



## TRADITIONAL HERBS – AN ALTERNATIVE IN DENTISTRY: A REVIEW

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**ABSTRACT**

Humans have sought cures for diseases in nature since ancient times, even recently, the use of herbal medicines in dentistry supplements, energy drinks, multivitamins, massage and weight loss products has gained popularity. These uses have broadened the field of herbal medicine and also increased its credibility. Oral diseases are among the major public health problem and the commonest of chronic diseases that affect the mankind. The application of natural products for the control of oral diseases is considered as an interesting alternative to synthetic antimicrobials due to their lower negative impact, and for the effort to overcome primary or secondary resistance to the drug during therapy.

**KEYWORDS** : Herbs, Therapeutic implementation, Dentistry.

**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. 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.<sup>1</sup> Herbal medicines have less side effect in comparison with traditional medicines, but side effects do occur. Herbal products can vary in their potency. The global need for alternative prevention and treatment option and products for oral diseases that are safe, effective and economical comes from the rise in disease incidence, increased resistance by pathogenic bacteria to currently used antibiotics and chemotherapeutics, opportunistic infections in immune compromised individuals and financial considerations in developing countries.<sup>2</sup> Despite several chemical agents being commercially available, these can alter oral microbiota and have undesirable side effects such as vomiting, diarrhea and tooth staining. Hence the search for alternative products continues and natural phytochemicals isolated from plants used in traditional medicine are considered good alternatives to synthetic. Chemical, herbal products are also being increasingly used as sedatives, plaque reduction and healthy gums.<sup>3</sup>

Throughout the human history, there has been a conspicuous concern for healthcare and the cure of the disease, even though the concepts themselves took a very long time to develop into a body of knowledge. From time immemorial, we have been using our natural resources to attain the state of wellbeing and it is becoming important in the developing world. Herbal medicines have two special characteristics that distinguish them from chemical drugs use of crude herbs and prolonged usage.<sup>4</sup> 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. 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.<sup>5</sup>

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 and oral infection. The herbal remedies have an edge over conventional antibiotic treatment that suffer the limitations of low benefit to high risk as compared to herbal treatment that possess high benefit to low risk ratio.<sup>6</sup>

**HERBS USED IN DENTISTRY****ALOE VERA**

Aloe vera has been used in dentistry for its wound healing effects, gingivitis, plaque control and curing oral mucosal lesions. Aloe vera may also reduce the pain and durations of oral ulcers while speeding healing. The dentists should use Aloe vera at a level high enough to maximize its therapeutic benefit. Among the various currently available herbal agents, the most popular and currently receiving a lot of scientific attention is Aloe vera. It has excellent anti-aging effect by producing the collagen and elastic fibres making the skin more elastic and less wrinkle. It possess anti-inflammatory, anti-bacterial, anti-fungal, anti-viral, anti-oxidant, anti-tumor and immune modulating properties.<sup>7</sup>

**PROPOLIS**

An alternative to gold standard drugs could be seen in propolis which is easy to use, patient friendly and easily accessible. Propolis is known natural anti-biotic, its use in medical and dental fields as anti-biotic, anti-inflammatory, anti-fungal effect has led to an extensive research. The role of natural product cannot be overemphasized as nearly all problems related to oro-dental region requires either direct contact of material and medicaments with oral mucosa that is a mouthrinse, intracanal irrigation, direct contact with capillaries in pulp as in direct pulp capping and pulpotomy, indirect contact to the hand and soft tissue as intracanal of medicament and irrigant accidental extrusion.<sup>8</sup>

**COCONUT WATER**

Health benefits of coconut water include low in carbohydrates, 99% fat free and low in sugar. It is biologically pure and full of natural sugars, salts and vitamins. Its electrolyte content is similar to human plasma; it has gained international acclaim as natural sports drink for oral dehydration. Its unique nutritional profile makes an excellent oral rehydration, enhances immune function, possess

anti-aging properties, decreased swelling, relieve spasm, root canal irrigant and storage media for avulsed tooth and better alternative to Henk's balanced salt solution or milk.<sup>9</sup>

#### CLOVE

It contains essential oil, eugenol, eugenol acetate and  $\beta$ -caryophyllene. It has analgesic, anti-bacterial, anti-viral, anti-inflammatory and anti-oxidant properties. It has been used to relieve tooth ache, in periodontitis, as an anesthetic and also to treat bleeding gums. It is an alternative to benzocaine for topical anesthesia especially for use with children and in areas where cost and availability limit access to pharmaceutical topical anesthetics. It is also available as mouthwash, lozenges and tincture.<sup>10</sup>

