A pastille combining myrrh tincture, peppermint oil and menthol to treat the upper airway

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Abstract

Myrrh and borax (combined in a tincture) can be used as a mouthwash. Myrrh gum is used to treat indigestion, ulcers, colds, coughs, asthma, lung congestion, arthritis pain, and cancer. Myrrh has been shown to exert analgesic effects on mice in which pain was induced. Myrrh is used as an astringent, antiseptic (to treat inflamed lesions of the throat and mouth), and antispasmodic to treat cancer and infectious disease. In this paper, we review the literature on myrrh tinctures, peppermint oil, and menthol.

Keywords: Myrrh tincture, peppermint oil, menthol, anti-inflammatory, expectorant.

Myrrh

Myrrh, an aromatic resin, is produced by a number of small thorny trees in the genus Commiphora.1 It is an essential oil termed an oleoresin. The resin is used as a component of perfumes, incense, and medicinals.2-3 The gum termed “Yellowish Myrrh” coagulates very rapidly and acquires a glossy finish.4

Myrrh is an antiseptic and it is often added to toothpastes, mouthwashes, and gargles.5 It is also used to treat minor skin injuries, such as abrasions. Myrrh is also employed as an analgesic, and is recommended to treat toothache.6 It is also used in tooth powders. Tinctures of myrrh and borax are commonly employed as mouthwashes. Horse tinctures, used to heal wounds, contain myrrh. The Somalian form of myrrh is termed Arabian myrrh or “Meetiga”. Myrrhs described as “Pliny” or “Jewish” are liquid myrrhs. These had many historical applications, but are currently unavailable. They were used to treat cancer, lung congestion, coughs, asthma, and ulcers.7

History

Myrrh has medicinal uses,8-9 being an antiseptic, astringent, and antitussive. It also aids wound healing and wound care.8 Myrrh is employed to treat headaches, gout, throat disorders, and indigestion.8 Infectious diseases, such as syphilis and leprosy,10 mouth infections, paediatric coughs, and to prevent the development of dental plaque.8 In East Africa, myrrh is used to treat snake bites.

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Mechanisms of Action
Myrrh is produced by members of the *Commiphora*, a genus in the family *Burseraceae*, and is an aromatic gummy resin. The components are gum, resin, volatile oils, and bitter materials. Myrrh exerts anti-inflammatory and cytotoxic effects in humans, and anti-inflammatory effects in animals. Myrrh exhibits analgesic effects in mice, reducing pain perception. The antiseptic properties of myrrh are useful in the treatment of throat and mouth inflammation. Myrrh is also employed to treat fascioliasis and schistosomiasis.

In Ethiopia and Somalia, myrrh resin, which includes volatile oils, polysaccharides, and terpenoids, is produced by the tree *Commiphora myrrha*. This myrrh exhibits antimicrobial and anti-inflammatory activities. Myrrh tinctures are used as gargles. Myrrh-containing mouthwashes are used to treat throat ulcers.

Studies on the Antimicrobial Effects of Myrrh
Myrrh (furanodiene-6-one, methoxyfuranoguaia-9-ene-8-one) exhibits antibacterial activity against *Pseudomonas aeruginosa*, *Escherichia coli*, and *Staphylococcus aureus*, and antifungal activity against *Candida albicans*. An anesthetic activity against mammalian nerve cells has also been shown. A 50 g myrrh/honey mixture was used to treat the diabetic ulcers of a 65-year-old male; the ulcers healed after 4 weeks.

Gingival Effects
The effects of oil of myrrh on human gingival fibroblasts and epithelial cells have been investigated. Myrrh oil inhibited prostaglandin E2 production by fibroblasts after stimulation by interleukin-1β. No significant effect on epithelial cells was evident.

Tinctures Containing Combinations of Menthol, Peppermint Oil, and Myrrh
Menthol
Menthol is an essential oil synthesized by the peppermint tree and has analgesic, antiseptic, antispasmodic, and cooling effects. Menthol is also used to treat bacterial, fungal, and viral infections.

