Allergen-specific IgE and basophil responses to Ara h 2 and Ara h 6 are good predictors of peanut allergy in children
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Background: Double blind placebo-controlled food challenge (DBPCFC) is the gold standard to diagnose peanut allergy. In children sensitized to peanut, the detection of allergen-specific IgE (sIgE) and/or basophil sensitivity to Ara h 2 and Ara h 6 could be an alternative way to predict clinical peanut allergy and thereby avoid burdensome and expensive challenges in part of the patients.

Aims: We aimed to prospectively evaluate the most accurate diagnostic approach in children with suspected peanut allergy using sensitization tests and the Basophil Activation Test (BAT) to peanut components, with focus on Ara h 2 and Ara h 6.

Methods: In this cross sectional prospective diagnostic study (January 2012 – May 2015), a total of 83 children (mean age 8.4 years) with suspected peanut allergy underwent diagnostic evaluation for peanut allergy including DBPCFC. The diagnostic value of sensitization tests and the BAT in predicting (severe) peanut allergy was evaluated.

Results: Peanut allergy was confirmed in 48 (58%) children, including 15 (18%) with severe allergy. Ara h 2 and h 6 showed high discriminatory capacity in sIgE and BAT. Ara h 6 had significant higher diagnostic value than Ara h 2 in the BAT. With sIgE to Ara h 2 we could classify 62% of children correctly as tolerant or allergic, when subsequently adding the BAT using Ara h 2 and Ara h 6 we could increase this to 80%.

Conclusion: This study shows that Ara h 2 and h 6 are both strong predictors of peanut allergy. A stepwise approach including sIgE to Ara h 2 and subsequently the BAT to Ara h 2 and Ara h 6 is able to predict peanut allergic status in the majority of children.