

Palmoplantar Psoriasis: Treatment with Calcipotriol and Local UVA Radiation Compared with Local PUVA

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Abstract:

Introduction: Palmoplantar psoriasis could hardly be differentiated from chronic tylotic eczema both clinically and histologically. The most commonly used therapeutic options for palmoplantar psoriasis are long-term therapy with topical corticosteroids and local PUVA. Frequently, it is a recalcitrant disease. We investigated the efficacy and tolerability of the combination of topical calcipotriol with local UVA radiation in comparison with local PUVA therapy.

Methods: In a total of 43 patients with palmoplantar psoriasis, 33 were given 15 sessions of local UVA radiation and topical calcipotriol and the remainder received 15 sessions of local PUVA (psoralen + UVA radiation).

Results: The statistical analyses of the results showed that the effect and tolerability of both therapeutic modalities are comparable.

Conclusion: Combination of topical calcipotriol and local UVA radiation is an optional corticosteroid-free therapeutic modality for palmoplantar psoriasis. It has a comparable effectiveness and tolerability with local PUVA.

Keywords: Psoriasis, palmo-plantar; Calcipotriol; Psoralen; Clinical Trial

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Introduction

Psoriasis is a chronic disease that can severely impair patient's quality of life. Psoriasis also causes significant functional, psychologic and social problems(1). Chronic plaque psoriasis is the most common form and is the focus of the majority of studies regarding genetics, pathogenesis, and treatment. Many patients within this large group have mixed components of intertriginous, seborrheic, scalp, palmar, and/or plantar involvement. In addition to the common plaque variation, some patients may suffer from primary nail, guttate, pustular, or even erythrodermic psoriasis. Despite all being

categorized as subdivisions of psoriasis vulgaris, it is possible that these different phenotypes have distinct mechanisms and genetic predispositions and, hence, require more specific treatments making phenotypical classification important(2).

When psoriasis involves the palms and soles, it is referred to as palmoplantar psoriasis. Palmoplantar psoriatic lesions may occur along with psoriasis elsewhere on the body, or less frequently, in isolation. Palm and sole involvement can be painful and disabling, as the acral skin lesions can interfere with a variety of functions. The lesions found in this region could be presented as erythemato-squamous plaques, hyperkeratosis and pustules. Palmo-planatar psoriasis could be hardly

differentiated from chronic tylotic eczema, both clinically and histologically, particularly when psoriasis does not involve the typical areas of skin regions such as elbows, knees, hair and nails.

The most commonly used therapeutic options for palmo-plantar psoriasis are long-term treatment with topical corticosteroids and local PUVA (psoralen + UVA radiation), but it frequently remains resistant(1). On this study, we are going to investigate the efficacy of the combination of topical calcipotriol with local UVA radiation in comparison with local PUVA. To our knowledge, there is no report in the literature concerning this modality.

Methods

A total of 43 patients were divided into two groups according to the applied treatment modalities. The characteristics of the patients are shown in Table 1; patients from group A were

treated by calcipotriol ointment applied on the affected area in the morning at least 2.5 hours before UVA radiation (365 nm) for 15 sessions. Patients of the group B were treated by 0.30% solution of 5-methoxypsoralen (Meladinin®) applied on the affected areas one hour before UVA radiation for 15 sessions. Patients in both groups received emollients and keratolytics as adjuvant therapy.

Skin biopsy was performed in 20 patients in group A. In 13 of them, the histopathology showed characteristic changes of psoriasis (Figure 1). In other 7, the histopathological picture revealed psoriasiform dermatitis (Figure 2). In 9 patients of group 2 for whom skin biopsy was performed, 8 showed characteristic changes of psoriasis and 1 revealed psoriasiform dermatitis.

The evaluation of the therapeutic effect in the two groups was done according to the Physician’s Global Assessment (PGA) after the 15th UVA radiation, considering the following criteria:

Table 1. Characteristics of the patients in the two groups

	Calcipotriol + UVA (Group A)	Topical PUVA (Group B)
Number of patients	33	10
Sex – female/male	22/11	6/4
Age (years)	50 (22 – 72)	52 (30 – 62)
Mean duration of the disease (years)	5 years (1 month – 30 years)	7 years (2 months – 30 years)
Histopathology (patients)	20	9
Histopathological diagnosis	Psoriasis – 13 Psoriasiform dermatitis -7	Psoriasis – 8 Psoriasiform dermatitis - 1

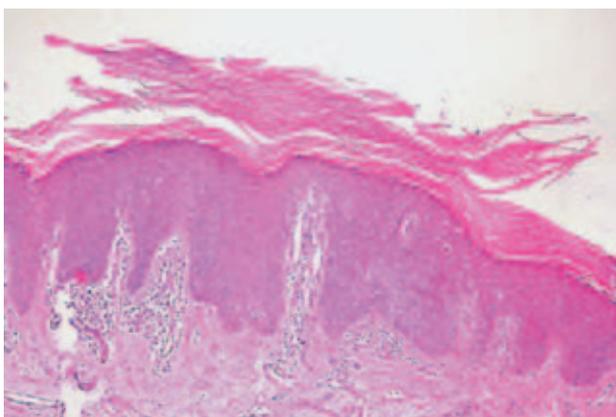


Figure 1. Psoriasis: Markedly elongated rete ridges, absent granular layer, parakeratosis with neutrophils, and dilated tortuous vessels in the dermal papillae

