



Markedly Increased Prevalence Of Eosinophilic Esophagitis In Patients With Atopic Diseases In A U.S. Veteran Population

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Purpose

Our study aimed to investigate the suggested link between EoE and atopy, and determine the associated demographics, risk factors, and upper gastrointestinal symptoms.

Further, we study the risk of EoE associated with various atopic conditions in the VA patient population, as we continue to optimize treatment options, including various elimination diet plans.

Background

EoE is a chronic, antigen-mediated disease of the esophagus of increasing clinical prevalence and a major cause of upper GI morbidity.

Patients with EoE often present with dysphagia and food impaction, progressing to esophageal furrowing and plaque formation.

EoE pathophysiology has been linked to that of asthma, allergic rhinitis, and conjunctivitis, as well as increased sensitivity to aeroallergens and food allergens.

Elimination diet for patients with EoE and concurrent food allergy should be optimized to improve patient adherence and patient quality of life.

Methods

A case-control, retrospective nationwide analysis was conducted with data from the VA population, 2009-2021, using a 9.7% random sample using patient data from the nationwide Department of Veterans Affairs electronic health records (VA EHR) system. Patients with EoE and at least one atopic disease diagnosis were identified using ICD9/ICD10. Demographic data, symptoms, and risk factors were collected for all patients.

EoE as the response and at least one atopic condition, gender, race as predictors

We fit three logistic regression models to the data

EoE as the response and each atopic condition, gender, race as predictors

EoE as the response and at least on symptom, at least one atopic condition, gender, race as predictors

Results

Of 1,110,189 VA patients, 26% (288,193) had at least one atopic condition and 0.092% (1,022) had an EoE diagnosis. **Atopy was more common in patients with EoE (51.6%) than without (25.9%; p<0.0001).**

In atopic patients, **EoE was common in patients with milk (4.10%), egg (1.06%), and wheat (0.81%) allergy.** Frequency of EoE was lower in patients with asthma (0.26%), rhinitis (0.22%), and conjunctivitis (0.16%).

Compared to male VA patients without allergy, **odds ratio for EoE was 2.87 for a male, and 3.29 for a female, with at least one allergic condition.**

VA patients with at least one atopy, **milk allergy had 19.9 times increased odds of EoE, wheat allergy had 5.94 times increased odds, and egg allergy had 4.10 times increased odds.**

Of patients with *more than one allergic condition*, **rhinitis and asthma were most likely to increase odds of EoE.**

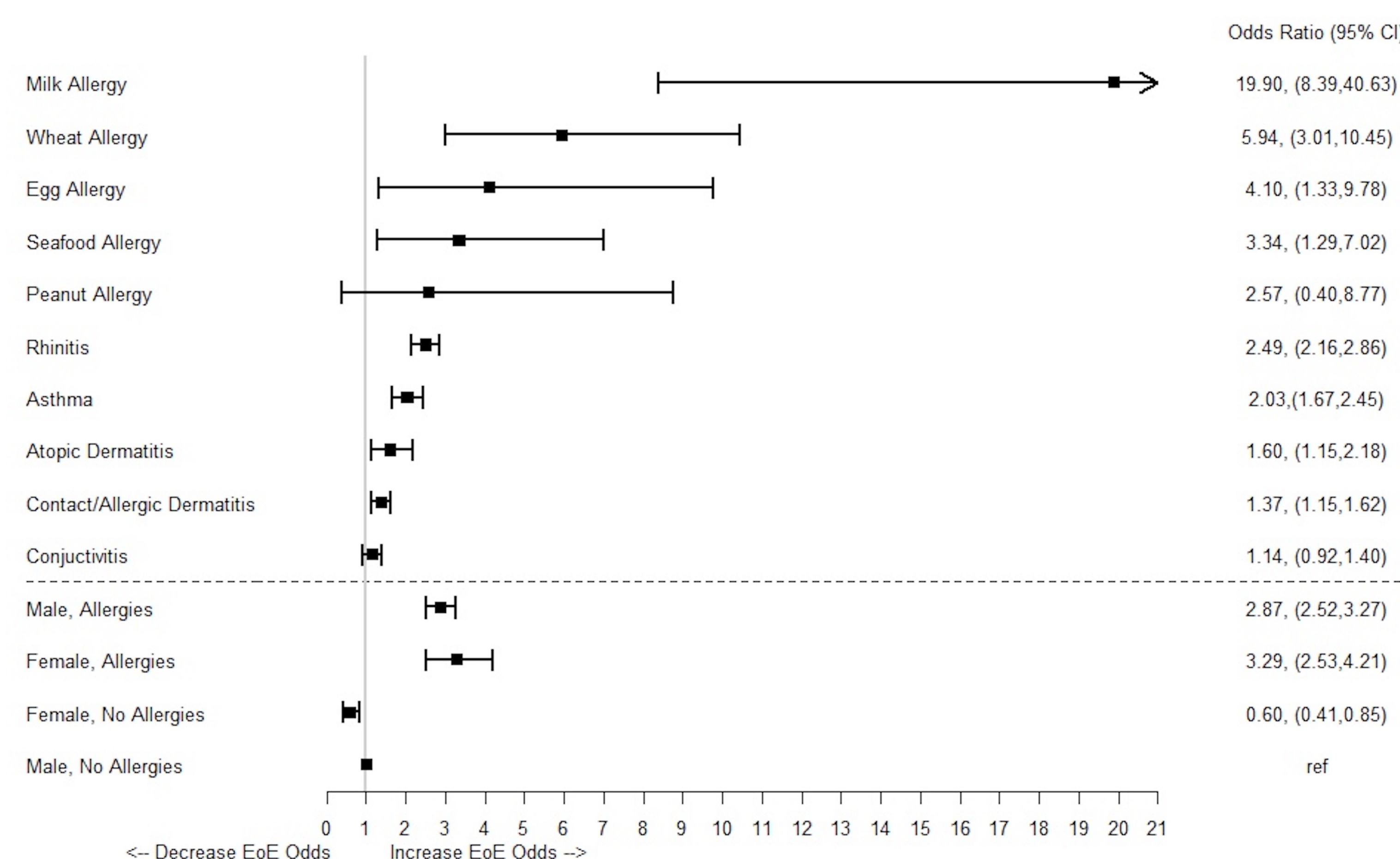


Figure 1. Odds ratio of EoE with various atopic conditions and sex with or without atopic disease.

Conclusions

While these data confirm that allergic disease is commonly associated with EoE, they newly show that the **prevalence of EoE in patients with atopic diseases is increased compared to the general population.**

Patients with **food allergies, especially to milk, wheat, and egg**, were most likely to have EoE as compared with other atopies.

Multiple atopies further contribute to the likelihood of EoE.

Rhinitis and asthma are the most common second allergies to increase odds of EoE.

High clinical suspicion for EoE should be considered if a patient **has GI symptoms with history of atopic disease and especially milk, wheat, or egg allergy.**

Elimination diet plans can be modified to each individual patient's underlying atopic conditions.

Our results indicate that **milk and wheat should be eliminated first**, to reduce risk of developing or exacerbating EoE symptoms.

Allergy testing should be done to eliminate increased prevalence of EoE associated with multiple allergic conditions. These findings **support the 2-4-6 elimination diet plan**, which allows for an individualized and easy to follow diet plan for each patient.

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