

## LETTERS TO THE EDITOR

### Treatment of Prurigo Nodularis, Chronic Prurigo and Neurodermatitis Circumscripta with Topical Capsaicin

Sir,

Prurigo nodularis (PN), chronic prurigo (CP) and neurodermatitis circumscripta (NC) are itching conditions that may be very resistant to therapy. A good response has been reported of capsaicin in psoriasis (1), postherpetic neuralgia (2), notalgia paresthetica (3) and hemodialysis-related pruritus (4). Capsaicin is the pungent agent in red pepper, and applied locally it may produce burning and itching sensations as well as erythema (1, 2). It excites unmyelinated sensory neurons (C-type neurons) to release substance P and probably other neuropeptides (5, 6). Repeated application induces depletion of these neuropeptides, followed by desensitization of C-type neurons (5, 6). We report here the successful use of capsaicin in 7 patients with PN, CP and NC.

#### MATERIAL AND METHODS

We applied 0.025% capsaicin in Lanette wax cream (Dutch Pharmacopoeia) 5 times daily in 3 patients with PN, 2 with CP and 2 with NC. These patients were not responsive to strong topical and/or intralesional steroids. The patients were instructed not to apply the capsaicin cream on erosive sites. The number of lesions that completely healed was scored by one of the authors (R.T.). The lesions that remained were scored by the patients on degree of relief (1 = no relief, 2 = minimal relief, 3 = marked relief, 4 = itching resolved) and on degree of burning (1 = no burning, 2 = mild transient burning, 3 = moderate transient burning, 4 = marked or prolonged burning). The follow-up period varied from 3 weeks – 6 months (mean, 2.1 months).

#### RESULTS

At the start of the therapy the disease had been present for 2–25 years (mean, 7.3 years). In most patients the lesions were located on the extremities. The number of lesions per patient varied from 1–20 (mean, 6.7). In 2 patients with PN more than half of their prurigo nodules disappeared within 2 weeks – 2 months. For the remaining nodules the improvement score for itching in these 2 patients was 3. In 3 other patients (1 PN, 1 CP, 1 NC) the lesions did not disappear completely but were more flattened, and the improvement score was 3. In the remaining patients (1 CP, 1 NC) the improvement scores were 1 and 2. In 5 patients, initially the score for burning sensation was 3; after 1–2 weeks however, this score dropped to 1. Two patients experienced a long-lasting burning sensation, which was related to exposure to sunlight. Two patients did not experience burning at all; in one of them the improvement score was 3, in the other the score was 2.

#### DISCUSSION

Itch and pain sensation is mediated by the unmyelinated C-type neurons. Substance P is probably an important transmitter for these signals. Repeated application of capsaicin depletes substance P and induces desensitization of C-type neurons (5, 6). The clinical use of this characteristic of capsaicin has been demonstrated in skin conditions with pain (2) and itch (3, 4). It has been shown to be a safe treatment modality even on large skin areas (4). PN, CP and NC are skin diseases of which the main feature is intense pruritus. In PN and CP an increased amount of neurons has been observed (7). In an attempt to interfere with capsaicin in the localized – probably neuron-mediated – intractable pruritus in the 7 patients, the majority of them admitted that capsaicin, for the first time in several years, markedly diminished the itch. In 2 patients many lesions disappeared completely. In the first week, most patients experienced a mild to moderate burning sensation as a side effect that they took for granted.

Although we are aware of the limitations of this relatively small open study, we conclude that capsaicin may be a helpful tool in the treatment of PN, CP and NC.

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