



REVIEW ARTICLE

AYURVEDA IN DENTISTRY: A SCIENTIFIC REVIEW

SAILAKSHMI BHUKYA¹ KOTYA NAIK MALOTH² VINAY KUMAR REDDY KUNDOOR³

ABSTRACT

Ayurveda is an ancient science based on holistic therapeutic methods and believes that oral and general health problems can be treated by balancing the three doshas of the human body- vata, pitta and kapha. The change in diet and life style modifications in the present era resulted in various health diseases as well change in usage of allopathic medications causing ill-effects. To prevent all these ill-effects as well various health issues alternative traditional medicine (Ayurveda) came into light such as oil pulling, salt water mixture, turmeric etc. used for strengthening of gums, teeth, and jaw, tooth decay, halitosis, prevention of pain, healing of socket and many other periodontal diseases. The present review highlights the role of ayurveda in the management of various oral health problems.

KEY WORDS: Ayurveda, herbal, oral lesions, dentistry

¹ Government Medical Practitioner, Government District Hospital, Khammam, Telangana, India.

² Asst. Professor, ³ Professor, Dept. of Oral Medicine and Radiology, Mamata Dental College and Hospital, Khammam, Telangana, India.

Corresponding Email id: drsailaxmi@gmail.com Access this article online: www.jahm.in

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INTRODUCTION

Oral disease is a major health problem worldwide even in the era of 21st century, with more advancement in the field of medicine as well in dentistry. Searching for the alternative prevention and treatment options, which are safe, effective, economical and practicable, because many pathogens have developed resistance to currently used allopathic medicines.^[1,2] Several commercially available allopathic medicines, can alter oral microflora and have undesirable side effects, thus making alternative medicine important to maintain disease free oral health.^[2] Hence, the search for alternative products continues and plant extracts used in traditional medicine (ayurveda) are considered as good alternative to allopathic medicine.^[3]

Ayurveda is the ancient Indian system of health-care and longevity evolved as a holistic system 3000-5000 years ago and approximately around 1250 medicinal plants are formulated to receive beneficial measures in ayurvedic ethnicity.^[3,4] Same is now practiced in other parts of the world as a form of complementary and alternative medicine (CAM).

CAM is a group of unconventional medical systems, practices and products that are not considered as a part of care usually provided by medical doctors and other healthcare professionals. According to the 2007 US

National Health Interview Survey (NHIS), approx. 38% of adults aged 18 years or older used some form of CAM. The CAM therapies most often used by adults were non-vitamin, non-mineral natural products, deep-breathing exercises; meditation; chiropractic or osteopathic manipulation, massage and yoga.^[5] Nowadays the hike of demand is more towards the usage of renewed various ayurvedic products for the management of oral diseases, due to their Anti-inflammatory, Antimicrobial, Antioxidant properties.^[3] In this paper, an attempt has been made to review various ayurvedic herbal products that can be used in prevention as well as management of oral diseases.

Concept of health in Ayurveda: In Ayurveda, dental health (*danta swasthya*) is held to be very individualistic, varying with each person's constitution (*prakriti*), and climatic changes resulting from solar, lunar and planetary influences (*kala-parinama*).^[6] Sushruta Samhita, the surgical compendium of Ayurveda, defines health as "the equilibrium of the three biological humors (doshas i.e. *vata*, *pitta* and *kapha*), the seven body tissues (*dhatu*s), proper digestion and a state of pleasure or happiness of the soul, senses and the mind."^[6,7,8] A balance among the three doshas is necessary for health. When they go slightly out of unbalanced, symptoms of

sickness are observed in an individual and experienced.^[7,9]

Management of oral diseases with Ayurvedic

Herbs: According to the Shalakyatantra (one of the branches of Ayurveda), 65 different oral diseases can arise in seven anatomic locations - 8 (lips), 15 (alveolar margin), 8 (teeth), 5 (tongue), 9 (palate), 17 (oropharynx) and 3 generalized form.^[10]

For the management of these diseases ayurveda recommends daily use of therapeutic procedures for the prevention and maintenance of oral health. These includes: the three main procedures in day to day life are *Dant Dhavana* (Brushing), *Jivha Lekhana* (Tongue scrapping) and *Gandusha* (gargling) or oil pulling as well tissue regeneration therapies, followed by other ayurvedic products are Clove Oil (*Syzygium aromaticum*), Aloe Vera (*Aloe barbadensis*), Pepper (*piper nigrum*), Coriander (*coriandrum*), Eucalyptus (*eucalyptus globules*), Turmeric (*Curcuma longa*), Green Tea (*Camellia sinensis*), Onion (*Allum cepa*), Papaya (*caricapapaya*), Potato (*solanum tuberosum*), Garlic (*alium sativum*), Honey (*Apis Mellifera*), Neem (*Azadirachta indica*), Lemon (*Citrus*), Olive oil (*olea europaea*), Ginger (*zingiver officinale*), etc.^[2,11,12] All these products have scientifically proven beneficial effects in prevention and maintenance of oral health diseases.

