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# Drug Treatment in Temporomandibular Disorder

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## Abstract

A large part of the world population is affected by some temporomandibular joint disorder (TMD). The challenges in the treatment of these disorders start from its proper diagnosis, which is often done inappropriately, to the choice of therapy. The highest prevalence is in cases of temporomandibular disorder of muscular origin. The symptoms resulting from TMD are usually accentuated in periods of greater emotional stress. With the Sars-CoV-2 (Covid-19) pandemic, many patients lost family members, jobs and their own income, and neurological disorders, linked to anxiety and sleep disorders, increased the occurrence of symptoms connected to TMD. Conservative treatment should be the first choice to combat TMD, when all these alternatives are exhausted, surgical treatment can be planned, according to the patient's pathology. Generally, the treatment of choice is the use of drugs, but a large number of alternatives have emerged and some have shown to be very promising. This review seeks to talk a little about drug treatment for the relief of TMD symptoms.

## Temporomandibular disorder

Pain in the head and neck region is certainly an important reason why patients seek treatment. Dental surgeons need to be thorough when evaluating a patient who has facial pain, including obtaining a detailed and history of the disease, past medical history, social history, as well as conducting a systematic and thorough clinical examination. After all of this information has been collected, the next crucial step is to create a differential diagnosis. Formulating a complete differential diagnosis involves creating a list of conditions that may be causing the patient's pain [1]. Imaging exams can also be used as complementary diagnostic tools. Periapical radiographs can be used to rule out dental pathologies as a cause of referred pain. Cone-beam computed tomography and panoramic radiographs will provide detailed images of the bone structures of the joint, but not of the articular disc [2]. Magnetic resonance imaging is the method of choice for examining the position and morphology of the disc (gold standard). Magnetic resonance imaging can also show degenerative bone changes. Isolated MRI findings should not dictate treatment strategies [3]. Initial management with non-surgical or clinical treatment is successful in most cases, as a result of advances in analgesia and other conservative treatments [4]. Some centers have developed multidisciplinary clinics that include surgeons, doctors, psychologists and physiotherapists to guide treatment in an attempt to have more structure and science for their planning [5]. This combination of different therapies has led to a considerable reduction in open surgery on the temporomandibular joint (TMJ), together with evidence that correction of the disc position is not indicated.

## Drug treatment

The use of drug therapy in the treatment of TMD should be seen as an adjuvant treatment, as opposed to the definitive treatment of this disease. TMD and its associated pain are known to be multifactorial due to many contributing causes and, consequently, the pharmacological therapy used to treat this condition is varied [6].

## Antidepressants

The literature supports the use of antidepressants to treat chronic non-malignant TMJ diseases and several reviews of controlled studies show that the use of antidepressants for pain control indicates that their analgesic effects are largely independent of their antidepressant activity [7]. Studies in patients with chronic non-dental pain also indicate that antidepressant drugs, such as amitriptyline, which inhibit the reuptake of serotonin and norepinephrine, are more effective than drugs that are selective for any neurotransmitter. Analgesia occurs well before the antidepressant effect and at lower doses that are not effective for treating depression in many patients with chronic pain [8].

## Muscle relaxants

They are drugs that eliminate muscle spasms and are often used in conjunction with physical therapy, heat, rest and pain relievers. One drug in this category that has been shown to be effective in the treatment of chronic musculoskeletal disorders is cyclobenzaprine (Flexeril). Although this drug has not been evaluated directly for TMD, available scientific studies suggest the effectiveness of this drug in the treatment of muscle relaxation in the orofacial region [9]. Cyclobenzaprine acts primarily on the central nervous system (CNS) in the brain stem, as opposed to spinal cord levels, and does not act directly on skeletal muscles. It is recommended that this medication be used only for short periods of time (2 weeks) and should not be used in patients using monoamine oxidase inhibitors because it can, in such cases, lead to a hyper pyretic seizure, seizures or both [6].

## Benzodiazepines

Benzodiazepine drugs have been prescribed for patients suffering from chronic orofacial pain of muscle origin; this medication has been shown to be useful in several studies, especially when combined with ibuprofen. Although the use of benzodiazepines in the treatment of chronic TMD pain has been discouraged by many, due to the depression observed in some



patients taking this class of drugs, some authors consider that the depression observed in these patients is not due to the benzodiazepines themselves, but rather to some type of depressive symptom often seen in patients suffering from chronic pain [10].

### Nonsteroidal Anti-Inflammatory

The use of non-steroidal anti-inflammatory drugs (NSAIDs) was developed as a treatment of first choice for TMD, which occurs mainly for 2 different physical causes: internal joint breakdown and dysfunction associated with the activity of the masticatory muscles. NSAIDs have a multifactorial influence and help to resolve these known causes of pain [6]. Prescribers tend to prescribe naproxen as the first-line treatment for patients with TMJ disorders, although there are many NSAID options. Additional options include ibuprofen, celecoxib, piroxicam and diclofenac, which have been used with varying frequency and effectiveness. Ibuprofen (400 mg) has been referred to as the gold standard for pain control and is a popular choice among prescribers for the relief of TMD pain symptoms [11]. Typical doses used for the treatment of acute and chronic TMJ pain are 500 mg twice a day, a dose similar to those recommended for the treatment of osteoarthritis. Dosages can be increased to a maximum of 750 mg twice daily, as needed. Prescribed NSAIDs can be used in conjunction with muscle relaxant medications [6].

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### Authorship

Author IFP contributed in the planning, literature review and writing. BCEV contributed with critical review, read and approved the final manuscript.

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