because it was shown in this study to terminate vomiting episodes and resolve and lethargy.

URL: www.pediatrics.org/cgi/doi/10.1542/peds.2017–2475BBB

Joan H. Dunlop, MD
Corinne A. Keet, MD
Baltimore, MD

Correlation Between Aeroallergen Levels and New Diagnosis of Eosinophilic Esophagitis in New York City

Fahey L, Robinson G, Weinberger K, Giambrone AE, Solomon AB. *J Pediatr Gastroenterol Nutr*. 2017;64(1):22–25

PURPOSE OF THE STUDY. Eosinophilic esophagitis (EoE) is often associated with atopic/allergic disorders. Seasonality has been established in the diagnosis of eosinophilic esophagitis, but there are limited data to support the contribution of aeroallergens to the development of EoE. This pilot study was designed to determine whether there is a seasonal variation in the onset of symptoms and/or diagnosis of EoE and whether these variations correlate with a specific pollen concentration within New York City.

STUDY POPULATION. All pediatric patients ages 0 to 21 years old diagnosed with EoE by histologic diagnosis between 2002 and 2012 at New York-Presbyterian/Weill Cornell Medical Center. Histologic diagnosis was defined as >15 eosinophils per high-powered field on esophageal biopsies after treatment for 6–8 weeks with a proton pump inhibitor.

METHODS. Retrospective chart review of EoE pediatric patients assessed for date of initial symptoms as identified by the pediatric patient and parental recall and date of histologic diagnosis. Demographic data, including sex, ethnicity, concomitant atopic disorders, and residential county, were obtained. Atmospheric pollen was collected using a Burkard volumetric spore trap from 2009 to 2012, and the data were examined for 11 taxa: *Acer* (maple), *Betula* (birch), *Populus* (poplar), *Ulmus* (elm), *Quercus* (oak), *Carya* (hickory), *Fraxinus* (ash), *Platanus* (sycamore, London planetree), *Fagus* (beech), *Poaceae* (grass pollen family), and *Ambrosia* (ragweed). To assess seasonal deviations in the distribution of observed EoE patients diagnosed, the binomial test was used to compare observed results with a theoretically expected distribution. Spearman rank correlation coefficient was used to assess the correlation between peak allergen count and onset of EoE.

RESULTS. Sixty-six patients were identified and classified by the date of initial symptoms and date of histologic diagnosis. There was a seasonal variation in the onset of symptoms and diagnosis of EoE, with the highest number of patients reporting onset of symptoms of EoE from July to September and with diagnosis being made in the next season (October to December). There was a seasonal correlation between peak levels of grass pollen and peak onset of EoE symptoms, which were both highest from July to September.

CONCLUSIONS. The data suggest that there is a correlation between specific aeroallergen levels and both the onset of symptoms and time of diagnosis of patients with EoE in New York City.

REVIEWER COMMENTS. The strength of this study is that it identifies a correlation between aeroallergen exposure with symptoms and diagnosis in pediatric EoE. The limitations of this study include the significant variability in the length of time between the initial onset of symptoms of EoE and the date of diagnosis of EoE as well as the retrospective nature of the data collection. The possibility of inaccurate patient recall of month or season of symptom onset is likely. In addition, the pollen counts were collected in 2009, a full 7 years after some of the patient samples were collected. The pollen counts may have changed over this decade.

URL: www.pediatrics.org/cgi/doi/10.1542/peds.2017–2475CCC

Carla M. Davis, MD
Houston, TX

Increased Prevalence of Airway Reactivity in Children With Eosinophilic Esophagitis

Krupp NL, Sehra S, Slaven JE, Kaplan MH, Gupta S, Tepper RS. *Pediatr Pulmonol*. 2016;51(5):478–483

PURPOSE OF THE STUDY. To assess the prevalence and determine clinical factors, biomarkers, or allergic sensitization that may be predictive of airway hyperresponsiveness (AHR) in children with eosinophilic esophagitis (EoE).

STUDY POPULATION. The study group included children ages 7 to 18 years (n = 33), with biopsy-diagnosed EoE, on stable medications (excluding systemic antibiotics or corticosteroids) for at least 4 weeks, and no other lung disease aside from asthma or allergies. Age-matched healthy controls (n = 37) without EoE, asthma, other lung disease, or atopic disease in the preceding year were enrolled from the general population.

METHODS. Cross-sectional analysis included a retrospective chart review, an assessment of most recent EoE control, and the presence and severity of comorbid asthma and atopic dermatitis. Pulmonary function testing with methacholine challenge and exhaled nitric oxide (eNO) were prospectively measured. AHR was defined as a provocative concentration necessary to affect an FEV_1 decrease of 20% (PC_{20}) <8 mg/mL. Peripheral blood was analyzed for complete blood count with differential, total serum IgE, IL-4, IL-5, IL-13, eotaxin, EGF, and FGF-2. Specific IgE to house dust mite, ragweed, Alternaria, timothy grass, Bermuda grass, cedar, and cat were measured by using ELISA (positive >0.70 IU/mL).

