January 2007 to May 2008. Each cohort had 49 infants; 35% of the study population and 47% of the control population were female. About 41% were exclusively breast-fed in each group; the remainder was breast- and formula-fed.

METHODS. The authors compared the chemokine/cytokine profiles in breast milk delivered to infants who developed AD and those who did not. Mothers completed questionnaires regarding their personal atopic histories and feeding methods throughout the study period until the infant was 6 months of age. History of AD was defined as itchy eczema at 6 months of age and having lasted for at least 2 months. Various chemokines and cytokines were measured from the maternal colostrum (collected within 4–5 days after birth) and mature milk (collected 1 month postpartum). In addition, maternal serum total immunoglobulin E (IgE) as well as specific IgE to house dust mite and Japanese cedar pollen were measured.

RESULTS. There were significant differences between the study and control populations in the concentrations of interleukin (IL)-1β and IL-12p40 in the colostrum. There were significantly higher levels of IL-4, eotaxin, granulocyte colony–stimulating factor, granulocyte macrophage colony–stimulating factor, interferon-α2, and MIP-1α in the mature milk of the study group. Maternal atopic history and IgE levels were not related to cytokine/chemokine concentrations in the breast milk. Logistic regression analyses indicated that high levels of eotaxin in the mature milk were a risk factor for developing AD at 6 months of age.

CONCLUSIONS. The results suggest that several mature breast milk pro-inflammatory chemokines/cytokines, including those more characteristic of allergic inflammation (especially eotaxin), are potential biomarkers for development of AD in early infancy.

REVIEWER COMMENTS. Previous studies have usually indicated that breastfeeding, compared with whole milk–based formulas, is generally protective of atopic disease, particularly AD. However, there are conflicting studies, some indicating that breastfeeding may be a risk factor for AD. This study, although limited by small size and the study design being cross-sectional, suggests that breast milk inflammatory biomarkers may play a role by affecting infantile intestinal and immune system development. In particular, they reported that eotaxin, which is involved in the chemotaxis and activation of eosinophils, was a risk factor for developing AD. Whether a biomarker or a causal factor, these insights may provide better avenues for prediction and prevention of atopic disease.

Mental Health Comorbidity in Patients With Atopic Dermatitis

PURPOSE OF THE STUDY. To quantify the mental health burden associated with pediatric atopic dermatitis (AD) in the United States. Recent data suggest that children with AD might be at an increased risk of mental health disorders.

STUDY POPULATION. Data were analyzed from the 2007 National Survey of Children’s Health, a survey reporting on the health status of 91 642 children aged 0 to 17 years. The analysis was limited to those children who had seen a health care provider in the past year (n = 79 667).

METHODS. Data were used from the 2007 National Survey of Children’s Health, which was designed to estimate the prevalence of various child health issues, including physical, emotional, and behavioral factors. The lifetime prevalence of provider-diagnosed mental health conditions was calculated for those with and without a history of AD, as determined by parental report. AD severity (mild, moderate, severe) was based on parent/guardian assessment of the skin disease. The mental health disorders assessed in the study were chosen based on previous associations with AD and included attention-deficit disorder (ADD) or attention-deficit/hyperactivity disorder (ADHD), depression, anxiety, and behavioral or conduct problems, such as oppositional defiant disorder, conduct disorder, autism, Asperger’s disorder, pervasive developmental disorder, or other autism spectrum disorders.

RESULTS. Children with AD reported seeing mental health care providers more often (12.12%) and receiving more mental health therapy (11.31%) than their peers without AD (7.89% and 6.61%, respectively; P < .0001). The odds of developing a mental health disorder was higher among children with AD than control subjects and included ADHD (odds ratio [OR] 1.87; 95% confidence interval [CI], 1.54–2.27), depression (OR 1.81; 95% CI, 1.33–2.46), anxiety (OR 1.77, 95% CI, 1.36–2.29), conduct disorders (OR 1.87, 95% CI, 1.46–2.39), and autism (OR 3.04, 95% CI, 2.13–4.34). The prevalence of each mental health disorder also strongly correlated with disease severity in a dose-dependent manner.

CONCLUSIONS. This study found strong associations between AD and several mental health disorders in the US pediatric population. The data showed that children with AD have an increased prevalence of ADHD, depression, anxiety, conduct disorder, and autism compared with their peers without AD. Children with more severe skin disease appear to be at greatest risk.

REVIEWER COMMENTS. This study is the first comprehensive evaluation of the mental health burden associated with pediatric AD in the United States. The results indicate that children with AD are at an increased risk for mental health disorders, and health care providers should be
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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ALLERGIC RHINITIS/CONJUNCTIVITIS

Grass Pollen Counts, Air Pollution Levels and Allergic Rhinitis Severity


PURPOSE OF THE STUDY. To assess the association between pollen count and severe seasonal allergic rhinitis (SAR) after controlling for air pollution levels and other confounders.

STUDY POPULATION. A nationwide sample of 36 397 patients in France who were suffering from SAR as defined by Symptomatic Global Score in the upper third quartile and were consulting a physician (general practitioner, ear-nose-throat specialist, pediatrician, or allergist) between May and August 2004. Patients were untreated and had uncomplicated SAR. Patients from all age groups were included.

METHODS. A multilevel model relating severity of SAR as the dependent variable and pollen counts and air pollution levels as independent variables was used. To understand the respective roles of pollen counts and air pollutants, 2 models were used: (1) a model taking into account only daily airborne pollen counts and (2) a model with both daily pollen counts and air pollution concentration.

RESULTS. A rise of 60 grass pollen grains per cubic meter increased the risk of severe SAR by 8% after adjusting for confounders (age, gender, address) and air pollution levels.

CONCLUSIONS. Grass pollen count aggravated SAR in terms of nasal and ocular symptoms in the nationwide sample, and the relationship between severity of SAR and grass pollen counts was not modulated by air pollution.

REVIEWER COMMENTS. This is a large study that quantifies the magnitude of change in SAR severity in relation to measured grass pollen counts. Because air pollution levels did not significantly modify this relationship, monitoring of pollen counts can be informative for the management of SAR regardless of the air quality.


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Allergic Rhinitis Is Associated With Otitis Media With Effusion: A Birth Cohort Study


PURPOSE OF THE STUDY. Otitis media with effusion (OME) is often considered to be associated with allergic diseases.
Mental Health Comorbidity in Patients With Atopic Dermatitis
Erin O'Brien and Stacie M. Jones
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