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[Intervention Review]

Interventions for the management of dry mouth: topical therapies

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ABSTRACT

Background

Xerostomia (the feeling of dry mouth) is a common symptom especially in older adults. Causes of dry mouth include medications, autoimmune disease (Sjögren's Syndrome), radiotherapy or chemotherapy for cancer, hormone disorders and infections.

Objectives

To determine which topical treatments for dry mouth are effective in reducing this symptom.

Search methods

We searched the following electronic databases: the Cochrane Oral Health Group Trials Register (28 October 2011), The Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library*, Issue 4 2011), MEDLINE via OVID (1950 to 28 October 2011), EMBASE via OVID (1980 to 28 October 2011), CINAHL via EBSCO (1980 to 28 October 2011), AMED via OVID (1985 to 28 October 2011), CANCERLIT via PubMed (1950 to 28 October 2011).

Selection criteria

We included randomised controlled trials of topical interventions such as lozenges, sprays, mouthrinses, gels, oils, chewing gum or toothpastes for the treatment of dry mouth symptom. We classified interventions into two broad categories, saliva stimulants and saliva substitutes, and these were compared with either placebo or another intervention. We included both parallel group and crossover trials.

Data collection and analysis

Two or more review authors independently carried out data extraction and assessed risk of bias. Trial authors were contacted for additional information as required.

Main results

Thirty-six randomised controlled trials involving 1597 participants met the inclusion criteria. Two trials compared saliva stimulants to placebo, nine trials compared saliva substitutes to placebo, five trials compared saliva stimulants directly with saliva substitutes, 18 trials directly compared two or more saliva substitutes, and two trials directly compared two or more saliva stimulants. Only one trial was at low risk of bias and 17 were at high risk of bias. Due to the range of interventions, comparisons and outcome measures in the trials,

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meta-analysis was possible for only a few comparisons. Oxygenated glycerol triester (OGT) saliva substitute spray shows evidence of effectiveness compared to an electrolyte spray (standardised mean difference (SMD) 0.77, 95% confidence interval (CI) 0.38 to 1.15) which corresponds to approximately a mean difference of 2 points on a 10-point visual analogue scale (VAS) for mouth dryness. Both integrated mouthcare systems (toothpaste + gel + mouthwash) and oral reservoir devices show promising results but there is insufficient evidence at present to recommend their use. Although chewing gum is associated with increased saliva production in the majority of those with residual capacity, there is no evidence that gum is more or less effective than saliva substitutes.

Authors' conclusions

There is no strong evidence from this review that any topical therapy is effective for relieving the symptom of dry mouth. OGT spray is more effective than an aqueous electrolyte spray (SMD 0.77, 95% CI 0.38 to 1.15) which is approximately equivalent to a mean difference of 2 points on a 10-point VAS scale for mouth dryness. Chewing gums appear to increase saliva production in those with residual secretory capacity and may be preferred by patients, but there is no evidence that gum is better or worse than saliva substitutes. Integrated mouthcare systems and oral reservoir devices may be helpful but further research is required to confirm this. Well designed, adequately powered randomised controlled trials of topical interventions for dry mouth, which are designed and reported according to CONSORT guidelines, are required to provide evidence to guide clinical care. For many people the symptom of dry mouth is a chronic problem and trials should evaluate whether treatments are palatable, effective in reducing xerostomia, as well as the long-term effects of treatments on quality of life of those with chronic dry mouth symptoms.

PLAIN LANGUAGE SUMMARY

Interventions for the management of dry mouth: topical therapies

Dry mouth is a common problem with a range of causes. The symptom may be due to a reduction in the quantity of saliva produced, or a change in the composition of saliva, but a feeling of dry mouth may also be present in people with normal saliva production. Radiotherapy or chemotherapy for head and neck cancers, and diseases such as Sjögren's Syndrome, may result in reduced saliva production. Many commonly prescribed medications are associated with a feeling of dry mouth, despite normal saliva production. As well as difficulty in speaking, chewing and swallowing, prolonged dry mouth may result in increased risk of tooth decay and reduced quality of life. In many sufferers dry mouth cannot be cured, but effective ways for people to manage dry mouth symptoms are available. Many topical treatments (applied directly to the inside of the mouth) such as sprays, lozenges, mouthrinses, gels, oils, chewing gum or toothpastes have been evaluated in this review, but there is no strong evidence that any topical treatment is effective for relieving the sensation of dry mouth. Oxygenated glycerol triester (OGT) saliva substitute spray is more effective than a water based electrolyte spray. A gel-releasing device worn in the mouth, or a mouthcare system might be effective but more research is needed. Chewing gum increases saliva production but there is no evidence that gum is better or worse than saliva substitutes. Acidic products and those containing sugar should be avoided.