

38 - CAPSAICIN AN EVIDENCE FOR AN ATYPICAL TOOTHACHE

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INTRODUCTION

Pain is an unpleasant sensation, varying in intensity and location extension, which affects millions of people, often reducing or even disabling functional and routine activities of the individual.

Painful conditions are common in the dental office and the majority of dental pain is odontogenic in nature, originating from pulp and periodontal tissues, however, there are also non-odontogenic odontalgias, and one of these conditions is the atypical odontalgia.

The term atypical odontalgia is applied to continuous pain in tooth or tooth socket region, in the absence of any cause dental identifiable¹.

There is no consensus on a treatment protocol that would be more appropriate to the treatment of neuropathic pain, because it is difficult to diagnose and the lack of well-designed control studies to evaluate the clinical effectiveness of prescription drugs to AO².

Several drugs have been used in the treatment of atypical odontalgias, among which stand out antidepressants³. In addition to these, there is an association with anticonvulsants and resents oral studies^{4,5,6,7}, provide a alternative of treatment the topical application of capsaicin.

The aim of this paper is to review the literature to provide information regarding the atypical odontalgia regarding clinical features, diagnosis and treatment with capsaicin. For this, we have used in the search database, PubMed, Medline and Lilacs, as well as a manual search of references in English and Portuguese.

DISCUSSION

The atypical odontalgia (AO) was first described by Horton in 1947 and McElin⁸. It is defined by the International Headache Society as a subgroup of persistent idiopathic facial pain⁹. But according to Baad - Hansen et al¹⁰, is best defined as a neuropathic condition, supported by the fact that most patients with AO have undergone invasive dental surgical procedures, and these procedures can cause deafferentation of trigeminal primary afferent fibers. It is also known as phantom tooth pain^{10, 11, 12}.

Patients with AO often have persistent pain localized in the tooth, gums or site of extraction^{11, 13, 14}. The area most commonly affected is premolars or superior molars area^{9, 11, 15}.

Despite the pain is felt in the teeth or alveolar process, there is no local pathological conditions that explain, as there are no radiographic findings¹³. An incorrect or ineffective treatment can perpetuate or generate the chronic pain¹⁰. In a study by List et al¹³ 83% of patients with atypical odontalgia stated that the pain began with a dental treatment.

Both genders can be affected, but is more commonly found in women around 40 years^{9, 10, 16, 17}. According Woda et al¹⁷, this prevalence is probably related to female hormones in a retrospective study in women who used hormone supplements, it was discovered that they had 20% to 30% more chronic pain conditions compared with women who did not use this type of supplement. This prevalence is confirmed by several studies^{11, 12, 18, 19}, however Woolf²¹ March²⁰ and reports that the prevalence increases with age. It is estimated that 18% of women and 9.6% of men over 60 have symptoms of AO²². But according to Craff-Radford et al⁹ this issue have not been well elucidated and more studies need to be done.

The differential diagnosis should be guided on many factors including the presence of emotional disorders such as depression and anxiety disorders, and the exclusion of dental pathologies^{8, 23}. Pain that does not have a odontogenic cause like the migraine^{23, 24}, trigeminal neuralgia^{25, 24}, arthritis of the joint temporomandibular²⁵ and temporal arthritis²⁴, burning bucal syndrome²⁶, postherpetic neuralgia^{25, 27, 28}, sinusite^{23, 24} herpeszoster²⁵, must be discarded.

In the study by Saravanan Ram et al¹¹ 80% of patients with AO who were submitted to dental procedures did not manage the pain and in some cases made it worse. Although in this study, 3% to 6% of endodontic treatment there were deafferentation, confirms these results Matwychuk et al⁸, 3% to 6% of patients develop OA after endodontic treatment.

The pain is not only a concern for the person suffering, but also for society, it seriously damages the lives of millions of people around the world, disabling them, often, from work and social life¹⁵. Besides the fact that some psychological pain are more influenced than others.

