

Patch testing versus history in poison ivy/oak dermatitis

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This study quantifies the relationship between a history of poison ivy/oak contact dermatitis and the result of patch testing to urushiol.

Subjects and Methods

12 healthy volunteers (6 female and 6 male, mean age 45.8 ± 3.8 , age 41 to 53 years), selected by a screening questionnaire, were studied after providing informed consent. The study had been approved by the University of California San Francisco Human Research Committee. The subjects had a history of naturally-occurring allergic contact dermatitis from poison ivy or poison oak. None had an immunosuppressive disease, took immunosuppressive medication, or applied a topical corticosteroid on the test sites.

Urushiol (plant oleoresin), provided by Holister-Steir (Miles Inc., Spokane, WA), was a combined extract, 50/50 of poison ivy and poison oak. The poison ivy-poison oak urushiol was diluted 50/50 by volume with 95% ethanol before patch testing. 10 μ l of urushiol was

applied to an Al-test patch (IMECO AB, Södertälje, Sweden), allowed to dry for 5 to 10 min, secured to the skin of the upper back with Scanpor tape (Norgesplaster, Vennesla, Norway) for 2 h, and then washed off with liquid detergent and water. The subjects returned for clinical readings at days 2 and 5. Each test was duplicated to diminish variations between test sites. The clinical scale was adapted from Marks (1).

Results

Urushiol sensitivity was found in 16.7% and 41.7%, respectively, at D 2 and D 5 (Table 1).

Discussion

Only 5 of 12 persons with a past history of poison ivy/oak contact dermatitis showed a positive patch test to urushiol. The low positive reaction rate may be because the 2 h exposure was too short (1, 2); or because tolerance had developed; or because poison ivy/oak sensitivity cannot reliably be predicted from the history, as meticulously documented by Kieffer for nickel sensitivity (3). Epstein (4, 5) has documented the phenomena with rhus.

Table 1. Patch test reactions to urushiol

Subject no.	D 2	D 5
1	3.0	5.0
2	0	0
3	5.0	5.5
4	0	0
5	0	0
6	0	0
7	0.5	2.5
8	0	0
9	0	0
10	0	0
11	0.5	1.0
12	0.5	1.5
average	0.79	1.29

At D 2, 10 of 12 persons, and at D 5, 7 of 12 persons, with a history of poison ivy/oak contact dermatitis, had negative patch test reactions to urushiol.

References

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