ORIGINAL RESEARCH PAPER
Volume - 9 | Issue - 6 | June - 2020 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

HEALING HERBS IN DENTISTRY

Dental Science

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ABSTRACT

Herbal extracts are used in dentistry for treatment of various dental diseases. Herbal extracts are effective because they interact with specific chemical receptors within the body. Herbal medicines have less side-effects in comparison with traditional medicines.
The herbs described in this article are Ginger, Green Tea, Triphala, Tea tree oil, Coconut water, Olive oil, Lemongrass, Neem, Grape seed extract, Evening Primrose, Clove, and a summary of other herbs that are useful in dentistry. Herbs may be good alternatives to current preventive and curative treatments for oral health problems, but it is clear that we need more research.

KEYWORDS

INTRODUCTION

"Let food be your medicine and let medicine be your food" was advised by Hippocrates, over two millennia ago. It's still true today that "you are what you eat."

India is known for its traditional medicinal systems - Ayurveda, Siddha and Unani.[1] Drugs, which are of plant origin played an important role in the treatment of various oral diseases and to maintain the oral health condition are known as Herbal drugs.[2] A herb may exhibit one or more following unique therapeutic properties like anti-inflammatory, anti-bacterial, anticariogenic, anti-plaque agents, anaesthetic, astringents, immune strengtheners, storage media for avulsed tooth, root canal irrigants, and tooth whitener etc.[3]

Herbal medicines help in maintaining good oral health and thus can be used for the treatment of periodontal diseases which are recognized as a major public health problem throughout the world and are the most common cause of tooth loss in adults.[4] Many years ago, a large number of oils and their constituents have been investigated for their antimicrobial properties. Oil pulling is also a traditional home remedy to prevent dental caries, oral malodor, bleeding gums, dryness of throat and cracked lips and for strengthening the gingival tissues.[5]

Herbal extracts are effective because they interact with specific chemical receptors within the body and are in a pharmacodynamic sense, drugs themselves.[6]

Herbal medicines are easily accessible, cheaper and relatively safer than other conventional medicines. Herbal medicines have less side-effect in comparison with traditional medicines, but side-effects do occur.[7] Dentist needs to be more knowledge regarding the use, safety and effectiveness of the various herbal medicines and over the-counter products. This article aims at a review of some common herbs which are alternatively used as important part of dental treatment with proven therapeutic benefits.

Herbs in Dental Practice

Neem (Azadirachta indica)

Azadirachta indica belongs to Meliacae family and widely distributed in Asia and Africa.[8] It has antiviral, antifungal, antimicrobial, antibacterial, antipyretic, anti-inflammatory, antitumor, analgesic, antihelminthic, anticariogenic, antioxidant activity.[9]

Neem leaves have been used in the treatment of gingivitis and periodontitis since a long time.[8] Neem is used in many preparations to improve health but is generally known for its marvelous powers of preventing and healing gum diseases and other dental problems.[10] Azadirachta indica has been proved to be effective against C. albicans and E. faecalis.[10]

Green Tea (Camellia sinensis)

It is the most common drink in the world.[8] It has various therapeutic effects such as antioxidant, anti-collagenase, antiinflammatory, anticaries, antifungal, antiviral and antibacterial effects.[1] It is used in the treatment of gingivitis and periodontitis.[4]

It is mostly rich in flavonoids, including catechins, and their derivatives, such as (-) epigallocatechin -3- gallate (EGCG), (-) epigallocatechin (ECG, (-) epicatechin -3-gallate (ECG), (-) epicatechin.[4] Hattarki SA et al in 2013 examined a randomized and placebo controlled split mouth study and compared the effect of scaling and root planning alone or in combination with green tea catechins as local drug delivery into periodontal pockets and found that green tea was more effective than scaling and root planning alone.[8]

Honey (Apis Mellifera)

Honey act as antibacterial, anti-inflammatory and immuno-stimulator. Raw honey is a simple, potent, easily available, inexpensive and affordable therapeutic agent.[11] Honey clears infection, reduces bad breath, reduces inflammation and pain, subsides edema and exudation, and it has healing properties by stimulating angiogenesis.[12] It is used for the treatment of gingivitis and periodontal diseases.[11] Bansal et al. (2015) conducted the study gum massage therapy with honey and olive oil has the ability to reduce gingivitis. It was found that the olive oil and honey showed a significant reduction in values of gingival scores and colony forming unit count. Hence, it can be concluded that the olive oil and honey can be used as a preventive and therapeutic agents.[11]

Clove (Sysygium aromatium)

