

# International Research Journal of Ayurveda & Yoga

An International Peer Reviewed Journal for Ayurveda & Yoga



## An Ayurvedic Preventive And Curative Approach To Periodontitis / Pyorrhea

Dr. Priyanka Narang<sup>1</sup> Dr. Sara Moncy Oommen<sup>2</sup>

ICV-70.44- ISRA-1.318

VOLUME 4 ISSUE 4

1. PG Scholar, Government Ayurveda College, Tripunithura
2. Professor M.D. (Dravyaguna vijnana), Government Ayurveda College, Trivandrum

**Corresponding Author** :- Dr. Priyanka Narang, PG Scholar, Government Ayurveda College, Tripunithura, Email, Id-priyankanarang145@gmail.com

Article received on 5th April 2021

Article Accepted 27th April 2021

Article published 30<sup>th</sup> April 2021

### ABSTRACT: -

Oral diseases are one of the major health problem world-wide. Most of the oral diseases are due to bacterial infestation. In Periodontitis or pyorrhea, the tissues surrounding and supporting the teeth i.e periodontium is affected which causes bleeding red swollen gums, bad breath with bad taste and painful mobile teeth. The global need for alternative prevention and treatment options for oral diseases that are safe, effective and economical comes from the rise in disease incidence (particularly in developing countries), increased resistance by pathogenic bacteria to currently used antibiotics and chemotherapeutics, opportunistic infections in immune-compromised individuals and financial considerations in developing countries.

*Ayurvedic* treatment is aimed at patient as an organic whole and treatment consists of salubrious use of drugs, diets and certain practices. Many ayurvedic medicinal plants and formulations confer considerable anti-microbial activity against various microorganisms including bacteria's responsible for pyorrhea, dental caries etc. This review article is mainly focused on the different *Ayurvedic* drugs, formulations and daily regimen effective in Periodontitis or pyorrhea.

**Key words:** Periodontitis, Pyorrhea, periodontium, *Dinacharya*



This work is licensed under a creative attribution -Non-commercial-No derivatives 4.0 International License commons

**How to cite this article:** Dr. Priyanka Narang Dr. Sara Moncy Oommen "An Ayurvedic Preventive And Curative Approach To Periodontitis / Pyorrhea" IRJAY, April: 2021, Vol-4, Issue-4;122-131 ; [Doi: https://doi.org/10.47223/IRJAY.2021.4416](https://doi.org/10.47223/IRJAY.2021.4416)

