pain ($P<0.05$).

**Conclusion:** This study showed that diclofenac phonophoresis and ergonomic instructions are effective in decreasing neck and shoulder pain and disability in patients with myofascial trigger points in trapezius muscle. None of both treatment strategy was superior to other.

**Keywords:** Trigger points, Trapezius muscle, Pain, Ergonomy, Phonophoresis

*** Corresponding Author: Akbari A (PhD), E-mail: akbari_as@yahoo.com**

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