notypic factors in a population of mixed racial background, including whites and non-whites. Naevus counts appear to be lowest in subjects with a dark constitutive skin colour and highest in those of Caucasian extraction. It is hypothesized that the propensity to develop moles is the most important denominator responsible for racial differences in melanoma risk, rather than the constitutive skin colour as such.

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Irritancy of Dithranol in Normally Pigmented and Depigmented Skin of Patients with Vitiligo

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In order to ascertain the extent to which the pigmentary system plays a protective role in dithranol-induced irritancy, a within-subject comparison was carried out between normally pigmented and depigmented skin of patients with vitiligo. In open patch tests, various concentrations of dithranol in a cream base were applied to the normally pigmented and depigmented skin of 6 patients with vitiligo. The responses were assessed 48 h after application. A mild to moderate inflammation occurred in the pigmented and depigmented skin and no statistically significant difference was shown between the two test areas. The present study does not support the hypothesis that the pigmentary system might be involved in dithranol-induced irritancy. ***Key words: Melanin; Psoriasis.***

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Dithranol is a classical therapy for psoriasis (1). Free radical formation by auto-oxidation is responsible for the irritancy potential of this antipsoriatic drug (2). Melanin has been shown to constitute a free radical trapping system (3). Therefore it is attractive to hypothesize that the pigmentary system is of relevance with respect to the sensitivity to dithranol irritancy.

In order to find out to what extent the pigmentary system may play a protective role in dithranol-induced irritancy, a within-subject comparison was carried out in patients with vitiligo, by measuring the irritancy to dithranol in depigmented and normally pigmented sites.

PATIENTS AND METHODS

Six patients with vitiligo (3 males and 3 females, aged between 19 and 59 years) participated in this investigation. All patients had had vitiligo on 5–15% of their body surface for at least 5 years and 3 of them reported isomorphic responsiveness (Koebner positive). Patients were questioned regarding their responses to sunlight and were categorized into four different skin types according to the Boston classification (4). Four patients had skin type III, the other 2 skin type IV. At least for 6 months the patients had not used any topical therapy, including light therapy. One patient had an autoimmune thrombocytopenia, 1 patient had autoimmune hypothyreoidy and was treated with levothyroxin, another patient

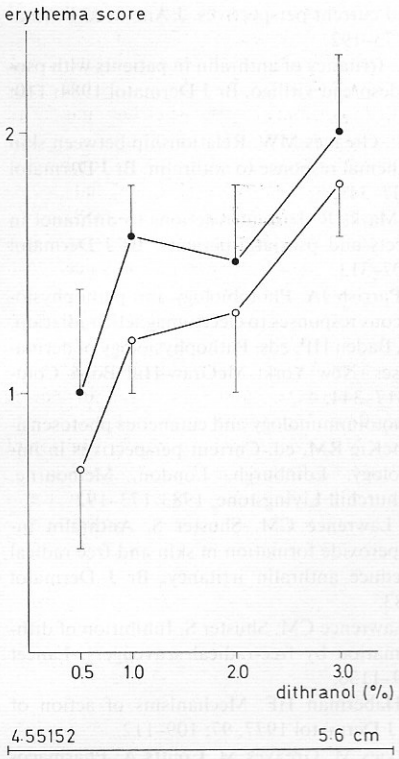

Fig. 1. Erythema scores (mean ± SE) after the application of dithranol at various concentrations. ●, responses in normally pigmented skin; ○, responses in depigmented skin.

had hyperthyreoidy and used propylthiouracil. Patients did not use any medication which might interfere with inflammation control.

