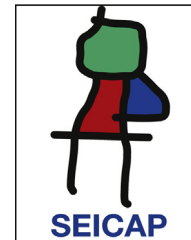




## Allergologia et immunopathologia

Sociedad Española de Inmunología Clínica,  
Alergología y Asma Pediátrica

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### ORIGINAL ARTICLE

## Demographic, clinical and allergological characteristics of Eosinophilic Esophagitis in a Spanish central region<sup>☆</sup>

A. Castro Jiménez<sup>a,b,\*</sup>, E. Gómez Torrijos<sup>a,b</sup>, R. García Rodríguez<sup>a</sup>, F. Feo Brito<sup>a</sup>,  
J. Borja Segade<sup>a</sup>, P.A. Galindo Bonilla<sup>a</sup>, J. Rodríguez-Sánchez<sup>b,c</sup>, F. Guerra Pasadas<sup>d</sup>

<sup>a</sup> Allergy Section, Hospital General Universitario de Ciudad Real, Ciudad Real, Spain

<sup>b</sup> Eosinophilic Esophagitis Research Group, Hospital General Universitario de Ciudad Real, Spain

<sup>c</sup> Endoscopy Unit, Hospital Gutiérrez Ortega, Valdepeñas, Spain

<sup>d</sup> Department of Allergy and Pathology, Medical School Unit, Hospital Universitario Reina Sofía, Córdoba, Spain

Received 8 January 2013; accepted 23 April 2013

Available online 8 July 2013

#### KEYWORDS

Atopy;  
Eosinophilic  
esophagitis;  
Panallergens;  
Pollen;  
Plants

#### Abstract

**Background:** Eosinophilic esophagitis (EoE) is a chronic inflammatory emerging disease of the esophagus with immunoallergic aetiology. The allergens involved have not been clearly defined and may depend on the exposure of the population to aeroallergens or food antigens.

**Materials and methods:** Patients diagnosed with EoE between 2006 and 2011 were referred to our Allergy Section. Patch and skin prick tests (SPT) with aeroallergens and foods were performed, and total and specific IgE levels, eosinophil cationic protein levels and eosinophil count were determined.

**Results:** 43 patients were included. 36 (83.7%) were atopic. 29 patients presented choking, 19 dysphagia, 9 food impaction with urgent endoscopy, 4 chest pain, 1 isolated vomiting and 1 epigastric pain. 22 had two or more symptoms. The mean duration of symptoms was 3.73 years. Concomitant allergic diseases included rhinoconjunctivitis and/or asthma (31 patients), IgE food allergy (21 patients) and atopic dermatitis (3 patients).

32 (74%) were sensitized to aeroallergens, of which 90% were sensitized to pollens; 23 (54%) showed positive tests to foods and 12 of them (52%) to lipid transfer proteins (LTP).

Of the 29 pollen-allergic patients, 15 (52%) were sensitized to plant foods and 10 (34.4%) to LTP.

**Conclusions:** Our findings support those reported in the literature: the disease is more common in men aged 30–40 years with at least a three-year history of symptoms of esophageal dysfunction, sensitized to pollens, the predominant aeroallergen in our area, but also to plant

**Abbreviations:** EoE, Eosinophilic Esophagitis; ECP, serum eosinophil cationic protein; SPT, skin prick tests; LTP, lipid transfer proteins; IgEt, total IgE.

<sup>☆</sup> The study was completely supported by the Ciudad Real University General Hospital (SESCAM, Health Service of Castilla-La Mancha, Spain).

\* Corresponding author.

E-mail address: [aracelicast82@hotmail.com](mailto:aracelicast82@hotmail.com) (A. Castro Jiménez).

foods or panallergens. These results increase the evidence for an immunoallergic aetiology and can help us in the early diagnosis of EoE.

