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DAY TO DAY DENTISTRY IN AYURVEDIC LANGUAGE- AN APPEALING CONCEPT IN PERIODONTAL PRACTICE

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ABSTRACT

Oral hygiene affects the overall health had already been proven. Various procedures are advocated for maintaining oral hygiene in regular practice. Shalaky Tantra (system of surgery), a branch in *Ayurved* includes Dentistry as a subject in it. Various studies has proven that chewing sticks described in ancient *Ayurved* texts have medicinal and anti-cariogenic properties. Its oil pulling (*Kaval, Gandush*) practice is claimed to cure oral diseases. Amla (*Emblic myrobalan*), is a general rebuilder of oral health. Bilberry fruit (*Vaccinium myrtillus*) and hawthorn berry (*Crateagus oxycanthus*) stabilize collagen, strengthening the gum tissue. Liquorice root (*Glycyrrhiza glabra*) promotes anti-cavity action, reduces plaque, and has an antibacterial effect. Green tea has antiplaque and anti caries activity. Various *aasanas* can have reduced tempero-mandibular joint (TMJ) problems by increasing blood flow. In this below mentioned review periodontal diseases are described in ayurvedic language. Scientific validations of the Ayurved dental health practices could justify their incorporation into modern dental care. Dental practitioner can get the ancient knowledge to understand and implicate this in pathogenesis, prevention and management of various oral disorder

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INTRODUCTION

Oral health is an integral part of overall health issue and affects the quality-of-life which extends beyond the functions of the oro-facial complex. Oral and dental diseases are considered as major health concern world-wide (Petersen *et al.*, 2005). Dental caries and periodontal diseases are considered as the most important oral health problems globally, other conditions like oral and pharyngeal cancers and soft tissue lesions are also occur in significant number (Petersen, 2003). It is well established that there is a relation between oral diseases and the microbiological activity inside the mouth (Jenkinson and Lamont, 2005). Anti-microbial agent used, to alter the oral microbial environment has significant side effects like diarrhoea, vomiting, tooth staining and the most increased salivary calculi (Park *et al.*, 2003; Chung *et al.*, 2006 and Flotra, 1973). The incidence of serious and fatal adverse drug reactions (ADRs) in US hospitals is now ranked as between the fourth and sixth leading cause of death in the United States, following next after heart disease,

cancer, pulmonary disease, and accidents. Thus the safety of and risks associated with medical interventions is an issue across all categories of health care (<http://www.who.int/intellectualproperty/studies/B.Patwardhan2.pdf>). Standard drugs has a little success in the prevention of periodontal disease and in the treatment of a variety of oral diseases. So, search for alternative medicinal products has an importance and natural chemicals obtained from various parts of plants used in traditional (alternative) medicine are considered as a good alternative to the drugs (Prabu *et al.*, 2006). Ayurveda is considered as the primitive system for health care. It takes care with the view as a complete man, and his health and remedies. This system considered man as an organic whole. Treatment consists of use of alternative medicines, diet control and practicing certain activities like yogas, and aasanas (Sharma, 1979). This 5000- year-old system of medicine recommends treatment with specific herbs and minerals to cure and control various diseases. Plants are considered as safe and are with fewer side effects through thousands of years in use (Kosta and Tiwari, 2009). Bacterial infections are considered as causative factors in most of the dental diseases, and it has been well-documented that Ayurvedic medicamentosas produce considerable antibacterial activity against microorganisms,

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including bacteria responsible for, periodontitis and dental caries (Kelmanson *et al.*, 2000). Dental Sciences hardly have a few researches in this field. Hence integration of professional dental treatment modalities (current concept) and complementary alternative medical (CAM) systems is required to provide the best and unique part of each system to patients as a comprehensive therapy or an alternative choice of treatment (Goldstein, 2000). Even though dentistry was not a specialized branch of Ayurveda, it is included in Shalakya Tantra (system of surgery). In ancient India, problems such as deformities of the oral cavity, plaques and infections, dental caries had been managed and even cured.

