

providers. This study evaluates comparatively the baseline anticipatory guidance (AG) provided by physicians to parents during well-child visits at ages 4 and 6 months, after two educational interventions directed to the health care personnel.

Method: This study was based in two pediatric outpatient clinics between July 2019 and December 2020 in Brooklyn, NYC. Patients attending well-child visits at ages 4 and 6 months were included. Through electronic chart review, the recording of AG provided at visits was obtained during four different time periods.

Results: For evaluation of the baseline situation during the third 2019 quarter 166 charts were reviewed. At the 4-month visits only 1% of the charts recorded providing guidance, while at 6-month visits, 59% did. After the first intervention, at the end of the fourth 2019 quarter, at 4-month visits 21% of the encounters recorded guidance. Pearson correlation for providing AG between the two quarters was positive (0.79; p-value of 0.019) for the intervention. During the third 2020 quarter, after the second intervention, at 4-month visits 55% recorded guidance while 84% at 6-month visits did. A fall in the completion of guidance at 4-month visits with a recording of 46% was found during the fourth 2020 quarter.

Conclusion: The educational intervention demonstrated improvement in documentation of the AG provided. However, persistence of hesitancy on providing peanut introduction guidance was noted at 4-month age.

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CHARACTERISTICS OF PATIENTS WITH SINGLE VERSUS MULTIPLE FOOD ALLERGIES FROM THE FARE PATIENT REGISTRY



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Introduction: Food allergies affect many patients in the US. Limited literature describes the characteristics of patients with single versus multiple food allergies. It is our hypothesis that characteristics differ between these groups and sought to evaluate that from registry data.

Methods: The FARE (Food Allergy Research & Education) Patient Registry conducts online surveys of patients with food allergies and caregivers, collecting cross-sectional data (from 2017- 2020) regarding their experiences. We describe responses of persons reporting single (SFA) compared to multiple food allergies (MFA) in the US.

Results: We identified 5593 respondents, with a mean age at diagnosis of 8 years, the majority diagnosed before age 18 (SFA: 78.2%, MFA: 80.7%). Of the total, 82% (4598) reported multiple food allergies, with a median of 4 allergies (max: 14). The most common comorbidities were more frequently seen in MFA: atopic dermatitis (SFA: 33%, MFA: 52%), asthma (SFA: 32%, MFA: 49%), and allergic rhinitis (SFA: 28%, MFA: 42%). The most common first diagnosis testing were skin prick tests (SFA: 64%, MFA: 73%) and IgE antibodies (SFA: 56%, MFA: 63%). Oral food challenges were infrequently performed (SFA: 5.5%, MFA: 7%).

Conclusion: In this registry, the majority of patients reported having multiple food allergies and these patients had numerically higher rates of comorbidities and diagnostic testing, compared to those with a single food allergy. These findings highlight that MFA may represent a distinct clinical phenotype from SFA, with continued research needed to explore this further.

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CHARACTERIZATION OF ALLERGIC INFANTS WHO FAIL INITIAL PEANUT ORAL FOOD CHALLENGES, IS THERE A PATTERN?



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Introduction: High-risk allergic infants (HRAI) undergo peanut oral food challenges (POFC) for peanut tolerization. NIAID has suggested protocols for POFC in HRAI. Characterization of failed POFC is important for practicing Allergists.

Methods: Retrospective chart review analyzing outcomes of failed POFC in HRAI.

Results: Eighty-two HRAI underwent POFC over 4 years. HRAI who passed included 66/77 (86%), while 11/77 (14%) failed. Mean peanut skin prick test (SPT) diameter of passed HRAI was 1.6 mm and failed HRAI was 3.2 mm (p= 0.054). Additionally, 5/11 (46%) of failed and 21/66 (32%) of passed HRAI infants were found to have multiple (> 2) food allergies (FA) at initial diagnosis. Interestingly, 7/11 (63%) of failed HRAI developed a new FA after the POFC, while 9/66 (14%) of passed HRAI developed a new FA after POFC; a score of 0 was given for no new FAs and 1 for a new FA. Mean scores between the two groups were compared using an F-test and a two-tailed t-test. A significant difference was observed in between mean scores with passed (M= 0.14) and failed (M= 0.64); t (12) = 3.17, p = 0.004. Sesame sensitization was seen in 4/11 (36%) and 2/66 (3%) for the failed and passed HRAI, respectively.

