Pediatric Nutrition
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EOSINOPHILIC ESOPHAGITIS: PRACTICAL DIAGNOSIS AND MANAGEMENT OF PEDIATRIC PATIENTS WITH EOE

RECENT COURSE UPDATES

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What symptoms are you looking for in this sea of nonspecific symptoms?

In the pediatric population, most patients have nonspecific gastrointestinal symptoms, which can include abdominal pain, intermittent vomiting, gastroesophageal reflux symptoms, and regurgitation. Because these symptoms are nonspecific, there are other factors to consider that would increase suspicion of EoE. These factors include a personal or family history of atopic diseases such as atopic dermatitis, asthma, or allergic rhinitis, a history in infancy of intolerance to a baby formula (such as blood in the stool or vomiting, with an infant formula that resolved with switching to a hypoallergenic formula), or any history of food allergy in that child. When 1 or more is present, a proper workup should be done.[1-3] Another symptom that is important to note is gastroesophageal reflux, which is common in children, but when it appears concomitantly with a failure to thrive, this should raise a suspicion for EoE, among other possibilities. Vomiting that is not associated with lethargy also suggests EoE because children with EoE do not appear sick when they vomit. They can also have intermittent vomiting, and this cannot be ignored. Furthermore, very young children can have feeding difficulties, such as food refusal or delayed progression in feeding due to a delay in oral motor development or sensory development of their feeding skills. It is important to screen for these and, if present, address them.

How do you determine which children should receive dietary therapy?

As a chronic disease requiring long-term treatment, shared decision making with the patient and family is instrumental in treatment decision making. As part of this process, patients and family need to understand and feel comfortable with what they choose, because if it works, it will be used long term.

When EoE is thought to be triggered by various foods, some families will want to get to the root cause and are willing to do an elimination diet, while others may not want to change their lifestyle. In the latter case, the treatment discussion focuses on medications, including rates of efficacy, potential side effects, and the long-term management of patients on these medications.[4,5]

Some families don't have a strong treatment preference, in which case, several factors need to be considered before a dietary restriction is recommended (see Table).[6]

FACTORS	CONSIDERATIONS
Age	What is the age of the patient?
Diet and Nutritional Status of the Patient	• Evaluate for malnutrition • Do they have feeding difficulties? • Do they have self-restricting behavior of foods, (ie, are they picky eaters)? • Are there foods they are already avoiding?
Social and Financial Factors	• Are they motivated to do this diet? • Is their family motivated to help with the diet? (The patient is not doing the diet in isolation—families and siblings share food and meals.)
	• What is the social support system? • If the child is school age, is lunch provided at school or does the child need to bring a special diet to school? • Does it need to be heated in a certain way? • Is there a support system that will allow this diet?
	• What is the financial support system? • Ready-made foods tend to be more expensive. The financial burden is often not discussed with the patients. Physicians can feel uncomfortable, and families can feel uncomfortable, but this needs to be addressed in an open discussion. • Ask if the diet is feasible from a financial standpoint. If not, there are ways to make it affordable with at-home recipes after consulting with dieticians.

When deciding if dietary therapy is appropriate, the patient and family should be asked if they are willing to go through multiple endoscopies. For example, if a patient had success with a 6-food elimination diet, the next step is to introduce 1 food at a time, followed by repeat endoscopy after a few weeks to months. If there is evidence of disease relapse, it is clear the food is a trigger, whereas if their EoE remains in remission, the food was never a trigger for their EoE, and it can stay in the diet. If a food is identified as the trigger, the maintenance diet can be initiated, based upon discussion with the patient and family, again with the understanding that following the plan long term will be needed.

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What is your recommended treatment approach?

Shared decision making with the patient and family is very important. There are 2 groups of treatment approaches: dietary eliminations and medications. It is very important to share with the patient the types of diets and types of medications, including the expected safety and efficacy of each therapy, and how each therapy is optimized long term.

If dietary restriction therapy is selected, there are 3 major types of diet. The first one is the modified elemental diet, where all foods are removed from a patient's diet and substituted with an amino-acid-based formula, along with 1-2 foods. This diet is best reserved for very sick patients and unique situations and should be avoided, if possible, because the long-term management of this diet, and the food additions required to make the quality of life acceptable, are very difficult. The second type of diet is the test-directed elimination diet where foods with a positive skin-prick or patch test result are removed. This is no longer encouraged by any EoE specialist because this diet has a low efficacy and can potentially exacerbate IgE-mediated food allergy. The third type of diet is the most favored among these, and it is called the **empiric elimination diet,** because foods are removed empirically, without any testing.