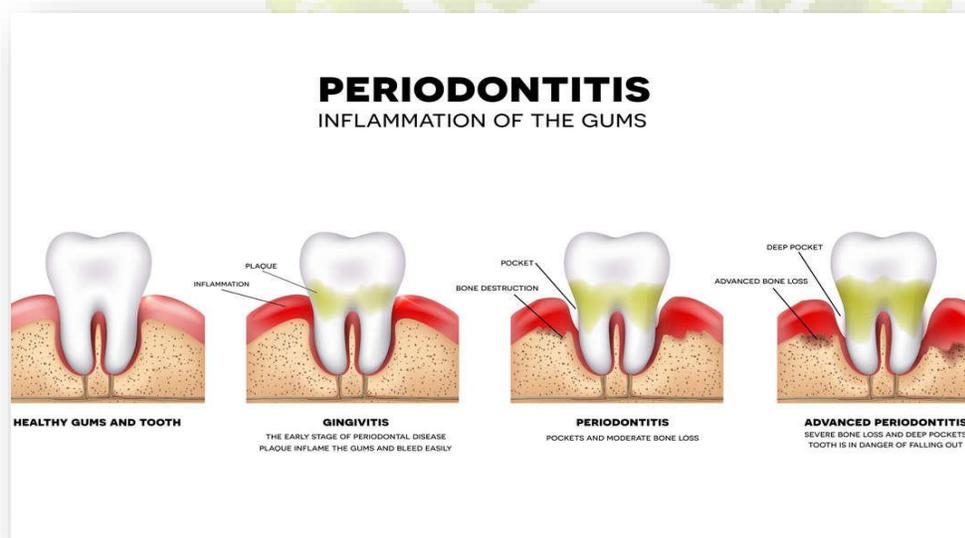
## INTRODUCTION

Oral health is integral to general well-being and relates to the quality-of-life that extends beyond the functions of the craniofacial complex. Periodontal diseases are among the most important global oral health problems. The prevalence of periodontal disease increased with age. The prevalence was 57%, 67.7%, 89.6% and 79.9% in the age groups 12, 15, 35-44 and 65-74 years, respectively (periodontal disease was not evaluated in 5 year old).<sup>[1]</sup>

The standard Western medicine has had only limited success in the prevention of periodontal disease and in the treatment of a variety of oral diseases. Hence, the search for alternative products continues and natural phytochemicals isolated from plants used in traditional medicine are considered as good alternatives to synthetic chemicals.<sup>[2]</sup>

### Pyorrhea or Periodontitis –

It is an inflammatory gum disease predominantly caused by gram-negative anaerobic bacteria like - *Treponema denticola*, *Porphyromonas gingivalis*, in which the tissues surrounding and supporting the teeth i.e periodontium is affected. It gets start by gum infection called gingivitis. But when gingivitis is left untreated and **periodontal disease** advances and lead to **periodontitis** i.e. the inner layer of the **gum** and bone pulls away from the teeth and **periodontal** pockets form with harmful bacteria causing painful mobile teeth which may ultimately lead to tooth loss.



### Causes of pyorrhea or periodontitis

Gum illness occurs when tarter and plaque are permitted to develop at the gum line. Tarter and plaque filled with bacteria, which leads to a gum infection. If this infection is permitted to grow, it leads to swelling of bone, gum, and eventually tooth loss. This situation where the infection spreads through bones and gums in very serious and is known as periodontitis. It depends upon dental hygiene.

The following risk factors may worsen this condition leading to an early tooth loss:

- Smoking
- Hormonal changes in girls/women
- Diabetes
- Other illnesses and their treatments. Diseases such as AIDS, Cancer and their treatments can also negatively affect the health of gums.
- Genetic susceptibility

### Symptoms of Pyorrhea

- Swollen, tender, sore or red gums
- Gum bleeding while brushing
- Constant bad breath and bad taste
- Mobile teeth
- Receded loosened gums (detachment of gums from the teeth)
- Pain while chewing

For thousands of years, *Ayurveda* has a sophisticated system of remedies and methods of treatment for mouth problems – from bad breath to diseases of teeth and gums: **caries, abscesses, pulpitis, fistulas, gingivitis** etc. It has been proven several times as the safe, effective and

economical alternative prevention and treatment options for global need.

The existence of periodontal diseases has been recognized by classical *Ayurvedic* texts such as *Charaka Samhita* (1500 BC) and *Ashtanga Hridaya*. *Ayurveda* recognizes the presence of *Upakusha* (peridontitis) and *Danta papputaka* (swelling, abscess of the teeth and periodontal and peri-apical abscesses). Pyorrhea is caused due to lack of dental hygiene, poor diet and constipation.<sup>[3]</sup>

According to *Ayurveda*, dental diseases indicates in imbalance in *Vata Dosa* and *Kapha dosa* is generally responsible for the oral cavity. Inflammation in most cases is related to impair *Pitta dosa*. All of this is accompanied by a number of manifestations in oral cavity by which *Ayurveda* finds disturbed balance in organism that need to be restored, so the optimal parameters can be returned to the normal range and the causes of the diseases can be eliminated.