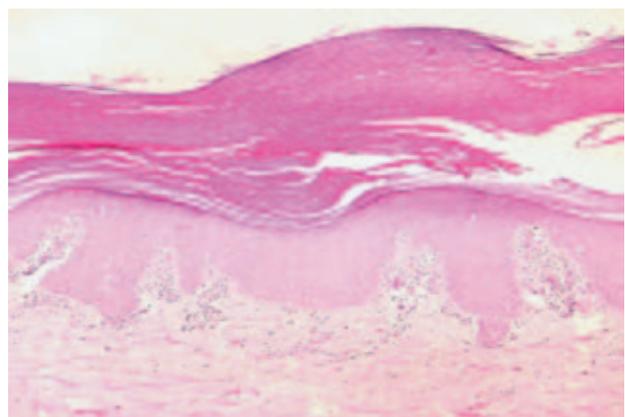


Figure 2. Psoriasiform dermatitis: hyperkeratosis interspersed with areas of parakeratosis, acanthosis with irregular elongation of the rete ridges and hypergranulosis; Slight spongiosis may be observed, but vesiculation is absent.

Remission – no erythema and desquamation; residual discoloration may be present;

Marked improvement – mild erythema; no desquamation; no infiltration; hypo or hyper pigmented lesions;

Improvement – mild erythema, infiltration and desquamation; hypo or hyper pigmented lesions;

No change – status idem

Data was statistically analyzed using Chi (χ)-square test.

Results

The results in the two groups are presented in Table 2. Of 33 patients in group A (calcipotriol + UVA), 19(57.5%) improved, 8(24.2%) showed marked improvement, 6(18.2%) showed no

Fig 3:

Before



After



Fig 4:



Figure 3,4. Patients in group A (calcipotriol+UVA)

Table 2. Distribution of the patients of the two groups according to the therapeutic effect, evaluated by the Physician's Global Assessment

Result	Calcipotriol + UVA (Group A)	Topical PUVA (Group B)
Remission	0	0
Marked improvement	8	4
Improvement	19	6
No change	6	0

change, and remission was not observed in any patient (Fig 3, 4). In group B (topical PUVA), of 10 patients, 6(60%) improved and 4(40%) showed marked improvement.

Statistical analysis showed no difference between these two treatment modalities regarding their clinical improvement ($P < 0.05$).

Discussion

Palmoplantar psoriasis is a peculiar clinical subtype of the disease affecting palms and soles. The lesions found in this region could be as typical erythemato-squamous plaques, hyperkeratosis, pustules, well-defined plaques resembling lichen simplex chronicus or hyperkeratotic eczema; or as a palmoplantar pustulosis. Mixed forms occasionally occur(1). It may often be difficult to distinguish the psoriasis from eczema, with which it may sometimes alternate. A sharply defined edge at the wrist or forearm and absence of vesiculation are helpful. Nowadays, psoriasis is considered as a heterogeneous disease and many authors define palmoplantar pustulosis as a separate clinical entity with its genetic predisposition, course, and therapeutic management which differ from psoriasis itself(2).

Palmoplantar psoriasis is a chronic disease which is commonly characterized with frequent exacerbations, difficulty in its management, and resistance to therapy(3). Topical corticosteroids and phototherapy are the most widely used therapeutic modalities for this subtype of psoriasis. In cases with palmoplantar psoriasis, which could hardly be clinically differentiated from chronic eczema, even systemic corticosteroids are used. These medications are harmful for the course of psoriasis, since severe exacerbations and complications of the disease may occur after withdrawal of these drugs. Therefore,

an effective, steroid-free therapeutic modality is needed for management of the disease in order to avoid steroid tachyphylaxis, the "rebound effect" of their use, and the development of their potential long-term side effects(2).

Phototherapy is a conventional steroid-free therapeutic option for palmoplantar psoriasis. In cases of psoriasis localized to the palms and soles, topical PUVA is commonly used(4). This therapy includes photosensitization of the treated area with 0,30% solution of meladinin (5-methoxypsoralen) and localized UVA radiation by specific equipment. The UVA radiation is conducted one hour after the application of the photosensitizer.

In Bulgaria, the topical formulation of the photosensitizers used for PUVA is not registered and the patients cannot use this therapeutic modality. This problem together with the data from the literature concerning the combination of phototherapy with topical agents for treating psoriasis made us to evaluate other therapeutic modalities for treatment of palmoplantar psoriasis. Vitamin D3 derivatives offer a safe, effective alternative form of treatment for recalcitrant hyperkeratotic palmoplantar eczema(5). Thus, the idea of combining calcipotriol with UVA emerged.

Data from the literature shows that adding calcipotriol ointment to topical PUVA markedly improves the therapeutic response to phototherapy and the number of "responders" increases. Also, such a combination allows decrease of the cumulative dose of phototherapy and the number of sessions of UVA radiation(6,7). In the same time, topical corticosteroids in combination with PUVA lead to decrease in the dose of UV radiation, but not the number of sessions needed to achieve remissions. Exacerbations after such therapy are common(8).

There are no data in the literature reporting combining calcipotriol and UVA radiation without psoralen. Thus, the presented study seems to be unique. The obtained results show that there is no statistically significant difference between the two treatment groups in regard to the therapeutic effect. This warrants us to conclude that combination of topical calcipotriol and local UVA radiation is an optional corticosteroid-free therapeutic modality for palmoplantar psoriasis and has a comparable effectiveness with PUVA.

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