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Is There a Place for Local Natural Treatment of Psoriasis?

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Abstract

BACKGROUND: Apitherapy is the medical use of honey bee products (honey, propolis, royal jelly, bee wax, and bee venom) to relieve human ailments, propolis in particularly, rich in essential oils such as flavonoid. Propolis is derived from tree buds and plants. It is considered as one of the most well-documented products from the honeybee and has always played an important role in traditional folk medicine. Another renowned plant is Aloe vera appertaining to the Liliaceae family. Its mucilaginous gel has been extensively used in many cultures for its apparent effectiveness in treating wounds, burns, itchiness and hair loss.

AIM: The aim was to assess the efficacy of a mixture in an ointment form of propolis (50%) and aloe vera (3%), in the treatment of mild to moderate psoriasis.

METHODS: In this double-blind control study, 2248 patients with both mild to moderate cases of psoriasis were evaluated from 2012 to 2015.

RESULTS: In Group 1 the overall response at the end of 12 weeks was as follows: Cleared in 64.4% (excellent response), good response in 22.2%, and weak response in 5.6% and no response in 7.7%. In Group 2 (placebo group) no significant improvement was observed after 12 weeks of treatment. Also, histology also demonstrated a marked reduction in hyperkeratosis and acanthosis.

CONCLUSION: In comparison with Group 2 (placebo group) patients in Group 1, treated with a mixture of propolis (50%) and aloe vera (3%), in the form of an ointment have shown noteworthy improvement thus substantiating the therapeutic value of propolis and aloe vera in the treatment of mild to moderate psoriasis.

Introduction

Psoriasis is an inflammatory and proliferative skin disease with heterogeneous genetic background and is characterised by chronic, sharply demarcated, dull-red scaly plaques on the skin and particularly on the extensor prominences and in the scalp area [1]. It is one of the most common chronic skin diseases in need of long-term therapy. Although the multi-factorial aetiology of this disease, a strong association between body mass index and psoriasis severity was shown [7]. Until now there has not been an ideal treatment for this perplexing ailment.

However, a variety of therapeutic approaches have shown limited efficacy with frequent side effects. *In vivo* and *in vitro* data prove the effectiveness of cytokines taken in low-doses [1] and antioxidants [2] Complementary therapy based on psychotherapeutic approaches has also shown to be effective [3].

The use of apitherapy (using hive products for medical and pharmacological purposes) remains a controversial matter in the treatment of dermatological diseases especially psoriasis [5].

Aloe vera is a plant that has been used in folk medicine; its mucilaginous gel is used for treating itching, hair loss and many other problems. It is also found in modern-day commercial beauty products.

Aloe vera has also proven effective on the

cutaneous burn and wound healing [6]. There have been many studies that demonstrated considerable analgesic, antipruritic, wound healing and anti-inflammatory properties [4]. These qualities justify investigating Aloe vera in the treatment of psoriasis.

This study aims to evaluate the efficacy of a combined natural topical treatment for psoriasis. The drug is mainly composed of propolis (one of the most important hive products) and Aloe vera. The ointment is used for topical treatment of mild to moderate psoriasis in all regions of the body except face and genitalia.

Material and Methods

In a double-blind placebo-controlled study, 2248 patients of the Center of Dermatology in Heliopolis (Cairo, Egypt), with mild to moderate psoriasis have been included. Patients from 2012 to 2015 were divided into two groups. Group I was treated with an ointment containing a combination of propolis 50% and Aloe vera 3%. Group was II treated with a placebo (ointment without propolis and Aloe vera). Topical treatment was performed for 12 weeks while sparing face and genital.

Definition of clinical outcome:

- Excellent response: when all psoriatic lesions disappeared, and skin becomes nearly normal (no erythema, no infiltration or desquamation of skin).
- Good response: when some of the lesions disappeared.
- Weak response: when no marked improvement in erythema, infiltration or desquamation of skin was noted.
- No response: when no response occurred at all.

The outcome was also evaluated by psoriasis area and severity-score (PASI score) and skin biopsies.

Results

In Group 1 the overall response at the end of 12 weeks was as follows: Cleared in 64.4% (excellent response), good response in 22.2%, and weak response in 5.6% and no response in 7.7% (Figures 1-6).

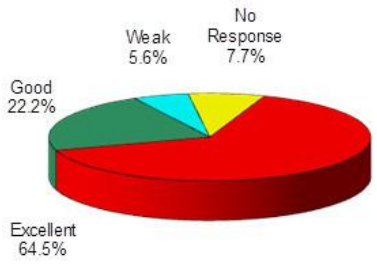

Figure 1: Clinical results of treatment

The formulation resulted in significant reduction of erythema and scaling. In Group 2 (placebo group) no significant improvement was observed after 12 weeks of treatment. Also, histology also demonstrated a marked reduction in hyperkeratosis and acanthosis.

The ointment worked for different types of lesions (Table 1).

