



Eosinophil hypersegmentation is a possible marker to monitor the disease activity of atopic dermatitis

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Background: In the present study, we tried to clarify whether nuclear hypersegmentation of peripheral blood eosinophils is correlated with peripheral eosinophil counts and/or the activity of atopic dermatitis (AD) in 79 patients.

Methods: We also compared the grades of skin scores, peripheral eosinophil counts, the rate of hypersegmentation of eosinophils and serum eosinophil cationic protein (ECP) concentrations in eight patients before and after treatment.

Results: There was a positive correlation between the skin scores of AD and peripheral eosinophil counts ($P < 0.01$), between the skin scores of AD and the number of nuclear lobes of eosinophils ($P < 0.01$) and between eosinophil counts and the number of nuclear lobes of eosinophils when the number of nuclear lobes of eosinophils was fewer than three ($P < 0.01$). A positive correlation was observed between serum ECP concentrations and eosinophil counts and/or skin scores of AD ($P < 0.001$). A negative correlation was observed between serum ECP concentrations and the number of nuclear lobes fewer than two ($P < 0.05$). During therapy, peripheral eosinophil counts and the degree of hypersegmented eosinophils decreased significantly, and this was associated with recovery of skin conditions, but not with serum ECP concentrations.

Conclusions: These results suggest that eosinophil hypersegmentation may reflect activated eosinophils and also that the observation of nuclear hypersegmentation in peripheral blood eosinophils is useful to recognize the disease activity of AD.

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