MATERIALS AND METHODS

1st we consulted the ancient literature like Susruta and Charak samhita. Then we search for the recent literatures. A systemic review of the articles had been done using the phrase "dentistry and ayurved" ,The databases searched for the current review were Medline, Natural Products Alert Database, AYUSH Research Portal, National Library of Ayurveda Medicine, Systematic Reviews in Ayurveda, Ayurveda Database, Web of Science, Indus Medicus and Google Scholar; by consulting existing bibliographies; by using both forward and backward reference chaining techniques; and by tracking recent activities in the field of Ayurveda, which is primarily concerned with prevention and management of oro-facial disorders. We did this in three steps

1st- we collected old literatures (Sanhitas).

2nd-after reading abstracts, we selected 50 articles for review

3rd-we referred the duplicity of material and select articles.

Inclusion criteria

Those articles describing no drug for taking orally, parenterally for curing diseases or describing regular daily practice methods for maintenance of oral health were included.

Exclusion criterias

Articles, describing the ayurvedic drugs taken orally for treatment and Curing of diseases are not included.

Then we searched for exclusive terms like "DANT DHAVANI", JIVA LEKHANA AND OIL PULLING and got exclusive articles for these terms. "Yoga for orofacial disorder" been searched and non published article we got.

Ayurved and Concept of Oral Health

Aurveda has the Suśruta Samhitā and the Charaka Samhitā as its earliest principal texts. In Ayurveda, dental health (danta swasthya in Sanskrit) is held to be very individualistic, varying with each person's constitution (prakriti), and climatic changes resulting from solar, lunar and planetary influences (kalaparinama). The body constitution is classified based on the predominance of one or more of the three doshas, VATA, PITTA AND KAPHA. The dominance doshas in both the individual and nature determines health care in Ayurveda, including dental health (Balkrishna A. Haridwar, 2006).

VARIOUS PERIODONTAL DIEASESES DESCRIBED IN AYURVED AND THEIR CURRENT NAMES (Sunitha Amruthesh, 2008)

Danta moola roga (diseases of gums)

1. Sheethada (scurvy, gingivitis)
2. Dantha pupputaka (gingival abscess, periapical or dentoalveolar abscess)
3. Dantha vestak (periodontal abscess)
4. Upakusha (periodontitis)
5. Dantha vydarbha (allergic gingivitis)
6. Vardana (supernumerary tooth)
7. Adhimamsa (pericoronitis)
8. Saushira (ANUG)
9. Mahashushira (cancrum oris, NOMA)
10. Paridhara
11. Vataj dantha nadi (sinus, fistula, osteomyelitis = DANTHA NADI)
12. Pittaj dantha nadi
13. Kaphaj dantha nadi
14. Sannipathaj dantha nadi

Alternative management and prevention procedure

Ayurveda advocates procedures such as oral prophylaxis, extractions, excisions, flap surgeries etc. Along with the treatment of orofacial diseases, Ayurveda also recommends some daily use therapeutic/preventive procedures for the prevention and maintenance of oral health.

1. Dant Dhavani (Brushing),
2. Jivha Lekhana (Tongue scrapping)
3. Gandoosha (gargling) or oil pulling
4. Tissue regeneration

Dant Dhavani

According to ayurvedic texts, it is recommended that Chewing sticks in the morning as well as after every meal prevents oral diseases. Ayurveda insists on the use of herbal brushes, approximately 9 inches long and one's little finger thick. These herb sticks should be either 'kashaya' (astringent), 'katu' (acidic), or 'tikta' (bitter) in taste. The method of use is to crush one end, chew it, and brush with it slowly. It is better to take from fresh plant (Shirley *et al.*, 2009).

Various recommended plants are Neem (*margosa or Azadirachta indica*), Fresh stems of Liquorice (*Glycyrrhiza glabra*), Black catechu or the Cutch tree (*Acacia Catechu Linn.*), Arjuna tree (*Termmalia arjuna*), Fever nut (*Caesalipinia bouduc*) and Milkweed plant (*Calotropis procera*).

