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Research Papers

THE RAPUETIC INTERVENTIONS AND ITS OUTCOMES IN FIBROMYALGIA

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Abstract

Objective: *To study therapeutic interventions and its outcomes in fibromyalgia*

Background:*The reported onset of pain was gradual.Pain was present at various areas in her body particularly in the neck,shoulder.Pain on VAS scale was taken.*

Treatment:*Patient was treated with therapeutic interventions including hot pack,interferential therapy,ultrasound and aerobic exercises.3 week protocol was given in preparation for return to normal daily activities.*

Conclusion:

By presenting this case report we hope for a better understanding of fibromyalgia and how to successfully manage and rehabilitate

Keywords: Therapeutic interventions, fibromyalgia,aerobic exercises

INTRODUCTION

Fibromyalgia is defined as " non articular rheumatism with widespread and chronic musculoskeletal aching or stiffness associated with soft tissue tenderness at multiple, characteristic sits in the absence of an underlying cause(Simon et al 2007).It is usually associated with constitutional symptoms that include fatigue and morning stiffness, sleep disturbance, fatigue, anxiety, prior depression, paresthesias. It is estimated to affect approximately 3 to 6 million people.It is the third most prevalent rheumatologic disorder.Approximately 90%of fibromyalgia syndrome patients are women(usually white) between the ages 40 and 60 years.It affects women(3.4%) more frequently then men(0.5%) (Neumann et al 2003). The prevalence of the syndrome increases with age(approximately 1% in women who are18 to 29 years of age and approximately 7%in those who are 70 to 79 years of age).

Common symptoms associated with fibromyalgia are widespread pain at 15 or more painfull sites, fatigue, morning stiffness, sleep disturbance, paraesthesia,raynaud's phenomenon, anxiety, prior depression.It is associated with various factors.

Various aggrevating factors for fibromyalgia include excessive physical activity, anxiety or stress, cold or humid weather, non restorative sleep, physical or mental fatigue.Various relieving factors are restful sleep, moderate activity, warm or dry weather, hot showers or bath.Current cause of fibromyalgia is unknown.

No evidence of an underlying cause or pathophysiologic basis for fibromyalgia currently exists although myriad of mechanisms have been proposed.Among the list of proposed mechanisms include lack of physical fitness, sleep deprivation, chronic muscle spasm with ischemia, adenosine monophosphate and creatine level imbalances, neurohormonal imbalances. Genetic abnormalities in the serotonin transporter promoter gene have also been noted. There is an increased association of catecholamine-o-methyltransferase deficiency in

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fibromyalgia.There are various researches related to pathophysiology of fibromyalgia

One such research suggests that autonomic nervous system dysfunction which includes increased sympathetic tone is another factor in the pathophysiology of fibromyalgia. There is also a reduction in the pain modulating

neurotransmitters in the descending CNS pathways that dampens pain transmission. Besides this other causes can be viral infections, nutritional deficiencies. Myofascial pain is also present in such patients so there is an association between myofascial pain and low levels of vitamin B 12 and vitamin D and these deficiencies should be treated if present in such patients(Russel et al 2010)

CASE REPORT

A 27 years old female presented with pain in various areas of the body since last one and a half year.Patient also complained of muscle discomforts,fatigue,sleep disturbance,anxiety and frequent mood swings.Pain was sharp and deep especially on applying pressure on these areas.Patient reported a VAS scale of 9 out of 10.Pain aggrevated on doing physical activity.Pain relieved on taking rest and taking some pain killers(combiflam).Patient didn't took any physiotherapy treatment before and came to physiotherapy opd for the first time.But ptient was not getting any relief from pain and pain increased on doing any physical work.So she decided to consult physiotherapist.At this time patient presented to authors clinic with a sharp pain mainly in the cervical region,muscle discomfort,sleep discomfort,anxiety.Patient also complained of frequent mood swings.She even complaint of some strange and depressing thoughts coming frequently to her mind which disturbed her sleep also.Pain aggrevated on doing any strenous work and physical activity.Pain was slightly relieved on taking rest and on not doing any strenous work and also on taking hot showers.Patient had similar family history with her mother having the same problem for several years.Her mother took physiotherapy treatment for sometime and got some relief.

On examination mild swelling was present on the left side of the neck region however bony and soft tissue contours were normal.On palpation tenderness was present at severa areas of the body especially neck. This includes sub-occipital muscle insertion points ,anterior aspects of intertransverse spaces at C5-7 ,midpoint of upper border of the trapezius muscle, origin of the supraspinatus muscle , superolateral aspect of second costochondral junction.Her active range of motion for cervical was;flexion-35 degrees ,extension- 40 degrees ,rotation- 45 degrees ,side bending-35 degrees.The passive range of motion for cervical was; flexion- 40 degrees ,extension-50 degrees ,rotation- 50 degees ,side bending- 40 degrees .Manual muscle testing for cervical showed weakness with grades of 3+ for cervical flexors and extensors and3 for rotators and side flexors.Mini Mental scale was applied and it was normal with score of 25.Tone was also normal with the grade of 2+(normal).Fibromylagia impact questionnare was filled.It showed a score of 77 which is considered positive.Then another scale ie Epworth sleepiness scale was filled which showed a score of 12 which means that patient was mildly affected.

Another scale known as self trait anxiety trait was also filled which showed that patient is having anxiety problem.No X-ray or MRI reports of the patient was available with the patient on the first day of the visit.

Initial treatment consisted of hotfermentation,Interferential therapy,Ultrasound,isometrics of the cervical region,active range of motion exercises for cervical,aerobic exercises including walking,breathing exercises.Hot fermentation was applied for 15minutes on the painful areas.Interferentail therapy was given at 4 KHZ for 10minutes and ultrasound at 0.8cm sq for 5 minutes(Gur 2006)Patient was asked to follow a home regime also.She was asked to do cervical isometrics,breathing exercises and walk at home.

