



Letter

Parental perception of anxiety in children with eosinophilic esophagitis in a tertiary care center

Eosinophilic esophagitis (EoE) is a chronic, immune-mediated, atopic disease characterized by eosinophil infiltration into the esophageal epithelium, resulting in fibrosis and dysfunction.¹ During the past 20 years, its prevalence has increased exponentially in children in Western countries up to 50.5 in 10,000, which is similar to that of pediatric inflammatory bowel disease.¹ The pediatric population presents with a broad spectrum of symptoms that vary with age. These, in ascending order of age, include feeding difficulty, failure to thrive, acid reflux, vomiting, abdominal pain, dysphagia, and food impaction; in contrast, adults primarily present with dysphagia and food impaction.^{1–3}

Various studies have reported on the psychosocial adjustment and coping problems for patients from the persistent symptoms of EoE and currently recommended prolonged treatment modalities.^{4–6} In fact, illness-specific dietary restrictions have been reported to potentially cause a severe negative impact on all components of quality of life in children and their families, including physical, emotional, social, and school functioning.⁷

One particular study by Petrovic-Dovat et al⁸ found that children with immunoglobulin E–mediated food allergies (FAs) did not have increased anxiety compared with a group of children with an anxiety diagnosis and a control group of general pediatric (GP) patients without an anxiety diagnosis. However, post hoc analyses showed a trend for mothers of children with FA to report more symptoms of panic disorder in their children, which did not reach statistical significance ($P = .07$).⁸ The researchers used the Screen for Child Anxiety Related Emotional Disorders (SCARED), which is a 41-question standardized screen for anxiety validated for use in children 8 to 16 years of age.⁹ There are 2 versions of SCARED: one is completed by the patient and the other is completed by the parent. A composite score of at least 25 of 82 indicates the presence of an anxiety disorder, in addition to specific and variable cutoff scores for each of 5 subscales (panic disorder, generalized anxiety disorder, separation anxiety, social anxiety, and school avoidance).

Degree of anxiety, directly or indirectly, in children with EoE compared with children with FA, anxiety disorders, and no chronic conditions has not been studied. In this study, parents of children with confirmed EoE completed the parent version of the SCARED during office visits at the Penn State Hershey Children's Hospital Allergy and Immunology Clinic (Hershey, Pennsylvania). Then, we compared our results with published data by Petrovic-Dovat et al. The inclusion criteria for this study were symptomatic children 8 to 16 years of age with confirmed diagnosis of EoE (15 eosinophils/high-power field after 2-month course of proton pump inhibitor). This study was approved by the institutional review boards of the

Penn State Milton S. Hershey Medical Center and the Penn State College of Medicine, and data were entered into RedCAP.

All variables were summarized before analysis, and the distribution of continuous variables was assessed using histograms and normal probability plots. The proportions of the outcome variables for patients with EoE in this study were compared with the proportions of the outcome variables for the anxiety, FA (food allergy), and GP (general pediatric) groups from the previous study. Because we did not have access to the raw data from the previous study, we used a 1-sample test of proportions to compare the proportion from the EoE group in this study with the proportions of the groups in the prior study in a pairwise process for each outcome variable adjusting the P values for the 3 comparisons made using the Bonferroni correction. This maintained an overall type I error rate (level of significance) of 0.05. All analyses were performed using SAS 9.4 (SAS Institute, Cary, North Carolina).

Of the 20 subjects (mean age 13 years) who met criteria for inclusion in the study, 5 were girls (25%) and 16 were Caucasian (80%). Table 1 presents the data collected from our EoE group compared with the published data of the anxiety, FA, and GP groups.⁸ SCARED scores were highest in the anxiety group in the published study and there was higher rate of all anxiety disorders in the anxiety group compared with the EoE group. There was no difference between the EoE and FA groups for any of the anxiety disorders. However, there was a statistically significant higher rate of parent-reported total anxiety ($P = .007$), panic disorder ($P = .003$), and school avoidance ($P = .029$) in the EoE group vs the GP group.

Our pilot study shows that parents of children with EoE report more symptoms of anxiety disorder and its subtypes of panic disorder and school avoidance compared with parents of children from the general population with no chronic illness. However, there are some limitations. Our study was cross-sectional and had a limited sample size; the children who met the inclusion criteria were in various stages of severity and medical treatment for EoE. Our demographic data for mean age and race were similar to the published article, which helped solidify the comparisons. In addition, the study populations being compared were from a similar geographic area and cared for under the same medical institution. Atopy, which is common in EoE, such as eczema, asthma, FA, and allergic rhinitis, was not considered in this study. Nevertheless, parental perception of quality of life in children with EoE was significantly affected compared with children without chronic illness.

It has been reported that overall adjustment and emotional responses to symptoms and treatment for children are greatly influenced by chronic illness.⁷ Therefore, dietary restriction, which is a major element of EoE management and treatment, should be carefully evaluated and implemented because eating can be a deeply emotional and social experience. Although the

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Table 1

Parent-completed Screen for Child Anxiety Related Emotional Disorders Questionnaire Scores for EoE Vs Anxiety, Allergy, and GP Groups

	EoE	GP group ^a	GP vs EoE group	Allergy group ^a	Allergy vs EoE group	Anxiety group ^a	Anxiety vs EoE group
Total subjects, n	20	43	—	40	—	37	—
Total anxiety	7 (35.0)	4 (12.5)	.007	6 (18.8)	.191	22 (68.8)	.003
Panic disorder	5 (25.0)	1 (6.7)	.003	2 (13.3)	.370	12 (80)	<.001
GAD	6 (30.0)	5 (16.1)	.272	6 (19.4)	.692	20 (64.5)	.004
Separation anxiety	3 (15.0)	7 (28.0)	.586	5 (20.0)	1.000	13 (52.0)	.003
Social anxiety	5 (25.0)	4 (18.2)	1.000	6 (27.3)	1.000	12 (54.5)	.024
School avoidance	5 (25.0)	2 (8.7)	.029	3 (13.0)	.332	18 (78.3)	<.001

Abbreviations: EoE, eosinophilic esophagitis; GAD, generalized anxiety disorder; GP, general pediatric.

^aData retrieved from Petrovic-Dovat et al.⁸

consequences of eating the offending food might not be as obvious or immediate for the EoE group as for the FA group, dietary restrictions and fluctuations in disease manifestation can have a profound effect on children's quality of life.^{7,10} Therefore, the use of a validated anxiety screening tool, such as the SCARED, in patients with EoE could be very useful in screening for anxiety symptoms in children with EoE. Mental health services should be considered for those with higher scores and could be added to the multidisciplinary team (pediatrician, allergist, gastroenterologist, and nutritionist) already treating these patients.

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