



REVIEW ARTICLE

The use of mouthwash containing essential oils (LISTERINE®) to improve oral health: A systematic review

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KEYWORDS

Listerine;
Mouthwash;
Mouthrinse;
Essential oils;
Short-term efficacy;
Long-term efficacy;
Review

Abstract *Background:* Standard recommendations to maintain daily oral hygiene include tooth brushing and interdental cleaning. Evidence from literature indicates that using a mouthrinse as an adjunct provides benefit beyond mechanical methods. The objective of this article was to evaluate the short- and long-term effect of a mouthwash containing essential oils (LISTERINE®) in improving oral health.

Methods: PubMed (MEDLINE) and bibliographies from the relevant retrieved reviews were searched to identify clinical studies involving the use of LISTERINE mouthrinse. The primary outcome measure was short- and long-term efficacy of mouthrinse containing essential oil (LISTERINE®) in improving oral health.

Results: Based on our search, 26 studies supported the use of essential-oil-containing mouthrinse (LISTERINE®) as an adjunct to daily oral health regimen. Most studies were conducted in healthy subjects, 2 studies in orthodontic patients, 1 each in xerostomia patients and mentally disabled patients. Of these, 13 studies supported the short-term (<3 months) and 13 studies supported the long-term (3–6 months) efficacy of LISTERINE mouthrinse as an adjunct to mechanical methods.

Conclusions: This review provides strong evidence of the anti-plaque and anti-gingivitis effects of essential-oil-containing mouthrinse LISTERINE® as an adjunct to daily tooth brushing and interdental cleaning.

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1. Introduction

Dental plaque is the main factor for initiation and progression of oral diseases (Sbordone, 2003). Therefore, plaque removal is mandatory to prevent accumulation of plaque on the teeth and adjacent gingival surface. Standard recommendations to maintain daily oral hygiene include tooth brushing and interdental cleaning (Choo and Delac, 2001; Claydon, 2008). Tooth brushing with a dentifrice containing anti-plaque agents and interdental cleaning with toothpicks and dental floss has been proven to control plaque and gingivitis. A proximal brush is recommended in order to access open interdental spaces (Choo and Delac, 2001). Studies indicate that regular professional plaque control by a hygienist can offer maintenance of a healthy periodontium (Axelsson et al., 2004). In addition, mouthrinses can prevent plaque growth and improve oral health by inhibiting the proliferation rate of bacteria in plaque or by preventing attachment of bacteria to dental surfaces (Netuschil et al., 1995). Over the past 100 years, phenolic compounds (e.g. LISTERINE®) have been acknowledged to be germicidal and effective in reducing plaque and gingivitis.

Recently, several studies have shown the combined effectiveness of essential oil (EO) containing mouthrinse-LISTERINE® in achieving healthy gingival tissue and reducing plaque (Claffey, 1985). These studies were conducted to assess the efficacy and safety of LISTERINE® in comparison with other mouthrinses. However, it is important to highlight long-term (3–6 months) versus short-term (< 3 months) effectiveness of LISTERINE® towards achieving gingival health. Thus, the available literature was systematically assessed to address the use of mouthwash containing EO (LISTERINE®) to improve oral health.

2. Methods

We performed an electronic search of PubMed (MEDLINE) based on the following search query: (“LISTERINE”[Supplementary Concept] OR LISTERINE[tiab]) AND (essential oil[tiab] OR essential oils[tiab]). The results of PubMed/MEDLINE search were as follows:

PubMed query	Items found
Search (essential oil[tiab]) OR essential oils[tiab]	11,943
Search (LISTERINE[tiab]) OR LISTERINE [Supplementary Concept]	369
Search (((essential oil[tiab]) OR essential oils[tiab])) AND ((LISTERINE[tiab]) OR LISTERINE [Supplementary Concept])	100

Additionally, a manual search was performed by screening the bibliographies from the relevant retrieved reviews as well as included publications. All chosen clinical studies were designed to meet the commonly accepted professional and regulatory standards set by the American Dental Association (ADA) and the US Food and Drug Administration (FDA). These trial results presented detailed data including baseline characteristics, intervention protocols, and outcomes.

3. Results and discussion

In the retrieved literature, it is well documented that brushing and flossing are the ‘gold standard’ procedures for controlling bacterial plaque. However, based on results derived from several clinical trials, the ADA has recommended a mouthrinse containing EO (LISTERINE®) as an adjunct to routine mechanical oral hygiene measures. We grouped the studies into short-term and long-term efficacy.

3.1. Short-term (< 3 months) efficacy of mouthrinse containing EO – LISTERINE®

Several clinical studies have demonstrated that EO-containing mouthrinse – LISTERINE® can combat harmful bacteria and improve oral health (Vlachojannis et al., 2015). A study to quantify the additional benefit provided by an EO-containing mouthrinse in reducing plaque and gingivitis in patients who brush and floss regularly confirmed that adjunctive use of an EO-containing mouthrinse provides a clinically significant

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