Orofacial Pain

Pharmacologic Paradigms for Therapeutic Intervention

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KEYWORDS

• Episodic/continuous pain • Anticonvulsants • Antidepressants • SSRIs • Antivirals • Botox • Topical medicaments

KEY POINTS

- Orofacial pain (OFP) is a complex process whose causes originate from the trigeminal nociceptive reflex arcs within the central and peripheral nervous systems.
- The primary management of intraoral, neuropathic, and neurovascular OFP within the soft and hard tissues of the head, face, and neck is based on sound and rational pharmacotherapy.
- The current perspectives of OFP management require the clinician to be cognizant of comorbid conditions and apply balanced pharmacologic paradigms for optimal outcomes. Many of the drugs in combination can elicit both beneficial and adverse effects in patients treated.
- Evidence-based clinical trials characterize opioids, tricyclic antidepressants, selective serotonin reuptake inhibitors, anticonvulsants, and several topical medicaments as viable choices in the pharmacologic management of pain associated with OFP syndromes.
- New innovations in routes of pharmacotherapy will augment not only the efficacy of medication but allow for combination therapy that has fewer adverse effects and greater prolongation of relief in patients who have OFP.

INTRODUCTION

The definition of pain according to the International Association for the Study of Pain is "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage."[1–3] Pain is a universal experience that has profound effects on the physiology, psychology, and sociology of the population. The World Health Organization (WHO) has estimated that more than

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one-third of the population has some form of acute or chronic pain.[1,2] Within the United States, the health care costs of diagnoses and treatment of pain exceed several billion dollars annually.[1]

Orofacial pain (OFP) refers to pain associated within the head and neck regions, soft and hard tissues, both extraorally and intraorally. Okeson[3] divides OFP into physical (axis 1) and psychological (axis 2) conditions. Physical conditions comprise temporomandibular disorders (TMD), which include disorders of the temporomandibular joint (TMJ) and disorders of the musculoskeletal structures (eg, masticatory muscles and cervical spine); intraoral dental and pulpal pain of somatic origin; neuropathic pain (NP), which include episodic (eg, trigeminal neuralgia [TN]) and continuous (eg, peripheral/centralized mediated) characteristics; and neurovascular disorders/headaches (eg, migraine and temporal arteritis). OFP can often be a presenting symptom for systemic illnesses, such as chronic pain seen in fibromyalgia, gastroesophageal reflux disease (GERD)/irritable bowel disease, posttraumatic stress disorder (PTSD)/other psychological disorders, myocardial ischemia, and cancerous lesions in other parts of the body.[4] Therefore, the evaluation of patients presenting with OFP accounts for a cornucopia of diagnostic possibilities. The oral health care clinician must be judicious in diagnosing clinical presentations as odontogenic and other dental conditions as a primary versus secondary cause of OFP.[4,5] A careful deciphering of signs and symptoms will set the foundation for specific treatment to improve long-term prognosis and resolution of most OFP syndromes.

Evidence-based observational and controlled experimental clinical trials suggest that pharmacologic therapy may significantly improve patient outcomes either alone or when used as a part of a comprehensive treatment plan for OFP.[6–8] The aim of this article is to provide the practitioner with therapeutic options from a pharmacologic perspective to treat a broad spectrum of both acute and chronic OFP syndromes. The epidemiology and neurophysiology/pathophysiology of OFP are introduced with respect to the most common treated areas of the head and neck followed by the latest in pharmacologic management strategies for pain management.

EPIDEMIOLOGY

Demographic studies have determined that greater than 39 million people, 22% of US citizens, report pain in the orofacial region.[8] Studies by Turp and colleagues[5] report that greater than 80% of patients presenting with OFP symptoms had concomitant pain systemically, that is, fibromyalgia, panic disorders, multiple chemical sensitivities, and PTSDs.[1,4,5,8] The classification and epidemiology of OFP are quite challenging because of a lack of consensus regarding diagnostic criteria. Lancer and Gesell[5] has coined the phrase “Pain management: the fifth vital sign” because patient sex, age, and psychosocial factors seem to be a prominent risk predictor for chronic facial pain.[9] Evidence-based studies have been published at a greater pace over the past decade in OFP, and there are still many questions unanswered with respect to the dynamics of this disease process.[1,8] Many drugs used to treat the symptoms are usually prescribed over an extended period of time necessitating careful monitoring for adverse effects and potential drug interactions. In addition, the latest experimental evidence demonstrates gender/sex differences in causes and clinical presentation of pain, that is, pharmacogenetic-specific responses to different analgesics and other medications to treat OFP. Future research in this area is ongoing and will continue to affect the epidemiologic criteria with respect to diagnoses and treatment options. A thorough understanding of the epidemiology/cause of OFP is essential to the practice of evidence-based oral health care.[9]