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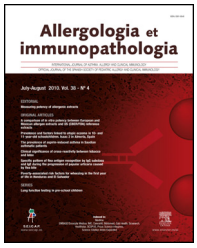

ORIGINAL ARTICLE

Diagnostic and therapeutic approaches in respiratory allergy are different depending on the profile of aeroallergen sensitisation

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Abstract
Background: There are few studies which analyse the characteristics of allergic respiratory disease according to profiles of sensitisation to different allergens. This study describes the clinical features and therapeutic approaches, according to the sensitisation profile to relevant aeroallergens, in a sample of adult patients with a first-time diagnosis of respiratory allergy (rhinitis and/or asthma).
Methods: 1287 patients, enrolled consecutively in the spring of 2010 by 200 allergy specialists, were classified into four groups according to sensitisation to significant allergens in each geographical area (grass pollen, olive pollen, grass and olive pollen, house dust mites). Information was obtained on demographics, diagnostic procedures used, treatments prescribed, clinical characteristics of the rhinitis, and severity and control of asthma.
Results: Of the patients, 58.6% had rhinitis only and 38.7% had both rhinitis and asthma. Patients with more severe rhinitis had more severe and poorer controlled asthma. Sensitisation to different allergens was not associated with significant differences in severity and control of asthma, but patients with house dust mite allergy presented persistent rhinitis more frequently. Allergy to grass pollen was significantly associated with food allergies. Differences were observed in the frequency of prescription of immunotherapy and antileukotrienes in patients allergic to house dust mites and of topical corticosteroids in patients with pollen allergy.

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Conclusions: It was observed in this study that in respiratory allergy disease, there are clinical differences as well as differences in diagnostic procedure and therapeutic attitudes, depending on the clinically relevant allergen.

Introduction

The prevalence of allergic rhinitis in the general population in developed countries is high (10–42%),[1] almost three times higher than that of asthma (4–10%).[2] In Spain, rhinitis affects 22% of the population.[3] The ARIA document (*Allergic Rhinitis and its Impact on Asthma*)[4] emphasises the reciprocal impact of the co-existence of allergic rhinitis and asthma. Up to 50% of patients with allergic rhinitis develop asthma, and over 75% of asthma patients have rhinitis.[5] 55% of patients who attend allergy clinics in Spain were diagnosed with allergic rhinitis, of whom 37% were also diagnosed with asthma.[6] In addition, 89% of asthma patients seen by allergy specialists suffer allergic rhinitis.[7]

Allergy may be understood as a systemic disease which affects different organs,[8] appearing in the form of rhinitis, frequently accompanied by conjunctivitis, and associated in many cases with asthma. The IgE-mediated allergic reaction to environmental allergens has been shown most conclusively to be the cause which sets this process in motion[9,10] and it has been demonstrated that, at least for house dust mites, exposure and sensitisation follows a dose-dependent relationship.[11] Furthermore, rhinitis and asthma are diseases of variable severity. Moreover, exposure to allergens may exacerbate symptoms of rhinitis and asthma in sensitised patients. However, there are very few studies which analyse the clinical characteristics of patients with allergic rhinitis and/or asthma related to the profile of sensitisation to various allergens in similar genetic and sociocultural populations.[12,13] In China, sensitisation to *Artemisia vulgaris* or *Ambrosia artemisifolia* seemed to be associated with the severity of intermittent rhinitis, while sensitisation to house dust mites was associated with increased severity of asthma,[14] but there are few data in western populations.

The rate of sensitisation in a population to a certain allergen is known to differ depending on parameters such as climate or environment. Around 80% of school children with asthma are sensitised to at least one of the common allergens in their environment, and sensitisation to a predominant allergen has been shown to increase the risk of suffering asthma 4 to 20-fold.[13] In Spain, while grass pollen is the most significant allergen in the central and northern regions, olive pollen is the most significant in the southern half of the country and dust mites are predominant in the Mediterranean and island regions. The geographical variability of allergens may produce heterogeneity in terms of both prevalence and clinical manifestations.

The aim of this article is to compare clinical characteristics in patients with respiratory allergy, evaluating whether there are differences depending on their sensitisation profile to significant allergens in each geographical area of Spain, which might be translated into changes in diagnostic and therapeutic approaches. Accordingly, we present the data obtained on the clinical characteristics in a large sample of adult patients from all over Spain, with a first-time diagnosis of respiratory allergy (rhinitis and/or asthma) in allergy clinics, according to their profile of sensitisation. In addition, data on the diagnostic and therapeutic management of these patients are presented.

Methods

Study design and variables

An epidemiological, observational, descriptive, cross-sectional, multicentre study was designed, in which data were collected during a single visit from patients over 18 years of age with clinical manifestations of respiratory allergy. Each investigator had to enrol six consecutive patients diagnosed for the first time with rhinitis and/or asthma in an allergy clinic, according to the clinical criteria for rhinitis[4] and asthma,[15] and for patients with asthma, based on lung function testing.[15] The patients were also classified into four groups according to their profile of sensitisation to significant allergens in each geographical area (establishing the exact relationship between the clinical picture and the symptomatic period): grass pollen, olive pollen, olive and grass pollens and house dust mites. Enrollment took place throughout spring 2010 (March to June), coinciding with the grass and olive pollen season in Spain. Patients also had to have been living for at least two years in the geographical area of the sample. Fig. 1 shows the distribution of centres by regions.

Patients sensitised to other perennial allergens, such as animal dander and moulds, occupational allergens and patients sensitised to other clinically significant pollens during the same pollen season in each region, and patients who had received prior immunotherapy or who had any other associated nasal or bronchial disease were also excluded. Participation in the study by investigators and patients was voluntary and patients had to sign informed consent. Approval was obtained from the Ethics Committee of the Hospital Clinic de Barcelona.

Sociodemographic (age, sex, smoking habit, and area of residence) and clinical variables were assessed for each patient. Data on the clinical characteristics of their rhinitis and asthma, diagnostic procedures used and prior treatment and treatment prescribed at the time of the visit were obtained. Allergic rhinitis was classified according to the criteria of the modified ARIA guidelines.[16] The Spanish Guideline on the Management of Asthma (GEMA 2009)[15] was used to assess the severity and degree of asthma control at the time of the consultation and control was also assessed using the Asthma Control Questionnaire ACQ5.[17]

Skin tests and determination of specific IgE

To confirm the diagnosis of sensitisation to the most significant allergen (olive and grass pollen or house dust mites)