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HERBAL REMEDEIS FOR ORAL WELLNESS: THE MAGIC OF HERBALMOUTHWASH

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Abstract: Conventional medicine has been used to prevent as as treat diseases for many of years**.** Herbal remedies have fewer adverse effects than conventional treatments. Numerous species of medicinal plants are members of different families and have historically been used for managing and treating a range of dental issues by the Native Americans This essay focuses on a number of herbs that are used in dentistry and oral care, including, Mentha, cinnamon, garlic, clove, turmeric etc. The safety and effectiveness of this specific medication are also highlighted in the paper. In order to safely prescribe or use common herbal formulations on their patients, dental professionals should possess sufficient knowledge about them. To support their use as effective substitutes for the current preventive and curative treatments for oral health issues, more research is necessary.

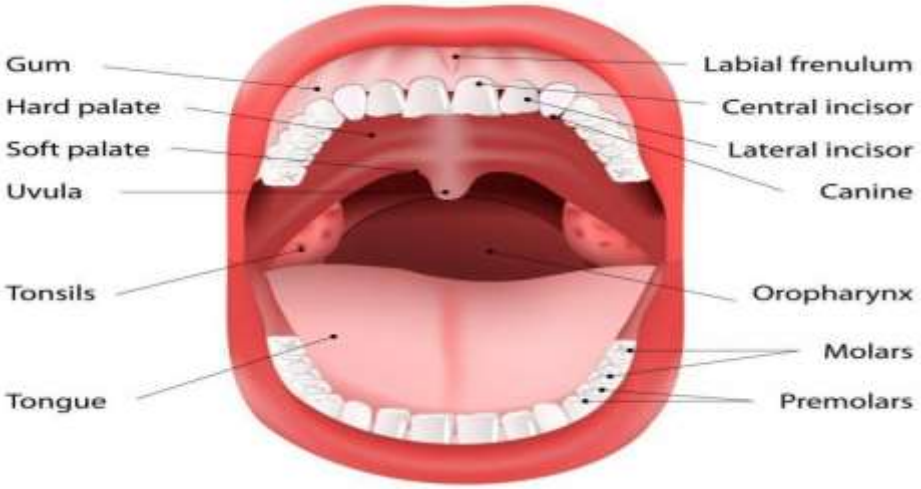
Index Terms- *Herbal remedies, Dentistry, Oral care, Safety, Effectiveness, Herbal formulation, Treatment, Oral health issue.*

I.INTRODUCTION

Since ancient time medicinal plants have been used to treat a various disease. Research on natural sources, including plants, animals, and marine resources, is crucial in preventing immunological complications.2. The advent of chemical drugs has led to a decrease in the utilization of herbal medicine. Nonetheless, a lot of scientists continue to use herbal remedies in various fields.**[1]** Turmeric, for instance, contains curcumin, which has anti-inflammatory, antidepressant,and anti-arthritic properties, among other therapeutic effects.**[2]** The general quality of life is greatly impacted by oral health, and systemic and chronic illnesses are greatly impacted by dental hygiene. Herbal remedies have been used to treat a number of diseases in the oral cavity. The oral cavity contains more than 700 different types of microorganisms.12 A portion of these microorganisms have been linked to periodontitis and dental caries. Many oral diseases can be treated with herbs and herbal medicine. Herbal treatments are also utilized in alternative therapy and homeopathy for treating oral conditions like xerostomia, lichen planus, and peptic ulcers. **[1]**

1.2 ANATOMY &PHYSIOLOGY: [3]

The mouth, also known as the oral cavity, is the main part of the digestive tract. It is surrounded by the palate



on top, the lips below, the faces on the bottom, the cheeks on the side, and a muscularfloor below.

Figure No: 1

Lips and cheeks:

The cheeks and lips play a significant role in the process of mastication by moving food around inthe mouth and keeping it there while the teeth split it. They aid in word formation, which further supports the speech process.

Tongue:

Food is shaped by the tongue into a rounded mass known as a bolus, which is then pushed towards the esophagus for swallowing.

Teeth and gingiva:

The teeth are important for speech and play a major role in chewing food. Together with the mandibular and maxillary alveolar ridges, teeth are situated in alveoli. The gingivae cover the alveolar processes and form the gingival sulcus by slightly expanding into each socket.

