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Profile of Cross-Reactivity Allergens Highlighted by Multiplex Technology "Alex Microchip Technique" in the Diagnosis of Type I Hypersensitivity

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Abstract : Introduction: Current allergy diagnostic tools using Multiplex technology have made it possible to increase the efficiency of the search for specific IgE. This opportunity is provided by the newly developed "Alex Biochip", consisting of a panel of 282 allergens in native and molecular form, a CCD inhibitor, and the potential for detecting cross-reactive allergens. We evaluated the performance of this technology in detecting cross-reactivity in previously explored patients. Material/Method: The sera of 39 patients presenting sensitization and polysensitization profiles were explored. The search for specific IgE is carried out by the Alex ® IgE Biochip, and the results are analyzed by nature and by molecular family of allergens using specific software. Results/Discussion: The analysis gave a particular profile of cross-reactivity allergens: 33% for the Ole e1 family, 31% for NPC2, 26% for storage proteins, 20% for Tropomyosin, 10% for LTPs, 10% for Arginine Kinase and 10% for Uteroglobin CCDs were absent in all patients. The "Ole e1" allergen is responsible for a pollen-pollen cross allergy. The storage proteins found and LTP are not species-specific, causing cross-pollen-food allergy. The nDer p2 of the NPC2 family is responsible for cross-reactivity between mite species. Conclusion: The cross-reactivities responsible for mixed syndromes at diagnosis in our patients were dominated by pollen-pollen and pollen-food syndromes. They allow the identification of severity factors linked to the prognosis and the best-adapted immunotherapy.

Keywords : specific IgE, allergy, cross reactivity, molecular allergens
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