

IMPACT OF AMITRIPTYLINE ON TREATMENT OF MYOFACIAL PAIN DYSFUNCTION SYNDROMEKuldeep Moras¹, Veena Pinto², Rahul Shivaraj³**HOW TO CITE THIS ARTICLE:**

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ABSTRACT: OBJECTIVE: To study assess the impact of amitriptyline in patients with MPDS. **MATERIAL AND METHODS:** Hundred patients diagnosed to have MPDS for the first time, between the age group 18-60 years were included. Patients were diagnosed based on their symptomatology and their clinical findings. They were started on Amitriptyline 25mg at night for a minimum period of 3 months and the clinical improvement was noted. **STUDY DESIGN:** It was a prospective study where the relief of the symptoms was assessed before and after treatment using mean, frequency, standard deviation and paired 't' test. **RESULT:** A total of 100 patients with MPDS who were treated with amitriptyline were studied. The study showed a female preponderance. MPDS was seen more common in patients with stress. Pain relief with usage of amitriptyline was seen in 85% of patients. The student 't' test should p value of <0.005 which was significant. **CONCLUSION:** Treatment of MPDS with amitriptyline for 3 months reduced the severity of symptoms. However the long term effects on quality of life could not be assessed. The study needs to be conducted in a large scale to evaluate the consistency and accuracy of test.

KEYWORDS: Amitriptyline, MPDS.

INTRODUCTION: Amitriptyline is an antidepressant agent which also has analgesic properties. It is the most widely used tricyclic antidepressant and has been proved effective in the treatment of depressive disorders. IT was originally developed by Merck, first synthesized in 1960.¹ It is listed in the WHO's List of Essential Medicines.² It is also used in a variety of conditions such as migraine, tension headache, post herpetic neuralgia, atypical odontalgia, psychogenic facial pain, diabetic neuropathy, atypical facial pain, temporomandibular disorders(TMD) and fibromyalgia.^{3,4,5}

Myofacial pain dysfunction syndrome (MPDS) is the most common temporomandibular disorder. This syndrome mainly involves the masticator muscles leading to pain and restriction of jaw opening, referred otalgia and pain radiating to forehead and neck. There may be deviation of the midline on opening the jaw, tenderness of the temporomandibular joint, or any of the masticator muscles.⁶ Epidemiological studies suggest that 40-70% of general population may present at least one symptom during their life.⁷

Women are more affected than men. Occlusal and psychological disorders are more common in this patients.⁸ Stress is an important aspect of MPDS. Tension and emotional stress increase the severity of the symptoms.⁹ Stressful events usually trigger the symptoms of the disease.¹⁰ Stress reduces the inhibitory effect of the sensory system in the thalamus which results in depletion of GABA and endorphins in CNS, hyperactivity of efferent gamma neurons resulting in contraction and pain of muscles.¹¹ Patient suffering from MPDS are more susceptible to anxiety and depression.¹²

The treatment of MPDS consists of pain relief and relaxation of the masticatory muscles, pain relief includes drug therapy, physiotherapy, management of depression and anxiety.

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Patients who do not respond to above modality of treatment may need dental treatment for adjustment of malocclusion, reconstruction of missing teeth and orthognathic surgery.^{13,14} Mechanism of action of amitriptyline: Amitriptyline belongs to the group of tri cyclic antidepressants (TCA). All TCAs act by increasing the actions of certain biogenic amines in the CNS by blocking uptake at nerve terminals. Amitriptyline inhibits the uptake of 5-HT (serotonin) and norepinephrine.¹⁵ Most of the patients who are treated conservatively showed improvement had symptomatic relief of symptoms.¹⁶

TCAs produce certain anti-muscarinic side effects like xerostomia, drowsiness, sedation, constipation, dizziness, muscle cramps, itching, tinnitus, urinary retention, tachycardia and postural hypotension.^{3,4} The sedative effect of TCAs improves the sleep pattern which may be helpful in the treatment for chronic pain. Reduced sleep may increase the pain perception and hence improvement of the sleeping pattern may be of benefit.³ TCA should be used with caution with patients with glaucoma, urinary retention, cardiac arrhythmias, heart block, xerostomia, hypotension, impaired liver function and who are on MAO inhibitors as they cause serotonergic syndrome.^{3,4}

The patients on TCAs should be informed about drowsiness and xerostomia which may last for several days. Starting dosage of amitriptyline is 10mg at bedtime for one week which is increased to 25mg, and maintained at this dosage for a minimum 3 to 6 months to prevent relapse.⁵ The dosage is tapered to 10mg and gradually stopped. It takes about two weeks before the analgesic effects appear, therefore patient should be told about the this time lag, patient should also be told to sip water frequently or to keep chewing gum in the mouth. Patients are also explained about drowsiness as well as other side effects that maybe seen with the drug.

