

A Review On: Herbal Mouthwash an Effective Way For Oral Care

Aaditi R. Ingale^{1*}, Vinayak M. Gaware², Rahul D. Khaire², Shraddha S. Bodke¹, Dr. Vivekanand A. Kashid³

1. Department of Quality Assurance, College of Pharmacy (For Women), Chincholi, Nashik.

2. Department of Pharmaceutical Chemistry, College of Pharmacy (For Women), Chincholi, Nashik.

3. Dr. Kolpe Institute of Pharmacy, Kolpewadi, Kopargaon, Ahmednagar

Submitted: 01-06-2023

Accepted: 10-06-2023

ABSTRACT

The mouth is said to be home of various bacterial organisms. But some of these organisms are harmless and there are certain organisms that are harmful which may cause oral plaque, bad breath and mouth disease. Thus maintaining a good oral hygiene is essential for healthy mouth and body. Herbal mouthwash preparations are the type's mouthwash which is prepared from the herbs extract. Herbal mouthwash has major advantage over the chemically prepared mouthwash due to their non-irritating, non-staining properties which do not contain alcohol. In this preparation the herbs extract are obtained from the leaves, fruit, flower, bark, and root of various plants. In this review we have highlighted different herbal drugs which can be used effectively in mouthwash formulation with minimal side-effects.

KEYWORDS: Herbal, Mouthwash, Oral cavity, Plaque

I. INTRODUCTION

Mouthwashes are liquids with anti-inflammatory, antimicrobial, and analgesic properties. Mouthwash is a remedy that is frequently used for its antiseptic, deodorizing, and refreshing qualities as well as for plaque control. It must include ingredients like glycerin, artificial sweeteners, surface-active agents, flavorings, and colors [1, 2]. Numerous studies have been conducted on the versatility of these rinses to affect plaque formation and alter the progression of gingival inflammation [3]. Over 50% of the drugs come from natural sources, and naturally occurring substances play a really significant role in drug development. The advantages of herbal mouthwash versus chemical mouthwash will be thoroughly covered in this review. It is believed that the first artistic drawings with emphasis date back to the ancient Egyptians. The significance of

cleanliness and beauty. An unclean body was considered impure. Pedanius, Dioscorides was a Greek surgeon and physician who lived between 40 and 90 AD using a mouthwash mixture of the following was advised in the textbook to treat bad breath. There are two types of mouthwash chemical and herbal. Herbal mouthwash contains natural ingredients called phytochemicals that contain desired anti-microbial and anti-inflammatory effects. Herbal mouthwash becomes more popular they work without alcohol, artificial preservatives, flavours and colors. As it contains natural herbs that have natural cleansing and healing property to teeth and gums. Many herbal mouthwashes contain herbs with anti-microbial property such as neem, yavani satva, nagavali, gandhapurataila, pilu, bibhitaka, ocimum, Echinacea, chameli leaves, etc. some of the herbs that are used in mouthwashes are clove, which is traditionally used for oral health because of their antiseptic, antibacterial and antiviral property, peppermint which gives cooling effect to the mouth. Natural Herbs such as Triphala, Tulsi, Neem, Clove oil, Pudina and many others are used as single or in combination have been Scientifically Proven to be Safe and Effective Medicine against Oral Health Problems such as Bleeding Gums, Mouth Ulcers, and Preventing Tooth Decay without side effects [4].

HISTORY OF MOUTH WASH

- The importance of mouth and teeth cleanliness has been recognized from the earliest days of civilization to the 21st century.
- As far as we have come in creating dental solutions that are effectively treat and prevent various types of oral diseases, the mouthwash rinses our ancestor used to maintain a healthy smile were just as widely used as some of the around today.