Myrrh Tinctures
Mucosal circulation in the throat and bronchial tract is stimulated by myrrh. In swollen tissues, myrrh exhibits anti-inflammatory, antioxidant, and antimicrobial effects. It is used to treat tonsillitis and gingivitis, and is an expectorant.

Peppermint Oil
Peppermint oil exerts a topical cooling effect, relaxes the skin, and reduces pain. Peppermint oil is well-absorbed by the skin and reduces muscle cramps. The oil produced by *Mentha piperita* and *M. arvensis var. piperascansa* is used to treat muscle pain, headaches, and stomach problems. The oil has antimicrobial, antioxidant, anti-edema, and analgesic activities.

Respiratory benefits
Peppermint oil is an expectorant and can be delivered as a vapor. The oil is beneficial to patients with tuberculosis, reducing inflammation and preventing recurrence. In asthmatic patients, rosmarinic acid in the oil may also be therapeutic.

Pain relief
Peppermint oil provides pain relief. Muscle pain is reduced upon massage with the oil, as is headache.

Antimicrobial and anti-plasmid activities
Peppermint oil exerts antimicrobial effects on the Gram-positive *Staphylococcus epidermidis* and the Gram-negative *E. coli*. Both peppermint oil and menthol also exhibit antiplasmid activities; the materials eliminate drug-resistant plasmids from bacteria.

Treatment of herpes infections
Topical application of peppermint oil has a beneficial effect on herpes simplex virus (HSV) infection. The lipophilic oil penetrates the skin and kills both HSV and the acyclovir-resistant HSV-1. Plaque formation is reduced in vitro.

Dental health
Peppermint oil extract is an effective mouthwash, preventing biofilm development, and can be added to toothpastes.

Stress and nervous problems
Peppermint oil has an energizing effect and is useful in treating stress and agitation. The oil exerts a psychostimulatory effect in mice.
Is Peppermint Oil Safe?
Peppermint oil is safe at low levels in adults, but should be used only on the recommendation of a physician: ⓚ[19,20]

- Pregnant and nursing females – The oil reduces milk production and must be used sparingly near the end of pregnancy; ⓚ[29]
- Infants and children (under 7 years of age) – The oil must not be used; ⓚ[20]
- Diabetics – The oil may increase the extent of hypoglycemia; ⓚ[20]
- Gastro-oesophageal reflux disease (GERD) and hiatal hernia – The oil relaxes the lower oesophageal sphincter; ⓚ[20]
- Gallbladder disease – The oil may trigger inflammation of the gallbladder; ⓚ[20]
- Notably, antacids readily degrade peppermint oil. ⓚ[20]

A New Formulation Containing Menthol, Myrrh Tincture, and Peppermint Oil
A new pastille (Vocalzone) containing menthol, myrrh tincture, and peppermint oil is available. ⓚ[19] Vocalzone is thus a blend of natural ingredients. The pastilles soothe the vocal cords. The menthol relieves throat irritation and the peppermint oil has an aromatic effect. Myrrh exerts anti-inflammatory effects on mucous membranes and can be used in gargles and mouthwashes. ⓚ[19]

Humidification to Treat Laryngeal Problems
Upper airway infections causing a cough or rhinitis may also be associated with dysphonia or hoarseness. ⓚ[11,32] Such symptoms are observed in both the acute and chronic stages of laryngitis and may persist for 7–10 days. The symptoms are additional to odynophonia, dysphagia, dyspnea, post-nasal discharge, and a sore throat. ⓚ[11]

Breathing of humidified air helps to moisten the upper airway and eliminate secretions. Voice rest should be recommended. ⓚ[13] Antihistamines and corticosteroids may exert drying effects on the larynx. ⓚ[33] Patients should be advised not to smoke. ⓚ[13]

Our Suggestion
We suggest that Vocalzone is indicated for treatment of both acute and chronic laryngitis (the latter is often associated with acute attacks). Further studies are required to evaluate the effects of menthol, myrrh tincture, and peppermint oil on more patients.

Conflict of Interest: No conflicts declared.

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