Clove contains the eugenol compound, which has been used in dentistry for many years.[4] It has analgesic, antibacterial, antiviral, anti-inflammatory, antioxidant property. Clove essential oil has a safety record a mile long with documented use as a breath freshener. It has been used to relieve toothache, in periodontitis, as an anesthetic and also to treat bleeding gums.[13] Clove gel can provide dentists with an alternative to benzocaine for topical anesthesia in their daily practice, especially for use with children and in areas where cost and availability limit access to pharmaceutical topical anesthetics. It is available as a tincture (1:5, 25% ethanol), lozenges and mouthwash.[6]

Tea Tree Oil (Melaleuca alternifolia)

It is popularly known as Australian tea tree oil as, is a native Australian plant with many therapeutical properties such as antiseptic, antifungal, non-irritant and a mild solvent.[6] Tea tree oil contains major active component is terpinen-4-ol (30%–40%). This compound is responsible for its antibacterial and antifungal properties.[4] In dentistry, tea tree oil has been used to destroy microorganisms in the mouth before dental surgery, removal of smear layer when used as a root canal irrigant and to relieve mouth soreness caused by dental procedures.[2]

Triphala (T. chebula)
It has a free radical scavenging property and the antimicrobial activity of Triphala (means three fruits), herbal product, which was made from equal proportions of Terminalia chebula, Terminalia bellirica and Emblica officinalis, have been evaluated.[4] It is used in dental caries, bleeding and ulcerated gums.[14]

Triphala is effective in inhibition of bio-film formation and acts as an antioxidant which is exhibited by this extract could protect the gum cells effectively from free radicals than the commercial toothpastes. Thus, Triphala could be used as an effective antiplaque agent.[2] It helps in detoxification and rejuvenation.[10] Bismelah et al.(2016) suggested that the components present in the plants also aids in the removal of smear layer thereby acting as chelating agent and have been suggested as an alternative for sodium hypochlorite for root canal irrigation.[14]

Olive oil (Olea europaea L.)
It is a typical Mediterranean species. It plays a significant role as it has inhibitory effect that reduces the growth of bacteria and fungi. It has anti-inflammatory anti - inflammatory property. Used for the management of periodontal diseases.

"Olive oil" has been used medicinally many times for its health benefits which have antimicrobial effect against a wide range of micro-organisms found within the body.[11]

Evening Primrose (Oleum oenothera biennis)
Chemical constituents primrose are linoleic acid. It is used in dental decay and orthodontic tooth movement.[1]They have anti allergic activity, antiulcer activity.[4] It has been proved as a controlling inflammatory conditions such as Sjögren syndrome and arthritis.[4]

Coconut Water (CocosNucifera)
In Sanskrit, the coconut palm is known as KalpaVriksha, meaning "tree which gives all that is necessary for living," since nearly all parts of the tree can be used in some manner or another.[4]

Health benefit of coconut water includes low in carbohydrates, 99% fat free and low in sugar. Coconut water is very stuff of nature; biologically pure and full of natural sugars salts vitamins.[6] Coconut water is a powerhouse of nutrition containing a complex blend of vitamins, minerals, amino acids, carbohydrates, antioxidants, enzymes, health enhancing growth hormones and other phyto-nutrients. Coconut water's unique nutritional profile makes an excellent oral rehydration, enhances immune function, possesses anti-aging properties, decreased swelling, relieve spasm, root canal irrigant (antiviral, antifungal and antimicrobial properties) and storage media for avulsed tooth. Coconut water is easily available in most of countries, and more importantly, it is a natural transport medium that is sterile and inexpensive.[4]

Ginger (Zingiber officinalis)
The various components of ginger are 1-4% essential oil and an oleoresin, zingiberene, curcumin, sesquiphellandrene, bisabolene.[1]

It has antibacterial, anti-inflammatory, analgesic property. It is used to relieve toothache. It should not be used in pregnancy and patients with the biliary disease. Because ginger can interfere with blood clotting, it should be used cautiously in patients on anticoagulant therapies such as coumadin or heparin.[2]It may reduce the toxic effects of the chemotherapeutic agent cyclophosphamide.[1]

Curry leaf tree (Murraya koenigii spreng)
It is a green leafy vegetable grown all over India and other countries for its aromatic leaves, used daily as an ingredient in Indian cuisine. The fresh curry leaves contain 2.65 volatile essential oils such as sesquiterpenes and monoterpenes, which have broad antimicrobial effects on S. mutans, Streptococcus sanguinis. It also contains chlorophyll that is proposed as an anticariogenic agent and also helps to reduce halitosis.[8]

Grape Seed Extract
It contains proanthocyanidins (PA) which are potent antioxidants and are known to possess antibacterial, anti-inflammatory and immune-stimulating effects.[6] It has been documented to strengthen collagen based tissues by increasing collagen cross-links.[4] In a study conducted to determine re-mineralizing effects of grape seed extract on artificial root caries, results showed that is a promising natural agent for noninvasive root caries therapy.[6]