- The first known references to mouth rinsing are in Ayurveda and Chinese medicine around 2700 BC. Mouthwash is a chemotherapeutic agent used as effective home care system by the patient to oral hygiene.
- In the Greek and Roman periods, mouth rinsing following mechanical cleansing became common among the upper classes and Hippocrates recommended a mixture of salt, alum and vinegar.
- Ancient Egyptians are known to be responsible for the first artistic drawing that emphasizes the importance of beauty and hygiene. An unclean body was thought to be impure. Pedanius Dioscorides, A Greek physician and surgeon (40-90) whose writings served as a medical textbook, suggested for treatment of bad breath a mouthwash mixture of the following.
- Greek physician Pedanius Dioscorides, formulated a mouthwash mixture of decoct extracted from the olive tree leaves, milk, wine and oil, pomegranate peelings, nutgalls and vinegar, this was how ancient mouth washes were prepared using traditional methods and herbs.
- The Romans included a secret ingredient in their mouthwash: human urine. They imported urine from Portuguese people because they thought it had more strength.
- It is observed that in 18th century urine served as a key active ingredient due to the presence of ammonia that rendered the oral cavity free from oral pathogens especially sulphur producing organisms.
- Before Europeans came to Americas, Native North American and Mesamerican cultures used mouthwashes, often made from plants such as *Coptis trifolia*.
- In 1892, German Richard Seifert invented mouthwash product Odol, which was produced by company founder Karl August Lingner (1861-1916) in Dresden [5].

HERBAL MOUTH WASH

Herbal mouthwashes can be used as an adjunct to various oral hygiene practices like tooth brushing, flossing. It's proven that they have effective anti-inflammatory, anti-plaque properties and hence can be used in supportive periodontal therapy. It does not contain alcohol, artificial preservatives, flavors or colors. Hence Herbal mouthwashes can be considered an alternative to chemical mouthwashes in sustaining oral hygiene,

especially because of the added advantages provided by herbal preparations [5].

TYPES OF MOUTHWASH

- **Fluoride mouthwash:** Fluoride in mouthwashes contains salt which helps protect the teeth from cavities and cavity. Since fluoride could also be found in toothpaste and water, it's advisable to require care when using this type of mouthwash since intake of an excessive amount of fluoride isn't good for your overall health.
- **Antiseptic mouthwash:** This is the foremost common mouthwash. This mouthwash usually contains alcohol and is typically utilized by people with mouth infection to stop bacterial growth. This is often also helpful for people that have halitosis or bad breath. This is often used alongside the proper brushing of teeth and flossing to help forbid bacteria that cause mouth infections and stinky breath.
- **Cosmetic mouthwash:** A mouthwash that doesn't really do anything to your overall oral care but is just how to freshen your breath or to mask bad breath.
- **Natural mouthwash:** Natural mouthwash could also be a mouthwash that does what other sorts of mouthwash do except the ingredients are natural. It is also a popular option as an alcohol-free mouthwash. Their ingredients are safer to use as compared to other sorts of mouthwash [6].

USES OF MOUTHWASH

The use of mouthwashes requires a correct diagnosis of the oral condition and a thorough knowledge of the product. The selection needs to take into consideration factors such as the patient's oral condition, disease risk and the efficacy and safety of the mouthwash and should also consider the patient's ability to perform good oral hygiene practices, the condition of their teeth, gingiva and oral mucosa, their risk of oral disease, and the proven efficacy of the mouthwash and its potential adverse effects. Mouthwashes should only be used for short periods of time and should never be the sole means of oral hygiene. It can be used in the following cases:

- Halitosis
- Mucositis
- Periodontal Diseases
- Gum disease
- Xerostomia
- To clean septic sockets

- Vincent's angina
- To control plaque
- To relieve tooth pain
- To effectively deliver fluoride in order to prevent dental caries
- Reduce inflammation [7]

BENEFITS OF HERBAL MOUTHWASH

- The non-irritating, non-staining, and alcohol-free properties of herbal mouthwash have given it an advantage over chemical mouthwashes.
- They have very minimal or no side effect and they are less harmful.
- All herbal mouthwashes do not contain alcohol and/or sugar.
- Herbal mouthwashes are gentle for even the most sensitive mouth.
- Herbal mouthwashes are inherently antibacterial.
- It contains no harsh additives.
- Herbal mouthwash doesn't cause dry mouth.
- It is highly in demand.
- It keeps your mouth healthy and plaque free [8].

HERBS USED AS MOUTHWASH

1. Peppermint: Peppermint incorporates high menthol content, and is usually used as tea and for flavouring dessert, confectionery, chewing gum, and toothpaste. The oil also contains menthone and methyl esters, particularly methyl acetate. It is the oldest and preferred flavor of mint flavoured confectionery. Peppermint could also be used in shampoos and soaps, which give the hair a minty scent and gives a cooling sensation on the skin. Peppermint essential oil is used to treat migraine, bronchitis, sinusitis, indigestion, nausea, irritable bowel syndrome, irregular periods and nervous conditions. It is also very useful within the treatment of cold and flu [9].