Dithranol was manufactured in a cream base with the addition of salicylic acid 2% (Hermal Chemie, Hamburg, FRG). The following concentrations were tested in an open patch test (diameter 2 cm): 0.5%, 1.0%, 2%, 3%. In preliminary experiments on normal volunteers an application period of 6 h proved to yield an optimum dose–response relationship without over-response such as edema or blistering. Dithranol creams were applied on 4 test areas on the depigmented skin and on 4 test areas on the normally pigmented skin immediately adjacent to the vitiliginous skin. After application of dithranol the test sites were covered with gauze. After a period of 6 h the creams were removed with water and soap. As maximum irritancy by dithranol is seen between 2–3 days after application (5), after an application period of 48 h erythema was recorded on a 4-point scale.

0 = no erythema
1 = slight erythema
2 = moderate erythema
3 = severe erythema with a burning sensation

For statistical evaluation a Wilcoxon ranking test for paired data was performed. A difference at the level of 0.05 was declared to be significant.

RESULTS

All patients tolerated dithranol very well. Apart from erythema and the sensation of burning, no patient experienced other signs of inflammation such as edema or blistering. The scores for erythema are shown in Fig. 1. In none of the patients was the response in the depigmented skin more pronounced than in the normally pigmented skin. In 3 patients, normally pigmented skin proved to be more sensitive, at least at some test sites. However, no statistically significant difference could be shown between depigmented and normally pigmented skin. A 6-week follow-up did not reveal any dithranol-induced depigmentation of the normal skin or a pigmentation in the depigmented skin.

DISCUSSION

The present study does not show any tendency to an increased irritancy potential in the depigmented skin of patients with vitiligo, if a mild to moderate inflammation is induced. However, if a more pronounced inflammation with more serious subjective discomfort and blistering were induced by higher concentrations or increased application times of dithranol, it cannot be ruled out with certainty that a difference might be observed.

Some literature suggests a role of the pigmentary system in dithranol irritancy. Two patients have been reported with psoriasis and vitiligo, who experienced a pronounced inflammatory reaction selectively on vitiliginous skin during treatment with dithranol (6). However, in the case of pronounced irritancy the pigmented skin might mask the erythema relatively more than the depigmented skin. Patients with skin type I have been reported to be slightly more prone to dithranol irritancy, compared with patients with skin types II–IV (7, 8). However, this difference is of an order of magnitude far too low to predict dithranol sensitivity in an individual. Furthermore, it should be stressed that the pigmentary system is not the sole determinant of the skin type. The optical properties of the skin and inflammation control should be reconciled as well in this respect (9, 10). Therefore, the reported protective role of the pigmentary system with respect to dithranol irritancy remains unsubstantiated.

The present investigation is not compatible with a role of the pigmentary system to trap free radicals induced by dithranol, though from a theoretical point

of view, it should be so (11–13). An escape from this impasse might be direct interference of dithranol in the dermis. Indeed, such an involvement, resulting in the release of mediators of inflammation which result in inflammation, seems unlikely (14, 15). As melanin is localized exclusively in the epidermis, the pigmentary system might not be in a position to scavenge dithranol-induced free radicals at the site of action in the dermis.

In conclusion, the present study does not support the hypothesis that the pigmentary system is of relevance to dithranol-induced irritancy.

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Melanocytic Proliferation in Condylomata Acuminata

A Report of Two Cases and Investigation by In situ Hybridisation

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Two cases of melanocytic lesions occurring in condylomata acuminata are described. In situ hybridization with human papillomavirus (HPV) DNA probes specific for 6 b, 11, 16, 18 revealed positivity with HPV 6 and 11, in the non-dysplastic condylomata, and HPV 18 positivity in the case showing severe dysplasia. The HPV localization was confined to the superficial parakeratotic zones, remote from the melanocytic proliferation. The relationship between human papillomavirus and the melanocytic lesions is discussed. ***Key words: Melanoma; Human papillomavirus.***

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The incidence of clinically obvious genital warts (condylomata acuminata) has more than doubled in the past 10 years, and this has paralleled the increase in cases of cervical intraepithelial neoplasia (CIN) in women under 35 years old (1). Evidence from various sources indicates that the human papillomavirus