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## Introduction

Eosinophilic esophagitis (EoE) was first described by Attwood in 1993<sup>1</sup> in 12 adult patients presenting with dysphagia. It is an emerging chronic inflammatory disease<sup>2</sup> of the oesophagus that affects children and adults. EoE is probably triggered by a hypersensitivity mechanism to foods and/or aeroallergens<sup>2</sup> and is characterized by a T helper type 2-mediated inflammation of the gastrointestinal tract,<sup>2-16</sup> similar to the inflammation produced by aeroallergens in the respiratory tract.<sup>3</sup> Sensitization to foods and/or aeroallergens probably plays an important role in the aetiology of EoE.<sup>4</sup> This assumption is based on an inter-relationship between the respiratory and digestive tracts as a consequence of the systemic response that characterizes allergic diseases.<sup>5</sup>

The prevalence of EoE has been increasing over the past decade, both in children and in adults.<sup>4,6,7,17,18</sup> It is not known whether this is due to a true increase in prevalence or to an improved understanding of the disease and a multidisciplinary approach that is leading to a higher rate of diagnosis.

It is manifested by symptoms of esophageal dysfunction and histologically occurs as a predominantly eosinophilic inflammation.<sup>17</sup> A significant esophageal eosinophilia has been shown in 1% of the general population, but only 4% of the adult population had marked infiltration consistent with definite EoE<sup>19</sup> being more common in developed countries and in men. The form of presentation and the intensity, frequency and duration of symptoms vary considerably.<sup>6</sup> However, the sociodemographic characteristics are less variable, as all authors report that the immunoallergic aetiology parallels that of atopy.<sup>6,18</sup> Onset occurs during childhood in 65% of cases, although it has been described in all age groups.<sup>18</sup>

Its physiopathology is based on a combination of factors:

- (a) An immunoallergic mechanism mediated by sensitized T-lymphocytes through a T<sub>H</sub>2-type immunologic reaction to certain elements in the diet or in the environment that act as food allergens or aeroallergens,<sup>2,4,17,18</sup> or by a mixed mechanism, also mediated by IgE immunoglobulin (Ig E).
- (b) The presence of gastro-esophageal reflux that induces an abnormal immune response and could lead to the onset of EoE, or EoE being itself a factor that predisposes to gastro-esophageal reflux.<sup>18</sup>

The province of Ciudad Real is located in central Spain. The more prevalent airborne pollens are *Poaceae*, *Olea* and *Chenopodiaceae-Amaranthaceae*.<sup>20</sup> Our population has a high level of sensitization to these pollens and to plant foods, both of which are rich in panallergens (lipid transfer proteins [LTP] and/or profilins) with marked

cross-reactivity.<sup>6,8</sup> The relationship between hay fever and plant-food allergy in the Mediterranean region could mean that respiratory sensitization to panallergens present in pollens constitutes a risk factor for being sensitized to multiple foods and plays a role in the subsequent appearance of EoE, particularly in adults.<sup>9</sup> Therefore, the identification of the allergic sensitization of the patients in our series would be of major importance to establish the possible relationship between EoE and the allergens that could be the triggers of the disease.

We performed this study to determine the demographic and clinical characteristics of patients with EoE in our reference area of Ciudad Real city and province. We also evaluated the frequency of allergic sensitization to foods, aeroallergens and panallergens in patients diagnosed with EoE, and studied relevant laboratory parameters: total IgE (IgEt), serum eosinophil cationic protein (ECP) and peripheral blood eosinophil count.

## Materials and methods

### Study design

This was a prospective cross-sectional descriptive study.

### Study population

The study population included patients diagnosed with EoE between 2006 and 2011 in the Gastroenterology Department of Ciudad Real University General Hospital (Eosinophilic Esophagitis Research Group) and subsequently referred to the Allergy Department of the Hospital. The diagnosis was based on compatible clinical manifestations (symptoms of esophageal dysfunction) and the results of the esophageal biopsy; based on the criteria published in the latest consensus of the American Clinical Committee and on the criteria of the European Academy of Allergology and Clinical Immunology (EAACI) and the World Allergy Organization (WAO).<sup>17</sup>

This study was approved by the Hospital's Ethics and Clinical Research Committee and in accordance with those of the World Medical Association and the Helsinki Declaration.

### Clinical evaluation

The following data were recorded for each patient: age, sex, gastrointestinal manifestations, duration of the disease, foods that triggered symptoms, history of rhinoconjunctivitis (duration and seasonal characteristics), asthma, atopic dermatitis or hay fever, food-related immediate symptoms prior to the onset of EoE, need for urgent endoscopic treatment and result of the biopsy on which the diagnosis was based.

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