positive APT reactions for milk was significantly lower in children of age 13 than in children of age 9 \( (P = .013) \). No concordance emerged between positive APT and SPT results for foods. Conversely, APT and SPT results for inhalant allergens yielded statistically significant concordance \( (P < .001) \).

**CONCLUSIONS.** The APT produces positive reactions for food or inhalant allergens in a significant number of subjects in the general population of schoolchildren. Inhalant allergens probably induce a positive APT reaction through an immunoglobulin E–linked process, whereas food allergens probably do not.

**REVIEWER COMMENTS.** The APT has been investigated as a new diagnostic tool for patients with food or inhalant allergies when non–immunoglobulin E–mediated reactions are considered, such as in identifying triggers for atopic dermatitis, allergic eosinophilic esophagitis, and food protein–induced enterocolitis syndrome. However, studies have demonstrated conflicting results for the utility of this test. Here, the authors investigated the prevalence of positive results of APT in an unselected population of schoolchildren and found that APTs produced positive reactions for foods in 4% to 11% of cases and for inhalant allergens in 4% to 30%, depending on the allergen used. This is important information to consider when investigating the APT as a potential diagnostic tool.

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### 14 Years of Eosinophilic Esophagitis: Clinical Features and Prognosis


**PURPOSE OF THE STUDY.** To define the presenting symptoms of eosinophilic esophagitis (EE) and describe the clinical course of treated and untreated patients with EE.

**STUDY POPULATION.** Patients referred to the Children’s Hospital of Philadelphia over a 14-year period who were diagnosed with EE.

**METHODS.** Retrospective and prospective chart review of patients diagnosed with EE and followed for \( \geq 1 \) year.

**RESULTS.** A total of 330 children were identified, of whom 68% were \(< 6\) years of age at the time of diagnosis; the majority were male. Children who presented at a younger age had symptoms of failure to thrive, feeding difficulties, gastroesophageal reflux disease, and vomiting, whereas older children presented with abdominal pain, dysphagia, and food impaction. When foods exacerbated EE (up to 17% for milk), 7 foods (milk, egg, wheat, soy, corn, beef, and chicken) accounted for two thirds of the cases. During the follow-up period, \(< 5\%\) had complete resolution of their EE, but those who did achieve resolution had fewer foods (2.4 foods) identified at initial testing. Untreated patients who returned years after their initial diagnosis had continued progression of disease.

**CONCLUSIONS.** Avoidance of causative foods and medical treatment can significantly improve EE symptoms; however, the chances of long-term resolution of EE are disappointing, with \(< 5\%\) of patients achieving complete resolution.

**REVIEWER COMMENTS.** As the experience builds at tertiary referral centers, more is understood regarding EE. One should think EE when presented with the triad of male gender, atopy, and gastrointestinal symptoms. One impressive aspect of this cohort was that >2500 biopsies were performed for 330 patients. Allergy skin-prick testing and patch testing with subsequent food avoidance are important, but continued surveillance of local tissue changes and not relying strictly on reported clinical symptoms is equally important.

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### Predictors of Response to Proton Pump Inhibitor Therapy Among Children With Significant Esophageal Eosinophilia


**PURPOSE OF THE STUDY.** To determine predictors of the histologic response to proton pump inhibitor (PPI) therapy among children with significant esophageal eosinophilia (SEE), defined as \( \geq 15 \) eosinophils per high-powered field (hpf) on esophageal mucosal biopsy (EMB).

**STUDY POPULATION.** Patients between the ages of 1 and 18 years who underwent esophagogastroduodenoscopy between 1999 and 2006 were eligible for the study. Indications for esophagogastroduodenoscopy included regurgitation, vomiting, heartburn, abdominal pain, dysphagia, and sensation of food impaction. Patients with SEE were eligible for this investigation if they were treated with a PPI (omeprazole, esomeprazole, or lansoprazole) and underwent repeat esophagogastroduodenoscopy to assess the response to the PPI. Patients were excluded if they were receiving corticosteroid, dietary elimination, or montelukast therapy for any indication.

**METHODS.** Response to PPI therapy among children with SEE treated with a PPI who underwent repeat EMB was
studied retrospectively. Response was defined as < 5 eosinophils per hpf on repeat EMB. Characteristics of responders and nonresponders were analyzed.