Lemongrass (Cymbopogon citratus)
This plant is commonly used in various teas, cosmetics, and folk medicine for its antiseptic, antiemetic, anti - rheumatic, analgesic, antispasmodic, and antipyretic properties. Warad SB et al (2013) examined a study to evaluate locally delivered 2% lemongrass oil in gel form and it was found that 2% lemongrass oil offers a new choice of safe and effective adjunct to scaling and root planning.[8]

Pomegranate (Punica granatum)
It has active compounds contains polyphenolic flavonoids, are believed to prevent gum diseases through a number of mechanisms including reduction of oxidative stress in the oral cavity, antioxidant activity, anti-inflammatory effects and anti-bacterial effects.[8,12]

Meswak (Salvadora persica)
It is derived from Arak tree (Salvadora persica) that grows mainly in Saudi Arabia and also in other parts of the Middle East. It is used as a chewing stick by various people of different cultures and in many developing countries as a traditional toothbrush for oral hygiene.[8] The Meswak extract has also found its way into the dentifrices in the recent years as antiplaque and antigingivitis agent. A study was carried out to examine the antiplaque efficacy of a commercially available Meswak containing dentifrice compared to the conventional dentifrice using a randomized, triple-blind, parallel design method. The results was found to be comparable effects of meswak with that of the conventional dentifrice.[2]

CONCLUSION
Oral health is one of the most common health issues in developing countries. The use of plants and herbs for dental care is a very common indigenous system of medicine and it must be included in everyday life. The active principles of plants should be incorporated into modern oral health-care practices and dentists should be encouraged to use natural remedies in various oral health treatments. Herbal extracts have been used in dentistry for reducing inflammation, as antimicrobial plaque agent, antiseptics, antioxidants, antimicrobials, antifungals, antibacterial, antivirals, and analgesics. They also aid in healing and are effective in controlling microbial plaque in gingivitis and periodontitis and thereby improving immunity. This will make dentistry much safer, affordable and more accessible for the lower socio-economic groups in society.

REFERENCES

1. Anushri M, Yashoda R, Puranik MP. Herbs: A Good Alternatives to Current Treatments for Oral Health Problems. Int J Adv Health Sci 2015;1(12):26-32.
2. Pandita V, Patthi B, Singla A, Singh S, Malhi R, Vashishtha V. Dentistry meets nature-role of herbs in periodontal care: A systematic review. J Indian Assoc Public Health Dent 2014;12:148-56.
3. Prathima G.S., Kavitha M. Ayurveda in dentistry.
4. Buggapati L. Herbs in dentistry. International Journal of Pharmaceutical Science Invention, 2016; 5(6): 07-12.
5. Lakshmi T, Rajendran R, Krishnan V. Perspectives of oil pulling therapy in dental practice. Dent Hypotheses 2013;4:131-4.
6. Jain N, Rajwar Y, Batra M, Singh H, Bhandari R, Agarwal P. Dentistry: Turning towards Herbal Alternatives: A Review. Scholars Journal of Applied Medical Sciences, 2014; 2(1): 253-257.
7. Bhardwaj S, Verma R, Gupta J. Challenges and future prospects of herbal medicine. Int. Res. Med. Health Sci., 2018; 1(1):12-1.
8. Avineet Kaur, Daljit Kapoor, Nitin Soni, Sanjeet Gill. Phytodentistry– A Boon???. Arch of Dent and Med Res 2016; 2(4):35-41.
9. Bhambal A, Kothari, Saxena S, Jain M. Comparative effect of neemstick and toothbrush on plaque removal and gingival health – A clinical trial. Journal of Advanced Oral Research, 1011; 2(3): 51-5.
10. Sinha DJ, Sinha AA. Natural medicaments in dentistry. Ayu 2014;35:113-8.
11. Bansal A, Ingle AN, Kaur N, Ingle K, Charania Z. Effect of gum massage therapy with honey and olive oil on common pathogenic oral micro-organisms: A randomized controlled clinical trial. J Int Oral Health 2015; 7(11): 63-66.
12. Bhukya SL, Maloth KN, Kumar V, Kundoor R. Ayurveda in Dentistry: a scientific review. J of Ayurveda and Hol Med (JAHM).2017;5(1):13-20.
13. Charantimath S, Oswal R. Herbal Therapy in Dentistry: A Review. Innovative journal of Medical and Health Science. 2011: 1-4.
14. Bismelah NA, Mohamed Kassim ZH, Ahmad R, Ismail NH. Herbs in dentistry Journal of Medicinal Plants Studies 2016; 4(2): 18-23.