



Review Article

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The Place of Aromatherapy in Ambulatory Management of Ungual Foot Disease: Literature Review

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ABSTRACT

The foot plays a vital role in maintaining balance and walking. Despite their vital importance to human health, feet are all too often abused and neglected. They can be the cause of a number of pathologies, which can be unsightly, painful and more or less disabling on a daily basis. Medicinal plants, and essential oils in particular, can provide a wide range of answers to the complex problems of dermatological diseases in podiatry, and offer therapeutic perspectives that complement conventional treatments. In this article, we will first review the main foot pathologies encountered by doctors and pharmacists, outlining the main symptoms and the role of aromatherapy in their management. We will then list the different essential oils used in these cases, along with their appropriate dosage. As such, the pharmacist is constantly responsible for finding the most appropriate solution for his patient dispensing phytomedicines, providing advice, and referring the patient to a medical consultation or, more rarely, to a hospital emergency room.

Keywords: Aromatherapy; Pharmacist-essential oil; Podology; Ungual foot disease

INTRODUCTION

The foot plays a vital role in maintaining balance and walking. Despite their vital importance to human health, feet are all too often abused and neglected. As a result, they can be the source of a number of pathologies, which can be unsightly, painful and more or less disabling on a daily basis.

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Between wearing ill-fitting shoes (too tight, with high heels), poorly trimmed nails and the inappropriate distribution of our body weight, our feet are put to the test on a daily basis. Numerous pathologies can affect the feet, with origins that can be inflammatory, infectious or bone malformations... They may be related to the nail (mycosis), skin (corns, calluses, dyshidrosis), muscles (tendonitis) or joints (hallux valgus, claw toe). These conditions are usually benign in a healthy individual but can become serious if that person is immune-compromised or has diabetes [1].

Phototherapy and aromatherapy are currently highly attractive fields. Indeed, various scientific investigations and research have helped to advance these therapeutic modalities, which are based on the utilisation of medicinal herbs and essential oils. The use of essential oils in the treatment of minor ailments has become common place, as has the use of essential oils in to podiatric conditions.

At the pharmacy, it's not uncommon for a patient to come to the counter with foot ailments. As the pharmacist is often the first health professional to be called on, he or she must be able to take the best possible care of the patient and guide him or her towards a personalized solution to the problem.

Podiatry, which is underdeveloped in Moroccan pharmacies, is a specialty that deserves more attention from pharmacists, as it can be so beneficial for patients. The aim of this study is to highlight the essential oils that can be used in dispensaries to treat dermatological foot disorders.

VETERINARY NAIL DISORDERS

Subungual hematoma

The most common injury is the formation of a hematoma under the nail (subungual hematoma). The nail (or nail plate) lies above an area called the nail bed, which is rich in blood vessels. Following an impact, the nail bed can become injured and begin to bleed.

Clinical signs apparent to the pharmacist: It leads to the formation of a hematoma, which takes the form of a bluish-black spot under the nail. If the bleeding is severe, the hematoma may cover almost the entire nail. In this case, the nail is black. After the impact, the blood pressure beneath the nail is responsible for pain that may manifest either as a continuous sensation or as regular throbbing. Microtraumas to the nails, exacerbated by intensive sports activities and wearing overly tight shoes, can cause recurrent small hemorrhages, resulting in black spots under the nail (Figure 1).

Italian Helichrysum essential oil: According to betadiones, it possesses anti-hematoma, anti-inflammatory, and decongestant properties. It also has analgesic activity due to neryl acetate. As a result, the interest in Helichrysum



Figure 1: Subungual hematoma showing hematoma under the nail

essential oil lies in reducing hematomas, edema, and subsequent inflammation [2].

Patchouli essential oil: Its components work synergistically for a phlebotonic and lymphotonic action, activating blood and lymphatic circulation to facilitate the drainage of hematomas. Sesquiterpenes also help modulate inflammation thus the oil actson the main markers of inflammation by reducing (heat, swelling, redness, and pain), making it very useful for relieving hematomas [3].

Noble laurel essential oil: It is anti-inflammatory, analgesic, and anti-infectious. It is a potent pain reliever.

Peppermint essential oil: It has astringent, antiseptic, anti-inflammatory, healing tonic and local analgesic properties.

Synergy against haematomas:

- 30 drops of Italian Helichrysum essential oil
- 10 drops of Noble Laurel essential oil

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- 10 drops of Peppermint essential oil
- 10 drops Patchouli essential oil
- 30 drops Argan oil

For small-sized hematomas, apply 4 to 6 drops of the blend directly to the affected area. Repeat this process several times a day until the bruising disappears.

Ingrown nail (Onychocryptosis)

The ingrowth of one edge of the nail plate into the adjacent skin fold is facilitated by compression within shoes that are too tight or have excessively high heels. Several contributing factors are often found [4]:

- Nail-related: improper trimming, thickening
- Foot-related: postural issues, deformities
- Skin fold-related: congenital hypertrophy
- Individual factors: diabetes, arteritis

Clinical signs apparent to the pharmacist: The main symptoms are pain around the nail, redness and swelling, resulting from inflammation of the skin tissue. It will be necessary to soothe these symptoms and limit the risk of bacterial (panariasis) and fungal severe infection until your ingrown toenail can be permanently removed [4]. Treatment is therefore essentially symptomatic and preventive, before removing the affected nail (Figure 2).



Figure 2: Onychocryptosis showing nail ingrowth on one side

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The role of aromatherapy for onychocryptosis

Aromatherapy treatment is based on the use of essential oils with anti-inflammatory, antibacterial and relaxing properties.