Conclusion: SPT alone was not significant enough between passed and failed POFC in HRAI. However, greater changes were seen in the failed cohort who developed subsequent increased FA, including sesame, compared to passed POFC. Identifying infants who fail POFC may help identify further food allergen development in HRAI.

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CHOOSING WISELY: ATOPIC PROFILE AND SERUM IGE IN THE PREDICTION OF EGG OIT OUTCOMES



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Introduction: Hen's-egg allergy (EA) is a common food allergy, confirmed by skin prick testing (SPT) and serum-specific IgE. Many EA patients are challenged to baked egg (BE-OC), followed by home egg oral immunotherapy (EOIT), and subsequent scrambled egg challenge (SC-OC) to assess allergy resolution.

Methods: A retrospective chart-review was conducted at an allergy clinic for EOIT. Age of diagnosis, SPT-positivity to egg-white/yolk, serum-specific IgE to egg-white/ovomucoid and OC-results were tracked. Student's t-test (p < 0.05) was used.

Results: Forty patients with IgE-mediated egg allergy (mean diagnosis-age = 11.4 months) underwent BE-OC. Thirty-six of 40 passed, with mean 1.1 comorbid food-allergies and mean-SPT wheals of 4.4 and 3.3mm to egg-white/ yolk, respectively. Four of 40 failed, with mean 2.0 comorbid food-allergies (p=0.16) and mean-SPT wheals of 8.3 and 7.3mm to egg-white/yolk, respectively (p=0.09). Mean-serum egg-white-IgE was lower in passed (1.8kU/L) vs failed (11.2kU/L) (p=0.01) and ovomucoid-IgE was lower in passed (0.8kU/L) vs failed (7.2kU/L) (p=0.005) for BE-OC. Thirty of 36 proceeded to SC-OC, and 27/30 passed, with mean 0.8 comorbid food-allergies while 3/30 failed, with mean 3.7 comorbid food allergies (p=0.001).

Conclusions: In the majority of patients that did not pass EOIT, their atopic profile was associated with increased IgE-mediated food allergies, although not reaching significance in BE-OC. Serum egg-white/ovomucoid-IgE as predictors of OC outcome were supported by BE-OC outcome data, although SPT data in EA did not reach significance.

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CURRENT US PARENT/CAREGIVER KNOWLEDGE, ATTITUDES, AND BEHAVIORS REGARDING DIETARY INTRODUCTION OF PEANUT PROTEIN DURING INFANCY



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Introduction: The National Institute of Allergy and Infectious Disease (NIAID)-sponsored addendum guidelines for the Primary Prevention of Peanut Allergy (PPA) were released in 2017, and mark a shift towards earlier recommended introduction of peanut—particularly among eczematous infants. However, much remains unknown about US parent/caregiver attitudes, knowledge and behaviors regarding peanut introduction.

Methods: A survey was developed by a multidisciplinary team of pediatricians, pediatric allergists and survey methodologists in order to assess current parent/caregiver attitudes, knowledge and behaviors around introduction of common food allergens. Detailed information about child, caregiver and family allergy history and demographics were also collected. The survey was administered between 1/21/2021–2/15/2021, to a US population-based sample of parents/caregivers of children aged 7–42 months. Complex survey weighting was conducted to address possible non-response bias and improve population-level inference.

Results: Complete responses were obtained from 3062 households, whose sociodemographic characteristics are representative of the general parent/caregiver population. Among infants, 11% had eczema, among whom 26% had been prescribed a cream/ointment—an indicator of more severe disease. Overall, 58% of surveyed parents/caregivers reported that their child's primary care doctor (PCP) discussed peanut introduction vs. 69% of parents/caregivers of eczematous children. Among all parents whose PCP discussed peanut introduction, only 40% reported receiving a recommendation to introduce peanut by 11 months of age, vs. 46% of parents of eczematous children. Only 44.7% of parents/caregivers reported introducing peanut by 11 months. Thirteen percent of all respondents were aware of the NIAID-sponsored PPA guidelines vs. 18% of parents of eczematous children.

Conclusions: PPA guideline implementation is suboptimal in the US.

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EOSINOPHILIC ESOPHAGITIS SYMPTOMS, DIAGNOSIS, AND TREATMENT IN HISTORICALLY UNDERREPRESENTED POPULATIONS

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Introduction: Phenotypic differences in age of diagnosis, symptoms, and eosinophil count have been reported among different racial/ethnic groups of eosinophilic esophagitis (EoE) patients. Our objective was to further characterize minority EoE patients in order to identify any health disparities.

