Vitamin D Level in Children Is Correlated With Severity of Atopic Dermatitis but Only in Patients With Allergic Sensitizations


PURPOSE OF THE STUDY. To determine the effect of vitamin D on atopic dermatitis (AD) severity in children with and without allergic sensitization.

STUDY POPULATION. Children with AD, followed in the pediatric allergy department of a Turkish tertiary care hospital, were enrolled in this study. Exclusion criteria were use of topical or systematic steroid treatment in the past month and using vitamin supplementation in the past 6 months.

METHODS. Subjects were designated as having mild, moderate, or severe AD based on SCORing Atopic Dermatitis index. Skin prick testing and specific immunoglobulin E testing to foods and aeroallergens allergens were used to determine allergic sensitization. Peripheral eosinophil counts, 25-hydroxy vitamin D levels, and total immunoglobulin E were measured. Patients were grouped according to allergic sensitization.

RESULTS. Seventy-three pediatric AD patients, median age 33 months, were enrolled in the study; 33 of 73 were found to have allergic sensitization. Vitamin D levels of participants with moderate and severe AD were significantly lower than those with mild disease ($P = .01$). In the sensitized group, vitamin D levels of participants with moderate and severe disease were also significantly lower than those of participants with mild severity ($P = .01$). In those not sensitized, vitamin D levels did not differ among those with mild, moderate, and severe AD. There was a negative correlation between SCORing Atopic Dermatitis score and serum vitamin D level in those with allergic sensitization ($P = .047$, $r = –0.349$). There was no correlation in the group without sensitization. Vitamin D was not correlated with eosinophil count or total immunoglobulin E in either AD group.

CONCLUSIONS. In participants with AD and allergic sensitization, those with lower vitamin D levels had more severe AD.

REVIEWER COMMENTS. This study helps set the groundwork for future studies investigating the efficacy of vitamin D supplementation in allergic individuals with moderate to severe AD.
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