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Review Article

Herbal mouthwashes for oral health care-A paradigm shift

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ABSTRACT

Herbs have been used since centuries to prevent and control various diseases. Being low in cost, safe, and easily available, herbal medicines are staging a comeback globally, owing to their antimicrobial, antifungal, anti-inflammatory, and anti-carcinogenic properties. In dentistry, herbal extracts have been widely used in tooth cleaning agents and mouthrinses. The present study is aimed at reviewing various extracts of herbal products and their effects on dental health. From this review study, it is evidenced that Aloe vera, Neem, Clove Oil, Castor Oil, and Peppermint showed better results than conventional mouthwashes in dental plaque and gingival inflammation reductions. However, preclinical and clinical trials are needed to gauge biocompatibility and safety before herbal medicines are often recommended conclusively for oral care.

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1. Introduction

Gingival and periodontal infections have afflicted humans since a very long time. Paleopathological studies have directed that critical periodontal diseases, as indicated by bone loss, have affected early humans in varied cultures. The ancient Greeks, Hippocrates of Cos (460-377 B.C.) thought that inflammation of gum could be caused by buildup of “pituita” or calculus with gingival haemorrhage.^{1,2} These periodontal diseases occur when bacteria in the plaque infect gums and bones that support the teeth.³ The mild to moderate forms of these periodontal diseases are treatable by non-surgical periodontal therapy, while the more severe cases require surgical intervention.³ Anti-microbial agents and antibiotics are used as an adjunct to both surgical and non-surgical periodontal therapy.^{4,5}

It has been seen in the past that continued use of antimicrobial agents and antibiotics can cause antibiotic

resistance.⁶ It has also been seen that emergence of previously rare infections is on a rise, possibly due to incorrect and prevalent overuse of antimicrobials. As a result, there has been a continual search for alternatives of conventional antibiotics.

Herbal medicine is a popular form of Complementary and Alternative Medicine (CAM).⁷ Herb, by definition, is a plant or plant part valued for its medicinal, savory, or aromatic qualities. Medicinal herbs are an effective method of treating various diseases.⁸ Over the recent years, herbal products are being preferred over conventional drugs because of substantial natural activity, advanced safety margins, and inferior cost.³ One of the most accepted method of delivering herbal extracts for their antimicrobial properties is mouthwashes. Mouthrinses are antiseptic solutions used to decrease microbial burden in the oral cavity. They have the capacity to provide therapeutic effect on all tooth surfaces, including the interproximal areas.⁹ This review aims at evaluating some commonly available herbal mouthwashes in India.

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1.1. Medicinal properties of some popular herbal extracts

Some of the commonly used herbs for preparation of mouthwashes are Aloe vera, Syzigiumaromaticum, Azadirachta indica, Mentha piperita extract, Elettaria cardamomum oil, Ricinus communis, and Melaleuca alternifolia oil. Other than these, Eucalyptuses, Calendula officinalis, Trachyspermumammi, Cinnamomum camphora, and Ocimumtenuiflorum are also widely used.

1.2. Aloe barbadensis

Aloe vera is a medicinal plant that has been used since many years for treatment of sunburns, digestive tract disorders and wounds. The active compounds include aloesin, aloin, aloeride, naftoquinones, methylchromones, flavonoids, saponin, sterols, etc.¹⁰ It is antibacterial, anti-inflammatory, antiulcer, and antioxidant in action.¹¹ Aloe vera mouthwashes have become increasingly popular because of its safety, easy availability, and its effectiveness against plaque causing bacteria.

1.3. Syzigiumaromaticum

Popular as Clove oil, Syzigiumaromaticum is another commonly used herbal extract used as an ingredient in herbal mouthrinses. It is a frequent find in Indian kitchens as flavor enhancer.¹² Studies done by Gijzen M et al.¹³ and Gislene GF et al.¹⁴ have shown that clove oil extracts have the potential to combat many gram positive and gram negative bacteria, thus establishing its antimicrobial properties.

1.4. Azadirachta indica

Azadirachta indica (Neem) has been used in India for decades for various dental problems. A large percentage of people still rely on neem, rather than on commercially available chemical toothpastes, for their daily dental hygiene. Neem has been proven to possess excellent antifungal and antibacterial properties.¹⁵ Studies also suggest that it has anti-inflammatory action, as it possibly inhibits prostaglandin E and 5HT.¹⁶

1.5. Melaleuca alternifolia oil

Popular worldwide for its antiseptic and anti-inflammatory properties, Melaleuca alternifolia (Tea tree) oil is a volatile essential oil originating in Australia. It has been used since almost 100 years. The antimicrobial activity of tea tree oil is mainly because of presence of terpinen-4-ol, a major component of the oil.¹⁷ It also has antibacterial properties. Tea tree oil is mostly bactericidal, while being bacteriostatic at lower concentrations.¹⁷

1.6. Mentha piperita

M piperita (peppermint) concentrates have been observed to be better than synthetic chlorhexidine mouthwash in suppressing Streptococcus mutans, bacteria commonly associated with dental caries.¹⁸ Leaves of peppermint are powdered to be used for brightening of teeth.¹⁹ It also helps get rid of bad breath, giving freshness.²⁰ Peppermint is well known for its antimicrobial, antioxidant, anticarcinogenic, antiviral, and antiseptic properties.¹⁸

1.7. Elettaria cardamomum

A popular flavoring and food preservative agent, Cardamom is well known for its medicinal benefits. It is commonly used as breath freshener. Studies have proven that cardamom is a potent antimicrobial agent.²¹ Other than that; E cardamomum exhibits hypocholesterolemic, hypoglycemic, anti-inflammatory, and antimutagenic properties.²²

1.8. Ricinus communis

Ricinoleic acid, synthesised from fatty acid molecules of Ricinus communis (Castor oil), has antimicrobial activity against a number of gram positive bacteria and yeast.^{23,24} A study by Panghal et al.^{25,26} also concluded that Castor oil has antimicrobial activity against clinical isolates of oral cancer.

1.9. Commercially available herbal mouthwashes for periodontal health

Many herbal mouthwashes are currently available in the market

1. IMC Aloe Mouthwash
2. Hiora-K
3. Closeup Natural Boost Mouthwash
4. Dr Organic Aloe Vera Mouthwash
5. Purexa Antioxidant Mouthrinse
6. Herbostra Oil Pulling Mouthwash

2. Summary

Due to lesser side effects, low cost, and ease of availability, use of herbal medicine continues to expand rapidly across the globe. Herbal extracts have been used in dentistry for their anti-inflammatory, antibacterial, antifungal, and antioxidant properties. They are also effective in controlling microbial plaque, thus preventing gingivitis and periodontitis. Despite being highly useful, there have been fewer researches regarding the standardization and product development in this field. It is critical that steps be taken in this regard as soon as possible, while also bolstering the current efforts already in place.

3. Source of Funding

None.

4. Conflict of Interest

None.

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