Figure 1: Peppermint Plant

2. Clove: Cloves are used as a carminative to increase acid within the stomach and to spice up peristalsis. Cloves are said to be a natural anthelmintic. The essential oil is used in aromatherapy when stimulation and warming are needed, especially for gastrointestinal systems problems. Topical application over the stomach or abdomen are said to warm the canal. Clove oil, applied to a cavity during a decayed tooth, also relieves toothache [10].



Figure 2: Clove buds

3. Ajwain: Ajwain is used as an antiseptic. It's used for cleaning wounds and treating skin infections. Oil of Ajwain is additionally utilized in toothpaste and perfumery. Ajwain leaves are crushed and applied on infections. Ajwain seeds are utilized in prevention of bad breath. Thymol from Ajwain seeds is additionally utilized in various mouthwashes. Regularly chewing of Ajwain seeds alongside fennel seeds prevents bad breath [11].



Figure 3: Ajwain plant

- 4. Guava Leaves:** Chewing fresh guava leaves also stops bleeding from gums alongside bad breath. Most mouthwashes contain antimicrobial substances as antiseptic ingredients to deal with germs that commonly cause mouth infections. Phytochemical studies shows the guava leaves bioactive components like tannins, tri terpenes, phenols, flavonoids, essential and stuck oils, sapinins, lectins, carotenoids, etc.
- 5. Neem:** The leaves, twigs, and seeds of neem have been used in India and South Asia to clean the teeth and fight bacterial and fungal infections. Neem extract gel is appropriate for **treating gingivitis and oral infections** because it inhibits the formation of plaque and the growth of bacteria [12].



Figure 5: Neem plant

- 6. Basil:** Tulsi/Basil in Ayurveda having many medicinal properties and a wide therapeutic range. The leaves are quite effective for the ulcer and infections in the mouth. The anti-inflammatory and anti-infectious properties of Tulsi make it a powerful treatment for gum disease. The leaves are

quite effective for the ulcer and infections in the mouth. It is also useful in pyorrhea and other gum disorders. The anti-inflammatory and anti-infectious properties of tulsi make it a powerful treatment for gum disease [13].



Figure 6: Basil plant

- 7. Turmeric:** Turmeric mouthwash (10mg curcumin extract dissolved in 100 ml of water with a peppermint flavoring agent added) was found to be as effective as a solution made from chlorhexidine gluconate (CHX), the gold standard compound for plaque build up in dentistry.



Figure 7: Turmeric

- 8. Oil Pulling Therapy:** Oil pulling or oil swishing, is a traditional Indian folk remedy that involves swishing oil in the mouth. Approximately one tablespoon of oil (sesame, sunflower and coconut oils are the most recommended) for 15–20 minutes on an empty stomach. Saline or saltwater gargling is also an age old proven and effective mouthwash, which is still widely used by almost all people [14].



Figure 8: Oil Pulling Therapy

9. Pomegranate (*Punicagranatum*):

Pomegranate is currently finding important applications in the field of dental health. Pomegranate containing mouthwash may fight dental plaque and tartar formation by inhibiting the activities of the microorganisms that cause plaque. It has anti-inflammatory properties that may help soothe irritated tissues [15].



Figure 9: Pomegranate

10. Green Tea: It can be used as a gargle or mouthwash to treat dental decay, halitosis, laryngitis, mouth sores, plaque formation, sore throat, thrush, and tonsillitis. It effectively reduces plaque accumulation and is free from side effects as of chemical mouthwashes [16, 17].



Figure 10: Green tea leaf

11. Lemon grass oil: The cymbopogon citrus have anti-bacterial, anti-inflammatory, and also superoxide scavenging property [11, 12]. It also reduces the bacterial load and decreases the inflammation and also reduces the oxidative stress of the tissue. The lemon grass oil mouthwash can be used as an adjunct along with the non surgical therapy [18].



