

## Age-based Differences in the Diagnosis and Management of Esophageal Eosinophilia

Whitney Rassbach, MD<sup>a,b</sup>, Joel H. Rubenstein, MD, MSc<sup>c</sup>, Matthew Elkins, MD, PhD<sup>d,e</sup>, Vera DeMatos, MD<sup>f</sup>, Joel K. Greenson, MD<sup>e</sup>, and Matthew Greenhawt, MD, MBA, MSc<sup>g,h,i</sup> *New York and Syracuse, NY; and Ann Arbor, Mich*

**What is already known about this topic?** The criteria for the diagnosis and evaluation of esophageal eosinophilia and eosinophilic esophagitis continue to evolve. Diagnostic criteria do not differ by age, nor does the decision to initiate treatment or seek allergy involvement.

**What does this article add to our knowledge?** Irrespective of consensus guideline recommendations and the use of a proton-pump inhibitor trial, in symptomatic patients with esophageal eosinophilia, patient age had significance influence regarding allergy referral, steroid treatment, and repeated endoscopy for disease monitoring.

**How does this study impact current management guidelines?** Of a referral center population of patients with esophageal eosinophilia, numerous age-based differences in care existed regarding the management of symptomatic patients, although consensus guidelines do not specify different pathways of care based on age.

**BACKGROUND:** Eosinophilic esophagitis (EoE) is hallmarked by esophageal eosinophilia, >15 eosinophils(eos)/high-powered field (hpf), unresponsive to acid inhibition, and varied symptomatology. EoE consensus guidelines do not discriminate based on age for initiating treatment.

**OBJECTIVE:** To evaluate if age-related differences exist in managing esophageal eosinophilia and EoE within a university population.

**METHODS:** In a retrospective cohort study from a referral center, the medical records of 426 pediatric and adult patients with at least 1 presenting symptom of esophagitis, reflux, or upper gastrointestinal dysfunction, who underwent esophageal biopsy between 2009 and 2011 were analyzed for age-based differences in care in diagnosing and managing esophageal eosinophilia.

**RESULTS:** For these patients, 79.6% (336/426) had  $\geq 15$  eos/hpf in biopsy specimens, which was not associated with age. Significantly fewer adults than children with  $\geq 15$  eos/hpf were diagnosed with EoE ( $P < .001$ ), referred for allergy evaluation ( $P < .001$ ), started on swallowed steroid therapy ( $P < .001$ ), or underwent repeated biopsy ( $P < .001$ ). Increasing age, atopy, and increasing biopsy peak eos count moderated these effects, but the adjusted predicted probabilities for these outcomes were significantly lower among adults. Restriction for an 8-week prebiopsy proton-pump inhibitor trial did not alter the age-based relationships for an allergy referral or repeated biopsy. **CONCLUSIONS:** Numerous age-based differences in the management of symptomatic patients with esophageal eosinophilia existed in this cohort. Adults were significantly less likely than children to receive a clinical diagnosis of EoE, allergy

<sup>a</sup>Division of Allergy and Clinical Immunology, The Ichan School of Medicine at Mount Sinai, New York, NY

<sup>b</sup>Department of Medicine and Pediatrics, The University of Michigan Health System, Ann Arbor, Mich

<sup>c</sup>Division of Gastroenterology, Department of Internal Medicine, The University of Michigan Medical School, Ann Arbor, Mich

<sup>d</sup>Department of Pathology, SUNY Upstate Medical University, Syracuse, NY

<sup>e</sup>Department of Pathology, The University of Michigan Medical School, Ann Arbor, Mich

<sup>f</sup>Division of Gastroenterology, Department of Pediatrics, The University of Michigan Medical School, Ann Arbor, Mich

<sup>g</sup>The University of Michigan Food Allergy Center; Ann Arbor, Mich

<sup>h</sup>Division of Allergy and Clinical Immunology, Department of Internal Medicine, The University of Michigan Medical School, Ann Arbor, Mich