Oral mucosa:

It performs a several functions such as protection, sensation, thermal regulation, secretion, immunological activities, and absorption.

II.MOUTH DISEASES: [4]

1. Oral Candidiasis: There is a noteworthy association between candidiasis and deficiency in folic acid, vitamins A, B1, B2, C, K, zinc, and a diet high in carbohydrate.

Figure No: 2

2. Potentially Malignant Oral Lesions: These could be brought on by low blood levels of folic acid, vitamins A, C, and B12, among other nutrients.

Figure No: **3**

3. Micronutrient Deficiencies and Mucosal Disorders: Oral mucosal diseases can result from a variety of nutritional deficiencies. Deficits in micronutrients like iron, folate, and vitamin B12 may cause changes like surface ulceration, tongue swelling, and papillary atrophy.

HERBAL VS SYNTHETIC -:

Herbal remedies were used by indigenous healers, midwives, and herbalists in the eighteenth century to treat a wide range of illnesses. Despite the fact that natural medicines can also have side effects, synthetic medications have gradually taken the place of natural ones as medical science has advanced. Even though a lot of synthetic medications benefit mankind and are useful, a lot of medications are known to have serious adverse effects. The majority of common medications, including over-the-counter options like Aspirin, Clopidogrel, Diclofenac, Enoxaparin, Ibuprofen, Naproxen, and Warfarin, are linked to mild side effects like headaches and back pain as well as more serious ones like excessive bleeding, hemorrhage, and breathing difficulties. Phytochemical compounds found in herbal medicines are used to treat a wide range of illnesses. Herbs contain active ingredients that function as drugs, such as opiates, digitalis, which acts against heart failure and certain abnormal heart rhythms, and taxol, which has anticancer properties. Opioids are used for pain relief and sedation. Antioxidant activity was shown by certain medicinal plants. Indeed, several herbs are used in practice today and have been reported to have a variety of medicinal effects.

The majority of people in rural and underdeveloped areas have blind faith in herbs, medicinal plants, and homemade remedies because they are less expensive than synthetic drugs. In addition to being effective in

treating various ailments, homemade remedies are also frequently used to improve appearance and treat skin-related problems. Herbal remedies are thought to be less toxic or to have fewer side effects than synthetic medications, even though they may occasionally be less effective than synthetic drugs. The most important standards for any medicine, whether created by humans or not, are their nontoxicity, efficacy, stability, potency, and specificity.

A synthetic drug not only cures disease but also causes severe side effect to human body. There is given an account of examples in literature which is related with the side effects cause by the synthetic drugs, e.g. paracetamol is popular antipyretic drug but it causes hepatotoxicity as majorside effect. **[2]**

❖ DRUGS IN ORAL HEALTHCARE:

1. COCONUT: [5]

Synonym: Coco, Coco palm, Narikela, Nariyal

Biological source: cocosnacifera

Family: Arecaceae

Active Ingredient: Sucrose monolaurate, Glycolipid compound

MOA: It is believed to prevent bleeding, prevent bronchitis, and have antipyretic and anti- gingival properties. A decoction from the roots of the coconut tree can be used as a gargle as wellas mouthwash. Coconut flour has antibacterial properties due to its high lauric acid content and is used in the treatment of some oral diseases such as cancer.

2. CLOVE: [5]

Synonym: Clove buds,Lavang

Biological source: Extracted from buds of Eugenia caryophillus

Family: Myrtaceae

Active Ingredient: Eugenol, Flavonoids

MOA: Ethanol extracts from the flowers of E. caryophyllata exhibited strongest growth inhibitionsagainst all the six test strains of H. Pylori

3. GARLIC: [5]

Synonym: Lahsun , Allium

Biological source: Dried bulb of Allium sativum

Family: Amarylidaceae

Active Ingredient: Allicin, Allin

MOA :Allyl sulphur constituents shows its effect on H. pylori cell

4. LEMON GRASS: [6]

Synonym: Silky head, Cochin grass, Malabar grass

Biological source: Cymbopogoncitratus

Family: Poaceae

Active Ingredient: Citral, Geranyl acetate

MOA: 1. Inhibit COX

2. Inhibit NO synthase

3. Activate K+ ATP channel and α2 receptors.

5. PAPAYA: [7]

Synonym: Pawpaw, musk, Papai

Biological source: fruit of carica papaya

Family: Caricaceae

Active Ingredient: Papain, Saponin, alkaloids, tannin

MOA: It maintains periodontal health.

