Review Article

Herbs: A Good Alternatives to Current Treatments for Oral Health Problems

M Anushri[1], R Yashoda[2], Manjunath P Puranik[3]

[1]Postgraduate Student, Government Dental College & Research Institute, Bangalore, Karnataka, India, [2]Associate Professor, Government Dental College & Research Institute, Bangalore, Karnataka, India, [3]Professor & Head, Government Dental College & Research Institute, Bangalore, Karnataka, India

ABSTRACT

Herbs have been used for centuries to prevent and control dental disease. 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, but side-effects do occur. Herbal products can vary in their potency. Therefore, care must be taken in their selection. The biggest challenge and problem is the lack of information about the effect of herbs on oral tissues, mechanism of action and side-effects. The herbs described in this article are Aloe vera, Bloodroot, Caraway, Chamomile, Clove, Cranberry, Evening Primrose, Garlic, Ginger, Green Tea, Haritaki, Liquorice, Myrrh, Neem, Peppermint, Propolis, Purple Coneflower, Rosemary, Sage, Thyme, Turmeric, Tulsi, Triphala, 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: Ayurveda, Dental diseases, Dentistry, Herbs, Oral health

Corresponding Author: Dr. M Anushri, Room No. 9, Department of Public Health Dentistry, Government Dental College & Research Institute, Fort, Victoria Hospital Campus, Bangalore - 560 002, Karnataka, India. E-mail: anushri.mj@gmail.com

INTRODUCTION

Throughout the human history, there has been a conspicuous concern for health care and the cure of the disease, even though the concepts themselves took a very long time to develop into a body of knowledge.[1] From time immemorial, we have been using our natural resources to attain the state of well-being,[2] and it is becoming important in the developing world.

In India, there are different systems of medicine like Allopathy, Ayurveda, Homoeopathy, Naturopathy, Siddha, Unani, and Yoga.[3] Ayurveda is a medical system primarily practiced in India that has been known for nearly 5000 years recommends a combination of lifestyle management, and treatment with specific herbs to cure various diseases.[4] There are approximately 1,250 medicinal plants being used in formulating beneficial measures.[5]

Herbal medicines have two special characteristics that distinguish them from chemical drugs; use of crude herbs and prolonged usage. Experience has shown that there are real benefits in the long-term use of whole medicinal plants and their extracts, since the constituents in them work in conjunction with each other.[6] Several popular conventional drugs on the market are from various herbs. Herbal medicines have fewer side effects and are safer to use than conventional medications.[7]

It is well documented that medicinal plants confer considerable antibacterial activity against various microorganisms including bacteria's responsible for dental caries. Phytochemicals for the prevention, treatment and maintenance of periodontal diseases are identified. They may be tannins, terpenoids, flavanoids, alkaloids, etc. Antimicrobial activities of these have been found to be particularly useful for periodontal diseases.[8] The biggest challenge and problem is the lack of information about the effect of herbs on oral tissues, mechanism of action, and side effects.

Hence the present review has been undertaken to study the effect of various herbs that are useful in dentistry.

HERBS IN DENTISTRY

Aloe vera

- The chemical constituents in Aloe vera are Anthraquinones, Saccharides, Prostaglandins

and fatty acids. Others: Enzymes, amino acids, vitamins, minerals. Other compounds: Cholesterol, triglycerides, steroids, uric acid, lignins, beta-sitosterol, gibberellin, salicylic acid.

