

LETTERS TO THE EDITOR

Patch testing to aeroallergens, especially house dust mite, is often positive in atopics with eczema of the face and hands

Editor

Patients with atopic dermatitis often have a positive patch test to house dust mite (HDM),¹ and those with exposed-site eczema can have positive patch tests to other aeroallergens.² However, the significance is unclear. To clarify the role of aeroallergens and examine correlations between immediate and delayed-type allergy, we undertook a review over 12 months of patch testing and specific IgE tests to aeroallergens in patients with atopic dermatitis of exposed sites.

Forty-four patients with atopic dermatitis diagnosed using the UK refined diagnostic criteria had dermatitis affecting exposed sites (Table 1). Several patients also had inhalant-induced asthma or rhinitis. There were 29 women and 15 men: all were aged 18 years or older. Patients were patch tested with an atopic allergen series in addition to the standard British Contact Dermatitis Society series and any other relevant series of allergens.

The atopic patch test series consisting of HDM (20%) in pet (50% *Dermatophagoides farinae* and 50% *Dermatophagoides pteronissinus*; Chemotechnique, Vellinge, Sweden), with mixed grasses, birch, *D. farinae*, *D. pteronissinus*, mugwort, cat, dog and plantain (all supplied by Stallerpatch, Stallergenes SA, Cedex Fresnes, France). Almost all patients had allergen-specific IgE tests to aeroallergens. Relevance was decided by clinical assessment of the presentation and signs. Follow-up data are not available.

Thirty-four (77%) of the patients exhibited at least a day 4 allergic positive to HDM, regarded as of potential relevance in 28 patients and of unknown relevance in 6 patients. Thirty-two HDM-positive patients were positive to *D. farinae*, 5 to *D. pteronissinus* and 2 to both. Twenty-nine patients had grade 2 or higher allergen-specific IgE to HDM, 10 had grade 0 and 1 was not tested. Twenty-four (71%) of those exhibiting a day 4 positive reaction to HDM also exhibited grade 2 or higher allergen-specific IgE to HDM. Fifteen (47%) reported respiratory symptoms or deterioration of eczema after dust exposure.

Irritant patch test reactions to aeroallergens were noted in seven patients on day 2, but these usually resolved by day 4. Reactions to other aeroallergens were infrequent: 1 reacted to cat, 1 to dog (both thought relevant), and 1 to birch (unknown relevance). Overall, 34 (77%) atopics with facial or hand dermatitis had

Table 1 Results of atopy patch test and allergen-specific IgE test to aeroallergens

	Atopic patients (n = 44)
Gender	15 males 29 females
Duration of dermatitis	Median: 1–3 years Range: 0–3 months to > 3 years
Positive history of respiratory or skin reaction to aeroallergens	15 – dust 11 – cat 7 – dog 1 – pollen
Range of total serum IgE (KUA/L-normal < 81)	11–6012 (mean = 1263; median = 241)
Distribution of the dermatitis	35 – face 7 – hands 1 – forearm and lower limbs 1 – axillae
Patch test results to HDM allergens	34 (77%) at least D4+ HDM CR 28 (82% of D4+ HDM) UR 6 (18% of D4+ HDM) IR 7 (16%) 32 reacted to <i>D. farinae</i> 5 reacted to <i>D. pteronissinus</i> 2 reacted to both
≥ Grade 2 allergen-specific IgE test to HDM (43/44 were tested)	29 24 (71%) in patients with D4+ HDM
Allergic + patch test results to other aeroallergens	1-cat 1-dog 1-birch

CR, current relevance; UR, unknown relevance; +, day 4 positive.

allergic positive patch tests to 20% HDM (Chemotechnique). Twenty-four (71%) with a positive patch test to HDM also demonstrated grade 2 or higher allergen-specific IgE.

Skin biopsies of positive patch tests of patients who have both type I and type IV hypersensitivity to HDM showed increased numbers of monocytes, basophils (probably in response to basophil chemotactic factors produced by T cells) and eosinophils.³ This differed from contact dermatitis, probably related to chemotactic factors released from mast cells or basophils. A higher incidence of immediate and delayed allergy to HDM is well known in atopic dermatitis.⁴ Our finding that 22 (63%) of 35 atopics

were day 4 positive to HDM supports the contention that there may be a role for HDM in atopic dermatitis.⁴

The potential interplay between types I and IV allergy is underlined by our findings that 71% of HDM patch test positive atopics also had significant allergen-specific IgE antibodies and a third reported asthma/rhinitis or worsening eczema after dust exposure. HDM avoidance is difficult to evaluate and authors that have tried have shown contradictory results.^{5,6} Further studies are needed to examine the possible roles of aeroallergens in disease pathogenesis.

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DOI: 10.1111/j.1468-3083.2009.03189.x