

## **DEPRESSION AND ANXIETY IN PATIENTS WITH CHRONIC MYOFASCIAL PAIN SYNDROME AND ITS CORRELATION WITH PAIN INTENSITY**

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### **ABSTRACT**

**Background:** Chronic myofascial pain is a regional pain syndrome characterized by myofascial trigger points (MTrP) causes a specific referred pain pattern. The symptoms of anxiety and depression have been shown to be involved in the genesis and perpetuation of chronic pain. The purpose of this study was to found the correlation between pain intensity with depression and anxiety. **Objectives:** To correlate pain intensity with depression and anxiety. **Materials and methods:** Total 100 participants were included in this study who presented with chronic regional myofascial pain in neck and upper back. Pain intensity severity was measured with sf-mpq-2 scale and correlated with HAM-A and HAM-D. **Results:** Pain intensity is significantly correlated with anxiety and depression. Higher pain intensity is associated with an increased level of anxiety and depression. **Conclusion:** Myofascial pain patients with high pain intensity have increased level of anxiety and depression.

**Keywords:** Myofascial pain, pressure algometry, trigger point, ham-a, ham-d, sf- mpq-2.

### **INTRODUCTION**

Myofascial pain syndrome is a regional pain problem characterized by trigger points which are small and sensitive areas in skeletal muscles that spontaneously or upon compression causes pain to a distant region, known as the referred pain zone and present with restricted range of motion, motor dysfunction and sometimes autonomic phenomena (1,2). Neck and upper back pain is the most common complaint in myofascial pain syndrome (MPS) mimicking cervical radiculopathy (3). The prevalence of MPS is about 46% and almost 85% population is encounter at some point in their life time (4,5).The myofascial pain is often described by referred pain with focal twitch response in taut band and restriction of range of motion (6).

Myofascial pain is diagnosed clinically and pressure algometer is used for quantification of myofascial

trigger points (7,8). Pain sensitivity can be evaluated in form of pressure pain threshold by use of pressure algometer (9,10,11). Pressure algometry involves induction of a specific pain in response to a measured force applied perpendicularly to the skin. Pressure threshold is defined as the minimum pressure which induces pain or discomfort.

The myofascial pain is not only associated with regional pain but also have decreased functional status along with impaired mood and decreased quality of life. Till now there are only few studies which shows pain and depression relationships in patients with MPS. Such studies have shown that depression and anxiety were frequently found in chronic patients with MPS (12,13). The greater the intensity of pain, more likely is depression and vice versa. In some individual, high levels of anxiety are

expressed in the form of muscle tension. Many muscles are held in sustained contraction leading to MTrP. In our study, we correlated pain intensity with depression and anxiety.

## **MATERIAL AND METHODS**

Participants are selected from the outpatient clinic of physical medicine and rehabilitation department, SMS Medical College and Hospital, Jaipur. Approval for the study was given by institutional Research Review Board and Ethical committee at SMS Medical College and Hospital, Jaipur. Patients were evaluated from February 2017 till November 2018.

The sample size was calculated at 95% confidence level (alpha error 0.05) assuming the standard deviation of the total myofascial score of 12 points at 4 kg/cm<sup>2</sup> among patients with chronic pain as found in reference study. At the precision (absolute available error) of 4 kg/cm<sup>2</sup>, minimum 81 patients are required as the sample size for the present study, which is enhanced and rounded off to 100 patients as final sample size.

The patient who had regional neck or dorsal myofascial pain for 3 months or more duration was included in this study. Patients who fit into American College of Rheumatology 2010 criteria for fibromyalgia were excluded from the study. Patients who had any psychiatric, medical or surgical issues which would interfere with study protocol.

Pressure pain threshold in myofascial trigger points were measured with pressure algometer in upper back and neck muscles. The dial type pressure algometer (orchid scientific algometer model-ALGO-D-01), was used, calibrated in kg/cm<sup>2</sup> with a range up to 20kg. The foot plate area of pressure algometer was 1 cm<sup>2</sup>. Pressure pain threshold value 4 kg/cm<sup>2</sup> or less was used as the reference threshold value for MTrP (14).

Short form McGill pain questionnaire (SF-MPQ-2) is used to evaluate pain intensity (15). SF-MPQ-2 is a highly authentic and sensitive pain questionnaire (16). It is useful in assessment of both neuropathic and nociceptive pain (17). The SF-MPQ-2 is composed of 22 items which investigate continuous descriptors, intermittent descriptors, neuropathic descriptors and affective descriptors of pain. The

range of score for each item was 0 to 10. 0 scored with no pain, 10 scored the worst pain ever felt. The Hindi version of SF-MPQ-2 was used in our study with due permission. The total score was calculated as a mean of all SF-MPQ-2 items rating.

Pain disability index is a brief self-report instrument described by Pollard to measure patient- perceived disability secondary to pain. The PDI reflects the multidimensional aspects of disability, including pain behaviour measures as well as psychological distress (18). PDI scores also shows a significant relationship between pain and different variables related to functional and mental status of chronic pain patients.

