Letter to the Editor

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Reduced Level of Soluble ICAM-1 in the Serum of Patients with Atopic Dermatitis

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AD

Dear Sir,

Allergic inflammatory reactions have recently been considered to play a central role in the pathogenesis of atopic dermatitis (AD) as well as bronchial asthma. In addition, adhesion molecules [1], especially intercellular adhesion molecule 1 (ICAM-1), have recently been suggested to play an important role in the inflammatory process in allergic diseases [2]. Evaluation of a soluble form of ICAM-1 (sICAM-1) might be useful in the investigation and monitoring of various inflammatory and immune disorders [2], since the sICAM-1 level in the serum, as well as the sputum, of asthmatic patients was elevated in comparison with that in the control in our recent study [3]. Thus, we examined the level of sICAM-1 in the serum of patients with AD in relation to the severity of AD.

Therefore, the levels of sICAM-1 in the serum of AD patients were examined by means of sandwich enzyme-linked immuno-sorbent assay (ELISA) [4]. In brief, and ELISA kit (Bender MedSystems, Vienna, Austria) employing two antibodies to distinguish different epitopes of ICAM-1 molecules was used for the present assay.

The level of sICAM-1 in the serum of the patients with AD was decreased as compared with that in the normal control individuals: 270.2 ± 62.1 ng/ml (mean $\pm$ SE; $n = 25$) and 229.8 ± 55.4 ng/ml ($n = 25$), respectively ($p < 0.05$, fig. 1). Moreover, the level of sICAM-1 in the serum of the patients with severe AD was much lower than that in those with non-severe AD: 198.5 ± 52.4 ng/ml ($n = 10$) and 254.2 ± 46.2 ng/ml ($n = 15$), respectively ($p < 0.01$). In contrast to our recent report of elevated levels of sICAM-1 in patients with asthma, the level of sICAM-1 in the serum of patients with AD was reduced.

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Fig. 1. The level of sICAM-1 in the serum of patients with AD and control subjects. The level of sICAM-1 in the serum was measured by a sandwich ELISA employing two antibodies to distinguish different epitopes of ICAM-1 molecules. The levels of sICAM-1 in the serum of AD patients were decreased compared with those in normal individuals: 270 ± 62.1 ng/ml (mean $\pm$ SE; $n = 25$) and 229.8 ± 55.4 ng/ml ($n \approx 25$), respectively ($p < 0.05$).

Moreover, in severe cases, the amount of sICAM-1 was apparently much more reduced, compared with that in the mild cases. The reason of the reduced sICAM-1 level in the serum of patients with AD, against the raised sICAM-1 level in asthma, is not clear. These findings might be affected by the difference in target organ, although this is only of several possible explanations. Since various cytokines might be involved in the synthesis and shedding of ICAM-1, these findings may possibly suggest that the cytokines or chemical mediators of various cells in the epidermis such as keratinocytes [5] which are different from those in bronchial asthma are involved in the pathogenesis of AD. The precise mechanism of the reduction in sICAM-1 level in AD will be further examined.

Control

References

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