Rosemary verbenone essential oil: Verbenone will bring its healing and skin regenerating properties around the nail, while 1,8-cineole and sesquiterpenes (alpha-humulene, beta-caryophyllene) present in this essential oil will modulate the body's response (inflammation) and consequently alleviate the sensations of heat and resulting redness [4,5].

Tea tree essential oil: Active against a large number of bacteria such as staphylococci and streptococci, which can cause paronychia (an infection localized on the nail). It therefore prevents and inhibits their development, helping to protect the nail from infection.

Lavender essential oil: Will be able to alleviate these problems, notably with its analgesic and soothing properties.

Onycholysis (nail loss)

It is a gradual detachment of the nail, meaning the body of the nail separates from the nail bed. Typically, it starts at the tip of the nail and can sometimes extend up to the matrix (the part beneath the epidermis, not visible). The nail begins to chip from the top and lift, eventually detaching from the nail bed. Clinically, the affected nail can also change color, taking on a pinkish, whitish, and then yellowish hue. It can also turn greenish, violet, or even gray, depending on the cause of the onycholysis [6]. When the nail falls off, it is referred to as onychoptosis. Several factors can cause onycholysis. The causes can be mechanical, inflammatory, or infectious:

- Wearing tight and ill-fitting shoes
- Impact or trauma (stubbing a toe, finger caught in a door, etc.)
- Taking antibiotic medications or immunosuppressive treatments
- Allergic reactions to chemicals used in manicures or pedicures (acetone in nail polish removers, nail polish, acrylic, glue, etc.)

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- Skin conditions such as onychomycosis, eczema, psoriasis, or lupus erythematosus

The key element of treatment is to minimize trauma to the affected finger and avoid water/irritant exposure as much as possible to prevent secondary infection (bacterial or fungal). Underlying nail bed disorders should always be addressed first (Figure 3).



Figure 3: Onycholysis nail separating from nail bed

The role of aromatherapy on onycholysis

Aromatherapy treatment is based on the use of essential oils with regenerative, healing, antibacterial and antifungal properties. For optimum results, it is advisable to repeat the application several times a day.

Myrrh essential oil: It stimulates nail growth with anti-inflammatory, anti-infectious and healing properties, and is non-irritating to the skin [7].

Lemon essential oil: It will restore whiteness to your nails, as well as contribute to their regeneration by enhancing the microcirculation of blood around the nail.

Tea tree essential oil: Especially to prevent the risk of fungal super infection, to which individuals suffering from onycholysis are vulnerable.

Lavender essential oil: Will be able to alleviate these problems, in particular with its analgesic and calming properties.

Synergy against onycholysis:

- 02 drops of Myrrh essential oil
- 10 drops of Lemon essential oil
- 12 drops of Tea tree essential oil

Apply 2 to 3 drops of this mixture to the damaged nail, 2 times a day.

Onychomycosis

They most often affect the toenails, especially the first and last ones, but can also extend to the fingernails. Three types of agents are responsible: yeasts, dermatophytes and, more rarely, molds. In this chapter, we focus on onychomycosis caused by yeasts and dermatophytes. The dermatophyte usually involved is *T. rubrum*, sometimes *T. mentagrophytes*. Yeasts include the *Candida* species [8,9].

Onychomycosis due to dermatophytes: Following weakening of the nail due to microtrauma, the lesion begins at the free edge of the nail or in the laterodistal groove, forming a yellowish spot (dyschromia) that extends towards the matrix. The nail thickens (subungual hyperkeratosis), becomes hard and crumbly. Over a period of many months, this fragility allows other filamentous fungi to colonize the nail.

Onychomycosis due to candida: Finger nails are affected preferentially. It usually begins with peronyxis. This is a painful swelling of the matrix area and the supraungual fold (Figure 4).



Figure 4: Dermatophyte onychomycosis

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The role of aromatherapy

Aromatherapy treatment is based on the use of essential oils with antifungal and healing properties. For optimum results, it is advisable to repeat the application several times a day.

Tea tree essential oil: Remains the remedy of choice because of its broad-spectrum antifungal activity.

Lavender essential oil: Its healing properties are also very interesting.

Palmarosa essential oil: With broad-spectrum antibiotic activity combined with powerful antifungal action, it is the remedy of choice for the treatment of mycosis. Noble Laurel Essential Oil; It has antibacterial and antifungal properties [10].

Synergy against onychomycosis:

- 30 drops of Lavender essential oil
- 60 drops of Tea tree essential oil
- 30 drops of Palmarosa essential oil
- 40 drops of Noble Laurel essential oil
- 100 drops of Argan oil

Apply 2 to 3 drops of this mixture to the damaged nail, 2 times a day, until the fungus has completely disappeared and a healthy nail has grown back.

CONCLUSION

In conclusion, the significant contributions of aromatherapy, particularly through essential oils like lavender, tea tree, and laurel noble, cannot be understated in the realm of preventing and managing nail disorders. Through their potent therapeutic properties and natural healing mechanisms, these essential oils offer a holistic approach that complements traditional treatments, revolutionizing the care of foot-related afflictions.

The synergy of aromatic compounds within these oils has demonstrated remarkable efficacy in combatting fungal infections, promoting nail health, and alleviating discomfort. Lavender's antimicrobial prowess, tea tree's potent antifungal attributes, and laurel noble's immunity-boosting effects collectively create a formidable arsenal against nail conditions.

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Furthermore, the non-invasive nature of aromatherapy renders it an attractive alternative for individuals seeking more gentle, harmonious solutions for their nail concerns. As these essential oils penetrate the nails and surrounding tissues, they not only address the immediate symptoms but also target the underlying causes, fostering long-term wellness.

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