Then patient came to the opd for 3 weeks and considerable imrovement was seen.The range of motion was again checked after 3 weeks.The active cervical range of motion was flexion-40 degrees ,extensio-45 degees ,rotation-50 degrees ,side flexion-40 degrees .The passive cervical ranges of motion.was flexion-42 degrees ,extension-48 degrees ,rotation- 52 degrees ,side flexion- 42 degrees. Manual muscle testing tests also showed improvement with the grades of 4 for flexors and extensors and 3+ for rotators and side flexors.Visual Analog Scale showed reduction in the pain from 9 to 4.

Measurements scales	0 DAY	7th DAY	14th DAY	21st DAY
Fibromyalgia impact questionnaire	65	51	45	42
Sleepiness scale	12	12	11	10
Self trait anxiety questinnaire	94	92	89	82
VAS	9	7	5	4

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Table 1:shows the scores of patient before and after treatment

DISCUSSION

This case is of fibromylagia.Exact cause of fibromylagia is yet known known.The cause of fibromyalgia is unknown. No evidence of an underlying cause or pathophysiologic basis for fibromyalgia currently exists although myriad of mechanisms have been proposed.Among the list of proposed mechanisms include lack of physical fitness, sleep deprivation, chronic muscle spasm with ischemia, adenosine monophosphate and creatine level imbalances, neurohormonal imbalances. Genetic abnormalities in the serotonin transporter promoter gene have also been noted. There is an increased association of catecholamine-o-methyltransferase deficiency in fibromyalgia.There are various researches related to pathophysiology of fibromyalgia

One such research suggests that autonomic nervous system dysfunction which includes increased sympathetic tone is another factor in the pathophysiology of fibromyalgia. There is also a reduction in the pain modulating neurotransmitters in the descending CNS pathways that dampens pain transmission. Besides this other causes can be viral infections, nutritional deficiencies. Myofascial pain is also present in such patients so there is an association between myofascial pain and low levels of vitamin B 12 and vitamin D and these deficiencies should be treated if present in such patients(Russel et al 2010)

This case is a unique case as it uses theraputic interventions including the use of hot packs,IFT,ultrasound,isometrics,aerobicc exercises.Fibromyalgia is more common in females. It is estimated to affect approximately 3 to 6 million people.It is the third most prevalent rheumatologic disorder.Approximately 90%of fibromyalgia syndrome patients are women(usually white) between the ages 40 and 60 years.It affects women(3.4%) more frequently then men(0.5%)(Neumann et al 2003). The prevalence of the syndrome increases with age(approximately 1% in women who are18 to 29 years of age and approximately 7%in those who are 70 to 79 years of age).Patient was given 6 week rehabilitation programme.The initial aim of the rehabilitation programme was to decrease pain through modality use,increase range of motion.Many therapeutic approaches have been used to traet a person with fibromylagia. Gur A(2006) in his study on physical therapy modalities in the management of fibromyalgia discussed the use of various physical modalities like TENS, Ultrasound and laser therapy for the treatment of fibromyalgia.Pulsed electrothearapy improved sustained muscle contraction by increasing the permeability of cell membrane, improves intracellular

energyconsumption.However patience and positive attitude on the part of patient are also necessary.The purpose of the study was to find out the effect of therapeutic interventions in patient with fibromylagia.

Patient also did aerobic exercises including walking and strenghtning exercises.A study was conducted to seed the effects of Aerobic Exercise Versus Stress Management Treatment in Fibromyalgia and it was concluded that aerobic exercise was the overall most effective treatment(Horven et al 1996). At follow up, there were no obvious group differences in symptom severity, which for aerobic exercise seemed to be due to a considerable compliance problem.Similarly a study was conducted on exercise programme for fibromylagia studied 60 patients who met American College of Rheumatology criteria for FM and had no significant comorbidities. Measurements performed on each patient at the pre and poststudy assessment included the number of tender points (TP), total myalgic scores (TM), aerobic fitness (AF), flexibility and isokinetic strength. After initial evaluation patients were randomly assigned to either an exercise or a relaxation group. Each group met 3 times per week for 6 weeks for 1 hour of supervised exercise or relaxation. All patients data were stored in a computerized database and statistical analysis was performed on all pre and poststudy assessments.Thirty-eight patients (18 exercise and 20 relaxation) completed the study. Analysis of our data showed no significant difference between the groups in their prestudy assessment. Poststudy assessments, however, showed a significant improvement between the exercise and relaxation groups in TP ($p < 0.05$), TM ($p < 0.05$), and AF ($p < 0.05$). Similar improvements were also found when the pre and poststudy assessment of the exercise group were compared.They concluded that exercise is helpful in the management of FM in the short term. It also shows that FM patients can undertake an exercise program which includes aerobic, flexibility, and strength training exercises without adverse effects. The long term utility of this type of exercise requires further evaluation.(Martin et al 1996)

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PROGNOSIS

Variables that corelated with satisfactory outcomes included pain relief,increase in range of motion,improvement in epworth sleepiness scale and reduction in score of self trait anxiety questionnaire.Fibromyalgia can be diagnosed on the basis of diagnostic criteria and careful history review.

CONCLUSION

Fibromylagia is the condition which can be dignosed on the basis of diagnostic criteria,carefull history review.Therapeutic interventions including the use of hot pack,interferential therapy,ultrasound,aerobic exercises are helpful in reducing various symptoms of fibromyalgia.They reduce pain.improve range of motion,helped to reduce sleep problem,decrease the level in anxiety in the patient.

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