

SECTION 2. THEORETICAL MEDICINE: BASIC DEVELOPMENT TRENDS

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PHYTOTHERAPY IN DENTISTRY: THE USE OF TRADITIONAL PHYTOTHERAPY AS AN ALTERNATIVE FOR THE TREATMENT OF DENTAL DISEASES

ФІТОТЕРАПІЯ В СТОМАТОЛОГІЇ: ВИКОРИСТАННЯ ТРАДИЦІЙНОЇ ФІТОТЕРАПІЇ ЯК АЛЬТЕРНАТИВИ ДЛЯ ЛІКУВАННЯ СТОМАТОЛОГІЧНИХ ЗАХВОРЮВАНЬ

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Phytotherapy, or herbal medicine, is suggested to be a safe alternative to synthetic drugs in dentistry. Archaeological and scientific research have shown that as early as 3,000 BC, plants were used for oral cavity care, pain relief, and reduction of swelling and inflammation in diseases of the teeth and periodontium. The use of certain plants for certain painful conditions of the gums and teeth is described in the medical treatise of Hippocrates (4th century BC) and the ancient Roman physician Galen (1st century AD).

The use of herbal remedies in dentistry has evolved throughout the history of medicine, accumulated a wealth of experience in their effective application. The presence of biologically active substances and microelements in most herbal preparations allows them to be used for the prevention and treatment of periodontal diseases. Herbal medicine has gained considerable popularity during the past decade. Many researchers in the field of dentistry and pharmacology have dedicated their time and resources to the evaluation of natural products, discovering their bioactive compounds and finding applications for them in various aspects of oral health maintenance [1]. Phytotherapy or herbal medicine has gained prominence in recent years because, in the face of certain challenges that clinicians have been facing, such as the adverse effects of medicines or microbial resistance, for example, the search for therapeutic alternatives

is emerging. Much research has emerged highlighting the positive and promising results of using plant extracts, essential oils, and natural derivatives in general [2, p. 7].

Herbal medicine is not a fad; rather, it reflects a wide and varied range of therapeutic resources, including homeopathy, acupuncture, and various forms of psychotherapy, as well as therapeutic agents derived from plants. Plants have been proposed as an alternative treatment for bucco-dental diseases, a domain in which long-term reliability is an important aspect of treatment [3, P. 1996]. These herbal alternatives have wide availability and lower cost, making people more inclined towards their use, especially in preventive and therapeutic dentistry [4, p. 11].

Modern scientific research confirms the potential of phytotherapy in dentistry, especially in developing countries, where a significant part of the population still relies on herbal remedies due to their availability and low cost. However, the cost of these medicines is not the key issue, as their use is determined by other factors. Herbal preparations have advantages over artificial or synthetic ones, as they are less likely to cause allergic reactions, macro- and microorganisms do not develop resistance to them, they are low in toxicity, and are well tolerated by patients [5, p. 64].

Quite often, treatment using phytotherapy is a conscious choice in favour of natural and herbal medicines. For example, there is a growing trend towards using toothpaste with natural ingredients and no flavourings. A group of Ukrainian scientists researching phytotherapy in dentistry proposes dividing all herbal remedies used in dentistry into two large groups:

- Decoctions and infusions, extracts (water-alcohol and oil), tinctures, herbal rinses, herbal sprays, elixirs, juices;
- Phytopastes, phytosuspensions, phytomasses, phytogels, films, plates [6, p. 175].

We believe that medical chewing gum, which is made from natural ingredients and helps remove plaque from enamel and maintain oral hygiene, is a separate group of herbal remedies that have preventive applications in dentistry. Natural chewing gum usually contains only natural ingredients such as natural resin, xylitol, glycerin and essential oils. They do not contain chemical additives, flavourings or sugar, which are present in traditional chewing gum. Many natural chewing gums contain oils – mint, eucalyptus, aniseed and cardamom – which naturally freshen breath and mask unpleasant odours, and can also help prevent tooth decay and gum disease, as xylitol, for example, inhibits the growth of bacteria in the mouth.

It is worth focusing on various medicinal plants and other herbal remedies that are actively used to treat diseases of the oral cavity and teeth. For example, in periodontology, coltsfoot, plantain, field cinquefoil and

horehound, aloe water extract, rue leaf infusion, etc. are widely used, which mainly have anti-inflammatory and analgesic effects.

