WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.453
Volume 13, Issue 22, 1281-1288. Review Article ISSN 2277–7105

ROLE OF AYURVEDA IN MANAGEMENT OF ORAL HEALTH: REVIEW ARTICLE

Dr. Abhay Pathak*[1] and Dr. Akanksha Pathak[2]

[1]BDS, K.D. Dental College, Mathura, U.P.

[2]Bams, Government Ayurveda PG College and Hospital Chaukaghat Varanasi, UP.

Article Received on
03 October 2024,

Revised on 24 October 2024,
Accepted on 13 Nov. 2024

DOI: 10.20959/wjpr202422-34673

***Corresponding Author**
Dr. Abhay Pathak
BDS, K.D. Dental College,
Mathura, U.P.

ABSTRACT

Background: Notwithstanding advancements in medicine, oral infections and dental diseases persist as significant public health concerns globally, disproportionately affecting developing countries. The emergence of antibiotic and antiseptic resistance has limited preventive measures, underscoring the need for alternative therapies. Commercial allopathic medications can disrupt oral micro flora and exhibit undesirable side effects, highlighting the importance of alternative medicine in maintaining optimal oral health. **Aim:** To investigate and delineate the applications of Ayurveda products and herbs in oral healthcare. **Objectives:** 1. To elucidate the integration of dentistry and Ayurveda. 2. To evaluate the efficacy of Ayurveda interventions in oral health. **Methodology:** A comprehensive literature search was conducted using PubMed, MEDLINE, and MEd know databases with keywords: Ayurveda, dentistry, oral health, oil pulling, and integration. Both indexed and non-indexed journals, including peer-reviewed publications, were reviewed. **Results:** Traditional Ayurveda medicine demonstrates potential in treating various infectious and chronic oral conditions. Research validates the medicinal and anti-cariogenic properties of chewing sticks described in ancient Ayurveda. Oil pulling (Kaval, Gandusha) is reportedly effective against gum diseases. Specific herbs, such as:

- Amla, exhibit oral health rebuilding properties.
- Bilberry fruit stabilize collagen and strengthen gum tissue
- Liquorice root, exhibits anti-cavity, anti-plaque, and antibacterial effects
- Jalandhar bandha, enables painless tooth extraction

Conclusion: Integrating traditional Ayurvedic knowledge with modern dental practice is

warranted. Ayurvedic preparations and herbal products offer promising therapeutic alternatives for various oral lesions and diseases.

KEYWORDS: *Ayurveda, Dentistary, Oral Health, Herbs, Gandusha, Kawal.*

INTRODUCTION

Ayurveda, derived from ancient Indian wisdom, embodies the concept of harmonious living with nature. As a holistic medical system, Ayurveda has been practiced for centuries, gaining global recognition as an alternative medicine.[1]

Originating in India, Ayurveda boasts a rich repository of resources, including dental applications. Although dentistry is not a distinct branch, Ayurvedic texts, such as Shalakya Tantra's Dantha Swasthya, provide comprehensive guidance on oral health, tailored to individual constitutional types (doshas) and environmental influences.[2]

The Ayurvedic framework categorizes body structures based on the dominance of three physical humors (doshas): Vata, Pitta, and Kapha. Imbalances in these doshas dictate healthcare approaches, including dental treatments.

Ayurvedic herbalism offers a wealth of oral health benefits, leveraging plants with therapeutic properties such as: Antibacterial, Anti-inflammatory, Astringent Anesthetic and Anti-cariogenic.[3]

Numerous Indian medicinal plants have been utilized in Ayurvedic dentistry, demonstrating safety and efficacy through the ages. The dental community has incorporated these herbal products into various applications: Toothpastes, Gum paints, Mouthwashes, Root canal irrigants, Storage media for avulsed teeth, Mouth rinses and Tooth whiteners.[4]

This evidence-based review aims to explore the potential role of Ayurveda in managing diverse dental health conditions. Various plants have been utilized in dentistry for their antibacterial and antiplaque properties, including: Amla (Emblica officinalis), Launga oil (Clove oil), Nimbu/Lemon solution (Citrus limon), Triphala (Terminalia chebula, Terminalia belerica, and Emblica officinalis), Haritaki (Terminalia chebula), Tea Tree Oil (Melaleuca alternifolia), Aloe Vera (Aloe barbadensis), Azadirachta Indica (Neem), Piper Betel (Betel leaf), Osmium sanctum (Basil/Tulsi), Curcuma longa (Turmeric).These herbal extracts have gained popularity as natural substitutes for conventional oral products, promoting holistic

health and wellness. Their non-chemical and non-synthetic composition makes them attractive alternatives. In Ayurvedic dentistry, specifically Shalakya-Tantra, various oral diseases are categorized based on anatomic sites: Lips, Alveolar margin, Teeth, Tongue, Palate Oropharynx and Generalized oral diseases.[5]

