allergy clinic. They all had a clinical diagnosis of AD, Tanner Stage I of development, no recent history of vitamin D supplementation, and no recent calcineurin inhibitor or systemic anti-inflammatory therapy.

METHODS. This was a single-center, prospective, longitudinal study in which study patients, including 20 healthy controls matched for age and gender, were all enrolled during the winter (November–February) season. The AD group was evaluated at time of recruitment and then after 3 months of daily vitamin D supplementation (1000 IU/day or 25 mg/day). Vitamin D serum levels, AD severity assessed through the SCORAD (Scoring Atopic Dermatitis) index, and cytokine serum concentrations were all assessed. Subjects were encouraged to avoid topical steroids during the study period.

RESULTS. The AD patients all had chronic eczema, with 3 (7.7%) having mild AD, 18 (46.1%) with moderate AD, and 18 (46.1%) with severe AD. Baseline evaluation indicated the children with AD had higher cytokine levels, except for tumor necrosis factor-α, compared with the healthy controls. After 3 months of oral vitamin D supplementation, the AD group’s serum vitamin D levels were significantly higher compared with starting levels (29.41 ± 10.73 vs 22.97 ± 8.03 ng/mL, P = .01). There was a reduction in SCORAD index (46.13 ± 15.68 vs 22.57 ± 15.28, P < .001). There was also a statistically significant reduction of interleukin-2, interleukin-6, and interferon-γ, but not for tumor necrosis factor-α. There was a significant negative correlation between the vitamin D change and the SCORAD change (r = −0.49; P = .02).

CONCLUSIONS. Vitamin D supplementation effectively reduces the severity of pediatric AD through apparent normalization of the Th1 and Th2 cytokine serum patterns.

REVIEWER COMMENTS. Vitamin D deficiency has been associated with active atopic conditions including asthma, allergic sensitization, and AD. It appears to have immunomodulatory effects on both the innate and adaptive immune systems. With AD being a chronic inflammatory condition, it is no surprise that many affected individuals have below-normal vitamin D serum levels. Although this prospective study had a small sample size, children with mild to severe atopic dermatitis all showed improvement in clinical symptoms. Normalizing serum vitamin D levels through daily supplementation may be an affordable nonsteroidal addition to controlling this challenging and often agonizing condition.

Association of Atopic Dermatitis With Being Overweight and Obese: A Systematic Review and Metaanalysis

PURPOSE OF THE STUDY. To determine whether there is an association between atopic dermatitis (AD) and being overweight/obese.

STUDY POPULATION. The 30 studies included in this systematic review and meta-analysis included 900 358 patients from 13 countries, including 878 354 children and 22 004 adults.

METHODS. The investigators used PubMed, Embase, and the Cochrane Library to search for studies with primary epidemiologic data covering the relationship between AD and obesity/overweight. Reviewers independently extracted data from 30 studies. Studies were cross-sectional with respect to AD prevalence and retrospective or prospective. Years ranged from 2001 to 2014.

RESULTS. Of the total population studied, 28 498 (6.8%) of normal weight patients, 6648 (7.2%) of overweight patients, and 5173 (8.8%) of obese patients had a previous or current history of AD/eczema. AD/eczema prevalence was higher in studies with health care diagnosis (11.2%) compared with self-diagnosis (7.2%). Using fixed effects pooled analysis, patients who were overweight (Cochrane-Mantel-Haenszel [CMH] odds ratio [OR], 1.27; 95% confidence interval [CI]: 1.19–1.36), obese (CMH OR 1.68; 95% CI: 1.34–1.5), or overweight/obese (CMH OR 1.42; 95% CI: 1.34–1.5) had significantly higher odds of AD than normal weight individuals. In random effects models, overweight patients (CMH OR 1.23; 95% CI: 1.11–1.4), obese (CMH OR 1.47; 95% CI: 1.21–1.79), and overweight/obese (CMH OR 1.31; 95% CI: 1.16–1.48) all had significant increased odds of AD. Overweight children (OR 1.24; 95% CI: 1.08–1.43), obese (OR 1.44; 95% CI: 1.12–1.86), or overweight/obese (OR 1.32; 95% CI: 1.15–1.51) had higher odds of AD. The association between AD and overweight/obesity was significant in North America and Asia but not Europe.

