

the children in our series were below the age of 24 months.

The second important finding of our study is that all the patients allergic to sesame seed had atopic dermatitis. Infants and children with atopic dermatitis are known to have a higher prevalence of food allergy than normal children, with a reported rate of 37% in one study (5). Removal of food allergens such as egg, milk, soybean, and peanuts from the patients' diet can lead to a significant clinical improvement (6).

Our findings indicate that allergy to sesame seed is increasing in infants and small children; therefore, sesame seed should be added to the list of allergenic foods in the first year of life. Elimination of sesame seed from the diet should be considered in infants with atopic dermatitis or atopic family history.

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The C-C chemokines, RANTES and eotaxin, in atopic dermatitis

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Key words: atopic dermatitis; eosinophils; eotaxin; RANTES; scales.

● ONE of the characteristics of atopic dermatitis (AD) skin lesions is an eosinophil infiltrate and extensive deposition of eosinophil granule proteins in the dermis. RANTES (regulated on activation, normal T expressed and secreted) and eotaxin are potent and well-characterized chemokines for eosinophils (1, 2). In the present study, we determined RANTES and eotaxin contents in the scales obtained from lesional skin with specific ELISA systems (R&D Systems).

Scales were collected from skin lesions of 15 patients with AD, and six with psoriasis vulgaris. Scales were also collected from four AD patients, who had no obvious lesions in their sole skin, and six healthy donors by scraping their sole skin.

RANTES was detected in the lesional scales from all patients with AD studied (12.8 ± 17.8 pg/mg scale), and from five of six patients with psoriasis (4.76 ± 5.46 pg/mg scale) (Fig. 1a). The concentrations of

RANTES were under the detection limit (below 1 pg/mg scale) in the scale extracts from the noninflammatory skin. The RANTES levels in the scales of AD were significantly higher than those in psoriasis ($P > 0.05$). Eotaxin was detected in the lesional scales of 13 of 14 patients with AD (0.30 ± 0.32 pg/mg scale), whereas the concentrations of eotaxin were under the detection limit (below 0.1 pg/mg scale) in the scale extracts from the patients with psoriasis as well as noninflammatory skin (Fig. 1b). There was significant correlation between eotaxin content in the scale and blood eosinophil count in the AD patients. However, no significant correlation was seen between RANTES content in the scales and blood eosinophil count.

Increased contents of the C-C chemokines, RANTES and eotaxin, were demonstrated in the lesional scales of AD, suggesting the involvement of these chemokines in the pathogenesis of AD. RANTES is known to be produced from epidermal keratinocytes by stimulation with the Th1 cytokine IFN- γ , together with proinflammatory cytokines such as TNF- α , IL-1 α , and IL-1 β (3, 4), suggesting that RANTES in lesional scales is derived from keratinocytes. Eotaxin detected in the lesional scales might be also derived from keratinocytes, because epithelial cells produce eotaxin after stimulation with IL-1 β and TNF- α . On the other hand, the eotaxin in the scales might be derived from dermal fibroblasts, since dermal fibroblasts produce large amounts of eotaxin after stimulation with IL-4 together with TNF- α (2).

Although a relationship between the eotaxin content in the lesional scales and the blood eosinophil count was detected in the patients with AD, it is unlikely that the eotaxin produced in the lesions directly regulates the blood eosinophilia. Production of eotaxin is upregulated by a Th2 cytokine, IL-4 (2), and downregulated by a Th1

Increased levels were found in lesional scales.

cytokine, IFN- γ , suggesting that production of eotaxin is associated with a Th2-dominant state. Thus, both production of eotaxin in the lesions and blood eosinophilia may be coregulated by Th2-dominant states underlying the pathogenesis of AD. In contrast, RANTES production is independent of the Th2-dominant state. Recently, a functional mutation in the promoter of RANTES has been reported to be associated with AD (5). Although we have not analyzed the promoter in our patients, the varied levels of RANTES in the scales may derive from this polymorphism.

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A new arthropod panallergen?

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Key words: arthropods; cross-reactivity; glutathione S-transferase.

• The existence of cross-reactivity among arthropod groups, such as mites, mosquitoes, and even crustaceans, is well established, and tropomyosin, a protein of about 37 kDa, may be the panallergen

A 25-kDa allergen accounts for much cross-reactivity.

responsible for this cross-reactivity (1–3). We detected a 25-kDa protein in a patient's serum which showed elevated levels of

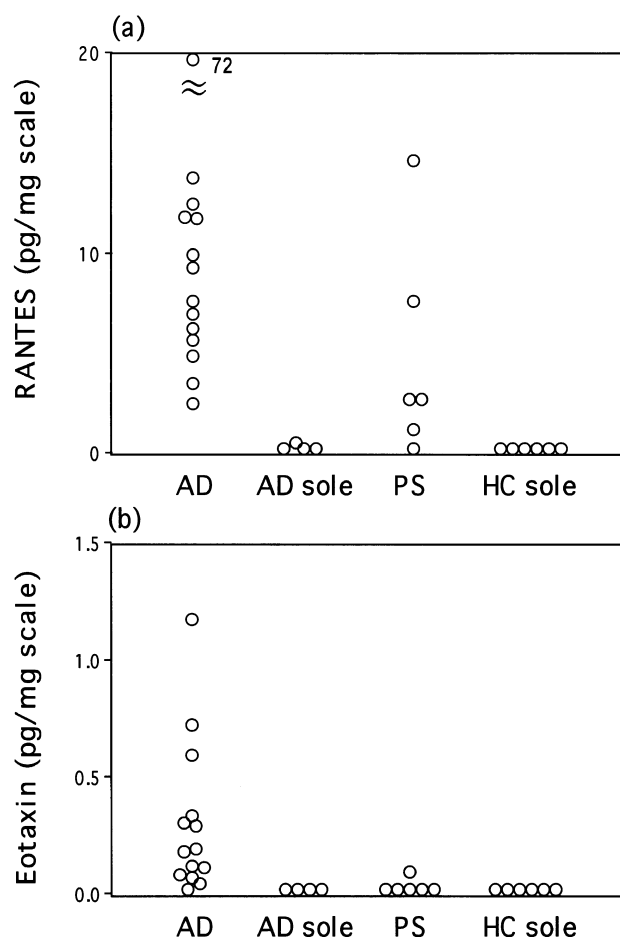


Figure 1. Content of C-C chemokines in scales and correlation with blood eosinophil counts. Scales were obtained from atopic dermatitis lesional skin (AD), atopic dermatitis nonlesional sole skin (AD sole), psoriatic lesional skin (PS), and healthy individual sole skin (HC sole). a) eotaxin content; b) RANTES content.