

Frequency of textile dye and resin sensitization in patients with contact dermatitis in Israel

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Hatch & Maibach (1) have stressed the need for further studies of the frequency of contact sensitization to textile dye and resins.

Materials and Methods

A total of 286 consecutive patients (190 females and 96 males) referred to two contact dermatitis clinics in Israel over a period of 1 year were patch tested with the TRUE Test standard series and a textile colour and finish series (TCFS) from Chem-

otechnique Diagnostics (Malmö, Sweden). The allergens were placed on unaffected skin of the upper back, removed at 2 days and read at day (D) 2 and 3 according to standard patch test definitions (2).

Results

Allergic reactions to dyes or formaldehyde resins were found in 11.2% of patients (Table 1). Irritant reactions were observed in 2.8% of cases. The frequencies of positive patch test reactions according to sex, age and atopy (atopic dermatitis, asthma, seasonal rhinitis) are shown in Table 2.

Patch tests revealed positive reactions to textile dye allergens in 5.2% of the patients, to formaldehyde and textile finish resins in 4.2% of the patients and to allergens in both groups in 1.7% of the patients.

The highest frequency of positive patch tests was found for Disperse Blue 124, Disperse Blue 106 and ethylene urea melamine formaldehyde. Of the patients positive to textile finish resins, 35% were also positive to formaldehyde in the standard series. Only 10% of patients positive to textile dyes were also positive to PPD.

Current relevance of positive reactions was found in 68.7% of patients,

past relevance in a further 9.4%, and no relevance in 21.8%.

Discussion

Hatch & Maibach (1) have reviewed studies (3–7) showing frequencies of disperse dye sensitization ranging from 1.4% to 5.8% of patch-tested patients. In patients suspected of having textile dye dermatitis, much higher frequencies are found (8). The frequency of textile-formaldehyde resin dermatitis in the US has been found to be 1.2% (9) and 2.3% (10) in patch-tested patients.

Our figure of 5.2% for disperse dyes is similar to that of Seidenari (3). Our figure for textile resins of 4.2% is higher than those previously reported (9, 10). Female patients had a higher frequency of allergic reactions to textile dyes and resins than male patients.

Our results confirm previous studies demonstrating Disperse Blue 124, Disperse Blue 106, and Disperse Blue 85 to be allergens of increasing frequency (11, 12). The most frequent positive textile resins were ethylene urea melamine formaldehyde, urea formaldehyde and melamine formaldehyde. PPD is not a good screen agent for textile dye sensitivity (6, 8, 11, 12), though formaldehyde is a better marker of allergy to textile resins.

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Table 1. Frequency of each allergen in the Textile Colors and Finish Series (number of patients tested = 286)

Allergens	Number of positive patients
1. Disperse Yellow 3	0
2. Disperse Orange 3	0
3. Disperse Red 1	0
4. Disperse Red 17	1
5. Disperse Blue 153	0
6. Disperse Blue 3	0
7. Disperse Blue 35	2
8. dimethylol dihydroxyethylene urea	2
9. dimethylol propylene urea	6
10. tetramethylol acetylene diurea	6
11. Disperse Blue 106	12
12. ethylene urea melamine formaldehyde	9
13. urea formaldehyde	7
14. melamine formaldehyde	7
15. Disperse Blue 85	5
16. Disperse Orange 1	1
17. Disperse Orange 13	0
18. Disperse Brown 1	0
19. Disperse Yellow 9	1
20. Disperse Blue 124	21
21. Basic Red 46	0

Table 2. Frequency of positive patch tests from textile dyes and resins

	Female	Male
Sex	78.1%	21.9%
Mean age (years)	48.1	47
Atopy	34.4%	3.1%

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