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Review Article

**REVIEW OF HIS ROLE AND RECENT DEVELOPMENT IN
TMJ MANAGEMENT****Dr Fahad Qayyum, Dr Haseeb Mehmood, Dr Shah Ahmad Fazli**
House officer, Jinnah hospital Lahore**Article Received:** February 2020 **Accepted:** March 2020 **Published:** April 2020**Abstract:**

Background and destination: The persistence of this analysis is to evaluate indication of the effectiveness of percutaneous electrical nerve stimulation (TENS) in the dealing of temporomandibular disorders (TMD).

Methods: A review of the literature of published and unpublished articles has resulted in 13 potential articles.

Discussion: One study looked at 17 articles confirming the effectiveness of TENS in the treatment of TMD. Eight research tests for the use of TENS with other therapies to reduce pain and improve mouth opening. However, two other studies did not show a significant result in the TENS study compared to the treatment of occlusal splints. One study supports the stimulation of microcurrent electrical nerve (MENS) by TENS. One study supports muscle training relaxation training on TENS.

Conclusion: In the review presented, 12 studies out of 17 studies confirmed the effectiveness of TDS as a therapeutic module for pain relieve in patients with TMD.

Keywords: Review, Role, Recent Development, Tmj Management.

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INTRODUCTION:

Temporomandibular syndromes (TMD): a collection of ailments that functionally affect the masticatory system, specifically the influences of the jaw and the temporomandibular joint (TMJ). Has dissimilar etiologies and different methods of treatment with percutaneous electrical nerve stimulation (TENS). Epidemiological studies - about 75% of people have TMD symptoms. While 33% had at least one symptom,^{1,2,3} Yap AU et al. TMD review. Singapore Med J. 1999; 40 (3): 179–82 had better to be treated the cause of pain, if possible. Purpose of Assessing Evidence for the Effect of TENS Electric Therapy. TENS therapy for treating TMJ TMD to relax overactive muscles and relieve pain is also known as craniofibular disorders⁴. It consists of a group of pathologies that affect chewing muscles, TMJ, and related structure⁵. In TMD, there may be various symptoms associated with pain, which is one of the most common symptoms, mainly in the chewing muscle. The clinical picture includes jaw, head or neck pain, joint sounds, headache or earache⁶, dizziness⁷ and changes or limitations in hearing problems⁸, also patients with chronic TMD often report depression, poor sleep characteristics and low morale.

ETHIOPATOGENESIS AND SIGNS AND SYMPTOMS

It can affect the evolution of TMD with several predisposing factors that can trigger or maintain a disorder such as muscle hyperactivity, trauma, emotional stress and malocclusion. The importance of occlusive factors as etiologic or risk factors for TMD has been extensively studied in recent years. Occlusal procedures, such as correction of occlusion of natural teeth, orthodontic treatment and occlusal splints, have been widely used in accordance with the principle of negative occlusive contact. This can lead to neuromuscular changes. The causal relationship between occlusion and TMD is weak or absent based on epidemiological data and systematic reviews. It is known that skeletal muscles are the main sources of common and unrecognized pain, from pain after exercise to painful myofascial syndrome. In the latter case, there may be areas of hypersensitivity, called myofascial points (MTPs), which are sensitive areas that can produce local or reference pain in a typical way in muscle bands, tendons or ligaments. These points present in chewing muscles are directly related to the symptoms of TMD, which was observed in a systematic review in which myofascial pain is the most common diagnosis among the patients studied. Currently, most authors are in favor of the multi-stage idea of etiology for most TMD. Conservative and reversible treatment is recommended, especially for muscle pain,

because its etiology has not yet been fully explained.

MANAGEMENT OF TMD

TMD itself or many of them require a multidisciplinary approach

1. education
2. Self-care therapy
3. Physiotherapy
4. Intraoral treatment
5. Pharmacotherapy
6. Behavior / relaxation techniques.

There are many physical treatments that are effective in treating TMD, such as wet heat, ultrasound, microwave lasers, exercise and TENS. These methods are aimed at reducing musculoskeletal load and pain.

HIS APPLICATION IN MANAGEMENT OF TMD**Historical context**

Wall and Melzack, who presented the biological validation for electro-analgesic activity in 1965. They suggested that harmful information transfer could occur due to high peripheral afferent activity or activity in brain pain pathways. Large-scale percutaneous electrical stimulus of fringe afferents has been shown to alleviate neuropathic pain and encourage spines to relieve chronic pain. First, TENS was used to predict the success of spinal implant stimulation. (14) TENS is a non-invasive analgesic technology. It is used to relieve neuropathic and musculoskeletal pain. TEN: Provides electricity from the hard surface of the skin to activate the nerve below. Standard TENS device with a pulse frequency of 50-250 μ s and a two-phase repetitive pulse current with a frequency of 1-200 pulses per second.