Hamilton Anxiety Rating Scale (HAM-A) is commonly used scale to measure the severity of anxiety symptoms. It consists of 14 items that measures both psychic and somatic anxiety. Total score range form 0-56. Score less than 17 shows mild severity, 18-24 mild to moderate and 25-30 moderate to severe anxiety. Commonly Hamilton Depression Rating Scale (HAM-D) is used for depression; it is clinician-administered depression assessment scale. It contained 21 items. Calculation of the score was done for first 17 answers. Score value 0-7 considered as normal, 8-13 (mild depression), 14-18 (moderate depression), 19-22 (severe depression) and >23 (very severe depression).

## **Statistical analysis**

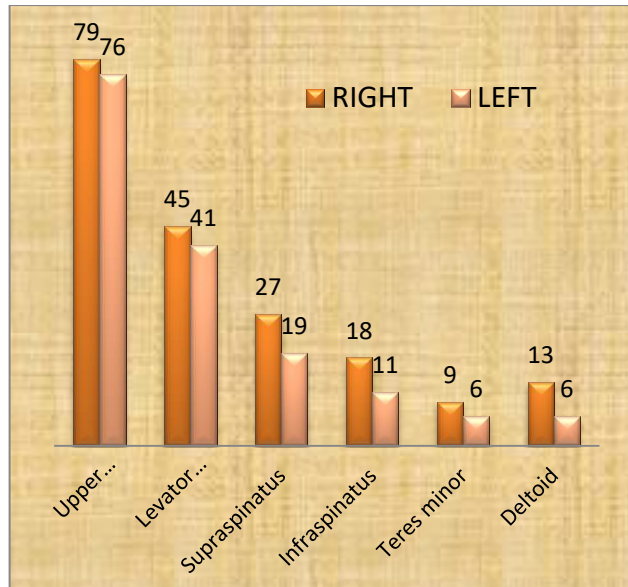
Statistical Package for Social Sciences (SPSS version 25) was used for Pearson's correlation analysis and P value 0.05 was considered statistically significant. Quantitative data is calculated by computing the mean and standard deviation (SD) for parametric data.

## **Observations**

In this study total 100 participants included, out of which 42 were male and 58 were female. Mean age of participants were 40.2 years. Majority of patients fall in 26-55 years of age group (65%). In total no. of patients 47% were housewives. The most prevalent MTrPs were identified in the upper trapezius muscle (79% and 76%) followed by levator scapulae (45% and 41%), supraspinatus (27% and 19%), infraspinatus (18% and 11%), and deltoid (13% and

6%) and teres major (9% and 6%) right and left side respectively. Pain intensity was statistically significantly correlated with anxiety and depression. The patients with higher PDI have high pain intensity and were associated with higher level of anxiety and depression.

### Prevalence of MTrP



**Table- Pearson Correlation matrix between pain intensity and HAM-A, HAM-D**

		HAM-A	HAM-D
<b>Pain Intensity</b>	Pearson Correlation	.530**	.482**
	Sig. (2-tailed)	0	0
	N	100	100

\*\* Correlation is significant at the 0.01 level (2-tailed)

Pain intensity was statistically significantly correlated with anxiety and depression, with a p value of .000. Higher pain intensity was associated with increased level of anxiety and depression.

### DISCUSSION

Chronic regional myofascial pain is one of the major causes of neck and upper back pain. Myofascial pain syndrome (MPS) is distinguished by trigger points (TPs) which are highly irritable focal areas within taut bands of skeletal muscle. Sensitivity to pain in patients with TrPs has been measured as the pressure pain threshold by pressure algometry. It is relatively objective, since the subject need not see the display, but the reading does depend on the subject's report of a subjective sensation. Previous studies

demonstrated the cut off value of pressure pain threshold is 4kg/cm<sup>2</sup> or less. Our study also found the same observations in myofascial trigger points.

Various psychological factors have been implicated in the predisposition, initiation, and perpetuation of chronic pain (19). Even though chronic myofascial pain is not a psychological disorder, it can be associated with psychological disturbance (13,20). Fishbain et al (13) reported that depression and anxiety syndromes were the most frequently attributed to patients with MPS.

The pain intensity was significantly correlated with depression and anxiety meaning patients with higher pain intensity having higher depression and anxiety. This study shows that nearly half of the patients have moderate to severe depression and the majority of the patients presented with mild anxiety (79%). It was reported that chronic muscle pain is frequently accompanied by symptoms of depression (21). Ozlem Altindag et al (22) reported that the depression in MPS is related to perceived pain severity and major depression is frequently found in MPS (39%). Thomas E. Elliot et al (23) found the severity of depression was significantly correlated with pain intensity and prevalence of major depression was 52% of patients. Different scales were used in previous studies but consistency of similar results shows reliability of the study. This undermines the importance of managing MPS along with depression and anxiety.

### CONCLUSION

Chronic myofascial pain patients have moderate to severe depression and it is correlated with the intensity of pain.

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