Regular use of efficient anti-plaque compounds, such as herbal toothpastes, can significantly contribute to plaque control.Ayurveda offers a comprehensive range of treatments for orofacial diseases, including: Oral cleansing (Kavala), Dental extractions (Danta Nirharana), Excisions (Kshara Sutra), and Flap surgeries (Uchchhedana). In addition to these treatments, Ayurveda advocates daily preventive measures through therapeutic procedures: - Dant Dhavani (Tooth Brushing), Jivha Lekhana (Tongue Scraping), Gandoosha or Oil Pulling (Oil Therapy), Tissue Regeneration Therapies (Rasayana Chikitsa). Scientific research has validated the beneficial effects of these procedures, demonstrating: Reduced plaque and gingivitis, Improved oral hygiene, Enhanced salivary health, Antimicrobial and anti-inflammatory effects, Increased tissue regeneration and wound healing. By integrating Ayurvedic therapies into oral healthcare regimens, individuals can experience improved orofacial well-being and overall health.[6]

TOOTH BRUSHING (DANT DHAVANI)

Ayurveda asserts on the use of herbal brushes twice daily to prevent diseases. The procedure consists of use of twig/stick at one end, chew on it and eat it slowly. Azadirachata Indica is the most famous herbal chewing sticks. The twigs and oil of Azadirachata Indica contain substances that have broad spectrum antimicrobial activity and when incorporated in toothpaste reduces gingival irritation. Herbal based tooth paste made up of Chamomile, Echinacea, Sage, Myrrh, Rhatany and Peppermint oil has been found to be as effective as conventional toothpastes. These brushes are nine inches in length, made up of either “kashaya”, “katu” or“tikta”, Fresh stems of liquorices (Glycyrrhiza glabra) are recommended for receding and atrophic gums, and for pale hypertrophic gums the Arjuna tree, fever nut and milkweed plant . Masticating these sticks causes attrition and leveling of biting surfaces, enhances salivary secretion and help in plaque control while some stems have an anti-bacterial action. Kadam et al in their study proved that the chewing sticks have medicinal and anti-cariogenic properties.

2014 Ranjit et al studied the Antimicrobial activity of leaf and bark extract of Azadirachta indica(Neem), showed more zones of inhibition against Vibrio cholerae and Bacillus subtilis,

while E. Coli and S. Typhi are less susceptible to Neem extract.[7]

In 2011 Anirban Chatterjee et al evaluated the anti-gingivitis and anti-plaque effect of an Azadirachta Indica (neem) mouth rinse on plaque induced gingivitis and showed that Azadirachata Indica mouth rinse is as effective in reducing periodontal indices as Chlorhexidine.[8]

Almas et al in 2004 concluded in their study that Strep. Mutans were more susceptible to Miswakantimicrobial activity than lactobacilli. Sharma A et al found that Neem sticks were commonly used by children in Kangra District of Himachal Pradesh.[9]

Sumanth et al (1992) evaluated the efficacy of mango leaf as an oral hygiene aid and concluded that Mongiferin had significant antibacterial property against certain strains of pneumococcal, streptococcal, and lactobacillus acidophilus.[10]

JIVHA LEKHANA

Early ayurvedic texts state that cleaning the tongue eliminates bad breath and unpleasant tastes. By removing the white coating from the tongue, teeth and mouth, this practice quickly restores freshness. People who clean their tongues daily can attest to the invigorating effects. This habit helps balance the heavy, dull qualities of Kapha dosha in the body, which if left unchecked, can lead to halitosis. Tongue cleaning is also a direct way to remove ama a toxic build up in the digestive system.

Scrapping the tongue offers several health benefits, particularly in reducing bad breath (halitosis). By stimulating reflex points on the tongue, it enhances taste perception, promotes the release of digestive enzymes, and inhibits bacterial growth. Clinical studies show that regularly using a tongue scraper effectively reduces anaerobic bacteria, which are often responsible for halitosis. According to the Charaka Samhita, an ancient Ayurvedic text, tongue scrapers should ideally be made of metal, with a blunt and rounded edge to avoid injuring the tongue. Today, stainless steel scrapers are widely available and are highly effective due to their durability and resistance to corrosion.

