

"BREAK THROUGH PHENOMENON"
DURING TREATMENT OF RADIATION
DERMATITIS WITH FLUOCINOLONE
ACETONIDE

By

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In view of earlier controversial results of the treatment of radiation dermatitis with steroids, we investigated the effect of the new potent topical steroid—fluocinolone acetonide ('Synalar'). 26 patients, 24 women and 2 men, were included in the study, all of whom received X-ray treatment for malignant tumors, 20 had mammary carcinoma.

The radiation constants were HVT 0.8–1 mm Cu, duration of treatment 10–29 days, total dose 2400–3600 R, field size 50–225 cm². In each patient two X-ray treated fields were chosen for the comparison of the effect on the radiation dermatitis of fluocinolone acetonide ointment (fluocinolone acetonide 0.025 per cent, propylene glycol 5.0, hydrogenated lanoline 10.0, paraffinum ad 100.0) and of ointment base alone. The two fields in each patient were comparable with regard to the radiation reaction of the skin, although the supraclavicular and the parasternal possibly may give somewhat different reactions due to underlying bone tissue and anatomical topographical differences. At the same time as the X-ray treatment was begun, the application of the ointment to the treated areas was also started and continued for 3 weeks in 26 patients and for 6 weeks in 23 patients.

After 3 and 6 weeks treatment respectively the radiation dermatitis was registered according to a numerical scale. After 3 weeks the reaction was of a significantly lesser intensity in the fields treated with fluocinolone acetonide ointment than in

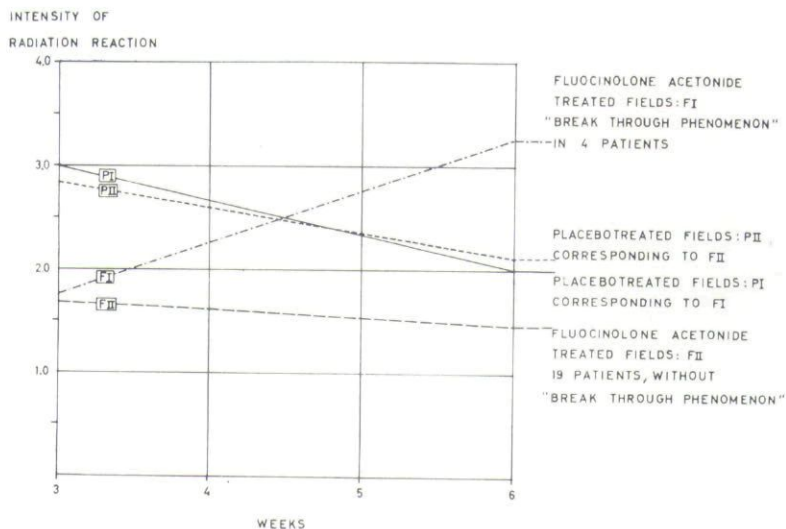


Fig. 1.

the fields treated with the ointment base alone. After 6 weeks there was no longer such a difference—partly because the radiation dermatitis subsided spontaneously.

During the period of observation 4 patients (Group I) showed a marked decrease in radiation reaction in the areas treated with fluocinolone acetonide ointment compared with those treated with ointment base. This decrease was as great as the decrease for the skin reaction in the other 19 patients (Group II) treated with fluocinolone acetonide. In Group I there appeared, after this initial good effect, a severe dermatitis during the fourth week in the areas treated with fluocinolone acetonide. This reaction was more pronounced than any reaction occurring in the corresponding areas treated with ointment base during the entire observation period. This "break through phenomenon" has been analyzed. With reference to the age, sex and total X-ray dose, size and localization of the treated fields, time of treatment and diagnoses of the malignant tumors, there were no apparent differences between Group I with "break through phenomenon" and Group II without this type of reaction.



Fig. 2.

The intensity of the skin reaction to radiation was graded according to the following scale: 0 = no skin reaction, 3 = dry dermatitis, 5 = wet dermatitis; 2 and 4 are intermediate reactions. The averages of the skin reaction at the third and sixth weeks were computed for Group I and Group II, both for the fluocinolone acetonide treated fields (F I, F II in Fig. 1) as well as for the ointment base treated fields (P I, P II in Fig. 1). The average numerical scale values for P I = 3.0 and for P II = 2.8 after 3 weeks and 2.1 respective 2.0 after 6 weeks, that is nearly identical values for the ointment base treated fields. For F I the value was 1.75 and for F II 1.68 after 3 weeks and 3.25 respective 1.47 after 6 weeks. After 3 weeks the reaction in the fluocinolone acetonide treated fields for two groups F I and F II was almost identical. The difference in radiation

reaction between F I and F II was statistically significant (Student's t-test, level of significance 0,05, two tailed test) depending on "the break through phenomenon".

Fig. 2 illustrates "break through phenomenon" in the supraclavicular field, which was treated with fluocinolone acetonide ointment. The parasternal field was treated with ointment base alone during the same time.

SUMMARY

During a double blind study of the effect of fluocinolone acetonide ointment on radiation dermatitis a severe "break through phenomenon" of the radiation skin reaction was observed in four out of 23 patients, who were X-ray treated for malignant tumors.

LITERATURE

Björnberg, Alf, Hellgren, Lars & Olsson, Stig: Treatment of Radiation Dermatitis with Fluocinolone Acetonide. To be published in Acta Radiologica.

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