TENS application technique

1. Conventional TENS (high frequency, low intensity)
2. Acupuncture TENS (low frequency, high intensity)
3. Intensive TENS (high frequency, high intensity).

Mechanism of Action

- 1) Segment mechanism, especially for traditional TENS. Condenses continuous nociceptive cell movement and CNS sensitivity. Down? Action causes long-standing reduction of fundamental nociceptive cell activity up to 2 hours.
- 2) Additional segment mechanism: mainly for high density TENS. It induces action in minor afferents (AP), leads to the stimulation of reduced inhibitory pathways and inhibition of pathways that facilitate pain reduction.
- 3) Environmental mechanism: mainly dense TENS. A nerve impulse is created that collects and extinguishes harmful impulses from the peripheral

structure. When TENS A activates the fibers, the peripheral block is large.

4) Neurotransmitters: TENS mediates many neurotransmitters, including opioids, serotonin, acetylcholine, noradrenaline and gamma aminobutyric acid (GABA). cap. TENS used in dentistry are designed to control chronic pain and relaxation of chewing muscles in selected cases. According to some authors, it has been observed that patients with resting TMD increase myoelectric activity, and administration of TENS increases pain, while reducing myoelectric activity.

Recent Development

1. Interventional flow therapy
2. Electric current of micro therapy
3. Percutaneous spinal analgesia
4. Transcranial electrical stimulation
5. Electrical stimulation of the percutaneous acupuncture point

DISCUSSION:

Some studies have shown the efficiency of TENS in the treatment of TMD in combination with other treatments and in the functional improvement of the stomatognathic system. Grossmann E et al. A evaluation article on the efficiency of TMD TENS was presented in 2012 to conclude that TENS is an alternative treatment for selected patients with TDS and TMD pain. Monaco A, Callaeno Ret.¹⁰. In studies on the effect of TENS on the electromyographic and kinesiographic activity of patients with TMD in 60 women, it was found that TENS can effectively reduce SEMG activity in chewing muscle and improve the periodic interval in patients with TMD. Madani AS, mirmortazavi et al.¹¹. I tried 20 patients with TMD. To compare 03 treatment options to click TMJ pain (TENS and radiation therapy in addition to radiation, ultrasound, physiotherapy and physiotherapy), conclude that radiation therapy is better than the other two treatments listed.¹². Raj Phurohit B, Khatri S et al. To test the effectiveness of TENS and MENS 2010, he conducted a comparative study with 60 violent individuals and concluded that MENS could be used as an effective pain supplement for TENS. Cooper, Barry C, Kleinberg conducted a comparative study on 313 TMD patients using an EMD device from 2008, Chin and TENS, claiming that EMD and chin tracking device could be effective at low frequency and low level. voltage¹³. Kato MT, Santos CN, Konawa EM et al. A comparative study of 18 chronic TMD patients using TENS and low-level laser therapy to treat TMD showed that both treatments effectively reduced TMD patience and the cumulative effect may be responsible for recovery. Núñez SC, Suzuki SS et al¹⁴. In 2006, a relative study was conducted on 10 patients aged 18 to 56 with TMD using TENS and low-level laser therapy (LLLT) to treat oral opening in patients with TMD. All patients

received both treatments for the next two weeks. In comparison of both methods, the values obtained after LLLT were significantly higher than the values obtained after TENS ($p < 0.01$). Both methods effectively improve mouth opening by comparing two methods. LLLT is more effective than TENS. Delaine R, olivera AS, Berzin F et al¹⁵. Using TENS, they conducted a study on 40 women (20 TMD and 20 normal people with myogenic TMD) and concluded that TENS reduced the severity of pain. Alverez-arenal A, junquera LM et al., 2002 conducted a comparative study in 24 patients with bruxism to find the effect of occlusal splints and concluded that both TENS and occlusal splints did not significantly improve symptoms. Gracia R, Radke J, Kmyszczek G et al., 2001 conducted a study on 39 patients, including 29 patients with resting muscle hyperactivity and 10 patients without resting muscle hyperactivity, to find electrographic evidence of reduced muscle activity at the TENS frequency. very low. It is used for the fifth and seventh cranial nerves in patients with TMD and claims that activity has ULF-TENS because it reduces the effect of resting and overactive muscle on resting EMG levels.

CONCLUSION

In the review presented, 12 studies out of 17 studies confirmed the effectiveness of TDS as a therapeutic module for pain reprieve in patients with TMD. TENS is an alternative treatment for pain and TMD in appropriately selected patients. Due to the variability of TMD groups, randomized controlled studies are needed in specific populations to identify patients and diseases that respond to this type of treatment. In addition, it is necessary to identify facial pain syndromes in which adjuvant TENS therapy may be beneficial. Currently, the option of using TENS is highly dependent on clinical experience and management by healthcare professionals.

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