Pharmacological guidelines for managing temporomandibular disorders

Eduardo Dias de Andrade1
Célia Maria Rizzatti-Barbosa2
Marcos Luciano Pimenta Pinheiro3

1DDS, MS, PhD, Professor, Department of Physiological Sciences, Piracicaba Dental School, State University of Campinas, Piracicaba, Brazil.
2DDS, MS, PhD, Professor, Department of Prosthesis and Periodontology, Piracicaba Dental School, State University of Campinas, Piracicaba, Brazil.
3Pharm.D., MS, Professor, Diamantina Dental School, Diamantina, Brazil.

Received for publication: March 23, 2004
Accepted: May 23, 2004

Abstract
Temporomandibular disorders (TMD) characterize a heterogeneous group of conditions involving the temporomandibular joint (TMJ) and its contiguous tissues. Although the etiology and pathophysiology underlying the development of TMD have not been completely explained, the symptoms associated with these disorders are similar and are most commonly manifested as pain in the orofacial region. Despite the large body of literature on therapeutic modalities for TMD, this article briefly discusses the most common and current pharmacological clinical guidelines for managing TMD.

Key Words:
temporomandibular disorders, facial pain, pharmacological management.
Introduction
Orofacial pain represents an important aspect in dental treatment. Temporomandibular disorders (TMD) are a classification of orofacial pain that dentists are uniquely equipped to manage1. Researches generally agree that TMD fall into three main categories: myofascial pain, the most common form of TMD, which is discomfort or pain in the muscles that control jaw function and the neck and shoulder muscles; internal derangement of the joint, meaning a dislocated jaw or displaced disc, or injury to the condyle and degenerative joint disease, such as osteoarthritis or rheumatoid arthritis in the jaw joint2. A variety of signs and symptoms may be linked to TMD. Pain, particularly in the chewing muscles and/or jaw joint, is the most common symptom. Other likely symptoms include: limited movement or locking of the jaw, pain in the face, neck or shoulders, painful clicking, popping or grating sounds in the jaw joint when opening or closing the mouth. Symptoms such as headaches, earaches, dizziness and hearing problems may sometimes be related to TMD. However, occasional discomfort in the jaw joint or chewing muscles is quite common and is generally not a cause for concern1. Because the exact causes and symptoms of TMD are not clear, diagnose these disorders can be confusing. One of the most important areas of TMD research is developing clear guidelines for diagnosing these disorders. At present, there is no widely accepted, standard test to correctly identify TMD. The National Institute of Dental and Craniofacial Research2 shows that “consensus has not been developed across the practicing community regarding that TMD problems should be treated, and when and how they should be treated”. The efficacy of most treatment approaches is unknown, as most have not been adequately evaluated in long-term studies and virtually none in randomized controlled trials. Although noninvasive therapies are clearly preferred for the vast majority of TMD, a small percentage of patients who have persistent and significant pain and dysfunction and for whom more conservative treatment has failed may be considered for surgical intervention. Professional education is needed to ensure the proper and safe practice in the treatment of TMD, especially with regard to pharmacological, surgical, and behavioral approaches.

TMD treatment
Because most TMD problems are temporary and do not get worse, simple treatment is all that is usually needed to relieve discomfort. Self-care practices, for example, eating soft foods, applying heat or ice packs, and avoiding extreme jaw movements (such as wide yawning, loud singing and gum chewing) are useful in easing TMD symptoms. Learning special techniques for relaxing and reducing stress may also help patients deal with pain that often comes with TMD problems. Other conservative, reversible treatments include physical therapy you can do at home, which focuses on gentle muscle stretching and relaxing exercises4. The decision to use drugs systemically in the management of temporomandibular dysfunction must be made with consideration of the information summarized in this report. It has been shown that pharmacotherapy may be effective. It has also been demonstrated that systemic pharmacotherapy frequently produces side effects which are occasionally severe. The clinician must decide on the appropriateness of therapy with the knowledge that many other conservative measures may also have excellent success rates and that pharmacotherapy is likely to be palliative rather than curative4. Most current pharmacological management approaches in the treatment of orofacial pain conditions, including TMD, involve the use of antidepressants, anticonvulsants, muscle relaxants, corticosteroids, and nonsteroidal anti-inflammatory drugs5.

