

Climate-driven differences in molecular IgE sensitization profiles in allergic patients from Bahía Blanca and La Plata in Argentina

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Abstract text

Text: Background: Allergen sensitization profiles will be increasingly affected by environmental and climate changes. This study exemplifies fundamental of differences in molecular IgE sensitization profiles in two nearby regions in Argentina, La Plata and Bahía Blanca.

Methods: A cross-sectional study was conducted involving 155 patients with allergic symptoms from La Plata and Bahía Blanca (34.01±11.29 years, female/male: 83/72). Serum samples were analyzed for IgE-reactivity using a chip containing 101 micro-arrayed non-redundant allergen molecules. Statistical analyses were conducted to compare allergen-specific IgE recognition profiles/levels, sensitization prevalence and reported symptoms in patients.

Results: La Plata showed higher prevalence of IgE-reactivity to HDM allergens, with Der p 23 (74%), Der p 1 (53%), and Der p 2 (56%) being the most frequently recognized allergens and patients more frequently reported allergic asthma (AA) symptoms (40% vs. 24% in Bahía Blanca). Conversely, Bahía Blanca had increased sensitization rates to grass pollen allergens, particularly Phl p 1, (49%), along with *Alternaria alternata* (Alt a 1, 35%). Patients from Bahía Blanca reported a significantly higher prevalence of atopic dermatitis (54% vs. 31% in La Plata). Cat allergen Fel d 1 was a relevant sensitizer in both regions (La Plata 30%, Bahía Blanca 37%). Sensitization to class 1 food allergens was rare in both regions (1-8%), among them non-specific lipid transfer proteins (e.g., peanut, peach).

Conclusion: Significant regional differences in allergen sensitization profiles were observed in two nearby regions influenced by climatic differences. Our findings emphasize the need for region-specific allergen profiling and demonstrate the clinical advantage of molecular allergy diagnosis for more precise allergen identification to improve the management of allergic diseases.

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Conflict of Interest statement

Do you have any conflict of interest to declare?: No

Affirmation

- 1. Consent to participate and present onsite:** Yes
- 2. Consent to publication publication:** Yes
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