2017

Eosinophilic Esophagitis

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Introduction

Providers have only been diagnosing eosinophilic esophagitis (EoE) for two decades. There is still a lot to learn about the diagnosis, treatment, and cause of EoE. I chose this topic to research due to personal interest. The general-public has shown increased awareness in how food is processed, antibiotics used in meats, genetically modified foods, organic foods, and their effects on health. The question that arises from this newly diagnosed process, is this the body's response to irritants, or an autoimmune response exacerbated by irritants?

Sign and Symptoms

The pediatric patient
Food aversion
Abdominal pain
Vomiting
Failure to thrive
Male
Other atopic disease

The adult patient
Dysphagia
GERD not relieved by proton pump inhibitors
Other atopic diseases
Asthma
Food impaction

The EGD

The esophago-gastroduodenal endoscopy (EGD) has brought EoE to the forefront. Patients scopes present differently among the ages groups. This leads the researchers to believe that EoE is a chronic progressive disease that causes fibrotic changes to the esophagus over time.

Significance of pathophysiology

- Eosinophilic esophagitis is characterized by rings, furrows, or white plaques in the esophagus, visualized on esophago-gastroduodenal endoscopy (EGD).
- Biopsies are taken to confirm the diagnosis, fifteen eosinophils per power field, in four separate areas of the esophagus is the standard for a new diagnosis.
- Pediatric patients' scopes were more inflammatory in nature, featuring furrows and plaques.
- Adult EGD's were more fibrous in nature, featuring rings, narrowing or strictures.

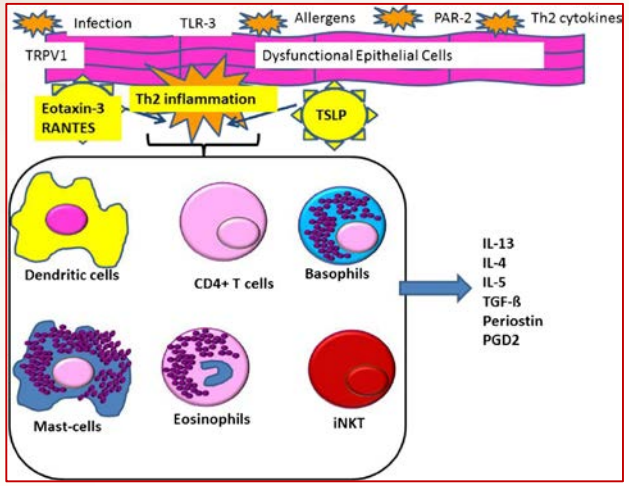
Picture 1. From left to right normal esophagus, ringed, furrowed, plaques

Process of Pathophysiology

Eosinophilic esophagitis is an autoimmune disease, patients that are diagnosed with EoE usally develop other autoimmune disease throughout their lives.

It is commonly accepted theory that the inflammation in the esophagus is due to a Th2 inflammation drive by the cytokine thymic stromal lymphopoietin (TSLP) secreted by epithelial cells in the esophagus (Cianferoni & Spergel, 2016). The cytokine, TSLP, is a secreted by epithelial cells in the skin, gut, and lung, in response to infectious agents, atopic cytokines, and environmental allergies. The dysregulation of TSLP, and other cytokines, is the cause of the elevated levels of eosinophils in the esophagus. TSLP is increased in patients with EoE compared those without. Evidence suggests that TSLP is key for the maturation of antigen-presenting cells (APCs) and other hematopoietic cells. TSLP is a master regulator of Th2-type allergic inflammation.

Blood samples and esophageal biopsies of patients with EoE showed increased levels of Th2 prototypical cytokines and chemokines such as interleukin (IL)-5, IL-4, IL-13, IL-15, TSLP, and eotaxin-3 secreted by the typical cells involved in allergic inflammation: T cells, mast cells, basophils, invariant natural killer T cells (iNKTs), and esophageal epithelial cells. Th2 cytokines are responsible for inflammation appreciated in EoE. Th2 cytokines induce an increased response from T cells, basophils, iNKTs, and mast cells; enhancing survival and activation of eosinophils, thus responsible for the fibrotic changes (Cianferoni & Spergel, 2016).



Nursing Considerations

- Assess for dysphagia
- Teaching the patient to sit up right, eat slowly, drink plenty of water between bites, and chew food thoroughly.
- Teach patients about their food allergens and how to read labels to be aware of foods that contain allergens.
- Review medications prescribed to the patient and how to take medications to minimize exacerbations.

Treatment

- Food elimination diet
- Oral antihistamine
- Oral fluticasone
- Acid reducing drugs
- Scheduled EGDs to assess progression

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