Table 1: Results of treatment I relation to the type of psoriasis lesions

Type		Result		Total
		Effective	Non-Effective	
Guttate	Excellent	183		183
	Good	24		24
	Weak		7	7
	No Response		11	11
Total		207	18	225
Palmo	Excellent	246		246
	Good	95		95
	Weak		12	12
	No Response		38	38
Total		341	50	391
Plaque	Excellent	1021		1021
	Good	380		380
	Weak		107	107
	No Response		124	124
Total		1401	231	1632

We used Psoriasis Area and Severity Index (PASI score) as a method of clinical assessment of patients.

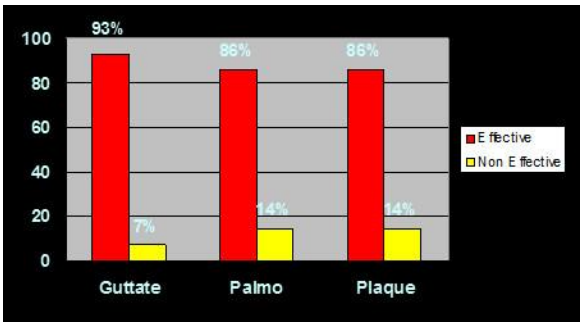

Figure 2: Results of treatment. Percentage of PASI-reduction

This is purely clinical rating system which assesses the area of the body affected by the intensity of the main symptoms.

Table 2: reduction of PASI score

%- Reduction of PASI score	Cases	Percent
Effective	1947	86.70%
Non-effective	301	13.30%
Total	2248	100%

A punch biopsy was taken before application of the treatment and stained to be examined histologically (Figure 3).

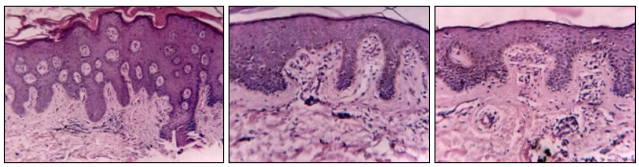

Figure 3: Histology pre and post-treatment (Biopsy Rt.Sole; HE stain). Within the typical plaque, psoriatic epidermis shows marked epidermal acanthosis, hyperkeratosis, and elongation; the presence of Munro's microabscesses (to the left). Parakeratosis changed to orthokeratosis, acanthosis decreased, the rate ridges became shorter than before TTT; absence of Munro's microabscesses (to the right)

Discussion

Psoriasis is a common systemic inflammatory disorder. In this double-blind placebo-controlled study 2248 patients with mild to moderate psoriasis were enrolled. Group 1 received topical treatment with an ointment containing a combination of propolis and aloe vera. Group 2 received placebo (ointment without aforementioned active compounds. We excluded only facial and genital skin. Tolerability of the treatment was very good.

Figure 4: Pre (left) and post (right) 3 months of treatment

Major natural constituents have been used in this trial. The first one is propolis, a non-toxic substance which is composed of resins, waxes and fatty acids, minerals, vitamins, and flavonoids. Flavonoids, caffeic acid-phenethyl ester (CAPE), and hydroxycinnamic acid are responsible for most biological effects including with anti-inflammatory activity. CAPE has both anti-inflammatory and anti-oxidative properties. Since CAPE is lipophilic, it is capable of inhibiting the intracellular LOX and COX enzymes, and thereby indirectly the arachidonic pathway. This action prevents the release of prostaglandins and leukotrienes, and it decreases neutrophil infiltration into the skin [4] [9].

No severe side effects were noted. Minimal discomfort due to the texture of the ointment and temporal itching sensation had been observed.

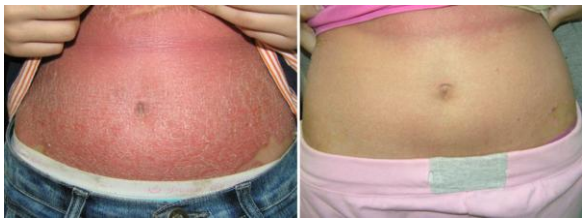

Figure 5: Pre (left) and post (right) 3 months of treatment

The other natural ingredients were Aloe vera. Aloe vera has moisturising qualities, which are helpful in restoring disturbed skin barrier function. Aloesin from Aloe vera positively regulated the release of cytokines and growth factors (IL-1β, IL-6, TGF-β1 and TNF-α) from macrophages and enhanced angiogenesis in endothelial cells (HUVECs). Aloesin accelerates wound closure in mice by activating Smad and MAPK signalling proteins that are of utmost importance in cell migration, angiogenesis and tissue development [10].

Figure 6: Pre (left) and post (right) 3 months of treatment

Topical Aloe vera was more effective in PASI reduction in moderate plaque psoriasis in a randomised, comparative, double-blind 8-weeks trial than 0.1% triamcinolone acetonide [11]. These results are supported by the present study.

In comparison with Group 2 (placebo group) patients in Group 1, treated with a mixture of propolis (50%) and aloe vera (3%), in the form of an ointment have shown noteworthy improvement thus substantiating the therapeutic value of propolis and aloe vera in the treatment of mild to moderate psoriasis.

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