

Effect of combined manual therapy techniques with modalities on pain and discomfort of patients with fibromyalgia syndrome

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ABSTRACT

Objectives: This study aimed at finding out the combined effect of manual therapy and physiotherapeutic interventions on pain and discomfort in patients with fibromyalgia syndrome.

Materials and Methods: A general musculoskeletal assessment (SOAP) was used for all patients who were referred to the physiotherapy department with the symptoms of fibromyalgia. Fibromyalgia Impact Questionnaire (FIQ) was used to assess the pre- and post-intervention measures of pain and discomfort of four Emirati women who participated in this study.

Results: The patients who underwent combination of manual therapy techniques with electrotherapy modalities such as TENS, hydrocollatral therapy and ultrasound therapy showed significant difference in pre- and post-intervention measures of FIQ (62.5 and 35.5) compared to those who underwent electrotherapy modality treatment alone (67.4 and 46.5). The pre- and post-intervention visual analog scale (VAS) showed significant improvement in pain reduction from 8.5 to 2 in patients who underwent combined treatment compared to modality alone from 8 to 3.5.

Conclusion: This study concluded that the combination of manual therapy techniques with modalities has greater effect in reducing pain and improving functions compared to other forms of physiotherapeutic intervention in the management of patients with fibromyalgia.

Key words: fibromyalgia impact questionnaire (FIQ), subjective, objective, assessment and plan (SOAP), visual analog scale (VAS)

INTRODUCTION

Fibromyalgia is an idiopathic, chronic, non-articular pain syndrome with generalized tender points. It is a multisystem disease characterized by sleep disturbance, fatigue, headache, morning stiffness, paresthesias, and anxiety¹. Fibromyalgia predominantly affects women (more than 80%) between the ages of 20 and 50 years. Less commonly, fibromyalgia affects men, children, and the elderly². Seven to ten million Americans suffer to some degree with fibromyalgia syndrome (FMS). The prevalence of fibromyalgia in the general population of the United States is reported to be 3.4 percent in women and 0.5 percent in men. Prevalence increases steadily through 80 years of age, and then declines. This condition affects women 10 times more often than men².

FMS can occur independently or can be associated with another rheumatic

disease, such as systemic lupus or rheumatoid arthritis. The pain generally involves both sides of the body and commonly affects the neck, buttocks, shoulders, arms, the upper back, and the chest³. Fibromyalgia can be triggered (or made worse) by a number of different factors such as over exertion, stress, lack of exercise, anxiety, depression, lack of sleep or sleep disturbances, trauma, extremes of temperature, humidity and infectious illness. As there is no specific test the diagnosis of fibromyalgia is made on clinical grounds based on the history and physical examination⁴. Diagnosis can be made by identifying sensitive pain 'tender points' or 'trigger points' on the body. A wide variety of interventions is used in the management of FM⁵. While medication mainly focuses on pain reduction, physical therapy is aimed at pain, fatigue, deconditioning, muscle

weakness and sleep disturbances and other disease consequences⁶. Rehabilitation plays a crucial role in the treatment of FM, particularly among patients more severely disabled by their chronic painful condition⁷. Therefore this study aimed to find out the effect of combined manual therapy techniques with electrotherapy modalities on pain and discomfort of patients with fibromyalgia syndrome.

MATERIALS AND METHODS

A pre-test post-test experimental study was conducted at the physical therapy department, Al Baraha Hospital, Dubai. The selected subjects were divided into two groups. The Group 1 patients received manual therapy with electrotherapy modalities. The group 2 subjects received treatment of electrotherapy modality alone. The duration of treatment was two weeks with six sessions for both groups. A pre-validated fibromyalgia impact questionnaire was employed before and after the treatment to find out the functional status of the subjects, and visual analogue scale was used before and after the treatment to find out the pain severity of the subjects with fibromyalgia syndrome. The Subjective Objective Assessment and Plan (SOAP) format was used to assess the general health of the subjects in both the groups. All participants' personal data, past medical history, and history of present illness were documented on initial examination. Diagnosis of fibromyalgia syndrome was done by special test (examination of specific "tender points" on the body). Examination revealed that two participants had loss of cervical lordosis and reduced internal rotation and adduction of scapula; two patients were with restricted neck flexion, extension and scapular internal rotation. The well-defined physiotherapy protocol was given to all the participants for 6 sessions. The data collected was transferred into Microsoft Excel spreadsheet, and data entry, cleaning, coding and analysis were carried out under the direct supervision of the Research Division of Gulf Medical University. Mean, standard deviation and

percentage were used to summarize the data.

RESULTS

The study subjects were four female in the age group of 40 to 60 years. Table one describes the socio-demographic characteristic of the participants.

Table 2 shows the treatment protocol for Group1 and Group 2 subjects. The Group 1 subjects received combined treatment of manual therapy with electrotherapy modalities like trigger point release technique, joint mobilization, stretching, cryotherapy, transcutaneous electrical nerve stimulation (TENS). The Group 2 patients received treatment of electrotherapy modalities alone like moist heat therapy, transcutaneous electrical nerve stimulation (TENS), with stretching. All the participants underwent six sessions of treatment for two weeks.

The patients who underwent combination of manual therapy techniques with electrotherapy modalities such as TENS, hydrocollator therapy and ultrasound therapy showed a significant difference in pre- and post-intervention measures of FIQ (62.5 and 35.5) compared to those who underwent electrotherapy modality treatment alone (67.5 and 46.5). The pre- and post-intervention visual analog scale (VAS) showed a significant improvement in pain reduction from 8.5 to 2 in patients who underwent combined treatment compared to modality alone, where VAS dropped from 8 to 3.5.