Neem- It is believed to cause attrition and levelling of biting surfaces, facilitate salivary secretion and, possibly, help in plaque control, (15) and has anti caries effect (16,17) while some stems have an anti-bacterial action. It is recommended for Pitta dosa people.

Liquorice and Black catechu – These have a bitter and astringent taste respectively. People with vata dosha

predilection might have a tendency to develop atrophic and receding gums, and are recommended to use these (Athavale, 1999).

Fever nut and milkweed plant – these have pungent taste. People with the kapha dosha are likely to have pale and hypertrophic gums and are asked to use chewing sticks (Naik *et al.*, 2003).

Besides those, mango leaf, miswak are commonly used. Sumant *et al.* (1992) evaluated the efficacy of mango leaf and found higher soft deposit score compared to toothbrush. Mangiferin, a compound present in mango leaves has significant antibacterial property against certain strains of *Pneumococci*, *Streptococci*, *Staphylococci*, and *Lactobacillus acidophilus* (Sumant *et al.*, 1992). Almas and Atassi, (2002) conducted research to assess the effect of miswak and tooth brush filaments end-surface texture on enamel. Their results show that filaments end-surface texture play major role in abrasive activity and enamel tooth surface loss. In that study Miswak showed lesser effect on enamel as compared to AQUAFRESH toothbrush (Almas and Atassi, 2002). Almas and Zeid, (2004) in a study to assess antimicrobial activity of miswak chewing stick in vivo, especially on *streptococcus mutans* and *lactobacilli* concluded that miswak had an immediate antimicrobial effect compared to toothbrush. *Streptococcus mutans* were more susceptible to miswak than *lactobacilli* (Almas and Zeid, 2004).

Jivha Lekhana

Clinical evidences shows that use of tongue scrapers on a regular basis, has a significant improvement on eliminating anaerobic bacteria and decreases bad odour. It is recommended to use gold, silver, copper, stainless steel for the scrapping of the tongue. Tongue scrapping stimulates the reflex points of the tongue, removes bad odour (halitosis), improves the sense of taste and stimulate the secretion of digestive enzymes (Outhouse *et al.*, 2006; Quirynen *et al.*, 2004 and Christensen, 1998).

Oil Pulling

Oil pulling, is a procedure that involves swishing oil in the mouth for oral and systemic health benefits. It is mentioned in the Ayurvedic text Charaka Samhita where it is called Kavala or Gandusha. In Gandush, the oral cavity is filled completely with liquid medicine, held for about 3-5 minutes, and then released. In Kavala Graha, a comfortable amount of fluid is retained with the mouth closed for about 3 minutes, and then gargled. Oil pulling was used extensively as a remedy in the past for prevent decay, oral malodor, to treat bleeding gums, dryness of throat, cracked lips and for strengthening teeth, gums and the jaw (Bethesda, 2006 and Hebbar *et al.*, 2010). Brushing is contra indicated in the cases of mouth ulcer, fever, indigestion, those who have tendency to vomit, asthma, cough, thirst in ayurvedic literature. Oil pulling is recommended to clean the oral cavity. Oil pulling therapy is usually done with oils like sunflower oil or sesame oil (Asokan, 2008). Asokan S *et al* (2009) evaluate the effect of oil pulling with sesame oil on plaque induce gingivitis, and to compare its efficacy with a chlorhexidine containing mouthwash. Significant reduction of

the pre- and post-values of the plaque and modified gingival index scores in both the study and control groups ($p < 0.001$) was achieved. Total colony count of aerobic microorganisms in the plaque of adolescents also decreases (Asokan *et al.*, 2009). Cranberry juice and Trifala mouth rinse shows significant result in anti-cariogenic property and reduction in gingivitis and periodontitis (Mukherjee *et al.*, 2014 and Prakash and Shelke, 2014).