The most researched are the positive effects of aloe vera, calendula, sage, turmeric, magnolia, etc. Their daily use helps to reduce inflammation and bleeding of the gums, reduce plaque build-up and improve the overall condition of the gums. An infusion or decoction of chamomile inflorescences is often used to treat stomatitis (bacterial, viral, fungal aetiology). This remedy has a positive effect on the symptomatic treatment of inflammation of the mucous membrane¹, which is especially important for the treatment of patients with oncological mucositis, since herbal rinses (with chamomile) are effective and do not cause additional intoxication in the case of long-term cancer treatment. The medicinal herbs most commonly used in dental phytotherapy are listed below.

Table 1

Medicinal herbs most commonly used in dental phytotherapy

Name:	The way it effects:	Main active ingredients and components:	Application:
1	2	3	4
Medicinal chamomile <i>Matricaria chamomilla</i>	Anti-inflammatory, antiseptic, soothing and wound healing	Essential oils (1.5–3.5%) (hamazulene, bisabolol), flavonoids, coumarins and polysaccharides	Gingivitis, stomatitis, periodontitis, gum inflammation, bad breath foetor ex ore
Peppermint <i>Mentha piperita</i>	Antiseptic and local anaesthetic effect	Essential oils (1.5–3.5%), caffeic, chlorogenic, ursolic and oleanolic acids, carotene, flavonoids, hesperidin and betaine	Severe toothache, unpleasant odour from the mouth foetor ex ore
Calendula officinalis <i>Calendula officinalis</i>	Anti-inflammatory, antioxidant, immunostimulant and antimutagenic	Essential oil (0.02%), salicylic and malic acids (6–8%), polysaccharides, flavonoids, triterpene alcohols, phenolic acids, glycosides, sterols, carotenoids	Ulcers of the oral cavity and pharynx, tonsillitis, stomatitis and alveolar pyoreia

¹ Inflammation of the mucous membrane caused by cancer treatment is called mucositis, and it's a common side effect of chemotherapy, radiation therapy, and some targeted therapies. It occurs because these treatments damage the rapidly dividing cells lining the gastrointestinal tract, leading to symptoms like mouth or gut sores, pain, difficulty eating, and an increased risk of infection. Treatment focuses on managing pain, maintaining good oral hygiene, and avoiding foods that can irritate the mouth.

Продовження табл. 1

1	2	3	4
Breckland thyme <i>Thymus serpyllum</i>	Antiseptic, disinfectant, anti-inflammatory	Essential oil (0.5–1%), tannins, colourants, gum, triterpene acids (urolovic, oleanolic), flavonoids and mineral salts	Stomatitis, prevention of periodontal disease
Medicinal salvia <i>Salvia officinalis</i>	Antiseptic, anti-inflammatory and local anaesthetic effect	Tannins (up to 4%), essential oil (0.5–2.5%), resinous substances (5–6%), three terpene acids, paradiphenol, flavonoids	Stomatitis, alveolitis, periodontitis, gingivitis, odontogenic and periodontal abscesses, bleeding gums
Common flax <i>Linum usitatissimum</i>	Enveloping, anti-inflammatory effect, reduction of pain sensations	Glycerides of linolenic (35–40%), linoleic (25–35%), oleic (15–20%), palmitic and stearic acids, organic acids, enzymes	Stomatitis, inflammatory diseases of the oral mucosa
Lemon balm <i>Melissa officinalis</i>	Antiviral and antioxidant activity	Group of phenolic compounds (rosmarinic acid, caffeic acid and their methyl esters)	Gingivitis, stomatitis, periodontitis, gum inflammation

It is worth sharing the opinion of a group of scientists who argue that the treatment of inflammatory diseases and inflammatory-dystrophic diseases of periodontal structures requires the use of drugs that have a polypharmacological effect – anti-inflammatory, antibacterial, astringent, enveloping, analgesic, and therefore are an alternative to synthetic medicines [6, p. 177].

Therefore, it can be said that the use of herbal remedies for inflammatory diseases of the oral and periodontal tissues is an alternative, but not a complete replacement for traditional dental treatment. The appropriateness and prospects of using phytotherapy in dental treatment boil down not only to assessing the effectiveness and safety of herbal remedies, but also to taking into account the specific characteristics of the patient, their condition, the presence of allergic reactions, etc. As a result, the use of such medicines and phytotherapy is more about preventive treatment of diseases, early detection and treatment of the disease before symptoms appear, rather than reducing the progression of existing illnesses and preventing complications. The other side of the coin is the formation of certain trends in the use of natural remedies for the prevention of dental diseases, as such remedies are considered a healthier way to care for and protect the oral cavity.

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