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[Intervention Review]

Interventions for treating burning mouth syndrome

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ABSTRACT

Background

Burning mouth syndrome (BMS) is a term used for oral mucosal pain (burning pain or discomfort in the tongue, lips or entire oral cavity) without identifiable cause. General population prevalence varies from 0.1% to 3.9%. Many BMS patients indicate anxiety, depression, personality disorders and impaired quality of life (QoL). This review updates the previous versions published in 2000 and 2005.

Objectives

To determine the effectiveness and safety of any intervention versus placebo for symptom relief and changes in QoL, taste, and feeling of dryness in people with BMS.

Search methods

Cochrane Oral Health's Information Specialist searched the following databases: Cochrane Oral Health's Trials Register (to 31 December 2015), the Cochrane Central Register of Controlled Trials (CENTRAL; 2015, Issue 11) in the Cochrane Library (searched 31 December 2015), MEDLINE Ovid (1946 to 31 December 2015), and Embase Ovid (1980 to 31 December 2015). We searched ClinicalTrials.gov and the World Health Organization International Clinical Trials Registry Platform for ongoing trials. We placed no restrictions on the language or date of publication when searching the electronic databases

Selection criteria

Randomised controlled trials (RCTs) comparing any treatment against placebo in people with BMS. The primary outcomes were symptom relief (pain/burning) and change in QoL. Secondary outcomes included change in taste, feeling of dryness, and adverse effects.

Data collection and analysis

We used standard methodological procedures expected by Cochrane. Outcome data were analysed as short-term (up to three months) or long-term (three to six months).

Main results

We included 23 RCTs (1121 analysed participants; 83% female). Interventions were categorised as: antidepressants and antipsychotics, anticonvulsants, benzodiazepines, cholinergics, dietary supplements, electromagnetic radiation, physical barriers, psychological therapies, and topical treatments.

Only one RCT was assessed at low risk of bias overall, four RCTs' risk of bias was unclear, and 18 studies were at high risk of bias. Overall quality of the evidence for effectiveness was very low for all interventions and all outcomes.

Twenty-one RCTs assessed short-term symptom relief. There is very low-quality evidence of benefit from electromagnetic radiation (one RCT, 58 participants), topical benzodiazepines (two RCTs, 111 participants), physical barriers (one RCT, 50 participants), and anticonvulsants (one RCT, 100 participants). We found insufficient/contradictory evidence regarding the effectiveness of antidepressants, cholinergics, systemic benzodiazepines, dietary supplements or topical treatments. No RCT assessing psychological therapies evaluated short-term symptom relief.

Four studies assessed long-term symptom relief. There is very low-quality evidence of a benefit from psychological therapies (one RCT, 30 participants), capsaicin oral rinse (topical treatment) (one RCT, 18 participants), and topical benzodiazepines (one RCT, 66 participants). We found no evidence of a difference for dietary supplements or lactoperoxidase oral rinse. No studies assessing antidepressants, anticonvulsants, cholinergics, electromagnetic radiation or physical barriers evaluated long-term symptom relief.

Short-term change in QoL was assessed by seven studies (none long-term).The quality of evidence was very low. A benefit was found for electromagnetic radiation (one RCT, 58 participants), however findings were inconclusive for antidepressants, benzodiazepines, dietary supplements and physical barriers.

Secondary outcomes (change in taste and feeling of dryness) were only assessed short-term, and the findings for both were also inconclusive.

With regard to adverse effects, there is very low-quality evidence that antidepressants increase dizziness and drowsiness (one RCT, 37 participants), and that alpha lipoic acid increased headache (two RCTs, 118 participants) and gastrointestinal complaints (3 RCTs, 138 participants). We found insufficient/contradictory evidence regarding adverse events for anticonvulsants or benzodiazepines. Adverse events were poorly reported or unreported for cholinergics, electromagnetic radiation, and psychological therapies. No adverse events occurred from physical barriers or topical therapy use.

Authors' conclusions

Given BMS' potentially disabling nature, the need to identify effective modes of treatment for sufferers is vital. Due to the limited number of clinical trials at low risk of bias, there is insufficient evidence to support or refute the use of any interventions in managing BMS. Further clinical trials, with improved methodology and standardised outcome sets are required in order to establish which treatments are effective. Future studies are encouraged to assess the role of treatments used in other neuropathic pain conditions and psychological therapies in the treatment of BMS.