- It is analgesic, antibacterial, antiviral, antifungal, antioxidant immune modulating, antiseptic, anti-inflammatory. Aloe vera is used in the sites of periodontal surgery, toothpick injuries, chemical burns, aphthous ulcers, gum abscesses, dry socket, lichen planus, benign pemphigus and gingival problems associated with AIDS, leukemia, migratory glossitis, geographic tongue and burning mouth syndrome, denture sore mouth, candidiasis, desquamative gingivitis, vesiculobullous diseases, acute monocytic leukemia, xerostomia.
- Studies have shown it might lead to allergic reactions: generalized eczematous and popular dermatitis (from topical application).[7,9-12]

Black Cohosh (Rhizoma Cimicifugae Racemosae)

- The main ingredients are cycloartenol-based triterpenes action, acetylacteone, 26 deoxy acetol, cimidenol, 26-deoxyactein and cimicifugaside.
- It mainly has an anti-inflammatory effect. Studies have been conducted using its anti-inflammatory property in treating periodontitis, but there is a lack of evidence.
- It is contraindicated in pregnancy or lactation, or in children under the age of 12 years. Minor gastrointestinal upset and headache are some of the adverse effects of black cohosh.
- Dosage - daily dosage: 40-60% isopropyl alcohol or ethanol extracts of the crude drug corresponding to 40 mg drug.[7,13]

Bloodroot (*Sanguinaria canadensis*)

- The principal chemical constituent is sanguinarine.
- It has antibacterial, anti-inflammatory, antifungal property. Mainly used for gingivitis and periodontal disease, remineralization of enamel lesions, acute sore throat.
- It is considered unsafe for use in children and pregnant or lactating women. Long-term use might lead to nausea and vomiting, glaucoma, edema, heart disease, miscarriage, diarrhea, stomach pain, visual changes, and paralysis.[7,10]

Caraway (*Carum carvi*)

- Caraway contains 3-7% volatile oil, with the main components divided into carvone (50-60%) and limonene (40%).
- Some of the properties of caraway include antihistaminic, antimicrobial, antiseptic, expectorant, anti-inflammatory, spasmolytic, flavoring agent. Literature has documented its use in gingivitis, periodontal disease, but definite evidence is lacking.
- Caraway is not used in children under 2 years of age. Some of the adverse effects reported are irritation of the skin and mucous membrane.[7]

Chamomile (*Matricaria recutita*)

- The Chemical constituents in chamomile are 1-2% volatile oils, essential oil (0.4-1.5%), chamazulene (1-15%). Other major constituents include α-bisabolol and related sesquiterpenes, flavonoids, apigenin, luteolin, and quercetin.
- These active ingredients contribute to its anti-inflammatory, antispasmodic, smooth-muscle relaxing action, antibacterial and antiviral activity.
- Major uses are in gingivitis, periodontal disease and ulcers as a mouth wash.
- Usually considered to be safe during pregnancy or breast-feeding.
- It is not used in people with allergies to plants of the Asteraceae family (ragweed, aster, and chrysanthemums), as well as mugwort pollen. Bronchial constriction with systemic use and allergic skin reactions with topical use.[7,14,15]

Clove Oil (*Syzygium aromaticum*)

- Clove consists of essential oil, eugenol, eugenol acetate and β-caryophyllene.
- It has analgesic, antibacterial, antiviral, anti-inflammatory, antioxidant property.
- It has been used to relieve toothache, in periodontitis, as an anesthetic and also to treat bleeding gums.
- Use with caution in children, pregnant and lactating women. Allergic contact dermatitis on topical use.
- It is available as a tincture (1:5, 25% ethanol), lozenges and mouthwash.[7,14,16]

Cranberry (*Vaccinium macrocarpon*)

- It consists of polyphenols, flavonoids that have anticarcinogenic, antibacterial, antiviral, antifungal, and antioxidant properties.
- Because of its antiadhesive property dental caries, periodontal disease, oral squamous cell carcinoma.
- There is no evidence of contraindications and adverse effects.[7,16-19]

Dandelion (*Taraxacum officinale*)

- Dandelion has anti-inflammatory, analgesic, antiulcer, antimicrobial property that makes it useful in periodontitis.
- Contraindications are those with obstruction of the biliary or intestinal tract and acute gallbladder inflammation. Minor gastrointestinal upset and headache on long term usage.