RESULTS. Children with EoE had a higher frequency of allergic rhinitis, atopic diagnosis, physician-diagnosed asthma, food allergy, prior wheeze and respiratory symptoms, eczema, total serum IgE, peripheral eosinophilia, and more frequent sensitization to at least 1 aeroallergen

compared with healthy controls. While baseline spirometry was normal, EoE subjects had lower PC_{20} values (indicating greater airway reactivity) and higher eNO (indicating increased lower airway atopic inflammation) in comparison with healthy subjects. Frequency of AHR was significantly greater in EoE (OR = 4.13; 95% CI: 1.16–14.62; $P = .0281$) and EoE without asthma (OR = 6.60; 95% CI: 1.64–26.58; $P = .0079$). In particular, AHR was present in 8 of 18 EoE subjects without a prior asthma diagnosis. When history of wheezing was included, 66.7% of EoE subjects were considered to have a definite or likely diagnosis of asthma. An elevated total serum IgE was associated with a greater risk of AHR (OR = 99.643; 95% CI: 1.633–56.925; $P = .0124$), but eNO and allergen sensitization were not. There were no differences in median serum levels of IL-5, IL-9, eotaxin, EGF, and FGF-2 among EoE subjects with and without AHR and healthy controls.

CONCLUSIONS. There is a high frequency of AHR and likely asthma diagnosis in EoE subjects. Elevated total serum IgE was the only marker associated with a greater risk of AHR in EoE children.

REVIEWER COMMENTS. As previously reported, EoE subjects had a very high prevalence of associated atopic disorders, and this study suggests that EoE patients in particular are being underdiagnosed for asthma. The cross-sectional design did not account for possible AHR variation over time and possible association with changes in EoE disease activity and lacks a comparison with children with atopic disease without EoE. Longitudinal studies correlating AHR with the treatment of EoE and associated atopic disease would help to determine its significance in EoE.

URL: www.pediatrics.org/cgi/doi/10.1542/peds.2017–2475DDD

Saritha Kartan, MD
Joyce E. Yu, MD
New York, NY

Retrospective Comparison of Fluticasone Propionate and Oral Viscous Budesonide in Children With Eosinophilic Esophagitis

Fable JM, Fernandez M, Goodine S, Lerer T, Sayej WN. [published online ahead of print May 9, 2017]. *J Pediatr Gastroenterol Nutr*. doi: 10.1097/MPG.0000000000001626

PURPOSE OF THE STUDY. Oral topical steroid therapies with oral viscous budesonide or fluticasone propionate are effective treatment options for eosinophilic esophagitis (EoE) patients, but a comparison between the 2 treatments has not been performed in pediatric patients. This study was designed to compare these 2 treatments.

STUDY POPULATION. A total of 68 EoE patients from Connecticut Children's Medical Center seen from 2010 to 2015.

METHODS. A retrospective chart review of patients all treated with either swallowed fluticasone propionate or oral viscous budesonide (thickened with either Neocate Duocal or sucralose) for >8 weeks who underwent endoscopy pre- and posttreatment.

RESULTS. Two-thirds cohort responded to topical steroids (65%), with fewer responding to fluticasone (FP) than oral viscous budesonide (OVB) (40% vs 75%, $P < .006$). Lower posttreatment eosinophils per high-power field (eos/HPF) levels were noted in the OVB treated patients (12±16 eos/HPF) compared with the FP treated group (20±29 eos/HPF). There was also a significantly greater difference in the change of absolute eos/HPF from pre- to posttreatment in the OVB group versus FP (−33 vs −18, $P = .047$). Asthma was associated with a poorer response in OVB treated patients. The vehicle thickener did not affect outcomes.

CONCLUSIONS. The data suggest that treatment with oral viscous budesonide leads to better endoscopic and histologic outcomes than fluticasone. Adherence to treatment and history of asthma are major determining factors in the response to treatments. Using Neocate Duocal as the budesonide delivery vehicle is just as effective as sucralose.

REVIEWER COMMENTS. This is the first study to directly compare the efficacy of topical steroid therapies in EoE. The limitations of this study include the retrospective nature and the potential selection bias, as the patients included in the study were treated based on provider preference, a past history of treatment success or failure, patient preference, insurance issues, or other reasons that could impact the measured response rates. In addition, the compliance with treatment was not assessed.

URL: www.pediatrics.org/cgi/doi/10.1542/peds.2017–2475EEE

Carla M. Davis, MD
Houston, TX

ATOPIC DERMATITIS, CONTACT DERMATITIS, AND ANGIOEDEMA

Antimicrobials From Human Skin Commensal Bacteria Protect Against *Staphylococcus aureus* and Are Deficient in Atopic Dermatitis

Nakatsuji T, Chen TH, Narala S, et al. *Sci Transl Med*. 2017; 9(378):eaah4680

PURPOSE OF THE STUDY. To identify if the normal human skin microbiome contains commensal bacteria that produce antimicrobial activity against *S. aureus* and if commensal loss results in the development of atopic dermatitis (AD).

STUDY POPULATION. The study included adults with AD and age-matched, healthy, non-AD subjects. A large number of AD subjects were culture positive for *S. aureus* on lesional and nonlesional skin sites.

Increased Prevalence of Airway Reactivity in Children With Eosinophilic Esophagitis

Saritha Kartan and Joyce E. Yu

Pediatrics 2017;140;S204
DOI: 10.1542/peds.2017-2475DDD

PEDIATRICS®
OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Increased Prevalence of Airway Reactivity in Children With Eosinophilic Esophagitis

Saritha Kartan and Joyce E. Yu

Pediatrics 2017;140;S204
DOI: 10.1542/peds.2017-2475DDD