

An answer to some questions raised by skin reactions observed during squaric acid dibutylester contact sensitization

Dear Sir

Recently, Stinco & Patrone (1) reported unusual skin reactions in a patient who had received topical application of squaric acid dibutylester (SADBE) for the treatment of alopecia areata. The authors raised several questions which I should like to answer.

Stinco & Patrone (1) started treatment by applying a "patch test with 2% SADBE solution in acetone" on the right forearm. 2 days later, they removed the "patch test" and did not see "any lesions indicating sensitization". They raised the question: "It remains to be explained why no clinical manifestations were observed after a 1st contact, although the allergen had penetrated". A simple answer is that the patient could not show a response at this point in time. The immune system may need as long as 10 days to develop a clone of specifically sensitized T cells directed against the contact allergen.

Because the authors were unfortunately unaware of the mechanisms involved in contact allergy (2), they still believed that the patient was not sensitized, i.e., unresponsive, when she presented 2 weeks later. For this reason, they applied for the 2nd time a dose of 2% SADBE in acetone to the left forearm, and this time the patient showed a rather conspicuous response. The authors asked themselves "why eczematous lesions took longer to appear following the 1st sensitization when compared to the 2nd sensitization, and why with such acuity". The answer is that the patient could not show any response 2 days after the 1st application because her organism had to follow the immunological rules of delayed-type hypersensitivity. Per contra, the marked "acuity" after the 2nd "patch test" is explained by the fact that this application was by no means a "2nd sensitization" and that the

dosage of 2% SADBE was far too high to induce a reasonably mild elicitation phase of contact allergy.

On the other hand, or, to say it more explicitly, on the other arm, the violent simultaneous response at the site of the 1st application can best be explained as a flare-up reaction elicited by the 2nd application.

Such embarrassing effects of topical immunotherapy with a potent contact allergen can be avoided when the sensitization is performed on the scalp and not elsewhere on the body (3), and when the treating physician has a basic knowledge of the immunological mechanisms inherent in contact allergy (2). In particular, one should be aware of the fact that *sensitization* needs a high dose, whereas *elicitation* needs a relatively low concentration of the contact allergen (4).

Yours sincerely

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References

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