IgE on Skin Dendritic Cells: A Clue for **Work-Related** Atopic Dermatitis

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We have read the paper of Bruynzeel-Koomen [2] dealing with the experimental evidence for IgE on the surface of Langerhans cells in atopic dermatitis. In our laboratory we have been studying this topic for a long time and in March we submitted an abstract for the 8th International Symposium on Contact Dermatitis held in Cambridge [3], the gist of which is that we have recently seen 5 bakers with the clinical characteristics of atopic dermatitis on the skin, where they come into contact with flour. They also had higher IgE levels and RAST positivity for cereals. We compared this group with 10 control subjects with atopic eczema but without reactions to cereals or grasses. The subjects undergoing the investigation were patch-tested with 3 cereals and as a control with allergens like mite and *Al-ternaria*, both at a concentration of 100 times the concentrations used for the ordinary prick test. Only 2 of the 5 patients with work-related dermatitis had a positive reaction for cereals. None of the control reacted to these substances. To better understand the mechanism of skin sensitization, usage tests were run by having the patient apply wheat flour twice daily for no longer than 2 weeks. Positive results were detected for all 5 bakers but we were not able to determine the absolute separation of allergic from irritant dermatitis. Two of the subjects had punch biopsies for immuno-histochemical investigation of tissues with APAAP and the monoclonal antibodies anti DR, RFBD7, and IgE. The immunohistochemical study showed many cells to be positive for the anti-IgE antibody. In the skin of the control atopic subjects there were a few perivascular IgE-positive cells, probably mastocytes. This study showed that there may indeed be a relationship between some allergens and atopic eczema in patients exposed to them in the course of work. We are thus able to confirm the data of Bruynzeel-Koomen [2] and Bruynzeel-Koomen et al. [1]. We feel also that the mechanism might be involved not only for inhalant allergens but for some allergens introduced by mouth and some topical allergens. In our opinion this phenomenon is widespread and important and it may provide clues for understanding some specific forms of eczema. This may be a new type of immunoreaction in atopies.

Letters to the Editor

P.D. Pigatto, E. Berti,

Brunyzeel-Koomen, C; van Wichen, D.F.; Toonstra, J.; Berrens, L.; Brunyzeel, P.L.B.: The presence of IgE molecules on epidermal Langerhans cells in patients with atopic dermatitis. *Archs dermatol. Res.* 278: 199-205 (1986).

Brunyzeel, D.P.: IgE on Langerhans cells. New insights in the pathogenesis of atopic dermatitis. *Dermatologica* 172: 181-184 (1986).

Pigatto, P.D.; Berti, E.; Altomare, G.F.; Polenghi, M.M.: Work-related atopic dermatitis: an immunohistochemical study. 8th Int. Symp. Contact Derm., Cambridge 1986.

In Reply

I have read with interest the letter from Pigatto et al. Although the authors state that they provide supporting evidence for my hypothesis some points in that letter need further explanation.

First, it is not clear on which cell types IgE is present in their study. Was there an epidermal anti-IgE staining? Was there any difference between the quantity of IgE present in 'allergic' and 'irritant' patch test reactions? What happened to the patch tests with mite and *Alternaria* in the bakers with atopic dermatitis and in the control patients with atopic dermatitis? If these points are clarified this only may be even more interesting.

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Reply

Together with many other groups we have also observed positive dendritic cells in the epidermis of patients with atopic dermatitis, thus confirming the observations of Bruynzeel-Koomen.

However, the number of intraepidermal IgE-positive cells was usually much lower than the number of dermal IgE-positive cells. That sensitivity to inhalant allergens in contact with the skin, as suggested by Pigatto et al., will increase the epidermal IgE-positive cells, should indeed be studied.

The Editor