Dantadhavana (brushing): *Avurveda* recommends chewing sticks (herbal brushes) in the morning as well as after every meal to prevent diseases as they have medicinal, anti-bacterial and anti-cariogenic properties. They are approximately nine inches long and the thickness of one's little finger with either "*kashaya*" (astringent), "*katu*" (acid) or "*tikta*" (bitter) in taste. The *Neem* (*Azadirachta indica*) is a famous herbal chewing stick used for medicinal, cosmetic, agricultural and other purposes due to their antifungal, anti-bacterial, antiviral, pest control and sedative effects. Fresh stems of *liquorice* (*Glycyrrhiza glabra*), *black catechu* or the *cutch tree* (*Acacia Catechu Linn.*), *Arjuna tree* (*Termmalia arjuna*), *fever nut* (*Caesalipiniabouduc*) and *milkweed plant* (*Calotropisprocera*) can also be used for brushing. Vatta dosha dominant individuals are recommended to use Bitter-Sweet/astringent tastes such as Fresh stems of *liquorice* (*Glycyrrhiza glabra*), *black catechu* or the *cutch tree* (*Acacia Catechu Linn.*),^[10,12] whereas Pitta dosha individuals recommended to use bitter taste such as neem and *Arjuna tree* (*Termmalia arjuna*) and Kapha dosha individuals recommended to use pungent taste such as *fever nut* (*Caesalipiniabouduc*) and *milkweed plant* (*Calotropisprocera*).^[10,13] The main disadvantage of these herbal brushes are on

chewing on these stems causes attrition and levelling of biting surfaces, but at the same time it facilitates salivary secretion and possibly, help in plaque control.^[3,7]

Recently the use of *Salvadora persica* twigs (Miswak, Peelu) has been recommended by the World Health Organization for oral hygiene purposes, due to their enormous medicinal values such as being antiseptic, astringent, detergent and containing enzyme inhibitors as well some other ingredients, much fluoride and silica^[7], sulphur, vitamin C and flavonoids. As well due to their analgesic effect to thermal stimuli, suggested in the management of dentinal hypersensitivity.^[7,14]

Jivha Lekhana (tongue scrapping): Tongue scrapping on a regular basis stimulates the reflex points of the tongue and removes microorganism growth followed by bad odor (halitosis) as well improves the sense of taste and stimulates the secretion of digestive enzymes. Use of gold, silver, copper, stainless steel products are ideal for the scrapping of the tongue.^[3,7]

Gandusha (gargling) or oil pulling: It is an ancient Ayurveda procedure, swishing oil in the mouth for oral and systemic health benefits, which is evidenced in the Ayurvedic text '*Charaka Samhita*' as *Kavala* or *Gandusha* and is claimed to cure about 30 systemic diseases ranging from headache, migraine, diabetes and asthma and

various oral health diseases such as decay, oral malodor, bleeding gums, dryness of throat, cracked lips and for strengthening teeth, gums and the jaw. Oil pulling therapy can be done using edible oils such as Coconut oil, Corn oil, Rice bran oil, Palm oil, Sesame oil, Sunflower oil, Soya bean oil.^[7,15,16] Oil pulling therapy is very effective against plaque induced gingivitis both in the clinical and microbiological assessment.^[3,7]

Gandusha and Kavala Graha are two primary oral cleansing techniques used in ayurveda to prevent oral diseases. In Gandusha the mouth is completely filled with liquid medicine for about 3-5 minutes and then spit out, where gargling is impossible. In Kavala Graha, a comfortable amount of fluid is retained within the mouth for about 3 minutes and then gargled.^[15]

Tissue regeneration therapies: In ayurveda the well-known various herbal products are considered as a general builder of oral health as well as general health.