6. COFFEE: [7]

Synonym: Joe, Java

Biological source: Dried ripe seed of Coffee Arabica

Family: Rubiaceae

Active Ingredient: Caffeine, Chlorogenic acid, Trigoneline

MOA: It decreses Streptococcus mutans salivary load

7. GUAVA: [7,8]

Figure No: 10Synonym: Guava bush, apple guava, Peru

Biological source: Fresh fruit of Psidiumguajava

Family: Myrtaceae

Active Ingredient: guajaverin, psidiolic acid ,1.8-cineol, monoterpenes, ρ-cimen

MOA: It has antibacterial and anti-inflammatory activity.

8. CINNAMON: [9]

Synonym: Cinnamomum, Cinnamon bark, Dalchini**Biological source:** Cinnamomumzeylanicum **Family:**

Lauraceae

Active Ingredient: Cinamaldehyde

MOA: Cinnamaldehyde completely inhibited the growth of standard H. pylori strain. Also, the growth of bacteria was completely inhibited in only 9 h when the MIC was doubled. At acidic pH,increased activity was observed for this compound.

9. CUMIN: [9]

Synonym: Roman caraway, Spice caraway, Jeera

Biological source: Cuminumcymium

Family: Apiaceae

Active Ingredient: Volatile oil (3–4 %), Cuminaldehyde

MOA: The ethanolic extracts of C. cyminum, among ethanolic or aqueous extracts from 17 plant materials, showed a significant in vitro effect against 11 H. pylori.

10. CARROT: [9]

Synonym: Daucus, Daucuscarotasativa , Gajar

Bio source: Root of daucuscarota

Family: Apiaceae

Active ingredients: Essential oil, Caffeic acid, Thiamine, Riboflavin

MOA: The pH from 7.4 to 4.0 (acidic conditions) of essential oil of carrot seed resulted in a marked reduction in the minimal concentration required to completely inhibit H. pylori.

11. EUCALYPTUS: [8, 9]

Synonym: River red gum, Eucalyptus amygdalina, Nilgiri

Bio source: Eugenia caryophillus

Family: Myrtaceae

Active ingredients: Ethanol extract, Tannin, Hydrocyanic acid Themacrocarpals A, B, and C are phloroglucinol derivatives of eucalyptus leaves. All three ingredients successfully resist the growth of *P. gingivalis*

MOA: Ethanol extracts from the flowers of E. caryophyllata exhibited strongest growth inhibitionsagainst all the six test strains of H. pylori.

12. NUTMEG: [9]

Synonym: Mace, genus myristica, jaiphol

Biosource: Myristicafragrans

Family: Myristicaceae

Active ingredients: Neolignan, Lignan, Terpenoid

MOA: Methanol extracts of M. fragrans (seed) inhibited the growth of 15 H. pylori strains. Gastrointestinal disease treatment was conventional use of M. fragrans.

13. PISTACHIO: [9]

Synonym: Pistaciavera , Genus pistacia , Pista

Biosource: Pistacialentiscus

Family: Anacardiaceae

Active ingredients: Triterpenic acid, Phylloquinone, carotenoids, chlorophyll

MOA: Triterpenic acids were found to be the most active fraction against a 11 H. pylori clinical strains.

14. ALMOND: [9]

Synonym : Prunusamygdalus , Sweet almond , Badam

Biosource : Prunusdulcis

Family: Rosaceae

Active ingredients:

MOA: Almond skin extracts rich in flavonoids and three pure flavonoid compounds were evaluated on 34 strains of H. pylori.. Natural almond skin was act most effectively against H. pylori followed by natural skin post gastric digestion, and natural almond skin post gastric plus duodenal digestion. Out of all pure flavonoid compounds, protocatechuic acid has the highest activity against H. pylori strains.

15.POMEGRANATE:[9]

Synonym: Redsaunders , Chaulmoogra , dalim

Biosource : Punicagranatum**Family :**Lythraceae

Active ingredients: Flavonoids, Anthocyanins , Punicic acid , Sucrose , Fructose

MOA : The ethanolic extract and semi-purified fractions of P. granatum demonstrated significantanti-H. pylori effects.