Elderberry (*Sambucus arborescent Gilib*)

- Elderberry consists of flavonoids, major secondary metabolites include about 1% triterpenes, 1% sterols, about 3% phenolic acids and their corresponding glycosides, and up to 0.15% essential oil.
- The anti-inflammatory activity of its constituents has been made and used to treat periodontitis.[7,13,16]

Evening Primrose (*Oleum oenothera biennis*)

- Chemical constituents primrose are linoleic acid (*cis*-linoleic acid) (65-80%), g-linolenic, acid (*cis*-g-linolenic acid) (8-14%), oleic acid (6-11%), palmitic acid (7-10%) and stearic acid (1.5-3.5%). Other constituents include sterols and triterpene alcohols.
- These have antiallergic activity, antiulcer activity. Used in orthodontic tooth movement and dental caries.
- Some of the adverse effects are headaches, nausea, loose stools and diarrhea. Administration of the fixed oil precipitated symptoms of undiagnosed temporal lobe epilepsy in schizophrenic patients taking phenothiazine.[7,13]

Garlic (*Allium sativum*)

- Garlic consists of alliin, ajoene, diallyl sulfide, dithiin, S-acetylcysteine, and enzymes, B vitamins, proteins, minerals.
- It has got antibacterial, antiviral, and antifungal, antiseptic, bacteriostatic, antihelminthic effects. Studies have been done using garlic to treat dental caries and periodontitis.
- Reports have shown adverse effects such as allergic reactions such as contact dermatitis and asthmatic attacks, increased bacterial attachment to orthodontic wires.[7,9,14,16]

Ginger (*Zingiber officinalis*)

- The various components of ginger are 1-4% essential oil and an oleoresin, zingiberene, curcumin, sesquiphellandrene, bisabolene. Monoterpene aldehydes and alcohols are also present.
- It has antibacterial, anti-inflammatory, analgesic property. It is used to relieve toothache, as a sialogog, in the treatment of oral thrush. Ginger may reduce the toxic effects of the chemotherapeutic agent cyclophosphamide.
- 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 cou madin or heparin.[9,15,16]

Ginseng (Radix Ginseng)

- Chemical constituents of ginseng include triterpene, saponins, oleanolic acid.
- It is antihelminthic, analgesic, antispasmodic, antimicrobial, anti-inflammatory, antipyretic, immunostimulatory, antiulcer property and used in periodontitis.
- Adverse effects with its use are hypertension, nervousness, irritability, diarrhea, skin eruptions, and insomnia.[7,9,16,17,20]

Goldenseal (Rhizoma Hydrastis)

- Chemical constituents present are isoquinoline alkaloids principally hydrastine, followed by berberine, canadine and lesser quantities of related alkaloids including Canada line, coalmine, hydrastine and jatrorrhizine.
- It has got anti-inflammatory and hemostatic property and used in periodontitis.
- Goldenseal contraindications include those with obstruction of the biliary or intestinal tract and acute gallbladder inflammation. Long term usage might result in exaggerated reflexes, convulsions, paralysis and death from respiratory failure.[7,16,21]

Green Tea (*Camellia sinensis*)

- Green tea contains polyphenol contents comprising catechin (C), epicatechin (EC), gallocatechin (GC), epigallocatechin (EGC) epicatechin gallate (ECG), and epigallocatechin gallate.
- It is anti-inflammatory, antibacterial, antiviral.
- Used in the treatment of periodontal disease.[14,18,20,22]

Haritaki (*Terminalia chebula*)

- The chemical constituents of Triphala consist of tannins, chebulaic acid, chebulinic acid, cerulenin, corilagin, gallic acid, gallic acid methyl ester, punicalagin, terchebulin and terminalic acid. Flavonols of interest include quercetin, isoquercitrin and rutin.
- It has antioxidant, antimicrobial, antihelminthic, astringent, dentifrice, anti- inflammatory. Studies have indicated it can be effectively used in the treatment of dental caries, bleeding and ulcerated gums.
- Contraindicated in children under 12 years, pregnant and lactating women.
- Daily dosage: 3-9 g of crude drug for decoction in divided doses.[17]

