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SCIENTIFIC LETTER

Serum Level of Interleukin-33 in Infantile Atopic Dermatitis

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To the Editor: It is paramount to consider the pathophysiology of infantile atopic dermatitis (AD), which heralds the atopic march, to manage subsequent allergic diseases. Cytokines such as IL-33 are involved in inducing Th2/Th1 imbalance [1]. The serum IL-33 level increases in adult patients with AD [2]. However, it remains unknown whether the serum IL-33 level increases in infantile AD specifically.

The study involved 10 infants with AD diagnosed based on the guidelines of the American Academy of Dermatology [3]. Laboratory investigations covered peripheral eosinophil count, thymus and activation-regulated chemokine (TARC), non-specific IgE, house-dust mite (HDM)-specific IgE antibody, and egg white (EW) -specific antibody levels. The serum IL-33 level was determined using an enzyme-linked immunosorbent assay (IL-33; R&D Systems, Minneapolis, MN, US).

The median age at the time of diagnosis was 4 (range, 1–9) mo. The median peripheral eosinophil count was 493/μL (0–6300/μL), median TARC was 5299 (2455–18170) pg/mL, and median total non-specific IgE was 24.4 (1.5–8675) IU/mL. HDM and EW sensitizations were observed in one and seven patients, respectively. The serum IL-33 level (1.32–2.49 pg/mL) was not elevated in any patient.

Here, the serum IL-33 level was not elevated in any patient. However, the TARC level was elevated in all patients. Accordingly, we considered that the serum IL-33 level may not be elevated in early-onset infantile AD. IL-33 may only have substantial local skin effects in early-onset infantile AD. Barrier dysfunction and necrosis of epidermal cells due to aggressive excoriation or recurrent scratching over a long duration may be required to increase the serum IL-33 level. Tamagawa-Mineoka et al. reported higher levels of IL-33 in patients with AD who exhibit numerous excoriations [2]. Infants cannot scratch more strongly than school-age children and adults. Furthermore, the pathophysiology of infantile AD may completely differ from that of adult AD.

Declarations

Conflict of Interest None.

References

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