MATERIAL AND METHODS: The study was done on 100 patients of either gender, in the age group 18-60 years.

INCLUSION CRITERIA: Patients with facial pain or pain in muscles of mastication, pain in the temporomandibular region, pain in front of or inside the ear.

EXCLUSION CRITERIA: subjects with arthritis or arthropathies of temporomandibular joint, Patients with facial pain which is attributed to migraine, Patients who are on treatment for depression, Patients with dental diseases who require continuous treatment and on whom or facial pain cannot be evaluated because of the present condition, Pregnant and lactation mothers were excluded from the study.

The patients' pain experience was measured by means of the visual analogue scale (VAS) as follows: 0 as No pain, 1 to less than 4 as mild pain, 4 to less than 7 as moderate pain, 7 to less than 9 as severe pain, and 10 as very severe pain.¹⁷ The criteria for improvement was defined as complete pain relief and tenderness in the symptoms.

STATISTICAL ANALYSIS: This was a prospective study where the severity of symptoms and the symptom relief were assessed before and after treatment using mean, frequency, standard deviation and paired't' test

RESULTS: This study was done on 100 patients. MPDS was found to be more common in females (67%) than males (33%). (Figure 1) The average age of presentation was 37 years. The average

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duration of symptoms was 2 months. Clinical improvement and symptom relief were seen in 85% of our patients who were treated with amitriptyline over a period of 3-6 months. Drowsiness was complained by 40% of our patients on initiation of treatment. Dry Mouth was seen in 20% of patients, which was no more of problem after few weeks of treatment. Dizziness seen in 8% patient and urinary retention in 6%, constipation was seen in 12% patients. (Table 1)

DISCUSSION: Our study revealed that use of amitriptyline results in complete pain relief in 85% of the patients with MPDS. MPDS was more prevalent in females in our study. This agrees with all the other studies that are done on this subject. This may be related to the stress, psychology and low tolerance of pain in women. We also found an association between MPDS and depression. IT has been shown that chronic pain and depression have a common pathophysiology.¹⁸ Norepinephrine and serotonin which play a role in the pathophysiology of mood disorders are also involved in the gate control mechanism of pain.

Hence antidepressants have been found to relieve chronic pain. Limitation of mandibular opening is commonly seen in patients with MPDS and was noticed in 67% of our patients. It was seen that mandibular opening gradually improved as drug treatment progressed. As per this study pain relief was seen in 85% patients who were on amitriptyline for a period of 3-6 months. Patient who still complains of pain at the end of 3 months were asked to continue the drug for another 3 months at the end of which they were assessed. It was assumed that the minimum duration of time for the improvement in the function and efficacy of masticatory muscles is 3 months.²⁰

CONCLUSION: This study concludes that use of amitriptyline for a period of 3-6 months is very effective in the treatment of MPDS with minimal side effects.

Adverse effects	Percentage of patients
Drowsiness	40%
Xerostomia	20%
Dizziness	8%
Urinary retention	6%
Constipation	12%

Table 1: Frequency distribution of adverse effects

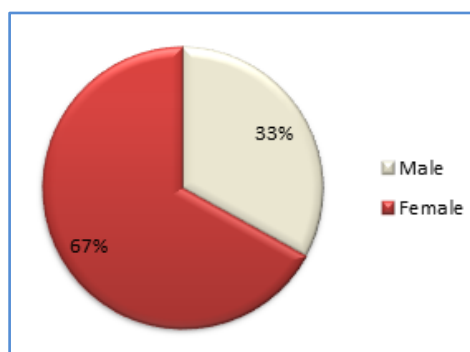


Fig. 1: Gender frequency distribution

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