<sup>i</sup>Department of Pediatrics, Child Health Evaluation and Research Unit, The University of Michigan Medical School, Ann Arbor, Mich

This study was supported by the University of Michigan Food Allergy Center and, in part, the National Center for Research Resources, grant UL1RR024986, and is now at the National Center for Advancing Translational Sciences, grant 2UL1TR000433. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

Conflicts of interest: Dr. Greenhawt has received research support from NIH grant #2KL2TR000434, has received support from NIH grant #UL1RR024986, and receives support from the University of Michigan Food Allergy Center. He has received honoraria for speaking for Nutricia and is a member of their specialty advisory board. He is a member of the American Academy of Allergy, Asthma, and Immunology, I EGIN committee. He is an associate editor for *Annals of Allergy, Asthma, and Immunology* and receives honoraria for that. He has received honoraria for speaking from the Canadian Society for Allergy and Clinical Immunology and Toledo Allergy Society. He has no other conflicts of interest relevant to this work. The rest of the authors declare that they have no relevant conflicts of interest.

Received for publication February 17, 2014; revised June 3, 2014; accepted for publication June 14, 2014.

Available online October 29, 2014.

Corresponding author: Matthew Greenhawt, MD, MBA, MSc, Division of Allergy and Clinical Immunology, University of Michigan Food Allergy Center, University of Michigan Medical School, University of Michigan Health System, 24 Frank Lloyd Wright Dr, Lobby H-2100, Box 442, Ann Arbor, MI 48106. E-mail: [mgreenha@med.umich.edu](mailto:mgreenha@med.umich.edu).

2213-2198

© 2014 American Academy of Allergy, Asthma & Immunology

<http://dx.doi.org/10.1016/j.jaip.2014.06.019>

**Abbreviations used**

BMI- Body mass index  
 EoE- Eosinophilic esophagitis  
 eos- Eosinophil  
 GERD- Gastroesophageal reflux disease  
 GI- Gastrointestinal  
 hpf- High-powered field  
 OR- Odds ratio  
 PPI- Proton-pump inhibitor  
 REE- Responsive esophageal eosinophilia  
 TIGER- The International Gastrointestinal Research Group

**referral, or steroid treatment, or to have a repeated biopsy. Even when stratified for an 8-week prebiopsy proton-pump inhibitor trial, advancing age was associated with lower odds of referral or repeated biopsy. Further study is necessary to better understand why discrepancies exist and their potential ramifications.** © 2014 American Academy of Allergy, Asthma & Immunology (J Allergy Clin Immunol Pract 2015;3:81-7)

**Key words:** Eosinophilic esophagitis; Eosinophil; Health disparities; Care pathways; Swallowed steroid therapy; Esophagogastroduodenoscopy; Allergy; TIGER; GERD; Dysphagia; Age; Children; Adults; Biopsy; Dilatation; Dietary therapy; Esophageal biopsy

Eosinophilic esophagitis (EoE) is a distinct clinicopathologic entity characterized by elevated esophageal eosinophil (eos) counts ( $\geq 15$  eos per high-powered field [hpf]) and widely varied symptomatology, which ranges from solid food dysphagia in adults to vomiting and feeding difficulties in children. EoE also must be distinguished from other types of esophageal eosinophilia, either by symptom presentation and/or trial use of a proton-pump inhibitor (PPI). Although other histologic features besides eos peak count can aid in the diagnosis of EoE, none are diagnostic of EoE.<sup>1,2</sup> Presenting symptoms are poorly predictive of disease status, and a diagnosis can only be made in the presence of an esophageal biopsy specimen with  $\geq 15$  eos/hpf, typically after multiple esophageal sites are sampled.<sup>1-3</sup> The International Gastrointestinal Research Group (TIGER) has published 2 sets of conjoint guidelines on the management and treatment of EoE, with input from both allergists and gastroenterologists, most recently in 2011. Although there are notable differences in presenting symptoms of EoE by age, the recommendations to initiate treatment for biopsy-proven disease or to refer a patient for evaluation by an allergist do not vary by age in the TIGER or American College of Gastroenterology guidelines.<sup>1-3</sup>