As most of the oral diseases are due to bacterial infections and it has been well-documented that medicinal plants confer considerable anti-bacterial activity against various microorganisms including bacteria's responsible for dental problems.<sup>[4]</sup>

### *Ayurvedic* herbs with various oral health related properties

There are approximately 1250 Indian medicinal plants<sup>[5]</sup>

Various plants and natural products have been used for their pharmacological applications viz. wound healing, anti-inflammatory, antimicrobial, antioxidant

properties etc.<sup>[6]</sup>

### 1. *Haritaki (Terminalia chebula)*

EETC (Ethanol Extracts of *Terminalia chebula*) inhibits the growth of DPB as well as DPB-induced inflammation, and effectively abolishes DPB-LPS-induced osteoclastic bone resorption in vitro. EETC can be considered a promising anti-bacterial and anti-oral inflammatory agent capable of preventing the development of gingivitis and periodontitis.<sup>[7]</sup>

### 2. Holy basil (*Ocimum sativum*)

Holy basil helps to disinfect the mouth and treat a number of periodontal concerns that may result from an overgrowth of oral bacteria, such as bleeding gums, plaque, toothaches, and pus or pain in the gums.<sup>[8]</sup>

### 3. *Amalaki (Phyllanthus emblica)*

*Amalaki* powder control the pyorrhea symptoms such as bleeding and pus formation. *Emblica officinalis* fruit possesses varied medicinal properties including cytoprotective antimicrobial, antioxidant, antiresorptive and anti-inflammatory activity.<sup>[9]</sup>

### 4. Guava leaves

Guava packs a lot of antioxidant properties due to its rich reserve of vitamin C. Plus, it is known to exhibit antiplaque, anti-inflammatory, and analgesic properties useful in treating periodontitis. The therapeutic benefits of guava leaves for

periodontal health are primarily attributed to two flavonoids, guaijaverin and quercetin.

A study demonstrated that guava leaves might be useful in inhibiting the growth of periodontitis-causing bacteria.<sup>[10]</sup>

### 10. *Aloe vera*

*Aloe vera* can be potentially used for treating periodontitis owing to its antibacterial, antifungal, analgesic, and soothing properties.

Many other Ayurvedic drugs are also known to be effective in different oral conditions, like- Turmeric (*Curcuma longa*), Neem (*Azadirachta indica*), Bibhitaki (*Terminalia bellirica*), Dalchini (*Cinnamomum zeylanicum*), Arjuna (*Terminalia arjuna*).

A natural way to keep your breath fresh, say the *Ayurvedic* texts, is by chewing certain spices after eating, for example, anise and fennel seeds, cardamom and cloves. These spices not only have a cleansing and disinfecting effect, but also taste good and stimulate digestion.<sup>[11]</sup>

### Herbal preparation having antibacterial potential

1. *Chyawanprasha* - Often the cause of dental diseases is the lack of zinc, magnesium and calcium. In this case, it is very efficient to use *Chyawanprasha*. This preparation, known since ancient times, is a medicinal preparation with 49 natural ingredients – powdered fruits, herbs, adding powdered sea shells. It recovers the tooth enamel and

strengthens the gums. Applied to gingivitis, periodontal disease, stomatitis for up to 3 months.

2. **Triphala churna** – It is also effective, which is mixed with ghee to obtain a homogenous mixture. The gums and teeth are rubbed with it, then leave it to act for twenty minutes. It has an anti-inflammatory effect and at the same time delivers important vitamins and minerals to the gums and teeth.
3. **Guggulu and turmeric** are useful for compresses and weak gums, they have an antiseptic and anti-inflammatory effect. Make a homogenous mixture of these, add a few drops of tea tree oil and apply over strips of natural fabric. Attach these on the gums and leave for about half an hour, then rinse with warm water.
4. **Dasana Sanskara Churna** – Local application is beneficial.

Some *ahara* (diet) and *vihara* (*Dincharya*) recommendations for the treatment of periodontitis or pyorrhea include:

### Diet recommendations (*Aahara*)

- Increase the intake of fibrous food, citrus (but sweet) fruits, and green leafy vegetables.
- Gargle with a solution of alum mixed in water.
- Cultivate the habit of rinsing the mouth after every meal.
- Increase the amount of food with abundant quantities of vitamins

(especially vitamin C) along with minerals.

- Avoid snacking between meals. Reduce carbohydrates in diet.
- Avoid food and beverages possessing pungent and salty taste.