ORAL CLEANSING

Kavala and Gandoosha are two traditional Ayurvedic methods used for oral cleansing, serving as both preventive and therapeutic treatments for oral diseases. While both involve holding medicated fluids in the mouth, they differ in technique and the amount of fluid used.

In Gandoosha, a larger quantity of medicated liquid is held in the mouth completely filled, preventing any movement, whereas Kavala involves swishing a smaller amount of fluid around the mouth. Both methods are believed to help remove toxins, improve oral health, and prevent diseases by maintaining hygiene and stimulating gum health.

In 2014, G. Subramanian et al. conducted a study on the antimicrobial properties of methanol leaf extracts of Tulsi (Ocimum sanctum) against three common human pathogens: Escherichia coli, Staphylococcus aureus, and Candida albicans. The study revealed significant inhibition zones against both bacterial and fungal strains, confirming the efficacy of plant-derived organic extracts in combating pathogens.[11]

S. Tandon et al. examined the impact of Triphala mouthwash on dental caries, concluding that it is a cost-effective alternative to commercially available chlorhexidine mouthwash. Triphala mouthwash was found to be free of side effects, rendering it suitable for prolonged use in oral care.[12]

Oil pulling is an ancient Ayurvedic practice involving the swishing of edible oils, such as sunflower or sesame oil, within the oral cavity to promote both oral and systemic health. Traditionally, this therapy has been used to strengthen the teeth, gums, and jaws, as well as to address conditions such as chapped lips. Clinical and radiographic evidence supports its efficacy in managing gingivitis. Although the precise mechanism is not fully understood, it is suggested that the swishing action stimulates enzymatic activity, potentially drawing toxins from the blood. Although the oral mucosa does not serve as a semipermeable membrane for toxin transfer, this process contributes to the prevention of infection and inflammation due to the antioxidant properties of the oils. Additionally, oil pulling has been shown to reduce plaque formation and microbial load by diminishing bacterial adhesion and plaque co-aggregation.

Some scientists were conducted a study on the antibacterial properties of fresh minced garlic and lemon solution, finding significant inhibition against various bacterial strains. Further investigation is recommended to assess their biological effects on peri apical tissues.[14]

Overall, oil pulling, herbal extracts, and alternative mouthwashes such as Triphala exhibit significant potential in reducing oral bacterial loads, preventing plaque accumulation, and supporting oral health through natural means.[15-16]

Also a study was conducted on the efficacy of coconut oil in managing plaque-induced gingivitis, observing a significant reduction in both plaque formation and gingival inflammation from day 7, with continued improvement noted throughout the study duration. Oil-pulling therapy with sesame oil was comparable to chlorhexidine mouthwash in its effectiveness, achieving reductions in Streptococcus mutans counts, plaque index, modified gingival index scores, and plaque-induced gingivitis.[17]

TISSUE RESTORATION THERAPIES

In Ayurveda, the well-regarded herb Amla (Indian gooseberry) is recognized for its restorative effects on oral health. Amla is effective as a mouth rinse, and when taken orally at a dosage of one to two grams daily (often in capsule form), it supports long-term health of the teeth and gums by promoting healing and the development of connective tissues. Regular use of Bilberry and Hawthorn Berry fruits is known to stabilize collagen and strengthen gum tissue. Additional herbs such as Yellow Dock root, Alfalfa leaf, Cinnamon bark, and Turmeric root are commonly taken internally to support healthy development of the skeletal system and joints.

CONCLUSION

Oral health remains one of the most prevalent health concerns in developing countries. Herbal medicine, as an alternative therapy, is gaining increasing popularity worldwide. The integration of Ayurveda with modern dentistry should be encouraged, and dental professionals should be motivated to incorporate natural herbal remedies into various dental treatments for both children and adults. Further research is needed to examine the suitability and safety of these therapies in pediatric dentistry, particularly considering potential side effects and taste preferences. Pediatric dentists should be well-informed about these traditional and emerging preventive and therapeutic products, as many patients may prefer their use. The decision to utilize these products should be made by patients and/or their dental care providers based on individual oral health needs, with particular attention to ensuring safety when used in children.

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