There is limited previous exploration regarding variations in pathways of care that pertain to the diagnosis and management of esophageal eosinophilia and EoE, and no known study that has modeled this as an effect of the patient, provider, or specialty level.<sup>1,4,5</sup> Differences have been noted in the choice of steroid agent,<sup>6-11</sup> the use of dietary management,<sup>12-16</sup> the order of preference in initiating diet versus steroid therapy,<sup>1</sup> and the age-specific differential diagnosis to consider in symptomatic patients (eg, consideration for esophageal cancers, erosive esophagitis, relative response to PPI [PPI-responsive esophageal eosinophilia [PPI-REE], gastroesophageal reflux disease [GERD]]).<sup>1,3,4,16,17</sup>

The current study seeks to evaluate if age-based differences in pathways to care exist in the diagnosis and management of esophageal eosinophilia and EoE, and to compare any differences across a large, age-diverse sample of patients undergoing endoscopy with esophageal biopsy at a large academic medical center.

## METHODS

This study was approved by the University of Michigan Medical School Institutional Review Board. A retrospective chart review was conducted of 503 pediatric and adult patients who underwent an esophageal biopsy with the biopsy specimen read at the University of Michigan between March 2009 and April 2011, and who were seen in the University of Michigan adult gastroenterology, pediatric gastroenterology, or allergy clinics, or were directly referred for endoscopy. Patients ages 6 months or older were selected from the Department of Pathology database based on the presence of the key words “esophagitis” or “eosinophil” in the diagnostic line of the pathology report.<sup>5</sup> This included biopsy specimens obtained by providers outside the system, but re-read by a University of Michigan pathologist (M.E., J.G.). A comprehensive medical record review was performed to examine patient characteristics, presenting symptoms, treatments, and diagnoses given just before or at the time of (including during immediate follow-up visits for) an *esophagogastroduodenoscopy* with esophageal biopsy.

## Patient attributes

Patient characteristics abstracted from the chart review included age, sex, race, and body mass index. Examined elements of the patient’s presentation included the following: type of symptoms; dysphagia frequency and triggers; GERD and associated symptoms and/or treatments (including the duration of treatment) such as chest or abdominal pain, water-brash, or regurgitation; overchewing of food, or excessive liquid intake to swallow a bite; nausea and/or vomiting; food impaction; esophageal dilatation; globus sensation; bloating; hoarse voice; chronic cough; decreased appetite, food refusal and/or early satiety; food aversion; a history of esophageal stricture or ring; hematochezia; failure to thrive and/or weight loss; and nocturnal awakening due to abdominal pain. Additional information was collected related to the patient’s history of comorbid atopy (asthma, eczema, allergic rhinitis, and/or food allergies as noted in the medical history) and medications taken for treatment of these conditions; history of other prior known gastrointestinal disorders (eg, inflammatory bowel disease, celiac disease, gastric ulcer disease, history of prior fundoplication, or history of *Helicobacter pylori* infection); and alcohol and tobacco history. Each patient’s record also was evaluated for a family history of dysphagia, EoE, esophageal stricture, eczema, or atopic disease. The cohort was further narrowed to exclude patients who had undergone a prior *esophagogastroduodenoscopy* or had no presenting symptoms of esophageal dysfunction and abdominal or epigastric pain, which left 426 individuals remaining for analysis.

## Gross visual and pathologic findings

Endoscopic findings obtained from a review of the endoscopy report were evaluated for the presence of the following features: subjective reported presence of erythema, esophagitis, furrows, plaques, corrugation (eg, a ringed esophagus and/or feline appearance), ulcers and/or tears, small-caliber esophagus, stenosis, Barrett mucosal change, stricture, duodenal ulcer, Schatzki

Download English Version:

<https://daneshyari.com/en/article/6069085>

Download Persian Version:

<https://daneshyari.com/article/6069085>

[Daneshyari.com](https://daneshyari.com)