### **Dincharya (Daily regimen for oral health for prevention purpose)**

For maintaining the optimal health and wellness, one's daily health and hygiene regimen is referred to as *dinacaryā* in *Ayurveda*, which means 'Daily practice' in Sanskrit. It involves many different components depending on one's age, gender, state of health, body type and seasonal or climatic factors.

Along with the treatment of orofacial diseases, *Ayurveda* recommends some daily use therapeutic procedures for the prevention of and maintenance of oral health. These include: *Dant Dhavani* (Brushing), *Jivha Nirlekhana* (Tongue scrapping) and *Gandoosha* (gargling) or oil pulling and tissue regeneration therapies. Some of the scientifically proven beneficial effects of these procedures are described below:

#### **Dant Dhavani or Datoon:**

*Avurveda* recommends chewing sticks in the morning as well as after every meal to prevent diseases. *Ayurveda* insists on the use of herbal brushes, approximately nine inches long and the thickness of one's little finger. 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 eat it slowly. <sup>[12]</sup>

The *neem* (*margosa* or *Azadirachta indica*) is a famous herbal chewing stick. Fresh stems of *liquorice* (*Glycyrrhiza glabra*), *black catechu* or the *cutch tree* (*Acacia Catechu* Linn.)<sup>[13]</sup> *Arjuna tree* (*Terminalia arjuna*), *fever nut* (*Caesalipinia bouduc*) and *milkweed plant* (*Calotropis procera*),<sup>[14]</sup> can also be used for brushing. Chewing on these stems is believed to cause attrition and leveling of biting surfaces, facilitate salivary secretion and possibly, help in plaque control while some stems have an anti-bacterial action.<sup>[14]</sup> Present-day research has shown that all the chewing sticks described in ancient *Avurveda* texts (Circa 200 BC) have medicinal and anti-carcinogenic properties.<sup>[15]</sup>

#### **Jivha Nirlekhana (tongue scrapping):**

*“Deposits formed at the root of the tongue, affect the sense of taste and cause bad breath. The tongue should therefore be cleaned regularly.”*

**Ch.Su. 5, 75**

It is ideal to use gold, silver, copper, stainless steel for the scrapping of the tongue. Tongue scrapping stimulates the reflex points of the tongue. Removes bad odor (halitosis). Improves the sense of taste, stimulate the secretion of digestive enzymes. Removes millions of bacteria growth (approximately 500 varieties) Clinical evidence also shows that use of tongue scrapers on a regular basis, has a significant Improvement on eliminating anaerobic bacteria and decreases bad odor.<sup>[16]</sup>

#### **Gandusha (gargling) or oil pulling:**

*“An oil mouthwash prevents dryness of throat and lips, protects the teeth, and strengthens gums.”*

**Ch.Su. 5, 78-80**

Oil pulling is an ancient Ayurveda procedure that involves swishing oil in the mouth for oral and systemic health benefits.

It is mentioned in

the *Avurvedic* text *Charaka Samhita* where it is called *Kavala* or *Gandusha* and is claimed to cure about 30 systemic diseases ranging from headache, migraine to diabetes and asthma. Oil pulling has been used extensively as a traditional Indian folk remedy for many years to prevent decay, oral malodor, bleeding gums, dryness of throat, cracked lips and for strengthening teeth, gums and the jaw.<sup>[17]</sup>

Oil pulling therapy can be done using oils like sunflower oil or *sesame* oil.<sup>[18]</sup> Oil pulling therapy is very effective against plaque induced gingivitis both in the clinical and microbiological assessment.<sup>[19]</sup>

#### **Tissue regeneration therapies:**

In *Avurveda*, the well-known herb, *Amla* (*Phyllanthus emblica*) is considered a general builder of oral health. *Amla* works well 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.<sup>[20]</sup> Regular use of *Bilberry* and *hawthorn berry* fruits stabilize collagen and strengthens the gum tissue.<sup>[21]</sup> *Liquorice* root promotes anti-cavity

action, reduces plaque and has an anti-bacterial effect.<sup>[22]</sup> Herbs such as *yellow dock root*, *alfalfa leaf*, *cinnamon bark* and *turmeric root* are taken internally to strengthen *Astidharu*, for example, the skeleton and the joints, have proven to be good for long term health of teeth.