Amla (*Phyllanthus emblica*): It is considered most potent herbal product due to its unique properties such as useful in stalling the degenerative and senescence process, to promote longevity, enhance digestion, to treat constipation, reduces fever and cough, purification of the blood, alleviate asthma, strengthen the heart, benefit the eyes, stimulate hair growth, and improve the

intellect.^[17] In dentistry, *Amla* used as a mouth rinse as a decoction. One to two grams per day can be taken orally in capsules for the long-term benefit to the teeth and gums. *Amla* supports the healing and development of connective tissue when taken internally. On regular use of *Bilberry* and *hawthorn berry* fruits stabilize collagen and strengthens the gum tissue, and other herbs such as *yellow dock root*, *alfalfa leaf*, *cinnamon bark* and *turmeric root* strengthen the skeleton and the joints (*Astidharu*) for long term health of teeth.^[4,17]

Turmeric (*Circuma Longa*): It is a member of the ginger family, Zingiberaceae and the rhizome's vibrant yellow-orange color in appearance. It is mostly available in south-east Asia, and cultivated throughout India since many years. It has more medicinal values such as in wound healing, nausea, indigestion, to treat liver diseases and enhancing skin complexion^[18] and various health benefits

such as antibacterial, anti-inflammatory, analgesic, anti-tumor, anti-allergic, antioxidant, antiseptic, antispasmodic, appetizer, astringent, cardiovascular, carminative, cholagogue, digestive, and diuretic.^[19] In dentistry, turmeric water used as a mouth rinses (boil 5 g of turmeric powder, two cloves, and two dried leaves of guava in 200 g water) gives instant relief from dental pain. Curcumin oil used for the management of recurrent aphthous ulcers.^[20] Other various oral health diseases are treated using turmeric products such as gum diseases (gingivitis and periodontitis), as a pit and fissure sealant, to strengths the teeth and due to its specific anti-cancer activity, used to treatment potentially malignant disorders such as oral submucous fibrosis, leukoplakia and oral lichen planus.^[19,21]

The various other herbal products and their medicinal uses in the management of oral diseases are mention in Table 1.

Table 1: Medicinal value of herbal products in the management of oral lesions

Name of the Herbal product	Medicinal Value
Asgand (withaniasomnifera)	Management of the patients with dental anxiety
Aloe Vera	Management of oral lichen planus
Babul (Acacia arabica wild)	Management of the gum diseases due to its antibacterial activity against P.gingivalis and P.intermedia
Clove oil (Syzygium aromaticum)	Posse's eugenol compound and rich in minerals and vitamins (Vit A and C) which act as most powerful antiseptic, analgesic and antimicrobial.

	Used for the management of gum diseases and mouth ulcers.
Eucalyptus (Eucalyptus Globules)	Management of periodontal diseases.
Garlic (Allium Sativum, Liliaceae)	Act as powerful antibiotics and relaxative properties.
Haldi/Turmeric (Curcuma longa)	For the management of dental pain, periodontal diseases, dental plaque detection, used as pit and fissure sealant, for the treatment of potentially malignant disorders of oral lesions. It suppresses metastasis of melanoma cells, and deactivates the tobacco containing carcinogens
Honey (Apis Mellifera)	Act as antibacterial, anti-inflammatory and immuno-stimulator. Used for the management of oral ulcerative lesions.
Jasmine (Jasminum)	Act as antioxidant, anti-ulcerogenic and used in the treatment of Odontalgia, periodontitis, ulcerative stomatitis, Skin lesions, Ulcers.
Katha (Acacia catechu wild)	Act as Analgesic, Antibacterial, Anti-ulcer, and Antipyretic and used in the management of wound healing, gingivitis, dental caries, tonsillitis, and halitosis.
Olive oil (Oleaeuropaea)	For the management of periodontal diseases.
Pomegranate (Punica granatum)	Acts as antioxidant, and used for the management of bleeding gums caused due to scurvy
Piper cubeba (Piperaceae)	Act as antibacterial and anti-cariogenic activity.
Nettle (Urtica dioica)	2-3 drops of root extract are applied to hollow tooth cavities to treat toothache
Tulsi leaves (Ocimum sanctum)	Act as Antibacterial, and prevents dental plaque, gingivitis and bad breath

Safety Precautions taken before herbal therapy: Improper usage of herbal products

such as poor quality of the product, taken inappropriately, or in conjunction with other

medicines may lead to harmful effects and adverse reactions. In ayurveda many metals such as lead, mercury and arsenic are used in herbal medicine products.^[22] To prevent, this awareness programmes about safe usage of herbal products with good quality should be conducted, as well as more training, collaboration and communication among providers of traditional and other medicines is necessary.

CONCLUSION

As the oral cavity reflects the health of the whole body, mouth is often referred to as the “mirror of the whole body”. So the every oral clinician should be aware of the various oral lesions and their management using various traditional herbal medicinal products over the allopathic medicines. So the traditional knowledge of the ayurveda should be integrated with modern dental practice and encouraged to use herbal products in various oral lesion treatments. In the field of dentistry, there is a need for integration of professional dental treatment modalities and complementary alternative medical (CAM) systems to provide the best and unique from each system to patients as a complementary therapy and an alternative choice of treatment.

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