THE LOCAL USE OF BENADRYL* OINTMENT

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A natural outgrowth of the use of antihistamine compounds in the treatment of allergic dermatoses is the local use of Benadryl (Betadimethyl aminoethyl benzhydryl ether hydrochloride). Friedlaender and Feinberg (1) studied ten ragweed sensitive patients with scratch tests. They showed that when a standard amount of Benadryl (50 mgm. per cc) is added to serial dilutions of ragweed extract or histamine, there was a definite decrease in the flare and to a lesser extent in the wheal in all ten cases. This was compared to the same dilutions of ragweed extracts or histamine used as controls (without the addition of Benadryl, 50 mgm. per cc). Their study indicates that the local application of Benadryl has some antihistamine effect.

EXPERIMENTAL RESULTS ON HISTAMINE WHEALS

The local effect of 2% Benadryl in a base containing cetyl alcohol, carbowax 1,000 monostearate, methyl p-hydroxybenzoate and water was studied in experimentally produced histamine wheals. A control wheal was produced on the flexor surface of the right or left forearm by the intradermal injection of 0.1 cc of 1/100,000 dilution of freshly prepared histamine phosphate. The diameter of the erythema and the wheal were both measured 10 and 15 minutes later. Two percent Benadryl ointment was rubbed into the flexor surface of each forearm for two minutes. At subsequent intervals of 5, 15, 30, 45 and 60 minutes the same amount of the same dilution of histamine phosphate was injected into different sites of the previously prepared forearms. Again at 10 and 15 minute intervals measurements of the erythema and wheal were made. The size of the erythema and wheal of the control wheal as well as the subsequent ones could then be compared.

This method was studied in seven patients, five of them were tested with 2% Benadryl ointment and two with the ointment base alone. The results were uniformly the same in all seven patients. There was no significant difference between the diameter (and intensity) of the erythema and wheal of the control as compared to the subsequent erythema and wheals produced at previously mentioned time intervals.

CLINICAL RESULTS

Twenty-two patients with a variety of dermatoses were treated with the local application of 2% Benadryl ointment from two to five times a day. No other local, oral or parenteral therapy was used while 2% Benadryl ointment was studied.

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Eight of the 22 patients in whom the Benadryl ointment had shown anti-pruritic effects subsequently used the ointment base alone. Included were two patients each of the eczematous dermatitis, contact dermatitis and pruritus ani groups, and one patient of the atopic dermatitis and localized neurodermatitis groups. In each patient the antipruritic effect obtained with the base alone was equal to that obtained with 2% Benadryl and the base.

**PATCH TESTS**

Eleven of the patients were patch tested to both the 2% Benadryl ointment and the ointment base alone. Ten patients had negative reactions to both. One patient had a positive patch test to both, thus indicating epidermal hypersensitivity to some ingredient in the base. The individual substances of the base were not available separately for further study. This patient used 2% Benadryl ointment on her left hand and a different anti-pruritic ointment on the right. In forty-eight hours she had an exacerbation of the dermatitis of her left hand while her right hand was improved.

**DISCUSSION**

The histamine wheal studies indicate that the Benadryl, in the preparation used, was not absorbed in sufficient quantities to produce a clinical effect following a local inunction. There was no manifest decrease in the size (or intensity) of the erythema or the wheal at any time within sixty minutes after its application. Similar results were obtained in the two patients tested with the ointment base alone.

The degree of relief of pruritus is difficult to evaluate clinically. The “itching threshold” varies in different persons. In this study an attempt was made to approximate the relief of pruritus from subjective as well as objective evaluation. Accordingly each patient was classified as having none, slight, moderate or excellent relief of pruritus. Table I indicates that six patients had moderate and two excellent relief of pruritus. Four of these eight patients, however, had the same degree of relief from the ointment base alone. These results give some indication that the Benadryl in the preparation studied was probably
not absorbed in sufficient quantities to produce a clinical effect following its local application, or that it has no significant antipruritic effect.

The two patients who had excellent relief of their pruritus both had acute contact dermatitis. This type of dermatosis is known to respond to many types of local therapy providing the causative agent is eliminated from the patient’s environment. It is therefore difficult to conclude that the antipruritic relief obtained in these two patients was a specific result of the application of the 2% Benadryl ointment.

The possibility must be considered that an increase in the concentration of Benadryl and the use of a base facilitating greater penetration might perhaps result in sufficient absorption of Benadryl to produce a local antihistamine effect.

CONCLUSIONS

1. Evidence is presented to demonstrate that local application of 2% Benadryl ointment is not followed by sufficient absorption (if any) to decrease the diameter of the erythema and the size of experimentally produced histamine wheals.

2. A total of twenty-two patients with various pruritic dermatoses were treated with 2% Benadryl ointment. Moderate relief of itching was obtained in six and excellent relief in two. Of these eight cases, however, four obtained the same antipruritic effect with the ointment base alone.

REFERENCE