Methods: At a pediatric tertiary referral center, the charts of all patients with a clinicopathologic diagnosis of EoE from 2011 through 2014 were reviewed (n=428) to determine race/ethnicity. Detailed demographic and clinical characteristics were recorded for 51 non-white patients.

Results: Of the 51 patients, 39 were African American/Black (10 of Somali descent), seven were of Asian or Middle Eastern descent, and 5 were Hispanic. Thirty-eight (75%) were male. The median initial peak eosinophil count was 53 eosinophils/high power field (range 14–110). The most common symptoms at diagnosis were: vomiting (58%), dysphagia (38%), failure to thrive (37%), abdominal pain (33%), heartburn (29%), reflux (15%), and impaction (6%). The median age of symptom onset was 2.0 years (range 0–17.5). The median age of EoE diagnosis was 5.2 years (range 1.0–20.0). Thirty-seven (73%) had a follow up endoscopy, 16 (43%) of which showed resolution of esophageal eosinophilia. Of those who had pathologic remission, all used proton pump inhibitors, 12 (75%) used a swallowed steroid, and 11 (69%) used a food elimination diet at some point.

Conclusion: Our results suggest that further work is needed to identify patients in a timely fashion, engage families to follow up, and achieve the goal of histologic remission.

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FACTORS ASSOCIATED WITH HEALTH-RELATED QUALITY OF LIFE IN ADOLESCENTS WITH PEANUT ALLERGY: A MULTIVARIATE ANALYSIS

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Introduction: The Peanut Allergy Burden Study (PABS) assessed the real-world burden of peanut allergy (PA), including Health-Related Quality of Life (HRQoL), on patients and caregivers in the United States.

Methods: Adolescents 13–17 years-old with self-reported, provider-diagnosed PA participated in the IRB approved PABS online survey. Socio-demographic, medical, treatment history and Pediatric Quality of Life Inventory (PedsQL) data were collected. Potential predictors of PedsQL scores were identified using univariate and multivariate statistics.

Results: 102 adolescents with PA completed PABS: mean age was 14.7 (standard deviation, SD: 1.4 years), 55.9% were male, 62.8% were white. The mean PedsQL total score was 69.4 (SD: 23.0), significantly below a previously published value for a comparable general population cohort (mean 83.6, SD 13.3). Of ~170 items collected within PABS, 25 items were at least weakly correlated with PedsQL total scores and included in a multivariate assessment. Stepwise regression resulted in a 6-variable model: patient race; history of moderate / severe reactions to peanut in last year; cause of most severe reaction = touching peanut; level of avoidance of peanut; current satisfaction with PA prophylaxis and fear of experiencing a reaction to peanut. A final model with 4 additional variables (age; gender; comorbidities; daily life limitations) explained ~30% of the variability in PedsQL total scores (adjusted R²: 0.297).

Conclusion: While some patient characteristics are associated with poor PedsQL scores, the results highlight the substantial heterogeneity in patient experience which indicates the need for shared decision making for PA management to optimize outcomes and improve HRQoL.

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FOOD ALLERGY AND INFORMATICS: USING NATURAL LANGUAGE PROCESSING TO IDENTIFY CLINICAL PREDICTORS IN PROGRESS NOTES

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Introduction: Accurate identification of food allergy (FA) cases is essential for ensuring patient safety and reducing healthcare burden of disease. Although electronic health records are ubiquitous in U.S. medical practice, using electronic health records as data sources to identify patients at risk for significant morbidity is still novel, particularly in food allergy. The objective of this study is to test whether text notes from general pediatrician visits can predict the diagnosis of FA by an allergist.

Methods: A cohort study design was used to apply several machine learning algorithms to the text data assembled from general pediatric care encounters. A dataset of 363 pediatric primary care patients from an urban academic medical center was developed to create the natural language processing (NLP) models.

Results: Of the 363 children, 140 (39%) were FA positive and 223 (61%) were FA negative. A variety of NLP models had similar performance with very good to excellent accuracy. As measured by Area Under Curve (AUC) analysis, logistic regression performed best (AUC = 0.834), followed by a passive-aggressive classifier (AUC = 0.830). Specific features were similar between the models and included the words “allergy,” “eczema,” “egg,” “breast,” “sister,” “years,” and “onset”.

Conclusions: We defined a model using NLP to identify which patients seen by a general pediatrician would have an allergy when