635 Perennial Distribution of Pediatric Eosinophilic Esophagitis Diagnoses

C. R. Schlegel[1], N. M. Quintanilla[1], A. P. Olive[2], D. P. Duvan[3], L. Xu[1], C. M. Davis[4]; [1]Baylor College of Medicine/Texas Children's Hospital, Department of Pediatrics, TX, [2]Gastroenterology, Hepatology and Nutrition, Department of Pediatrics, Baylor College of Medicine/Texas Children's Hospital, TX, [3]Houston Department of Health and Human Services (HDHHS), TX, [4]Immunology, Allergy and Rheumatology, Department of Pediatrics, Baylor College of Medicine/Texas Children's Hospital, TX.

RATIONALE: Studies in the adult population suggest seasonal variation in the diagnosis of eosinophilic esophagitis (EoE) due to seasonal aeroallergens, but there is no evidence of this in the pediatric population.

METHODS: Patients with EoE pathologic diagnoses from 1/2006-12/2010 at Texas Children's Hospital were reviewed for age, gender, endoscopic date, symptomatology and comorbid conditions (allergic rhinitis, asthma, eczema, and food allergies). Monthly counts for tree, grass, and weed pollen and mold spores were obtained using a Burkard volumetric spore trap. The linear relationship between the monthly total pollen and mold counts and number of diagnoses was performed by Pearson correlation coefficient with peak eosinophil count/high powered field (eos/hpf) and co-morbid conditions/symptoms compared via Mann Whitney U test.

RESULTS: Of 457 biopsies with pathologic diagnoses, 81 clinicopathologic cases were identified (age 8 months- 19 years, median 11 years, 70% male). The percentages of EoE patients with food allergy, allergic rhinitis, asthma and eczema were 38%(n=31), 26%(n=21), 19%(n=15) and 9%(n=7). The number of diagnoses during tree (Jan-May), grass (Feb-June), and weed (Aug-Nov) seasons was 25(30.8%), 27(33.3%) and 30(37%), respectively, and 11(13.5%) out of season. There was no statistically significant variation of the timing of diagnosis with pollen or mold spore counts (p=0.97, 0.34, respectively). At diagnosis, asthma was associated with lower eos/hpf (with and without asthma: median=23, 36, respectively, p=0.04) and heartburn with higher eos/hpf (with and without heartburn: median=54, 30, respectively, p=0.02).

CONCLUSIONS: EoE diagnoses in this pediatric population were evenly distributed throughout the year without significant seasonal variation with pollen or mold counts.

636 Allergen Sensitization Profiles in A Pediatric Cohort with Eosinophilic Esophagitis

S. Nicole Chadha, MD, Li Wang, Donna Sedlak Hummell, MD; Vanderbilt University Medical Center, Nashville, TN.

RATIONALE: Eosinophilic esophagitis (EoE) is a chronic allergic disease of the esophagus unresponsive to treatment with proton pump inhibitors. A combination of immediate, IgE-mediated and delayed, non-IgE mediated immune reactions to foods and aeroallergens are thought to contribute to disease pathogenesis. Optimal methods to assess for food allergen sensitization have been debated. Patients with EoE often have co-morbid atopic diseases.

METHODS: A retrospective study was conducted to evaluate 40 pediatric patients diagnosed with EoE at a single institution within the southeastern United States. Aeroallergen and food sensitization profiles obtained by skin prick (SPT) and patch (APT) testing, and history of associated atopic diseases were analyzed.

RESULTS: Older patients with EoE showed greater aeroallergen sensitization; the most common allergens were grass and tree pollens and dust mite. Younger patients showed greater sensitization to foods both by SPT and APT. The most common foods identified by SPT were egg, soy, corn, peanut, and beef. The most common foods identified by APT were wheat, pork, pea, and peanut. Co-morbid atopic disease was common (allergic rhinitis: 70%, asthma: 40%, food allergy: 20%, atopic dermatitis (AD): 30%). Patients with AD showed significantly higher sensitization to foods by APT (median 5 foods) compared to patients without AD (median 2 foods) (p=0.01).

CONCLUSIONS: In pediatric patients with EoE, sensitization to aeroallergens increases with age, while sensitization to foods decreases with age. Concomitant atopic disease is common. APT is useful to identify additional food allergens not detected by SPT. However, a history of AD may be associated with non-specific positivity by APT.

637 Food Allergy Testing in Adult Eosinophilic Esophagitis, Clarifying the Role of the Allergist

Manujendra Ray, MD, PhD, Benjamin P. Soule, MD; University of Pennsylvania, Philadelphia, PA.

RATIONALE: Food allergy testing in Eosinophilic Esophagitis (EoE) patients is an area of controversy. Neither IgE (skin prick or serum IgE) nor non-IgE (patch) testing is reliably predictive. Further characterization of these patients may provide the basis for a more targeted approach with a clearer role for allergists.

METHODS: This is a retrospective chart review with additional data obtained via phone interviews. Adult patients with >/= 15 eosinophils/hpf on esophageal biopsy after at least 6 weeks of PPI therapy were included. Exclusion criteria included chronic immunosuppressive therapy and a history of esophageal cancer.

RESULTS: Twelve of 60 patients with the diagnosis of EoE met the study criteria. In 33% of these dysphagia was triggered only by specific foods, 25% had intermittent dysphagia but not to specific foods, and 42% had both nonspecific and specific triggers. The following trends were seen. Compared to the group with specific triggers, those with non-specific triggers or both were more likely: to be male (25% vs 100% and 60%), to have had dysphagia or obstructive symptoms for > 10 years (25% vs 100% and 60%), and to have fewer IgE mediated sensitivities to foods (41% vs 0% and 35%). No patients with specific triggers had esophageal strictures or narrowing on EGD compared to 67% of patients with non-specific symptoms and 40% of patients with both.

CONCLUSIONS: Classification of adult EoE patients based on symptoms may reveal phenotypic subgroups. It is possible that some of these subgroups may benefit more from food allergy testing than others.

638 Comparison of Atopic Features Between Children and Adults with Eosinophilic Esophagitis

Natalia Vernon, MD, Shenil Shah, MD, Sapna Shah, MD, Gisoo Ghaffari, MD, FAAAAI; Penn State Milton S. Hershey Medical Center, Hershey, PA.

RATIONALE: Eosinophilic esophagitis (EoE) is a chronic inflammatory process characterized by esophageal dysfunction and eosinophilic infiltration of the esophagus. EoE has been described in both the pediatric and adult population. The aim of this study was to examine the differences between EoE in adults and children in regards to presenting symptoms and atopic features.

METHODS: After IRB approval, we conducted a retrospective study of 37 adults and 31 children (aged 2-18 years) who were diagnosed with EoE by endoscopic biopsy. Variables of interest included presenting symptom; and personal and family history of atopy. We used chi-square test to determine the significance of the differences between adults and children.

RESULTS: Dysphagia was the most common presenting symptom in adults (76% vs. 29%; p<0.05), whereas children presented more commonly with abdominal pain(29% vs. 8%; p<0.05). Comparing adults and children, there were no significant differences in the concurrent history of allergic rhinitis (62% of adults vs. 64.5% of children), asthma (27% of adults vs. 48% of children) or eczema (8% of adults vs. 26% of children). Family history of atopy was present among 46% of adults and 61% of children (non-significant).

CONCLUSIONS: The clinical presentation of EoE differs among children and adults. Adults are more likely to present with dysphagia compared to children, while children are more likely to present with abdominal pain. There is no significant difference in family history of atopy, or the concurrent history of allergic rhinitis, asthma and eczema between adults and children.