Tissue Regeneration

Rasayana herb, amla (*Phyllanthus emblica*) is considered as general builder of oral health. Amla works as a mouth rinse as a decoction. One to two grams per day can be taken orally, for long-term benefit to the teeth and gums. Liquorice root promotes anti-cavity action, reduces plaque and has an antibacterial effect (Singh and Purohit, 2011). Bilberry and hawthorn berry fruits can stabilize collagen and strengthens the gum tissue. Yellow dock root, alfalfa leaf, cinnamon bark and turmeric root are taken internally to strengthen Astidharu, (the skeleton and the joints), have proven to be good for long term health of teeth (Singh and Purohit, 2011 and Amruthesh, 2011).

Gum Massage

A study for the effectiveness of Periocare[®] gum massage powder containing *C. zeylanicum*, *Piper nigrum*, *E. caryophyllata*, *G. glabra*, and *R. cordifoliat* in ayurvedic formulae shows reduction in plaque scores, gingival score, aerobic CFUs, and anaerobic CFUs, reveals significant result with mechanical plaque control (Suchetha and Bharwani, 2013). The active constituent of turmeric is known as curcumin, which has been shown to have a wide range of therapeutic effects (Chaturvedi, 2009). Applying a paste made from 1 tsp of turmeric with ½ tsp of salt and ½ tsp of mustard oil provides relief from gingivitis and periodontitis. It is recommended to rub the teeth and gums with this paste twice daily (Çıkrıkçı *et al.*, 2008). 1% curcumin solution causes resolution of inflammatory signs better than Chlorhexidine and saline irrigation as a subgingival irrigant (Suhag *et al.*, 2007).

Beverages

It has been seen that green tea (*Camellia sinensis*) has natural anti-oxidants, helpful for maintaining overall health. It has been found that it reduces plaque score, cure gingivitis and has anti cariogenic effects (Rasheed and Haider, 1998 and Kaur *et al.*, 2014).

Yoga

In an unpublished data it has been seen temporo mandibular disorder can be relieved by various yogic pose. Asanas such as the *AdhoMukhaSvanasana* (DownwardFacingDog), *Salamba Sarvangasana* (Shoulderstand) and *Viparita Karani* (Legs-Up-the-Wall-Pose) which postures, helps bring blood flow into your cranium, helps to increase in flow to the TMJ in blood and lymph. The vinyasa (Upward Facing Dog into Downward Facing Dog) serves to outward flow of blood from jaw and face. It has been advised not to practice Salamba

Sirsasana (Headstand) as it causes more pressure on tmj (<http://www.yogajournal.com/practice/754>).

DISCUSSION

Various procedures described above can be performed daily basis to maintain good oral health. The above mentioned procedure has additive effect on general health also. Daily practising those may add a further step in the life style of a healthy human being. Lack of scientific literatures and studies may be the obstacle for incorporating Ayurved in periodontal practice. So this article may help the young budding scientist to develop the new horizon of dental research in protocol forming for oral hygiene maintenance.

Conclusion: Countries with a history of traditional medicine should support and integrate traditional medicine into national health systems in combination with national policy. Periodontist must be aware of these alternative procedures to apply in appropriate situation. Above scientific study results show strong evidence for incorporation of Ayurveda in modern periodontal practice. Research regarding these methods in appropriate method, would benefit the general population through progress in oral and overall health thus preventing tooth morbidity. Because of younger generation's lack of knowledge on the identification, collection, preservation and processing of the plant species for medicinal use, it is necessary to conserve these ethno-cultural practices before they are lost definitively. However further in-vivo long term studies in localized environment are required for recommending any preventive procedures.

Clinical Relevance

Scientific rationale for study

Principal procedures for oral hygiene maintenance are tooth brushing, flossing and rinsing with mouthwashes. There is no alternative method found in curriculum of dental hygiene. Some principle findings in the past studies show the relevant application of different methods and materials in maintenance of oral health.