16. AJWAIN: [9]

Synonym: Caraway, Carumajowan , Ova

Bio source: Trachyspermumcopticum

Family : Apiaceae

Active ingredients : Thymol, terpene, cymene

MOA: Extracts of T. copticum shows significant effect on H. pylori activity. Over 93% of H.pylori sensitive to the extracts of T. copticum .

17. CABBAGE: [6]

Synonym: Broccoli , Kale, Coleslaw

Biosource : Brassicaoleracea

Family : Brassicaceae

Active ingredients : Betacarotin , Cholin, Lutein

MOA: Active against H. Pylori.

BITTER ORANGE:[6]

Synonym : Seville orange, Bigarade orange, marmalade orange

Bio source : Citrusaurantium**Family :**Rutaceae

Active ingredients : Synephrin , Essential oil

MOA: Ischemia reperfusion

18. LEMON: [6]

Synonym : Citruslimon , Lemon peel

Bio source : Citrus lemon

Family : Rutaceae

Active ingredients : Essential oil, Citric acid

MOA: 1. Synthesis of mucus layer

2. It helps to release NO as well as it act as vasoactive intestinal peptide

19. Maintenance of PGE2 and glutathione level

CAVENDISH BANANA:[6]

Synonym: Chinese banana, Canary banana

Bio source : Musa acuminate

Family : Musaceae

Active ingredients: Flavonoid, Tannin, Saponin , Alkaloid, Phenol

MOA: Crued flavonoid exract increase the mucus production

21. MANGO: [6,8]

Synonym: Aam ,Mangifera

Bio source : Mangiferaindica**Family :**Anacardiaceae

Active ingredients : Mangiferrin , glucosylxanthonegums, resins, and tannins

MOA :1. It protects the GIT

2. Antisecretory

3. Antioxidant

22. TERMERIC: [5]

Synonym : Curcumin, Halad

Bio source : Rhizomes of Curcuma Longa

Family : Zingiberaceae

Active ingredients : Curcumin

MOA : Antiseptic , Antiinflammatory , Antiseptic

23.PEPPERMINT:[5]

Synonym: Mentha, Pudina , Mint

Bio source: MenthaPiperita

Family : Lamiaceae

Active ingredients: menthol, methyl acetate, tannic acid, 0.1-1.0% volatile oil andVitamin C.

MOA: Anti-inflammatory

24. NEEM: [5, 8]

Synonym: Margosa ,arishth

Bio source: Azadirachtaindica

Family : Meliaceae

Active ingredients: Alkaloids, saponins, flavanoids, sterols, resins, tannins, oils, gum,chloride, fluoride, silica, sulfur, and calcium.

Moa: Significantly decreases gingival, bleeding and plaque indices

25. TULSI: [8]

Synonym: Holy basil

Bio source: Ocimumsanctum

Family: Lameaceae

Active ingredients: Eugenol

MOA: Antibacterial activity

Drug	Biological source	Active ingredients	uses in oral health
COCONUT: 	Cocosnacifera	Sucrose monolaurate, Glycolipid compound	1.Reduces plaque formation & plaque induced Gingivitis 2.Reduce bad bacteria3.Prevent gingivitis 4.Prevent tooth decay**(10)**
CLOVE: 	Eugenia caryophillus	Eugenol , Flavonoids	**1.**Eugenol &cynamaldehyde inhibit growth of 31 strainS of H.pylori.**(11)** 2.Useful in treatment of • Toothache • Tooth decay • Ulcer
GARLIC: 	Aliumsativum	Allicin , Allin	**1.** Garlic has synergisticactivity against H.pyloriwith proton pump inhibitor.**(12)** 2. Shows aid against oral flora imbalance. 3.Treat gum bleeding
LEMON GRASS: 	Cymbopogoncitratus	Citral , Geranyl acetate	1.Lemongrass oil usefulin treatment of gingivitis.**(13)** 2.Reduce plaque level 3.Treat sore throat

