Kunzea Oil: A Future Solution for Hair Loss?

Thomas J*, Kosari S and Naunton M
Department of Pharmacy & Health, University of Canberra, Australia

*Corresponding author: Jackson Thomas, Department of Pharmacy & Health, University of Canberra, Australia
Submission: December 12, 2017; Published: January 29, 2018

Abstract

Hair loss is a significant dermatological disorder affecting about 50% men and women and some ethnic groups are found to be more susceptible than others. Current treatment options are limited for the long term management of this condition. Topical aromatherapy (involving the use of essential oils) has been previously trialed for the management hair loss with encouraging results. Our case study provides preliminary evidence for the use of kunzea oil for stimulating hair re-growth in a horse. Further studies are warranted.

Keywords: Alopecia; Essential oil; Kunzea oil

Case Report

In this case report we present an interesting serendipitous observation of spontaneous hair re-growth on the denuded lesional areas of the pastern of the horse (Figure 1A). The horse was treated for a contact dermatitis induced lesion on the pastern area using an essential oil based formulation (containing 20% v/v kunzea oil in an emulsifying ointment base BP [British Pharmacopeia]). The condition readily resolved with complete healing of the wounded surface, followed by a remarkable increase in the hair density in the previously denuded areas on the wounded pastern. This involved noted increase in the hair length and density at the site. The final photograph (Figure 1B) was taken after 21 days of twice daily application of the formulation.

Discussion

Hair loss is a common problem and that can affect approximately 50% men and women usually before the age of 40. It can be a distressing event for men and women (particularly when scalp is affected) and is associated with negative psychological effects including anxiety, depression, dissatisfaction with body appearance, low self-esteem, and reduced quality of life [1-3]. The most commonly used treatments for male pattern hair loss are finasteride (oral) and minoxidil (topical: 2% w/v; 5% w/v); however, they found to have mediocre clinical response. Upon treatment one-third of men experience moderate or marked hair regrowth, one-third will have minimal regrowth, and one-third
is expected to remain unchanged with no progression of the hair loss [4,5]. Hence, the search for novel treatments to stimulate and maintain hair growth is warranted. In the current scientific communication we present a serendipitous case of significant hair re-growth in a horse treated with kunzea oil (a myrtaceous essential oil) based formulation.

Kunzea oil is produced by steam distillation of the aerial parts of shrub kunzeaambigua (family Myrtacea) which is native to Tasmania. Kunzea oil is currently approved and listed by the TGA (Therapeutic Goods Administration, Australia) for topical application in humans and animals. The author’s preliminary investigations Thomas J et al. [6,8] and Thomas J [7] revealed kunzea oil’s potent in vitro antimicrobial action activity (anti-bacterial, anti-fungal, anti-viral). Kunzea oil’s potent activity antifungal activity (MIC [minimum inhibitory concentration] 0.01-0.03% v/v; MFC [minimum fungicidal concentration] 0.03-0.12 % v/v) against yeast fungi Malassezia spp appeared to have noted clinical significance. Malassezia spp. Especially Malassezia furfur found to be involved in the pathogenesis of psoriasis and seborrhic dermatitis of the scalp, both conditions have been reported as potential antecedents for hair loss. The oil has been anecdotally used for the management of various dermatological conditions including onychomycosis, impetigo, inflammation and cold sores also as an environmentally benign insect repellent and/or cidal agent. The recent preclinical and clinical investigations of this essential oil demonstrates it potential usefulness as an antimicrobial agent for the management inflammatory skin conditions in humans and animals, and further studies are underway [6-9].

Essential oils are plant secondary metabolites containing a mixture of fatty acids, and have been investigated successfully for the management of alopecia areata in randomised controlled trials [10,11]. It has been reported that that several fatty acids (e.g. palmitic, oleic, linoleic, linolenic and arachidonic acids) have been shown to possess significant anti-androgenic effect resulting from testosterone 5α-reductase inhibitory activity (a known mechanism involved in minoxidil-induced hair growth in humans)[11]. It has also been reported that stimulation of the Vascular Endothelial Growth factor (VEGF) transcription in keratinocytes results in accelerated re-growth of hair follicles (a known mechanism associated with the anti-inflammatory action of medicinal agents).

Anecdotally kunzea oil has been used for the management of inflammatory skin conditions in humans and animals [12]. Hence, intuitively the fatty acid mixtures present in the oil plus its anti-inflammatory properties potentially may have contributed to the observed hair re-growth. However, further in vitro, in vivo investigations are warranted to understand the molecular mechanisms involved in the activity. This would lay foundation to further randomized controlled investigations and kunzea oil based scalp formulations for the management hair loss.

References