RESULTS. Of 326 patients diagnosed with SEE over a 7-year period, 43 (mean age: 8.5 years; male: 67%) met inclusion criteria. After PPI therapy, 17 patients (40%) were responders. There were no significant differences in demographic features, presenting symptoms, endoscopic findings, or histologic findings between responders and nonresponders. Among patients with 15 to 20 eosinophils per hpf on EMB, 50% were responders; among patients with > 20 eosinophils per hpf on EMB, 29% were responders. Seven (41%) of 17 patients with abnormal pH monitoring and 5 (45%) of 11 patients with normal monitoring were responders.

CONCLUSIONS. Forty percent of patients with SEE demonstrated histologic response to PPI therapy. None of the clinical characteristics evaluated predicted response, and response was not dependent on pH study results. The role of PPI therapy in treating SEE warrants further prospective investigation.

REVIEWER COMMENTS. Esophageal eosinophilia has become an increasing clinical concern in the pediatric population. These investigators set out to determine predictors of histologic response to PPI therapy among children with SEE. They correctly identified significant limitations in their retrospective study. For example, the treatment and evaluation of these patients were not standardized at their institution. In addition, not all patients were treated with PPI, doses were not uniform, and not all patients treated with PPI underwent repeat endoscopy. A selection bias cannot be excluded with this study design. Prospective controlled investigations examining the role of PPI, as well as other therapies (eg, enteral corticosteroid therapy), in patients with SEE are definitely needed.

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Food Protein-Induced Enterocolitis Syndrome: 16-Year Experience
Mehr S, Kakakios A, Frith K, Kemp AS. Pediatrics. 2009;123(3). Available at: www.pediatrics.org/cgi/content/full/123/3/e459

PURPOSE OF THE STUDY. To investigate possible patterns in demographic features, causative foods, clinical features, treatments at presentation, and outcomes in children diagnosed with food protein-induced enterocolitis syndrome (FPIES).


METHODS. Diagnosis was made by pediatric allergists after referral to the allergy clinic (74%) or from the emergency department (ED) (26%), using previously published criteria. Cases were identified by codes signifying allergic and dietetic gastroenteritis and colitis or by searching for key words in letters written by allergists.

RESULTS. Thirty-two children fulfilled all criteria, and 3 presented with 1 typical episode and no other causal explanation. Sixty-six episodes were recorded, with a mean presenting age of 5.5 months and a median of 2.2 episodes before diagnosis (range: 1–4 episodes). Most children reacted to 1 food, and 6 children reacted to 2 foods. Causative foods included rice (n = 14), soy (n = 12), cow’s milk (n = 7), oat (n = 2), sweet potato (n = 2), banana (n = 1), fish (n = 1), chicken (n = 1), and lamb (n = 1). The mean time from ingestion to reaction was 1.8 hours. Symptoms included vomiting (100%), lethargy (85%), pallor (67%), and diarrhea (24%). Information regarding evaluation of 64 episodes included admission from the ED (25 of 39 visits), abdominal imaging (34%), septic evaluation (28%), and surgical consultation (22%). A decreased body temperature of < 36°C was noted in 6 (24%) of 25 episodes. Thrombocytosis not accounted for by hemoconcentration was noted in 15 (63%) of 24 blood counts performed. Only 2 of 19 initial cases presenting to the ED were correctly diagnosed. Other initial diagnoses included food allergy (26%), viral infection/sepsis (21%), gastroenteritis (21%), resolved intussusception (11%), or no diagnosis (11%). Treatments at presentation included intravenous fluid resuscitation (n = 19), antibiotics (n = 8), oxygen (n = 6), air or barium enema (n = 4), parental ephedrine treatment (n = 2), and laparotomy (n = 1). Tolerance was demonstrated by 3 years of age in 5 of 6 undergoing soy challenges and 4 of 5 undergoing rice challenges.

CONCLUSIONS. Delayed diagnosis and misdiagnosis is common in FPIES, leading to incorrect and/or invasive treatment. Thrombocytosis, in addition to previously recognized leukocytosis, may be a laboratory clue upon initial presentation. Diarrhea and body temperature of < 36°C were associated with more-severe episodes. Foods commonly considered hypoallergenic (ie, rice) may cause FPIES. The prognosis of developing tolerance by age 3 years is favorable.

REVIEWERS COMMENTS. Currently, FPIES is a clinical diagnosis. The authors attempted to identify subjective criteria that may be used to diagnose FPIES; however, thrombocytosis and decreased body temperature are factors that will continue to lead to other common diagnoses, such as sepsis or gastroenteritis. The authors argue that, although cases increased in incidence during the 16
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