Liquorice (*Glycyrrhiza glabra*)

- Major components in liquorice are triterpene saponins, glycyrrhizin (is the major component

(2-9%); minor components occur in proportions that vary depending on the species and geographical location. Glycyrrhizin occurs as a mixture of potassium and calcium salts. Flavonoid constituents include liquiritigenin and isoliquiritigenin.
- It had antimicrobial, anti-inflammatory and antiviral activity and used in dental caries.
- Contraindicated in patients with hypertension, cholestatic disorders or cirrhosis of the liver, hypokalemia, or chronic renal insufficiency, and during pregnancy. Some of the adverse effects reported are pseudo aldosteronism, which includes potassium depletion, sodium retention, edema, hypertension, and weight gain.[10]

Myrrh (Commiphora molm)

- The three main constituents of myrrh are the resin, the gum, and the volatile oil. The gum consists of 20% proteins and 65% carbohydrates made up of galactose, 4-*O*-methylglucuronic acid and arabinose.
- Myrrh had been used in pharyngitis, tonsillitis, gingivitis, stomatitis and ulcers. Topical application for the treatment of and for local application as an anodyne to treat infections of the oral cavity.
- It should not be used in pregnancy. Adverse effects include contact dermatitis.[7,16,21]

Neem (*Azadirachta indica*)

- Neem consists of genin, sodium nimbinate, salannin, nimbin, azadirachtin, nimbidiol, quercetin and nimbidin. Neem leaves contain fiber, carbohydrates and at least 10 amino acid proteins, calcium, carotenoids, fluoride.
- Neem has antiviral, antifungal, antimicrobial, antibacterial, antipyretic, anti-inflammatory, antitumor, analgesic, antihelminthic, anticariogenic, antioxidant activity. Studies have shown that neem is used in the treatment of dental caries, gingivitis, periodontitis.
- Dosage - Infusion (1:20): 15-30 ml; Tincture (1:5): 4-8 ml. External applications: 70% ethanol extract of the leaves diluted to 40%, apply twice daily.[13,18,21]

Peppermint (*Mentha piperita*)

- Peppermint leaves yield approximately 0.1-1.0% volatile oil that is composed primarily of menthol (29-48%) and menthone (20-31%).
- It is analgesic and also has muscle-relaxing action. Peppermint oil application for toothache by soaking a cotton ball in the oil and placing it in the cavity or rubbing it on the tooth.
- Avoided by people with severe liver damage, inflammation of the gallbladder or obstruction of bile ducts. Adverse effects reported are burning and gastrointestinal upset, skin rashes, headache, heartburn, perianal burning, bradycardia, muscle tremors and ataxia.[7,10,13,16]

Propolis

- Propolis is a complex mixture made up of plant-derived and bee released compounds. Raw propolis consists of around 50% resins, 30% waxes, 10% essential oils, 5% pollen and 5% of various organic compounds. Caffeic acid phenanthryl ester, polyisoprenylated benzophenone, galangal, pino banksin and pino cembrin, amino acids, phenolic acids, phenolic acid esters, flavonoids, cinnamic acid, terpenes.
- It has got a wide range of activity as anesthetic, antibacterial, antifungal, antiviral (including anti-HIV-1 activity), antioxidant, anticarcinogenic, antimutagenic, antithrombotic and immunomodulatory.
- It has been used in dental caries, gingivitis, storage medium, intracanal medicament, dentinal hypersensitivity, relief from denture ulceration, stomatitis, halitosis, mouth freshener, periodontal pocket/abscess, dentinal sensitivity, lichen planus, candidal infections, angular cheilitis, xerostomia, traumatic ulcers, pulp capping, temporary restorations and dressings, covering tooth preparations, dry socket, pre-anesthetic, and pericoronitis.[7,14,18,23-25]

Purple Coneflower (Echinacea)

