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Pollen count and incidence of oesophageal eosinophilia in southwestern area of the region of Madrid: is there a relationship?

Objectives and study: This study aimed to determine the incidence of oesophageal eosinophilia in southwestern area of the region of Madrid, analyzing the relationship between eosinophilia and the most common pollens measured in annual absolute counts (*Olea, Platanus, Poaceae, Artemisia, Urticaceae, Cupressaceae and Quercus*) and seasonal variations in these pollen counts. We hypothesized that a relationship between them could exist in addition to other environmental factors.

Methods: A multi-center retrospective observational descriptive study of the incidence of oesophageal eosinophilia in children aged under 15 years in the southwestern area of the region of Madrid. 254 cases diagnosed with confirmed oesophageal eosinophilia based on standard clinicopathologic criteria between 2002 and 2013 were included. The clinical data collected include age, sex, clinical presentation and diagnosis date. To test for statistical significance, the relative risk (RR) estimate was performed using negative binomial regression models to assess the association between seasonal incidence, pollen counts and respective time of pollination of each type of pollen analysed (data from Subiza Clinic and Red PalinoCAM). All statistical analyses were performed with Stata v.11 software.

Results: 192 were male (75.6%), age range 6 months to 14.99 years old (median 9). Symptoms at presentation were: oesophageal impaction 23.6% (n=60); dysphagia 22%

(n=56); gastroesophageal reflux-like symptoms 44.9% (n=114); abdominal pain, faltering growth and others 4.3% (n=11); 5.1% were asymptomatic (n=13). We estimated the incidence of cases per 100,000 under 15 year old children / year (from 2002-2013): 0.81; 1.5; 0.37; 3.17; 3.07; 4.36; 6.87; 7.19; 8.38; 9.05; 9.14; 9.68. The overall analysis of the relationship between the oesophageal eosinophilia incidence and absolute counts of pollen types analysed both annually and at times of pollination revealed a RR> 1 for all pollens, though only *Platanus* showed a statistically significant difference ($p < 0.05$).

Conclusion: The average incidence of oesophageal eosinophilia in our region has increased by 19% each year between 2002 and 2013. The characteristics of age, sex and clinical presentation presented here are presented here are consistent with those of other reports. This increase may be related to *Platanus* pollen counts (among other environmental factors), with higher incidence occurring during pollination. According to this model, a 9.8% increase in the risk of developing oesophageal eosinophilia is expected for every 1,000 unit increase in *Platanus* pollen counts.

Disclosure of interest: None Declared.

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