PAPAYA: 	Carica papaya	Papain , Saponin , alkaloids , tannin	1.Decreases gingival bleeding and inflammation **[14]** 2.Have Good healing property 3.can treat Mouth ulcer ,gum inflammation
COFFEE: 	Coffee Arabica	Caffeine , Chlorogenic acid , Trigoneline	1. Coffee containing chlorogenic acid haveantibacterial activity against P.Gingivalis. **[15]**
GUAVA: 	Psidiumguajava	Flavonoids , tannin , Phenol, Carotenoids	1. Guava leaf extract had a excellent effect ongingivitis. 2. Guava can act as antiplaque agent.[16]
	Cinnamomumzeylanicum	Cinamaldehyde	It is effective in treatment of
CINNAMON: 			1.Caries 2.periodontal disease 3.Endodontis 4.Candidasis **[17]**

CUMIN: 	Cuminumcymium	Volatile oil (3–4 %) , Cuminaldehyde	**1.** Cumin essential oil shows antibacterial andantibiofilm properties against P.gingivalis. **[18]** 2. It cure the gum bleeding, oral ulcer &halitosis.
CARROT: 	Daucuscarota	Essential oil, Caffeic acid , Thiamine , Riboflavin	1.Carrots are good for human teeth as well as mouth because it scrape away plaque &food particles 2.Carrots stimulate GumsTo produce lot of saliva.**[5]**
EUCALYPTUS: 	Eugenia caryophillus	Ethanol extract , Tannin , Hydrocyanic acid	1.Eucalyptus oil act asantiplaque agent for bleeding gums, holitosis& Stomatitis. **[19]** 2 It can treat. Endodontics , and periodontics.
NUTMEG: 	Myristicafragrans	Neolignan , Lignan , Terpenoid	**1.** It can used as an adjunctive in periodontitis. **[20]** 2. It is effective in treatment of gingivitis.
PISTACHIO: 	Pistacialentiscus	Triterpenic acid , Phylloquinone , carotenoids , chlorophyll	1. It is active against H.pylori.

ALMOND: 	Prunusdulcis	Flavonoids , Oleic acid , Linoleic acid	1. It provide calcium &fibre which strengthen the teeth enamel. 2. It decreases plaque from teeth.
POMEGRANATE: 	Punicagranatum	Flavonoids , Anthocyanins ,Punicic acid , Sucrose , Fructose	It is helpful in 1.Gingivitis 2.Reducing plaque formation.**[21]**
AJWAIN: 	Trachyspermumcopticum	Thymol , terpene , cymene	**1.** Ethanolic extract ofajwain reduces ulcerative lesions. **[22]** 2. It helps to decrease pain in toothache.

CABBAGE: 	Brassica oleracea	Beta carotin , Cholin , Lutein	1. It reduces gum inflammation. 2. It prevents gum diseases & promote healthy teeth.

BITTER ORANGE: 	Citrus aurantium	Synephrin , Essential oil	1.It reduces hardness oftooth enamel. 2.It promote healthy teeth & gums.
LEMON: 	Citrus lemon	Essential oil ,Citric acid	**1.**It removes accumulated supra gingival debris. **[23]** 2. It soothe toothaches.
CAVENDISH BANANA: 	Musa acuminate	Flavonoid , Tannin , Saponin , Alkaloid , Phenol	**1.**It has an antiulcer property.**[24]** 2. It strengthen the tooth enamel.
MANGO: 	Mangiferaindica	Mangiferrin , glucosylxanthone	**1.** It is effective in treatment of dental caries. **[25]** 2. The branches of mango tree can used asayurvedic natural toothbrush.

TURMERIC: 	Curcuma Longa	Curcumin	1. It play role in treatment of periodontaldisease & oral cancer. **2.** It provides releif from Gingivitis. **[26]**
PEPPERMINT: 	MenthaPiperita	menthol, methyl acetate, tannic acid,0.1-1.0% volatile oil and vitaminC	**1.** It is important remedy for dental caries. **[27]** 2. It decreases bacterialplaque formation.
NEEM: 	Azadirachtaindica	alkaloids, saponins, flavanoids, sterols, resins, tannins, oils, gum, chloride, fluoride, silica,sulfur, and calcium	1.It shows antibacterial activity against dental caries causing organism such as S.mutans, S. Mitis, S.Salivarius etc.**[28]** 2.It can heal the Orla ulcer.
TULSI: 	Ocimum sanctum		**1.**It is effective in Periodontal diseases &gingivitis.**[29]** 2.It can treat halitosis.

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