- It consists of alkyl amides/polyacetylenes, caffeic acid derivatives, and polysaccharides.
- The mouthwash of Echinacea is effective in gingivitis and periodontal disease in combination with sage, peppermint oil, menthol and chamomile.
- Contraindicated in serious conditions such as tuberculosis, leukosis, collagenous, multiple sclerosis, AIDS, HIV infection and autoimmune disorders. It might lead to allergic reactions.[7,9,20,22]

Rosemary (*Rosmarinus officinalis*)

- Chemical constituents of rosemary includes volatile oil, carnosol, ursolic, linalyl acetate (25-46%), linalool (20-45%), lavendulyl acetate (>1.0%), 1,8-cineole, eucalyptol (<2.5%), 3-octanone (<2.5%), camphor (<1.2%), limonene (<1.0%), and α-terpineol (<2.0%).
- It has antibacterial, antifungal, antioxidant, anti-inflammatory property. Used in relieving toothache, disinfecting GP cones.
- Contraindicated in pregnant and lactating women.
- Dosage - Tea can be taken several times per day. Rosemary tincture, half to one teaspoon (2-5 ml) three times per day, may also be used.[7,16,17]

Sage (*Salvia officinalis*)

- The volatile oil of sage contains the constituent alpha and beta-thujone, camphor, and cineole. It also contains rosmarinic acid, tannins and flavonoids.
- It is used in treatment of sore throat, inflammations in the mouth, and gingivitis. Sage oil has antibacterial, antifungal, and antiviral activity that may partially explain the effectiveness of sage for this indication.
- Not used in pregnant women, children, should be avoided when fever is present.
- Adverse effects include increased heart rate and mental confusion. Very high amounts may lead to convulsions.[7,16]

Thyme (*Thymus vulgaris*)

- The primary constituents are the volatile oils, which include the phenols, thymol and carvacrol.
- A salve made up of thyme, myrrh, and goldenseal is used to treat oral herpes. Also, thyme is used to treat chronic candidiasis and halitosis.
- Used with caution in young children, pregnant and lactating mothers. Adverse effects include dizziness, vomiting, and breathing difficulties. Some people may be sensitive to use of thyme oil topically on the skin or as a mouth rinse.[7,9,10,18]

Turmeric (*Curcuma longa*)

- Chemical constituents of turmeric include volatile oil (6%) composed of a number of monoterpenes and sesquiterpenes, including zingiberene, curcumin, *a*- and β-turmerone among others. The colouring principles (5%) are curcuminoids, 50-60% of which are a mixture of curcumin, mono des methoxy curcumin and bis des methoxy curcumin.
- It is antimutagenic, anticarcinogenic, antioxidant, antibacterial and used in dental caries, oral lichen planus, gingivitis, halitosis, pit and fissure sealant, dental plaque detection system. Massaging the aching teeth with roasted, ground turmeric eliminates pain and swelling.[7,9,13,14,26]

Tulsi (*Ocimum sanctum*)

- Tulsi consists of tannins (4.6%) and essential oil (up to 2%), eugenol (up to 62%), methyleugenol (up to 86%), and *a*- and β-caryophyllene (up to 42%), methylchavicol, linalool and 1,8-cineole.
- It has got antihelminthic, analgesic, antipyretic, immune stimulatory, antiulcer, antimicrobial, anti-inflammatory property. Used in periodontitis.
- Contraindicated in pregnant and lactating women, used with caution in children.[13,18]

Triphala

- Triphala is a combination of amalaki, haritaki and bibhitaki. Amalaki contains ascorbic acid, thiamin, riboflavin and niacin. It comprises β-sitosterol, gallic acid, ellagic acid, ethyl gallate, galloyl glucose and cheb Ula gic acid, Haritaki contains chebulagic and chebulinic acid, as well as corilagin.
- It is antioxidant, antimicrobial. Used in dental caries, bleeding and ulcerated gums.[14]

OTHER HERBS THAT ARE USEFUL IN DENTISTRY

Alfalfa

- Useful in cases of hemorrhaging and fungal infections.[7]