One approach is the **6-food elimination diet**, which consists of removal of dairy, gluten, eggs, soy, all nuts, and all seafood. Another is the **4-food elimination diet**, which I generally follow because seafood and nuts are not common triggers for EoE. The **2-food elimination diet** removes dairy and gluten only. And finally, there is the **1-food elimination diet,** which consists of removal of the most common trigger, which is dairy.

My treatment approach is to choose the elimination diet that is expected to work best for that specific patient and their family based on their medical situation and their nutritional, psychosocial, and financial factors. Considering all these factors is important so that they can adhere to the diet without problems in the long term.

TREATMENT APPROACHES
Types of Empiric Elimination Diets
6-food elimination diet: Removes dairy, gluten, eggs, soy, all nuts, all seafood
4-food elimination diet: Removes dairy, gluten, eggs, soy
2-food elimination diet: Removes dairy and gluten only
1-food elimination diet: Removes dairy only

If medication is selected, medication options include proton pump inhibitors (PPI). Treatment with a PPI is generally started with a high dose, with the goal of inducing remission clinically and histologically. If remission is achieved, the dose of PPI is lowered, with monitoring, to see if this lower dose is effective as maintenance therapy.[7] The second medication option is off-label use of a topical corticosteroid, such as fluticasone or budesonide, taken orally. Close monitoring is important for potential side effects, including growth retardation, adrenal suppression, and oral candidiasis. The third medication option is a biologic, particularly for a patient who has 1 or more atopic diseases that are not well controlled. When considering a biologic, discussion with the multidisciplinary care team is especially important, first, to share that a diagnosis of EoE has been made, and second, to minimize polypharmacy by using a biologic that is FDA-approved for the other atopic disorder.

Can you share your experience in the multidisciplinary management of children with eosinophilic esophagitis? What are some key pearls and pitfalls?

Multidisciplinary management is crucial, especially when treating children. Not every patient needs to see every provider on the team at the same time and all the time, as this can be overwhelming and costly. However, early involvement with the right specialists, whether it is a physician or another clinician, is essential for their care.

For example, children with EoE often have difficulty swallowing; they have GI symptoms and may have reduced oral intake. In addition, they may have failure to thrive (up to 30% of EoE patients have failure to thrive). Consequently, a dietitian becomes an important part of the multidisciplinary care team beyond their role with diet restriction therapy.

Other situations, when multidisciplinary care is important, include when a young child is placed on a restrictive diet or if they have feeding difficulty, such as pain with swallowing, because they may self-restrict their diet, resulting in feeding delays. In this case, a feeding therapist is often needed to help to re-establish proper feeding. Note that EoE needs to be in remission first, before initiating feeding therapy.[8] The goal is to reverse delay in oral motor development and delay in sensory development, especially for a patient with an onset of EoE before the age of 2 years.

In summary, for a child with EoE, a multidisciplinary team can consist of a pediatrician, pediatric gastroenterologist, pediatric allergist, dietitian, and feeding therapist. In addition, the pathologist is important, so the histopathology findings are fully evaluated and clearly described. Thus, the pathologist is important for every stage of the biopsy evaluation.

In addition, the multidisciplinary team might also include an otolaryngologist, if there is coughing and gagging with food, so that the patient may be referred accordingly. An emergency medicine clinician also needs to have similar awareness of EoE, so the patient is appropriately referred, especially a patient with an esophageal food impaction.

Additional members of a multidisciplinary team can include a psychologist, social worker, or psychiatrist, particularly if the patient is experiencing a high disease burden, such as a patient treated with dietary restriction. The disease burden can be either physical or psychological, which can affect their social interaction with peers. Addressing the disease burden early is important to avoid anxiety or depression.

For more context, watch Dr. Chehade's recorded CE/CME webcast, *Eosinophilic Esophagitis: Practical Diagnosis and Management of Pediatric Patients with EoE*. It's part of our extensive collection of educational material, *Understanding Food Allergies in Infants and Children.*

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This material is supported by an educational grant from Mead Johnson Nutrition