CONCLUSIONS. Being overweight/obese is associated with an increased prevalence of AD.

REVIEWER COMMENTS. Studies have reported conflicting results regarding an association between being overweight or obese and AD, but this meta-analysis demonstrates a positive association. Given that the majority of available studies were cross-sectional, the authors were unable to determine the temporal relationship. Future studies using more rigorous clinical criteria for diagnosing AD and longitudinal studies are needed. The authors discuss proposed mechanisms including changes to the epidermal barrier caused by obesity and altered cutaneous and systemic inflammation. Sharing that there is an association between AD and overweight/obesity.
Impact of Rhinitis on Asthma Severity in School-Age Children


PURPOSE OF THE STUDY. To investigate the risk factors for rhinitis in school-age children and whether there are differences in risk factors between allergic and nonallergic rhinitis. Among children with asthma, the authors also investigated the association between rhinitis and asthma severity.

STUDY POPULATION. Nine hundred and six children participating in a birth cohort study were reviewed at age 8 years.

METHODS. Subjects were recruited antenatally and followed prospectively. Participants attended follow-up at age 8 years, and a validated International Study of Asthma and Allergies in Childhood questionnaire was administered to collect information on parentally reported symptoms, doctor diagnoses, and environmental exposures. Skin prick tests were performed to common inhalant allergens in 815 of the 906 participants. Data were extracted between January 2006 and February 2008 from electronic and paper-based primary care medical records, including prescriptions of inhaled and intranasal corticosteroids. Specific airway resistance was measured by using plethysmography. Spirometry was used to measure forced expiratory volume in 1 second and forced vital capacity. Airway hyperreactivity was assessed by using methacholine challenge. Fractional exhaled nitric oxide was measured as an indicator of airway inflammation.

RESULTS. School-age children with rhinitis (allergic and nonallergic) had higher airway reactivity than those without rhinitis. Children with asthma and rhinitis were more likely to have doctor visits and missed school days. Children with asthma and allergic rhinitis had more wheezing attacks than children with asthma who had no sensitization to inhalant allergens. Intranasal corticosteroid use improved asthma control independent of lower airway inhaled corticosteroid treatment and oral antihistamines.

CONCLUSIONS. The findings in this longitudinal cohort study confirm previous observations that appropriate treatment of rhinitis in children with asthma reduced the risk of asthma severity. However, this study showed a small but consistent reduction in risk with intranasal corticosteroid use. This article also confirmed the presence of distinct rhinitis phenotypes in early childhood.

Stress and Anxiety Effects on Positive Skin Test Responses in Young Adults With Allergic Rhinitis


PURPOSE OF THE STUDY. To study whether skin prick test (SPT) response to common allergens in patients with allergic rhinitis is affected by anxiety and stress.

STUDY POPULATION. Healthy individuals between 18 and 40 years of age with seasonal allergic rhinitis by clinical history and SPT.

METHODS. Participants were admitted to a hospital research unit twice, at least 2 weeks apart, for testing. An acute stress condition was induced using the Trier Social Stress Test. In a crossover design, SPT wheals to 9 common aeroallergens were assessed at multiple time points: before and after the test, as well as the next morning. For further comparison, SPT wheals were evaluated before and after a separate session without a stressor, as a control. A 20-item Anxiety Test Scale was used to assess anxiety.

RESULTS. A higher incidence of positive SPT reactions was found to allergens that had previously tested negative in more anxious patients with atopy. Positive SPT response for allergens previously testing negative were enhanced after a stressor, therefore correcting previous false-negative SPT results. No effects on SPT responses for the positive histamine control or negative saline controls.

CONCLUSIONS. The results of this study indicate that a laboratory stressor in more anxious patients with allergic rhinitis affects SPT response. Such a response was not noted in the more anxious patient when the laboratory
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