Anises

- An anti-inflammatory herb, anise is commonly used in tea form to soothe the gums.[7]

Catnip

- Catnip tea or capsules help in relaxation before dental treatment.[7,16]

Cayenne

- Cotton with oil of cayenne to aching tooth provides emergency relief from pain.[7,16]

Comfrey

- Used as a compress to ease jaw tension and relieve the pain of jaw and tooth fractures.[7,16]

PUBLIC HEALTH IMPORTANCE

Herbal extracts are used in dentistry for treatment of various dental disorders. The natural photochemical could offer an effective alternative to antibiotics and represent a promising approach to prevention and therapeutic strategies for various oral infections. The herbal remedies have an edge over conventional antibiotic treatment that suffer the limitation of low benefit to high risk as compared to herbal treatment that possess high benefit to low-risk ratio.[8]

Studies for assessment of safety and efficacy of herbal remedies are in its infancy. These herbal remedies are expected to widely use in future. There are much more opportunities for further research in the utility of herbal remedies for oral diseases.[8]

Trends indicate that the public increasingly prefers to purchase herbs rather than making a visit to their physician's office. It seems that providers of conventional medicine will eventually be forced by the economics of the market place to deal with the reality of the public interest in the use of herbs. In the interim, great harm can befall the uneducated users. Therefore, health educators must consider the challenge to ensure that people participate in making decisions about the herbal medicine to protect the public health.[27]

In India, there are currently about 2,50,000 registered medical practitioners of the Ayurvedic system (total for all traditional systems: Approximately 2,91,000). In every Indian state, about one-third of the governmental medical post is occupied by physicians who belong to the traditional systems.[6] On the other hand the dentist:population ratio of India is 1:10,000. However, the reality is that in rural India one dentist is serving over a population of 1,15,000.[28] To address the complex circumstances facing our dental workforce, solutions will almost certainly involve a broad spectrum of interests and one among them is Ayurvedic practitioners and use of herbal medicines.

SAFETY, EFFICACY, QUALITY

Toward the end of 19th-century, traditional medicine production shifted from a home level production to large industrial mass production. There are several registered pharmaceutical industries in India and herbal medicines are already popular as the safest medicines to be used.

At the same time there is a need to ensure the public safety and effective quality control of these preparations. The same can be achieved by ensuring the standardization of the several aspects such as nomenclature of medicinal plants and other resources, their collection practices, semi processes and final processing, packaging, preservation, storage, product life, labeling and modes of distribution including clinical application are needed to ensure quality, safety and efficacy.[3]

CONCLUSION

As a long-standing component of the Asian culture, traditional medicine has had a remarkable record. As we stand in the 21st century, we must challenge ourselves to critically examine the ingrained beliefs, habits and old institutions of health care. What has worked should be kept and what has not should be discarded or improved and optimal health care that is effective, safe, accessible and affordable should become the priority of every country's health care system.