Pharmacological guidelines for TMD treatment
These pharmacological guidelines were presented in a conference of the I Symposium of diagnostic and treatment of TMD, August 2003, in the Piracicaba Dental School – Campinas State University, Brazil, and include the usual and habitual treatment approaches recommended for each categories on the examination and diagnosis of temporomandibular disorders, including in order: acute spasm and myofascial pain, myositis and other TMD inflammatory disorders and chronic facial pain1.

Acute spasm and myofascial pain
Acute spasm involves sudden involuntary muscle contracture that is maintained over time4. The muscle is shortened, which causes pain when the muscle is stretched. The diagnostic anesthetic blockage, performed in the spastic muscle, can relief the acute pain and allow therapeutic stretching. Myofascial pain arises from a trigger point in a muscle and its associated fascia4. The trigger point is a hyperirritable spot that refers pain in a predictable pattern and often are accompanied by facial swelling, lacrimation, and associated muscle spasm6. Diagnostic anesthetic blockage will completely remove the pain if made at the trigger point, but will give equivocal results when only the area of referred pain is injected4. If residual pain is sustained, prescribe dypirone, which promotes a direct antagonism of inflammatory hiperalgisia9.

Guidelines
Infiltration of 1 ml lidocaine 2% (without vasoconstrictor) in the involved muscle or in the trigger point. This procedure requires a perfect knowledge of the technique by the
professional. Dypirone 500 mg alone or associated with orfenadrine, a muscle relaxant, three times daily, for 2 days, can be prescribed like complementary analgesic therapy.

**Myositis and Temporomandibular inflammatory disorders**

The myositis muscle is tender, sometimes perceptibly swollen, and is irritated by almost any functional demand. Management of myositis is difficult and is usually not benefited by treatments that abate myospasm, since is irritated by anesthetic injection.

The acute inflammatory TMD may be localized or generalized. Since that the inflammatory autacoids prostaglandin E2 and leukotriene B4 were be identified in the sinovial fluid of painful, dysfunctional temporomandibular joint, the most appropriate strategy is to administer a one intramuscularly dose of a sustained release corticosteroid preparation. Data also suggest that use of an inhibitor selective for the inducible form of cyclooxygenase enzyme, COX-2, may significantly attenuate the neurogenic component in an inflammatory TMJ animal model.

**Guidelines** (one of two options)

I. **Intramuscularly route with the sustained release corticosteroid preparation:**
Diprosapain® (association of 5 mg betamethasone dipropionate and 2 mg betamethasone dossic phosphate) - 1 ampoule (1 ml) IM;

II. **Oral route with a nonsteroidal anti-inflammatory drug:**
Rofecoxib 50 mg or Etoricoxib 120 mg, once daily dosing regimen for 5 to 7 days.

**Chronic facial pain.**

Several investigations into TMD have led to the recommendation of antidepressants as a supporting treatment against chronic facial pain. In a recent controlled double-blind study, twelve female volunteers presenting chronic TMD pain were divided into two groups and treated for 14 days with 25 mg/day of amitryptiline and or placebo. The intensity of pain and discomfort was evaluated daily, using a visual analog scale (VAS), over a period of seven days preceding the treatment (baseline), during the 14-day treatment, and for seven days after the treatment. The results revealed a significant reduction of pain and discomfort in Group 1 (75%) compared to Group 2 (28%) during the three weeks beginning at baseline (p < 0.01). Amitryptiline proved to be an efficient alternative treatment for chronic pain in TMD patients.

**Guidelines**

Amitryptiline 25 mg once daily, for 14 to 21 days.

**Anxiety**

In most cases of myofascial pain or painful TMD, the role of the psychic component assumes a strong relevance. If the anxiety is diagnosed and are exacerbating the symptoms, than prescribing a oral route benzodiazepin chloride.

**Guidelines**

Diazepam 5 mg or Lorazepam 1 mg or Alprazolam 0.5 mg, once daily dosing for 5 to 10 days.

**Depression**

When suspecting that the depression is contributing to aggravate pain symptoms, send the patient to a physician for definitive diagnostic and treatment.

**References**