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CLINICAL REPORT

Treatment of Hyperkeratotic Dermatitis of the Palms (Eczema Keratoticum) with Oral Acitretin. A Single-blind Placebo-controlled Study

KRISTIAN THESTRUP-PEDERSEN[1], KLAUS E. ANDERSEN[2], TORKIL MENNÉ[3] and NIELS K. VEIEN[4]

Departments of Dermatology at [1]Marselisborg Hospital, University of Aarhus, [2]Odense University Hospital, [3]Gentofte, University of Copenhagen, and the [4]Skin Clinic, Aalborg, Denmark

Hyperkeratotic dermatitis of the palms – also called eczema keratoticum – is a chronic, sometimes disabling condition in middle-aged persons. We carried out a single-blind, placebo-controlled study using acitretin in 29 patients. Fourteen patients received active therapy (30 mg acitretin daily) and 15 placebo. All had hyperkeratotic changes of the palms with painful fissures and most had involvement of the volar aspects of their fingers. Approximately half of the patients had similar plantar changes. A semi-quantitative score of six parameters was used: hyperkeratosis, fissuring, scaling, itch, redness and vesicle count. After 4 weeks of treatment, a 51% reduction of all symptoms was observed among patients receiving acitretin ($p < 0.01$) compared with a 9% reduction in the placebo group ($p > 0.05$). No further improvement was seen over another 4 weeks of treatment. There were no changes in blood biochemistry, including serum lipids. No patients discontinued therapy because of side effects. We conclude that 30 mg of acitretin is efficacious and safe to use in patients with hyperkeratotic dermatitis of the palms. ***Key words: acitretin, eczema keratoticum, hyperkeratotic dermatitis, psoriasis, blood lipids.***

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Kristian Thestrup-Pedersen, Department of Dermatology, Marselisborg Hospital, DK-8000 Aarhus C, Denmark. E-mail: ktp56@hotmail.com

Hand eczema occurs among 11% of the adult population in Scandinavia during a cumulative one-year period (1). Approximately 90% of patients have contact eczema, whereas 2% have the type of hand eczema known as eczema keratoticum or hyperkeratotic dermatitis of the palms (1).

Hyperkeratotic dermatitis of the palms has been described by many authors. Smith described the condition as lichen simplex chronicus (neurodermatitis) of the palms and soles (2). Keratotic eczema has been considered to be a form of localized psoriasis, but in a description by Hersle & Mobacken (3), the histological picture of eczema keratoticum was that of a spongiotic dermatitis and not psoriasis.

We set out to determine whether the use of systemic retinoids would prove beneficial in the case of this disease. Our placebo-controlled investigation shows that acitretin can significantly reduce the symptoms of this disorder, which is difficult to treat using topical remedies alone.

PATIENTS AND METHODS

Patients were enrolled at four dermatology departments or clinics during a one-year period. The diagnosis was clinical, with one of the following symptoms: Hyperkeratosis, fissures, scaling, itch or redness. Vesicles were also looked for, but seen only in one patient. All patients were found to be patch-test-negative or had a clinically irrelevant test reaction, thus excluding a diagnosis of allergic contact dermatitis. Four patients had psoriasis elsewhere on the skin; however, their palmar dermatosis was considered to be keratotic eczema. Histological examination was not performed.

Patients were enrolled in the study after fulfilling the inclusion criteria and giving informed consent. They were asked to take three 10-mg capsules of acitretin once daily for 8 weeks, or identically looking placebo capsules. No additional treatment was given other than topical emollients. Hemoglobin, hepatic function and fasting serum cholesterol and triglyceride levels were performed and only patients having values within normal limits were included. The study was approved by the Ethics Committee of Aarhus County.

Twenty-nine patients (21 men and 8 women; age range 30–76 years, median 54 years) were assessed at the initial visit, when a history was taken and screening blood tests were performed. There was no difference in sex or age range between the acitretin-treated group (14 patients) and the placebo-treated group (15 patients) (Table I).

At each visit, clinical scoring was carried out in terms of the following parameters: Hyperkeratosis, fissuring, scaling, itch, redness and vesicle count. The grading system was: 0 for absent, 1 for slight, 2 for moderate and 3 for severe. The scores were aggregated and a mean value is presented. Statistical evaluation was performed using Wilcoxon's test for paired data. As several patients in the active treatment group experienced dryness of the lips, we have called our study single-blind.

Table I. *Characteristics of the patients*

	Acitretin group	Placebo group
Men	10	11
Women	4	4
Age range (years)	30–76	31–67
Median age (years)	54	56
Psoriasis in family	2	4
Psoriasis*	1	3
Atopy in family	4	0
Atopic eczema*	2	0
Menopause**	2	3
Disease duration in years	1–32	1–12
Median duration in years	5	4
Constant symptoms of disease	13	12
Intermittent symptoms of disease	1	3
No treatment on entering the study	9	13

*Patient suffered from or had suffered from the disease.
**Number of women who had experienced menopause.

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RESULTS

Patient history and background for psoriasis or atopy, and previous course of disease, are given in Table I. Hyperkeratotic dermatitis of the palms and feet was seen to be a long-standing, chronic skin disorder; between one-third to one-half of the patients also had changes on the soles. The most-reported eliciting factors were repeated physical pressures of the palms during work or when in contact with oil or detergents (Table II). Few patients were using topical treatment when first seen.