Several drugs have been used in the treatment of atypical odontalgia, among which stand out antidepressants^{3, 19, 29}, the beneficial effect of the drug is not connected to the treatment of depression, but its analgesic effect, and therapy with opióides^{6, 30}. The use is still controlled and is only indicated for patients with chronic moderate pain, to severe.

Besides these, there is an association with oral anticonvulsants^{6, 10} and also the use of topical capsaicin^{5, 10}. However, with the administration of these drugs is reduced, but there is rarely a full control of the pain^{10, 30}.

Capsaicin is an irritant and produces a burning sensation in any tissue which enters into contact³¹. It was first isolated by Thresh, around the year 1846³², and only in 1919 was given its exact chemical structure³³.

It is seen as the only compound able to act pharmacologically in specific neurons and nociceptor fibers, it initially depolarizes these neurons, but in the continuous presence of capsaicin they lose the ability to despolarization^{34, 35}.

According to Philip et al²⁷ initial topical application of capsaicin causes a burning increased sensation, but repeated applications result in desensitization of unmyelinated epidermal nerve fibers, thus leading to a reduction of hyperalgesia.

Capsaicin is available as a cream at a concentration of 0, 025% used 3-4 times a day, or 8% used once a day³⁶.

Mason et al⁷ evaluated the efficacy of topical capsaicin in patients with musculoskeletal neuropathic pain. They found that 57% had significant analgesia using capsaicin 0.075%. When using capsaicin 0.025% was the result of 38% improvement. The analgesic effect was 4-8 weeks. These results are similar to Derry's et al³⁸, where they observed improvement in neuropathic pain within 6-12 weeks with repeated use of capsaicin 0.075% and single application of capsaicin 8%.

Corroborating to these studies, Altman et al³⁹ found in a study of 12 weeks, 53% reduction in pain compared to placebo, however in the study of Deal⁴⁰ in 4 weeks the pain reduction was 33%.

According to Spruce et al⁴¹, topical application of capsaicin at a concentration of 0.075% for 4-6 weeks and 3 to 4

times a day have hindered patient compliance with treatment. Silva et al⁴² conducted a systematic review of randomized controlled trials of patients with AO, using complementary alternative medicine (CAM) compared with other treatments or placebo. In this review the authors found consistent evidences^{39, 40,43,44,45} that capsaicin 0.025% four times daily for 12 weeks and a 0.015% capsaicin once daily for 6 weeks and capsaicin 0.075% for 4 weeks was effective in the AO.

Hargreaves et al⁴⁶ postulated that adrenergic agonists inhibit the activation of peripheral terminals of capsaicin-sensitive pulpal fibers and suggest that these drugs can be used in the treatment of postoperative pain.

CONCLUSIONS

Chronic pains are normally difficult diseases to diagnose and treat, because treatments are often ineffective and unnecessary.

Atypical odontalgia is a moderate to strong chronic pain, which may be followed by headache, hyperesthesia and allodynia. The diagnosis is clinical and should be considered the emotional factor.

The use of topical capsaicin on mucosa at different concentrations, as a treatment for chronic pain is possible and it was extensively studied achieving results that motivate further studies in relation to another route of administration, because in this it has some side effects limiting its use. It is a cheap alternative, easily applied and clinical effectiveness in the battle against chronic pain

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CAPSAICIN AN EVIDENCE FOR AN ATYPICAL TOOTHACHE

ABSTRACT

Introduction: Atypical odontalgia (AO) is an orofacial neuropathic pain that affects thousands of people, applied to a tooth or tooth socket region, in the absence of any identifiable dental cause. It is a chronic condition, difficult to diagnose and is often treated wrongly. **Materials and methods:** We conducted a literature review regarding clinical features, diagnosis and treatment for AO with capsaicin. **Discussion:** The atypical toothache pain is constant, with characteristics of burning, stinging or pressure, no local presence of pathologies. The diagnosis is difficult because it is performed by exclusion. Capsaicin, which is the active component of chili peppers, is already used in treatments for other types of chronic pain as well as in the oral mucosa. **Conclusion:** The use of topical capsaicin is effective and should be considered for the treatment of AO, but they have side effects that may limit its use