Figure 11: Lemon grass oil

EVALUATION TESTS FOR HERBAL MOUTH WASH

- **Colour and odour:** Physical parameters like colour and odour can be examined by the visual examination.
- **pH:** The pH value of the herbal mouthwash can be measured by using the pH meter. The pH meter have to be calibrated with the standard buffer solution about 1ml of mouthwash which can weighed and dissolved in the 50 ml of distilled water and pH have to be measured.
- **Microbial growth test:** The prepared mouthwash can be taken at a agar plate and the plate have to be placed in the incubator at 37°C for 24 hour .After the incubation period the plate have to be checked for microbial growth and compare with control group.
- **Stability testing of mouthwash:** The stability testing of pharmaceutical products is done for the assurance of product stability at environment conditions. This is done in order to determine the physical and chemical stability of the prepared product and also determine the safety of the product [19].

II. CONCLUSION

Mouthwashes can be utilized for different circumstances, contingent upon the sores present in the oral cavity. Mouthwash is intended to assist with working on your oral cleanliness and shield

your gums from illness. Herbal mouthwash has been proven cost effective with very less or no side-effects. The use of herbs for medicine has been successfully used in dentistry as antioxidant, antiseptic, and analgesic which can improve the immunity and help in the healing of oral infections. Many of these herbs show antimicrobial activities which can be useful for the management of various oral problems.

REFERENCES

- [1]. Waite FC. The background of modern American dentistry. *J Dent Educ*, 1937; 1: 91.
- [2]. Ozan F, Sumer Z, Effect of Mouthrinse Containing Propolis on Oral Microorganisms and Human Gingival Fibroblasts. *Eur J Dent*, 2007; 1(4): 195–201.
- [3]. Kukreja BJ, Dodwad V. Herbal mouthwashes-a gift of nature. *Int J Pharma Bio Sci*. 2012 Apr; 3(2):46-52.
- [4]. Sandhya R. Herbal product as mouthwash-a review. *Int J Sci Res*. 2017; 6(7):1334-7.
- [5]. Shivani Suresh Uttarwar, Formulation and Evaluation of Herbal Mouthwash, *IJCRT*, 2022, 10(2), 55-64.
- [6]. <https://www.gentledentalcenter.com/different-types-mouthwash/> Access on 21.02.2020
- [7]. Sandhya R. Herbal product as mouthwash-a review. *Int J Sci Res*. 2017; 6(7):1334-7.
- [8]. Parashar A. Mouthwashes and their use in different oral conditions. *Sch J Dent Sci*. 2015; 2(2B):186-91.
- [9]. R. Eccles. Menthol and Related Cooling Compounds. *J. Pharm. Pharmacol* 1994; 46(8):618–630p. PMID 7529306.
- [10]. Balch Phyllis, Balch James. *Prescription for Nutritional Healing*, 3rd edn. Avery Publishing: 2000; 94p.
- [11]. <http://valuefood.info/Herbs-and-Spices/Nutrition-Health-Benefits-Spices/health-benefits-of-ajowan-or-ajwain-seeds.html>.
- [12]. L.G.Vijayaalakshmi, R.V.Geetha. Comparison of Herbal Mouth Wash with Conventional Mouth Wash in Use in Reducing Streptococcus Mutans -An In vitro Study. *J. Pharm. Sci. & Res*. 2015, Vol. 7(7), 485- 486.
- [13]. Moghbel A, Farajzadeh A, Aghel N, Agheli H, Raisi N. *Toxicology Letters* 2009; 189 (Suppl1): S257.
- [14]. Hennessy T; Antibacterial properties of Hibitane. *J Clin Periodontol*, 1977; 4: 36-48.
- [15]. Grenier D; Effect of chlorhexidine on the adherence properties of Porphyromonas gingivalis. *J Clin Periodontol*, 1996; 23: 140-2.
- [16]. Wade AB, Blake GC, Mirza KB; Effectiveness of metronidazole in treating the acute phase of ulcerative gingivitis. *Dent Practi t.*, 1966; 16: 440-3.
- [17]. Pontefract H, Hughes J, Kemp K, Yates R, Newcombe RG, Addy M. Erosive effects of some mouthrinses on enamel. *J Clin Periodontology* 2001;28; 319-324.
- [18]. Weaver A, Fleming SM ,Smith DB . Mouthwash and oral cancer ;Carcinogen or coincidence? *J Oral Surge* 1979;37(4):250-3.
- [19]. Bloom T, slot DE, Quiren M, Vander Weijden GA .The effect of mouthrinses on malodour ;a systemic review .*Int J Dent Hygiene* 2012;10(3):209-22.