The severity grading of symptoms is illustrated in Table III, where the ranking order was found to be hyperkeratosis, fissures, scaling, itch and redness. Vesicles were seen in only two patients during follow-up visits. The biggest complaint of patients was the painful fissuring of hyperkeratotic skin. Itch was a minor symptom.

The result of acitretin treatment was that there is an overall 51% reduction in clinical symptoms. Improvement occurred within the first 4 weeks of therapy, and no further improvement was seen between weeks 4 and 8 (Table III).

The biochemical investigations were within normal limits and did not change significantly during the treatment period.

Table II. *Location of disease and factors recognized by patients that worsened their skin disease*

	Acitretin group	Placebo group
Locations affected		
Palms	14	15
Palmar side of fingers	12	10
Plantar side of feet	8	6
Eliciting factors		
Repeated physical trauma	6	5
Exposure to oil	5	3
Detergents	3	4
Vibration	3	1
Food items*	1	2
NCR paper	1	1

*Food items were fish, meet juice and vegetables.
NCR: no-carbon-required.

Table III. *Score of symptoms (0–3) in 29 patients treated with 30 mg acitretin daily (acitretin group) or placebo (placebo group)*

	Acitretin group			Placebo group		
	W 0	W 4	W 8	W 0	W 4	W 8
Hyperkeratosis						
Mean score	2.14	1.17*	1.08*	2.40	2.07	2.07
Percent reduction		45%	50%		14%	14%
Fissures						
Mean score	1.64	0.42*	0.54*	1.47	1.47	1.33
Percent reduction		74%	67%		0%	10%
Scaling						
Mean score	1.64	0.67*	0.85*	1.40	1.27	1.40
Percent reduction		59%	48%		9%	0%
Itch						
Mean score	1.43	0.92	0.85	1.40	1.33	1.13
Percent reduction		36%	41%		5%	19%
Redness						
Mean score	1.36	0.83	0.77	1.07	0.93	1.00
Percent reduction		39%	43%		13%	7%
Vesicles						
Mean score	0	0	0	0	0	0
Percent reduction		0%	0%		0%	0%

*$p < 0.005$ Wilcoxon test for paired data.
Other comparisons were not statistically significant.
Standard deviations are not shown for clarity of the table.
W: Week at start (0), after 4 and 8 weeks.

DISCUSSION

This study is the first to document that acitretin 30 mg per day will induce a clinical improvement of, on average, 51% in patients with hyperkeratotic dermatitis of the palms without any concomitant impact on blood lipids. Thus, a systemic treatment can help patients suffering from fissuring and painful hyperkeratosis of the palms, which is the major problem often interfering with their daily work. Etretinate has also been found efficacious in the treatment of this condition (4, 5).

The diagnosis of hyperkeratotic dermatosis of the palms was based on the clinical picture. The disease is long-standing. Vesicles are rarely seen, although this condition was noted in two patients during the course of the disease. Itching was present, but not very pronounced. This is in contrast to pompholyx or recurrent vesicular hand eczema, where bouts of vesicles with severe itching are followed by periods of scaling, dryness and painful fissuring until the next relapse of vesicles. Pompholyx patients frequently have contact allergies, which were not present in our patients or irrelevant to the course of their disease.

Unlike Hersle & Mobacken (3), who observed a spongiotic dermatitis, we did not perform histological investigations. From the clinical symptoms, it might be expected that the histology would show a psoriasiform dermatitis. Also, the course of the disease is fairly constant and protracted, similar to psoriasis. Six of our patients had a predisposition to psoriasis and four had psoriasis separate from their hyperkeratotic dermatosis of the palms. Thus, a total of 10 of 29 patients had a history of psoriasis themselves or in the family. It could be argued that this subgroup of patients did not have hyperkeratotic dermatitis of the palms, but psoriasis (6, 7). However, the patients could not be differentiated clinically from hyperkeratotic dermatitis. Thus, future studies using better differential diagnostics – if these occur – are needed to elucidate whether hyperkeratotic dermatitis of the palms is a unique disease entity or a variant of psoriasis. The histological findings of Hersle & Mobacken suggest that the conditions belong to different disease entities. A further support for an overlap between hyperkeratotic dermatitis of the palms and psoriasis is our finding of a beneficial effect of acitretin.

The cause of the disease is unknown. It is characteristic that repeated physical or chemical trauma of the skin is an eliciting factor, as seen in psoriasis. The structure of palmar skin is unique, and future studies should look at keratin expression in this disorder (8).

Standard treatment of hyperkeratotic dermatosis of the palms includes emollients, keratolytic agents, tar, topical steroids in an ointment base combined with a keratolytic agent such as salicylic acid, or PUVA (9–12). However, topical treatment has not been efficacious in our patients. Acitretin therapy can induce a significant reduction of symptoms within

a 4-week treatment period. Side effects were not seen. In particular, there was no increase in blood lipids during our 8-week treatment period.

We have found that acitretin is a valuable remedy for hyperkeratotic dermatosis – a psoriasis-like change in palmar skin and in some patients also in plantar skin. Further studies should tell us whether cyclic therapy of 4 weeks' duration of acitretin combined with topical treatment could lead to long-term control of the disease.

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