PLAIN LANGUAGE SUMMARY

Interventions for treating burning mouth syndrome

Review question

Which treatments help to relieve symptoms for people with burning mouth syndrome (BMS)?

Background

BMS is a common painful condition. Symptoms include burning, dryness or uncomfortable sensations in the mouth and changes to taste, with no obvious underlying medical or dental cause. BMS is usually persistent and suffered long term, and can lead to a reduced quality of life (QoL). Currently, scientific research suggests that BMS is caused by underlying damage to the nerves. There are many treatments available including drugs for anxiety, other psychological conditions and increasing saliva production, protective barriers and treatments applied to the mouth surface amongst others.

Study characteristics

This review of studies was carried out through Cochrane Oral Health, and the evidence is current up to 31 December 2015.

We found 23 studies (assessing 1121 people; 83% were women), published between 1995 and 2015 to include in this review. Twenty-one studies assessed short-term (up to three months) symptom relief, and four studies assessed long-term (from three to six months) symptom relief. Seventeen studies provided information about side effect occurrence, seven studies assessed a measure of QoL, and two studies assessed changes in taste and feeling of dryness.

All of the 23 treatments included in this review were compared to a placebo (fake treatment): antidepressants and antipsychotics (two studies), antiseizure drugs (one study), types of tranquillisers (four studies), saliva stimulants (one study), dietary supplements (12 studies), directed energy waves (one study), physical barriers (one study), psychological therapies (one study), and treatments applied to the mouth surface (five studies).

Key results

Short-term symptom relief

We found evidence of short-term symptom relief for directed energy waves (one study, 58 participants), a type of tranquilliser used topically (that is held in the mouth before being removed, and which also acts as an antiseizure drug) called clonazepam (two studies, 111 participants), thin plastic tongue covers (one study, 50 participants), and an antiseizure drug called gabapentin (one study, 100 participants).

There was no difference in short-term symptom relief found for antidepressants, saliva stimulants, and another type of tranquilliser used systemically (one that is swallowed) also called clonazepam. We were unable to show whether dietary supplements or treatments applied to the mouth surface provide symptom relief in the short term or not.

Short-term relief was not reported for the single study that assessed a psychological therapy.

Long-term symptom relief

We found evidence of long-term symptom relief for psychological therapy (one study, 30 participants), chili pepper mouthrinse (one study, 18 participants) and the topical tranquilliser called clonazepam (one study, 66 participants).

We found there was no difference in long-term symptom relief for dietary supplements or treatments applied to the mouth surface.

Studies which assessed antidepressants, directed energy waves, saliva stimulants, antiseizure drugs, or physical barriers did not evaluate long-term symptom relief.

Change in QoL

There was evidence of short-term improvement in QoL for directed energy waves (one study, 58 patients), although no difference was found for antidepressants, tranquillisers, dietary supplements and physical barriers. No study assessed long-term QoL changes.

Change in taste or feeling of dryness

A few studies assessed short-term change in taste or feeling of dryness (none evaluated these outcomes long-term), but there was not enough evidence to judge the effects of treatment on these outcomes.

Side effects

Side effects were more likely to be experienced with antidepressants (dizziness and drowsiness more likely: one study, 37 people), and with a dietary supplement called alpha lipoic acid (also known as ALA) with or without other ingredients (headaches more likely: two studies, 118 people; and upset stomachs more likely: three studies, 138 people).

Quality of the evidence
Overall, we found very low-quality evidence for each short- and long-term outcome we investigated (symptom relief; changes in QoL, taste and feeling of dryness; and side effects) in all types of assessed treatment: antidepressants and antipsychotics, antiseizure drugs, types of tranquillisers, saliva stimulants, dietary supplements, directed energy waves, physical barriers (except side effects, which was assessed as low quality), psychological therapies, and treatments applied to the mouth surface. As we found so few studies at low risk of bias, we are currently unable to prove or disprove the effectiveness of any treatments for managing BMS.