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Profiles in shrimp allergy. A clinical study

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Aims: Shrimp allergy is a frequent food allergy in Portugal. Besides tropomyosin sensitisation, other shrimp-derived allergens might contribute to the different clinical profiles observed. The aim of this study was to characterize, over a six-year period, the frequency of tropomyosin sensitisation and the clinical profiles observed in patients allergic to shrimp, followed in a Food Allergy outpatient consultation in Coimbra Hospital and University Centre.

Patients and Methods: Sixty three patients (32 females), mean age 38±16 years, with immediate reactions to shrimp were studied. The clinical manifestations of shrimp allergy, symptoms after ingestion of other foods, and inhalant allergies were recorded. Skin prick tests (SPT) to shrimp and to inhalant allergens (GA2LEN battery) were performed. Sensitisation to tropomyosin was determined by SPT and/or specific IgE (sIgE) to Pen a 1. SPT and sIgE to other foods and inhalant allergens were done according to case history. Oral challenge tests were performed in selected cases.

Results: Sensitisation to tropomyosin was detected in 32 patients (50,8%). Among the tropomyosin sensitized patients (group I), anaphylaxis after shrimp ingestion occurred in 11 patients (34,4%) whereas the remainder 21 patients presented with skin-mucosal manifestations (urticaria and/or angioedema and/or swollen lips-tongue-uvula). All patients were sensitised to other crustaceans and/or molluscs and reported similar symptoms after ingestion. Mite sensitisation was detected in all the patients. Twenty two had asthma, 24 had rhinitis/rhinoconjunctivitis and 5 had atopic dermatitis.

In the 31 patients without tropomyosin sensitisation (Group II), anaphylaxis after shrimp ingestion occurred in 5 patients (16,1%) and cutaneous-mucosal symptoms in 26 patients. Nineteen patients reported no symptoms with molluscs and 3 patients tolerated both molluscs and crustaceans other than shrimp. 80,6% were sensitised to mites and 14 had a history of asthma, 22 rhinitis/rhinoconjunctivitis and 2 had history of atopic dermatitis.

Conclusions: Cutaneous and/or mucosal symptoms were the most frequent clinical manifestations in both groups. Anaphylaxis was more frequent in patients sensitised to tropomyosin (34,4% vs 16,1%). Besides tropomyosin, other proteins appear to be responsible for shrimp allergy in a significant number of patients, including patients with anaphylaxis.