REFERENCES

1. Introduction - Indian Medicinal Plants. Available from: http://www.Medicinalplantsn Kr.Org/Introduction.html/. [Last accessed on 2013 Jan 15].
2. Lall S. Alternative medicine: Herbal dentistry, a review. Available from: http://www.saspublisher.com/wp-content/uploads/2014/.../SJAMS-21C253-257.pdf. [Last accessed on 2013 Jan 15].
3. Payyappallimana U. Role of traditional medicine in primary health care: An overview of perspectives and challenges. Yokohama J Soc Sci 2010;14:57-77.
4. IARC Monographs, Volume 82, Monographs. Available from: http://www.iarc.fr/ENG/Monographs/vol82/mono82. [Last accessed on 2013 Jan 15].
5. WHO Guidelines on Safety Monitoring of Herbal Medicines in Pharmacovigilance Systems-Classification. Available from: http://www.libdoc.who.int/publications/2004/9241592214. [Last accessed on 2013 Jan 15].
6. Regulatory Situation of Herbal Medicines A Worldwide Review. WHO/TRM/98.1. Available from: http://www.who.int/medicinedocs/pdf/whozip57e/whozip57e. [Last accessed on 2013 Jan 15].
7. Taheri JB, Azimi S, Rafieian N, Zanjani HA. Herbs in dentistry. Int Dent J 2011;61:287-96.
8. Kumar P, Ansari SH, Ali J. Herbal remedies for the treatment of periodontal disease – A patent review. Recent Pat Drug Deliv Formul 2009;3:221-8.
9. WHO Monographs on Selected Medicinal Plants. 1999. Volume 1. Available from: http://www. who.int/medicine docs/en/d/*20*.html. [Last accessed on 2013 Jan 20].
10. WHO Monographs on Medicinal Plants Commonly used in the Newly Independent States. Available from: http://www.apps.who.int/medicine docs/en/m/abstract/Js17534en. [Last accessed on 2013 Jan 20].
11. Wynn RL. *Aloe vera* gel: Update for dentistry. Gen Dent 2005;53:6-9.
12. Alternative Medicine *Aloe vera* is Good for Teeth and Gums, Too. Available from: http://www.knowyourteeth.Com. [Last accessed on 2013 Jan 20].
13. Guidelines on Developing Consumer Information on Proper Use of Traditional, Complementary and Alternative Medicine. Available from: http://www.who.int/medicinedocs/en/d/Js5525/10.html. [Last accessed on 2013 Jan 20].
14. Kamat S, Rajeev K, Saraf P. Role of herbs in endodontics: An update. Endodontology 2011;23:98-102.
15. Sudarshan GR, Vijayabala S. Role of ginger in medicine and dentistry - An interesting review article. Southeast Asian J Case Rep Rev 2012;1:66-72.
16. Oswal R, Charantimath S. Herbal therapy in dentistry: A review. Innov J Med Health Sci 2011;1:1-4.
17. WHO Monographs on Selected Medicinal Plants.Volume 4. Available from: http://www.apps.who.int/medicine docs/en/m/abstract/Js16713e. [Last accessed on 2013 Jan 20].
18. Kukreja BJ, Dodwad V. Herbal mouthwashes: A gift of nature. Int J Pharma Bio Sci 2012;3:46-52.
19. Yoo S, Murata RM, Duarte S. Antimicrobial traits of tea- and cranberry-derived polyphenols against *Streptococcus mutans*. Caries Res 2011;45:327-35.
20. Corwin A. Herbal supplements: Healthcare implications and considerations. Can Dent Hyg Assoc 2009;24:7-15.
21. WHO Monographs on Selected Medicinal Plants.Volume 3. Available from: http://www.who.int/medicine docs/en/m/abstract/Js14213e. [Last accessed on 2013 Jan 20].
22. Wolfram S. Effects of green tea and EGCG on cardiovascular and metabolic health. J Am Coll Nutr 2007;26:373S-88.
23. Wagh VD, Borkar RD. Indian propolis: A potential natural antimicrobial and antifungal agent. Int J Pharm Pharm Sci 2012;4:12-7.

24. Rathod S, Brahmankar R, Kolte A. Propolis - A natural remedy. Indian J Dent Res Rev 2012;50:99-103.
25. Parolia A, Thomas MS, Kundabala M, Mohan M. Propolis and its potential uses in oral health. Int J Med Med Sci 2010;2:210-5.
26. Chaturvedi TP. Uses of turmeric in dentistry: An update. Indian J Dent Res 2009;20:107-9.
27. Sharif BA. Trends in utilization of herbal medicine: Implications for health education. Int Electron J Health Educ 2002;5:27-34.
28. Ahuja NK, Parmar R. Demographics and current scenario with respect to dentists, dental institutions and dental practices in India. Indian J Dent Sci 2011;3:8-11.

How to cite this article: 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.

Source of Support: Nil, **Conflict of Interest:** None declared.