

THE TRAFURIL TEST IN RECURRENT JUVENILE ECZEMA OF HANDS AND FEET

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Abstract. The reaction to a locally applied ointment with an ester of tetrahydrofurfurylester of nicotinic acid was studied in 21 children with recurrent eczematous dermatitis of the hands and feet. Seven children suffering from atopic dermatitis and 10 non-atopic children with local skin-diseases not involving hands and feet served as controls. When Trafuril was applied to the skin, 19 of 21 patients with recurrent eczema of hands and feet showed marked redness and edema, while 3 patients showed marked redness only. All 10 non-atopic controls showed marked redness and edema, while, as expected, all atopic children showed either a markedly reduced erythematous reaction, or none at all. Sixteen of the patients with recurrent eczema were referred to the Department, because of *tinea pedis*. However, all examinations for fungus were negative. The fact that 16 of the 21 patients were referred to the department during the winter, together with the morphology of the disease, suggest a similarity to asteatotic eczema in the adult. Inadequate hygienic standards and trauma may favour the disease. The term "recurrent juvenile eczema of hands and feet" is proposed for this entity. The results of the Trafuril test do not indicate atopy as an underlying disease among patients with recurrent juvenile eczema of hands and feet.

A recurrent eczematous dermatitis, occurring particularly on the hands and feet, is relatively common in children. Usually these patients are referred to the dermatologist with the diagnosis of dermatophytosis. They have often been treated unsuccessfully for months with various fungicides.

Although some dermatologists believe this type of eczema to be an infectious dermatitis (6), the etiology of the disease remains unknown. Generally the bacterial flora does not differ qualitatively from that of normal skin (5). In the majority of cases the morphological features are those of a dry, cracked and fissured skin, resembling similar changes in atopics (Figs. 1, 2). The disease has recently been described by Möller (3), who considers it a manifestation of atopy.

We also have found it valuable to search for atopy as an underlying disease. Patients with atopic dermatitis have a markedly decreased or absent erythematous response to Trafuril (tetrahydrofurfuryl ester of nicotinic acid) (2). The failure to react with erythema to the rubefacient is read as a positive Trafuril test (TT) and indicates an atopic disposition. The present paper reports on results of TT in recurrent juvenile eczema of hands and feet.

MATERIAL AND METHODS

The investigation comprised 21 children, eight girls and thirteen boys, aged 7 to 15 years. All had recurrent eczema of hands and feet. 16 of the patients were referred to us from January to April. 16 were referred with the diagnosis *tinea pedis*. In most cases both hands and feet were affected. Two children had a brother or a cousin with the same disease. In 6 cases disposition for atopy was found in the family. All patients were examined for fungus, were routine patch tested, and had direct skin tests (scratch test) performed with common allergens.

As controls, 7 children suffering from typical atopic dermatitis were investigated. In addition, 10 non-atopic children with various local skin disease not involving hands and feet were examined.

TT was performed by rubbing 5% Trafuril ointment to the skin of the forearm, and examining the response after 30 min. Marked redness and edema was read as a negative test, while an absent or markedly decreased erythematous response was read as a positive test, indicating atopy.

Treatment was restricted to topical Tetracyclin in a steroid ointment or crude coal tar 5% in vaseline.

RESULTS

The results of TT are displayed in Table I. When Trafuril was applied to the skin, 19 of 21 patients with recurrent eczema of hands and feet showed