In this section, it is tried to review the recent studies undertaken to use of natural drugs, products and daily practice (*Dincarya*) for oral diseases.

## MATERIALS AND METHODS

In this review of the literature, we only considered those studies that include individual plants or mixtures of plants consistent with the philosophy of *Ayurveda*. The databases searched for the current review were Medline, Natural Products Alert Database, and related databases, such as AYUSH Research Portal, National Library of Ayurveda Medicine, Systematic Reviews in Ayurveda, Ayurveda Database, Web of Science, Indus Medicus and Google Scholar; In addition, literature on traditional medicine were also collected and searched some Indian journals not included in Medline.

## RESULT

Oral diseases are one of the most important problems in public health and are on the rise in developing countries. Most of the oral diseases are caused due to the bacterial infections. The anti-bacterial activity of medicinal plants are due to the presence of potential bioactive compounds, which help to

reduce bacterial load in the oral cavity and thus prevent the formation of plaque, dental caries and ulcers. Use of indigenous plants in oral health and hygiene has a long history in different parts of the world.

## DISCUSSION

In this paper, an attempt has been made to review various herbal plants mentioned in *Ayurveda* that can be used as an adjunct for the maintenance of oral health. The literature showed that there are numerous *Ayurvedic* drugs and formulations, which can be used in prevention as well as management of oral diseases. Many *Ayurvedic* herbal plants, which are reviewed, possess antimicrobial, anti-inflammatory, analgesic, antiulcer genic activities when screened according to the modern parameters. In addition an *ayurvedic* daily practice for dental care also explained in order to prevention and oral-disease curing purpose.

The traditional knowledge of *Ayurveda* should be integrated with the modern dentistry. For this, 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. This will make dentistry much safer, affordable and more accessible for the lower socio-economic groups in society. The present scientific evidence based review of literature is focused on the possible role of *Ayurveda* in the management of one of the most common oral disorder, Periodontitis or pyorrhea.

## CONCLUSION

Due to the changes in diet and lifestyle etc. oral infectious diseases like pyorrhea are on the top now a days which leads increased need of proper medication also. To approach the appropriate diagnosis, the cause and pathways involved in the different conditions are need to be understand clearly and for the proper treatment, chemical constituents and pharmacological actions of the drug should be well known. In *Ayurveda*, *dravya* are explained with their detailed properties beneficial in different oral diseases, which are more affordable and very helpful to treat cause and cure the conditions accordingly.

## ACKNOWLEDGEMENT –

I express my sincere gratitude towards Dr. P.Y.Ansary (Professor and HOD, Dept. of *Dravyaguna vijnana*, Government Ayurveda college, Tripunithura), Dr. Shincymol VV (Professor, Dept. of *Dravyaguna vijnana*, Government Ayurveda college, Tripunithura), Dr.Sara moncy oommen (Professor, Dept. of *Dravyaguna vijnana*, Government Ayurveda college, Trivendrum), Dr. Sethu R and Dr. Mrudula MK (Assistant Professor, Dept. of *Dravyaguna vijnana*, Government Ayurveda college, Tripunithura) for their guidance and support.