KEYWORDS: capsaicin, orofacial pain, toothache atypical

PREUVE D'UNE CAPSAÏCINE MAL AUX DENTS ATYPIQUE

SOMMAIRE

Introduction: Le mal de dents atypique est une douleur orofaciale neuropathique qui affecte des milliers de personnes, appliqué à une dent ou une région de l'alvéole en l'absence de toute cause identifiable dentaire. Il s'agit d'une maladie chronique difficile à diagnostiquer et est souvent traité à tort. **Matériel et méthodes:** Nous avons effectué une revue de la littérature concernant les caractéristiques cliniques, le diagnostic et le traitement par la capsaïcine. **La discussion:** Les maux de dents atypique est constante, avec des caractéristiques de brûlure, de picotement ou de pression, pas de présence locale de pathologies. Le diagnostic est difficile car elle est réalisée par l'exclusion. **Conclusion:** L'utilisation de capsaïcine sont efficaces et devraient être considérés pour le traitement de l'arthrose, mais a des effets secondaires qui peuvent limiter son utilisation.

MOTS-CLES: la capsaïcine, la douleur orofaciale, mal de dents atypique

CAPSAICINA UNA EVIDENCIA PARA DOLORES DE MUELAS ATÍPICOS

RESUMEN

Introducción: La dolor de muelas atípicos es un dolor oro facial neuropático que afecta a millones de personas, que ocurre en un diente o una región del alvéolo dental, en la ausencia de cualquier causa dentaria de identificación. Es una condición crónica de difícil diagnóstico y muchas veces es tratada de una manera equivocada. **Materiales y métodos:** Se realizó un levantamiento bibliográfico cuanto las características clínicas, diagnósticos y tratamiento con capsaicina de la dolor de muelas atípicos. **Discusión:** El dolor por muelas atípica es constante, con características de quemazón, con picor o presión, sin la

presencia de las patologías locales. Su diagnóstico es difícil por ser realizado por exclusión. La capsaicina, que es el compuesto activo de las pimentas, ya es utilizada en tratamientos para otros tipos de dolor crónico así como la mucosa bucal. Conclusión: El uso de la capsaicina tópica es eficaz y debe considerarse para el tratamiento de la dolor de muelas atípicas, pero posee efectos colaterales que pueden limitar su utilización.

PALABRAS CLAVE: la capsaicina, dolores oro faciales, el dolor de muelas atípicas

CAPSAICINA UMA EVIDÊNCIA PARA ODONTALGIAS ATÍPICAS

RESUMO

Introdução: A odontalgia atípica (OA) é uma dor neuropática orofacial que atinge milhares de pessoas, aplicado em um dente ou região do alvéolo dentário, na ausência de qualquer causa dentária identificável. É uma condição crônica de difícil diagnóstico e muitas vezes é tratada de forma errada. Materiais e métodos: Realizou-se um levantamento bibliográfico quanto às características clínicas, diagnóstico e tratamento com capsaicina da OA. Discussão: A dor por odontalgia atípica é constante, com características de queimação, ardência ou pressão, sem presença de patologias locais. O seu diagnóstico é difícil por ser realizado por exclusão. A capsaicina, que é o composto ativo das pimentas, já é utilizada em tratamentos para outros tipos de dor crônica assim como na mucosa bucal. Conclusão: O uso da capsaicina tópica é eficaz e deve ser considerada para o tratamento da OA, mas possuem efeitos colaterais que podem limitar a sua utilização.

PALAVRAS-CHAVE: capsaicina, dor orofacial, odontalgia atípica