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MEETING ABSTRACT Open Access

Food allergy and anaphylaxis – 2044. Component resolved allergen sensitzation profiles in shrimp allergy in the tropics

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Background

Shellfish allergy is one of the commonest food allergies in the tropics.

Objectives

To evaluate the sensitization profile to a panel of allergens of dust mite(DM), shrimp and tropomyosin allergens in a cohort of shrimp allergy (SA) patients.

Methods

Serum allergen-specific IgE of 105 subjects were quantified using ImmunoCAP and ImmunoCAP ISAC biochips. The subjects were classified based on a convincing clinical history and food challenge testing (FC) (dose=70g) to *Penaeus monodon* and *Litopenaeus vannamei*. **Group1A**: Either SA with FC positive to either shrimp (n =22) or SA admitted to emergency departments for severe reactions but no FC performed (n=14) (total n=36); and **Group1B**: Reported SA with FC negative (n=31). **Group2**: Shellfish tolerant DM sensitized controls (n= 38).

Results

All 105 subjects but one were sensitized to at least one of 3 DM tested (*Dermatophagoides pteronyssinus*, *Dermatophagoides farina*, *Blomia tropicalis*), with highest sensitization rates to Blo t 5 followed by Der f 1. DM and shrimp tropomyosin showed high correlation (p<0.001). **Group1A** had higher rates of sensitization to tropomyosins compared to **Group1B** (Der p 10 [33.3%vs9.7%], and Pen m 1 [33.3%vs9.7%], p<0.037); and to **Group2** (Blo t 10 [19.4% vs0%], Pen m 1 [33.3%vs5.3%], Pen I 1 [27.8%vs5.3%], Lit v 1 [22.2%vs5.3%], p<0.05). Sensitization to Lit v 2 were higher in **Group1A** (22.2%) compared to **Group1B** (6.5%) and **Group2** (5.2%) (p<0.093). The sensitization rates to Lit v 3, 4 were low (<10%). A positive test for a combination of shrimp (ImmunoCAP f24)+any tropomyosin+any shrimp allergens gave the highest sensitivity(81.8%) to distinguish FC positive from negative subjects but had a low specificity of 24.1%. The specificity was highest (93.1%) when using a positive test for Der p 10 or any shrimp tropomyosin, but sensitivity was low (31.8%).

Conclusions

Tropomyosins are highly cross reactive across species and is significantly associated with SA in the tropics. ISAC Immunocap improved the accuracy to detect FC+ve SA.

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