#### TEATREE OIL

It is a native Australian plant with many properties such as an antiseptic, antifungal, non-irritant and a mild solvent. It stimulates the immune system and is effective against a broad range of bacterial and fungal infections. In dentistry, tea tree oil has been used to destroy microorganisms in the mouth before dental surgery, removal of smear layer when used as a root canal irrigant and to relieve mouth soreness caused by dental procedures.<sup>11</sup>

#### GREEN TEA

Green tea contains polyphenol contents of catechin, epicatechin, gallic acid, gallo catechin, epigallocatechin, epicatechin gallate and epigallocatechin gallate. It is an antiviral, anti-inflammatory and anti-bacterial. Mostly used in the management of periodontal diseases.<sup>12</sup>

#### NEEM

Neem contains genin, sodium nimbin, salannin, nimbin, azadirachtin, nimbidiol, quercetin. Neem leaves contain fibres, carbohydrates, amino acids, calcium, carotenoids and fluoride. The twigs used as toothbrush, the bark for healing gum disease, the oil for soap and the leaves for medicine. The inhibiting effects of neem upon bacterial growth, adhesion to hydroxyapatite on tooth surfaces and production of insoluble glucan which may effect in vitro-plaque formation.<sup>13</sup>

#### GARLIC

It has got anti-bacterial, anti-viral, anti-fungal, anti-septic, bacteriostatic, anti-helminthic effects. It is chopped and held in the mouth for 5 minutes to sterilize the oral cavity. Studies proved using garlic to treat dental caries and periodontitis.<sup>14</sup>

#### GINGER

Ginger may reduce the toxic effects of the chemotherapeutic agent cyclophosphamide. It has anti-bacterial, anti-inflammatory, analgesic property. It is used to relieve tooth ache as a sialog in the treatment of oral thrush and used cautiously in patients on anti-coagulant therapies such as coumadin or heparin.<sup>15</sup>

#### PEPPERMINT

Peppermint oil is composed primarily of menthol and menthone. It is analgesic and also muscle relaxing agent. Its application for tooth ache by soaking a cotton ball in the oil and placing it in the cavity or rubbing it on the tooth.<sup>16</sup>

#### TURMERIC

Turmeric include volatile oil (6%) composed of a number of monoterpenes and sesquiterpenes. It is anti-mutagenic, anti-carcinogenic, anti-oxidant, anti-bacterial and used in dental caries, oral lichen planus, gingivitis, halitosis, pit and fissure sealant, dental plaque detection system. Massaging the aching tooth with roasted, ground turmeric eliminates pain and swelling.<sup>17</sup>

#### TULSI

Tulsi consists of tannins, essential oil, eugenol, methyl eugenol,  $\alpha$  and  $\beta$  caryophyllene, methylchavicol, linalool and 1, 8-cineole. It has got anti-helminthic, analgesic, antipsychic, immune stimulating,

antitumor, anti-microbial and anti-inflammatory properties. Mainly used in the treatment of periodontitis.<sup>18</sup>

#### GRAPE SEED EXTRACT

Grape seed extract are potent anti-oxidant and possess anti-inflammatory, anti-bacterial and immune stimulating effects. It has been reported to strengthen collagen based tissues by increasing collagen cross-links. Remineralizing effects of grape seed extract on artificial root caries showed that is a promising natural agent for non-invasive root caries therapy.<sup>19</sup>

#### PAPAIN

Papain is a proteolytic enzyme and is effective against gram +ve and gram -ve organisms. Papain acts only in infected tissues as it lacks a plasmatic antiprotease called  $\alpha$  1- anti-trypsin. The principle that an active ingredient acts on the pre degraded collagen of the lesion, promoting its softening, without acting on healthy adjacent tissue and without causing pain has made this technique an effective alternative for treatment of carious injuries.<sup>20</sup>

#### MANGO LEAVES

Mango leaves contain mangiferin, a compound which had significant anti-bacterial property against certain stains of streptococci, pneumococci and lactobacillus acidophilus. Tannins and resins supposedly have an astringent effect on the mucous membrane forming a layer over enamel thus providing protection against dental caries.<sup>21</sup>

#### AMLA

Amla is a rasayana herbs considered as general builder of the oral health. It is the richest source of vitamin C and a good tonic for the maintenance of the health of the gum. The efficacy of triphala mouthwash in the inhibition of streptococcus counts and cure of periodontal diseases has been proved.<sup>22</sup>

#### CONCLUSION

Herbal extracts are used in dentistry for treatment of various dental disorders. 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. The natural photochemical could offer an effective alternative to antibiotics and represent a promising approach to prevention and therapeutic strategies for various oral infections.

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