Principal findings

Alternative traditional methods are suitable for oral hygiene practices, although the practice of different yoga positions cannot be recommended for the time being. Further in vivo studies in the field of yoga and oral hygiene procedures required to have an impact in dentist community.

Practical implications

The alternative procedures described above can be included in the curriculum of dental students, so that in needful situations, these can be applied.

REFERENCES

- Petersen, PE., Bourgeois, D., Ogawa, H., Estupinan-Day, S. and Ndiaye, C. 2005. The global burden of oral diseases and risks to oral health. *Bull World Health Organ.*; 83:661–9.
- Petersen, PE. 2003. The World Oral Health Report: Continuous improvement of oral health in the 21st century: The approach of the WHO Global Oral Health Programme. *Community Dent Oral Epidemiol*; 31(Suppl 1):3–23.
- Jenkinson, HF. and Lamont, RJ. 2005. Oral microbial communities in sickness and in health. *Trends Microbiol.*; 13:589–95.
- Park, KM., You, JS., Lee, HY., Baek, NI., Hwang, JK. and Kuwanon, G. 2003. An antibacterial agent from the root bark of *Morus alba* against oral pathogens. *J Ethnopharmacol.*; 84:181–5.
- Chung, JY., Choo, JH., Lee, MH. and Hwang, JK. 2006. Anticariogenic activity of macelignan isolated from *Myristica fragrans* (nutmeg) against *Streptococcus mutans*. *Phytochemistry*; 13:261–6.
- Flotra, L. 1973. Different modes of chlorhexidine application and related local side effects. *J Periodontal Res Suppl.*; 12:41-4
- Patwardhan, B. Traditional Medicine: Modern Approach for affordable global health. Available from: <http://www.who.int/intellectualproperty/studies/B.Patwardhan2.pdf>
- Prabu, GR., Gnanamani, A. and Sadulla, S. 2006. Guaijaverin: A plant flavonoid as potential antiplaque agent against *Streptococcus mutans*. *J Appl Microbiol.*; 101:487–95.
- Sharma, S. 1979. Ayurveda and health. In: Sharma PS, editor. *Realms of Ayurveda*. 1st ed. New Delhi: Arnold Heineman Publishers; pp. 117–34.
- Kosta, S. and Tiwari, A. 2009. A fusion of ancient medicinal plants with modern conventional therapies on its multifaceted anti diabetic properties. *Pharmacol.*; 1:64–77
- Kelmanson, JE., Jäger, AK. and van Staden, J. 2000. Zulu medicinal plants with antibacterial activity. *J Ethnopharmacol.*; 69:241–6.
- Goldstein, BH. 2000. Unconventional dentistry: Part I. Introduction. *J Can Dent Assoc.*; 66:323–6.
- Balkrishna A. Haridwar, India: Divya Prakashan; 2006. *Ayurveda: Its' philosophy and practice*
- Sunitha Amruthesh, 2008. Dentistry and Ayurveda-IV; classification and management of common oral diseases. *Indian Journal of Dental Research*; 19(1):52-61.
- Shirley, T., Naveen, K. and Balkrishna, A. 2009. Use of Ayurveda in promoting dental health and preventing dental caries. *Indian J Dent Res.*; 20:246.
- Saimbi, CS. 1994. The efficacy of neem extract -reported in Jeevaniya Health Care magazine. Available from: <http://www.healthmantra.com/hctrust/art6.shtml>.
- Venugopal, T., Kulkarni, S., Nerurker, A., Damle, S. and Patnekar, N. 1998. Epidemiological study of dental caries. *Indian J Pediatr.*; 65:883–9.
- Athavale, VB. 1999. New Delhi: Chaukhamba Sanskrit Pratishthan. *Dentistry in Ayurveda [Danta-Shastra]*
- Naik, GH., Priyadarsini, KI., Satav, JG., Banavalikar, MM., Sohoni, DP., Biyani, MK. et al. 2003. Comparative antioxidant activity of individual herbal components used in Ayurvedic medicine. *Phytochemistry*; 63:97–104.
- Sumant, G., Beena, G. and Bhongade, L. 1992. Oral Health status of young adults using indigenous oral hygiene methods. *Stomatologica India*; 5:17–23.