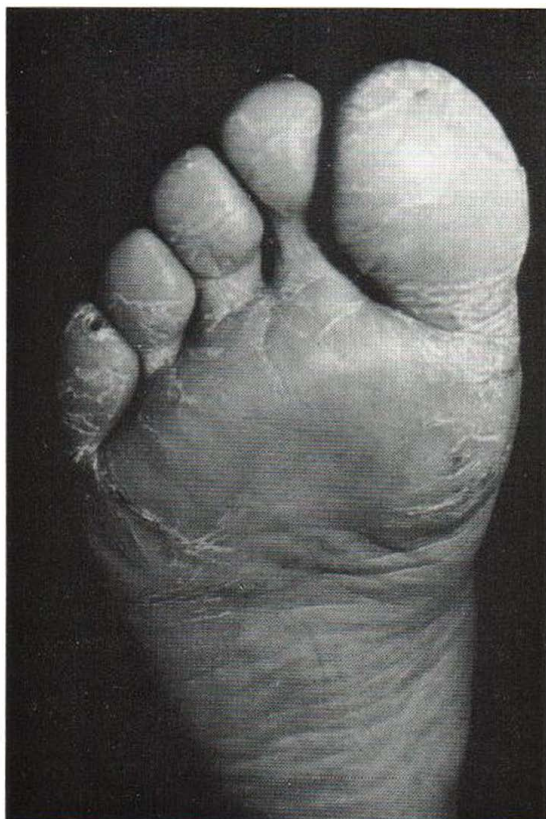


Fig. 1. Dry, cracked and fissured skin of toes and sole of a patient with recurrent juvenile eczema.

marked redness and edema, 3 patients showed marked redness only. All 10 "normal" controls showed marked redness and edema, while all 7 atopics showed a markedly decreased or absent erythematous reaction (a positive TT).

Table I. Results of Trafuril tests (TT) in 21 patients with recurrent juvenile eczema of hands and feet compared with results in 7 children with atopic dermatitis and 10 non-atopic children suffering from local skin diseases not involving hands and feet

Diagnosis	No. of patients	Results of Trafuril test		
		Positive	Doubtful	Negative
Recurrent juvenile eczema of hands and feet	21	0	2	19
Atopic dermatitis	7	7	0	0
Non-atopic controls	10	0	0	10

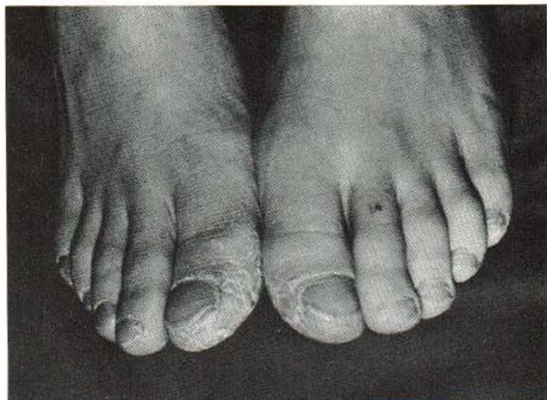


Fig. 2. Dry, scaly, eczematous skin of toes from a patient with recurrent juvenile eczema.

No patients were found to have fungi. All microscopic examinations and cultures were negative. Furthermore, all routine patch tests (1) were negative, while 2 patients with recurrent eczema of hands and feet were demonstrated to have reagins to certain grasses. One of these patients had a doubtful positive TT. All patients responded favourably to the topical treatment.

DISCUSSION

The TT confirms the abnormal skin reaction to vasodilatation in atopics (2). All 7 atopic controls showed positive TT. Only 3 of our 21 patients with recurrent eczema of hands and feet showed a doubtful positive TT. The majority of patients with atopic dermatitis have reagins to a wide variety of allergens (4). However, although 6 of 21 patients had a history of atopy in the family, only 2 showed positive scratch tests. The results of the present study therefore, in contrast to the data of Möller (3), do not indicate that atopy is an underlying disease in this juvenile eczema of hands and feet. Möller's demonstration of a local white dermographism on the legs in supine position may, however, represent a local abnormal vascular reaction, of importance for the disease.

Although 16 of 21 patients were referred to us for dermatophytosis, none had fungi. The fact that most of the patients were referred to us in the winter, together with a morphology of dry, cracked and fissured skin suggest a similarity to asteatotic eczema in the adult. In the more erythematous and macerated cases, inadequate hygienic standards and hyperhidrosis together with

trauma from tight and heavy shoes may favour the disease. Due to the still incomplete understanding of the etiology, we propose the descriptive term "recurrent juvenile eczema of hands and feet" for this entity.

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