**Financial Support:** Nil.

**Conflict of Interest:** Nil

## REFERENCES

1. Shaju JP, Zade RM, Das M. Prevalence of periodontitis in the Indian population: A literature review. *J Indian Soc Periodontol.* 2011;15(1):29-34.
2. Prabu GR, Gnanamani A, Sadulla S. Guaijaverin: A plant flavonoid as potential antiplaque agent against *Streptococcus mutans*. *J Appl Microbiol.* 2006;101:487–95.
3. Sharma S. Ayurveda and health. In: Sharma PS, editor. *Realms of Ayurveda*. 1st ed. New Delhi: Arnold-Heineman Publishers; 1979. pp. 117–34.
4. Kelmanson JE, Jäger AK, van Staden J. Zulu medicinal plants with antibacterial activity. *J Ethnopharmacol.* 2000;69:241–6.
5. Chatterjee A, Pakrashi S. History of Indian medicine. In: Chatterjee A, editor. *The Treatise on Indian Medicinal Plants*. 1st ed. Vol. 1. New Delhi: National Inst. Science Communication and Information Resources; 1991. pp. 221–4.
6. Cowan MM. Plant products as antimicrobial agents. *Clin Microbiol Rev.* 1999;12:564–82.
7. Lee J, Nho YH, Yun SK, Hwang YS. Use of ethanol extracts of *Terminalia chebula* to prevent periodontal disease induced by dental plaque bacteria. *BMC Complement Altern Med.* 2017;17(1):113.
8. Gupta D, Bhaskar DJ, Gupta RK, et al. A randomized controlled clinical

- trial of Ocimum sanctum and chlorhexidine mouthwash on dental plaque and gingival inflammation. *Journal of Ayurveda and integrative medicine*.  
<https://www.ncbi.nlm.nih.gov/pubmed/24948862>. Published April 2014
9. Grover S, Tewari S, Sharma RK, Singh G, Yadav A, Naula SC. Effect of Subgingivally Delivered 10% Emblica officinalis Gel as an Adjunct to Scaling and Root Planing in the Treatment of Chronic Periodontitis - A Randomized Placebo-controlled Clinical Trial. *Phytother Res*. 2016 Jun;30(6):956-62.
  10. Shetty YS, Shankarapillai R, Vivekanandan G, et al. Evaluation of the Efficacy of Guava Extract as an Antimicrobial Agent on Periodontal Pathogens. *The journal of contemporary dental practice*. <https://www.ncbi.nlm.nih.gov/pubmed/29959298>. Published June 1, 2018.
  11. Singour, D. A. K. , Mishra, D. ., & Sahoo, D. . (2020). Role Of Gandush In The Management Of The Dantharsh (Tooth Sensitivity). *International Research Journal of Ayurveda & Yoga*, 3(9), 356-365.
  12. Telles S, Naveen KV, Balkrishna A. Use of Ayurveda in promoting dental health and preventing dental caries. *Indian J Dent Res*. 2009;20:246.
  13. Athavale VB. Dant rogas. In: Athavale VB, editor. *Dentistry in Ayurveda*. 1st ed. New Delhi: Chaukhamba Sanskrit Pratishtan; 1999. pp. 7–11.
  14. Naik GH, Priyadarsini KI, Satav JG, Banavalikar MM, Sohoni DP, Biyani MK, et al. Comparative antioxidant activity of individual herbal components used in Ayurvedic medicine. *Phytochemistry*. 2003;63:97–104.
  15. Venugopal T, Kulkarni VS, Nerurker RA, Damle SG, Patnekar PN. Epidemiological study of dental caries. *Indian J Pediatr*. 1998;65:883–9.
  16. Kadam A, Prasad BS, Bagadia D, Hiremath VR. Effect of Ayurvedic herbs on control of plaque and gingivitis: A randomized controlled trial. *Ayu*. 2011;32:532–5.
  17. Hebbar A, Keuskar V, Shetti A. Oil pulling: Unraveling the path to mystic cure. *J Int Oral Health*. 2010;2:11–4.
  18. Asokan S. Oil pulling therapy. *Indian J Dent Res*. 2008;19:169.
  19. Asokan S, Emmadi P, Chamundeswari R. Effect of oil pulling on plaque induced gingivitis: A randomized, controlled, triple-blind study. *Indian J Dent Res*. 2009;20:47–51.
  20. Singh A, Purohit B. Tooth brushing, oil pulling and tissue regeneration: A review of holistic approaches to oral health. *J Ayurveda Integr Med*. 2011;2:64–8.

21. Amruthesh S. Dentistry and Ayurveda-V: An evidence based approach. *Indian J Dent Res.* 2011;2:3–9.

22. Singh A, Purohit B. Tooth brushing, oil pulling and tissue regeneration: A review of holistic approaches to oral health. *J Ayurveda Integr Med.* 2011;2:64–8