- Almas, K. and Atassi, F. 2002. The effect of miswak and tooth brush filaments end-surface texture on enamel. *Indian J Dent Res.*; 13:5–10
- Almas, K. and Al-Zeid, Z. 2004. To assess antimicrobial activity of miswak chewing stick (*Salvadora persica*) in vivo, especially on *streptococcus mutans* and *lactobacilli*. *J Contemp Dent Pract.*; 5:105–14.
- Outhouse, TL., Al-Alawi, R., Fedorowicz, Z. and Keenan, JV. 2006. Tongue scraping for treating halitosis. *Cochrane Database of Systematic Reviews*, issue 2
- Quirynen, M., Avontroodt, P., Soers, C., Zhao, H., Pauwels, M. and van Steenberghe, D. 2004. Impact of tongue cleansers on microbial load and taste. *J Clin Periodontol*; 31:506–510
- Christensen, G. J. 1998. Why clean your tongue? *Journal of the American Dental Association*. 129, 1605–1607
- Bethesda, M. 2006. A Closer Look at Ayurvedic Medicine. Focus on Complementary and Alternative Medicine. National Center for Complementary and Alternative Medicine, US National Institutes of Health, US National Institutes of Health; XII(4)
- Hebbar, A., Keluskar, V. and Shetti, A. 2010. Oil pulling – Unraveling the path to mystic cure. *J Int Oral Health*; 2:11–4.
- Asokan, S. 2008. Oil pulling therapy. *Indian J Dent Res*; 19:169.
- Asokan, S., Emmadi, P. and Chamundeswari, R. 2009. Effect of oil pulling on plaque induced gingivitis: A randomized, controlled, triple-blind study. *Indian J Dent Res.*; 20:47–51.
- Mukherjee, M., Bandyopadhyay, P. and Kundu, D. 2014. Exploring the role of cranberry polyphenols in periodontitis: A brief review. *J Indian Soc Periodontol*; 18:136-9
- Prakash, S. and Shelke, AU. 2014. Role of Triphala in dentistry. *J Indian Soc Periodontol*; 18:132-5
- Singh, A. and Purohit, B. 2011. Tooth brushing, oil pulling and tissue regeneration: A review of holistic approaches to oral health. *J Ayurveda Integr Med.*; 2:64–8.
- Amruthesh, S. 2011. Dentistry and Ayurveda-V: An evidence based approach. *Indian J Dent Res.*; 2:3–9
- Suchetha, A. and Bharwani, AG. 2013. Efficacy of a commercially available multi-herbal formulation in periodontal therapy. *J Indian Soc Periodontol*; 17:193-7
- Chaturvedi, T. P. 2009. Uses of turmeric in dentistry: An update. *Indian J Dent Res*; 20:107-9
- Çıkrıkçı, S., Mozioglu, E. and Yılmaz, H. 2008. Biological activity of curcuminoids isolated from *Curcuma longa*. *Rec Nat Prod.*; 2:19–24
- Suhag, A., Dixit, J. and Dhan, P. 2007. Role of curcumin as a subgingival irrigant: A pilot study. *PERIO: Periodontal Pract Today.*; 2:115–21
- Rasheed, A. and Haider, M. 1998. Antibacterial activity of *Camellia sinensis* extracts against dental caries. *Arch Pharm Res*; 21:348-52
- Kaur, H., Jain, S. and Kaur, A. 2014. Comparative evaluation of the antiplaque effectiveness of green tea catechin mouthwash with chlorhexidine gluconate. *J Indian Soc Periodontol*; 18:178-82
- <http://www.yogajournal.com/practice/754> internet source (as on 10 th nov 2014)