The pre- and post-test measures of fibromyalgia impact questionnaire (FIQ) are shown in Table 3. The patients who underwent combination of manual therapy with modality shows having received greater benefit compared to the patients who underwent modality treatment alone.

The pre- and post-test measures of VAS scale for pain perception are shown in Table 4. The Group 1 patients perceived greater pain reduction through combination of manual therapy with modality compared to the Group 2 patients.

Table 1. Socio-demographic characteristics

Variables	GROUP 1		GROUP 2	
	AGE	50	40	62
GENDER	Female	Female	Female	Female
NATIONALITY	UAE	UAE	UAE	UAE

Table 2. Treatment protocol for Group1 and Group 2 subjects

GROUP 1 Combined modality and manual therapy		GROUP 2 Modality alone
SESSION 1	Cryotherapy (15 mints), Tens(20 mints), Stretching exercise for scapula	Moist heat therapy (15 mints), Tens (20 mints)
SESSION 2	Cryotherapy, Tens, Stretching exercise for scapula and neck	Moist heat, Tens
SESSION 3	Cryotherapy, tens, Stretching exercise, Joint mobilization (scapula)	Moist heat, Tens
SESSION 4	Cryotherapy, tens, Stretching, Joint mobilization (scapula & neck) Trigger point release technique	Moist heat, Tens, Stretching exercise
SESSION 5	Cryotherapy, Tens, Stretching exercise for scapula and neck Joint mobilization (scapula, neck), Trigger point release techniques, Strengthening exercise (scapula, neck and shoulder)	Moist heat, Tens, Stretching exercise
SESSION 6	Cryotherapy, Tens, Stretching exercise for scapula and neck Joint mobilization (scapula, neck), Trigger point release techniques, Strengthening exercise (scapula, neck and shoulder)	Moist heat, Tens, Stretching exercise

Table 3. Pre- and post-test values of fibromyalgia impact questionnaire (FIQ)

	Group 1- Combined modality and manual therapy			Group 2- Modality alone		
	Pt-1	Pt-2	Average	Pt-3	Pt-4	Average
Pre test	63	62	62.5	72	63	67.5
Post test	37	34	35.5	51	42	46.5

Table 4. Pre- and post-test values of visual analogue scale (VAS)

	Group 1- Combined modality and manual therapy			Group 2- Modality alone		
	Pt-1	Pt-2	Average	Pt-3	Pt-4	Average
Pre test	8	9	8.5	7.5	8	8
Post test	1	3	2	3	4	3.5

DISCUSSION

Fibromyalgia syndrome is one of the most commonly diagnosed non-articular soft tissue conditions in all fields of musculoskeletal medicine. While Chakrabarty et al. had suggested that there are no guidelines for treatment, there is evidence that a multidimensional approach with patient education, cognitive behavior therapy, exercise, physical therapy, and pharmacologic therapy can be effective for treating fibromyalgia syndrome¹. Almeida et al. stated that electrotherapy, including transcutaneous electrical stimulation (TENS), electro-acupuncture, functional electrical stimulation, iontophoresis, laser, interferential therapy and ultrasound has been used in musculoskeletal pain conditions³. They pointed out that combined therapy with pulsed ultrasound and interferential current, acting as an electro diagnostic tool and as modality of physical therapy, provides an effective pain treatment, with consequent sleep improvement in FMS³. Several non-pharmacologic treatments and manual-type therapies, such as those reported by Michael Schneider et al. have acceptable evidentiary support in the treatment of FMS^{4,9}. This study report shows that there is a greater reduction in pain (VAS 8.5 to 2) and functional status (FIQ 62.5 to 35.5) in patients who underwent a treatment combination of manual therapy with modality compared to the patients who were treated with modality alone (VAS 8 to 3.5), (FIQ 67.5 to 46.5) on fibromyalgia syndrome.

CONCLUSION

This study shows that the combination of manual therapy techniques with modalities has greater effect in reducing pain and improving function compared to treating with electrotherapy modality alone in the management of patients with fibromyalgia syndrome.

REFERENCES

1. Sangita C and Roger Z. AAFP 2007 Annual Clinical Focus on management of chronic illness, *Am Fam Physician* 2007 Jul 15;76(2):247-254.
2. Neumann L, Buskila D. Epidemiology of fibromyalgia. *Curr Pain Headache Rep* 2003;7:362-8.
3. Almeida TF, Roizenblatt S, Benedito-Silva AA, et al. The effect of combined therapy (ultrasound and interferential current) on pain and sleep in fibromyalgia. *Pain* 2003;104:665-72.
4. Esenyel M, Caglar N, Aldemir T. Treatment of myofascial pain. *Am J Phys Med Rehabil* 2000;79:48-52.
5. Richard S, Cleare A. Treating fibromyalgia. *Rheumatology* 2000;39:343-6.
6. Offenbacher M, Stucki G. Physical therapy in the treatment of fibromyalgia. *Scand J Rheumatol* 2000; 29(113):78-85.
7. Sprott H. What can rehabilitation interventions achieve in patients with primary fibromyalgia? *Curr Opin Rheumatol* 2003;15:145-50.
8. Schneider M, Vernon H, Ko G, et al. Chiropractic management of fibromyalgia syndrome: a systematic review of the literature. *J Manipulative Physiol Ther* 2009, 32(1):25-40.
9. Michael S, Howard V, Gordon K, et al. Chiropractic management of fibromyalgia syndrome: a systematic review of the literature, *J Manipulative Physiol Ther* 2009;32:25-40.