



ORAL PRESENTATION

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O11 - Cor a 14: the missing link in the molecular diagnosis of hazelnut allergy?

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Background

Hazelnut (*Corylus avellana*) allergy shows age and geographic related sensitization profiles that have not been fully resolved.

Objectives

To study sensitization to hazelnut components in different age groups of hazelnut allergic patients and infants with atopic dermatitis (AD) sensitized to hazelnut in a birch-endemic region.

Methods

Seventy-five hazelnut allergic patients, 14 infants below 1 year of age with AD sensitized to hazelnut and 15 age related healthy control individuals were tested for IgE reactivity to rCor a 1.04, rCor a 8, rCor a 9, nCor a 11, rCor a 14 by ImmunoCAP and rBet v 1 by ISAC 103 microarray.

Results

Thirty-seven patients suffered from a systemic reaction and 38 patients reported an oral allergy syndrome (OAS) after eating hazelnut. In the population with systemic reactions, sensitization to Cor a 14 was seen in 19/20 preschoolchildren (median age (range) 2.6 years (1.0 – 5.4)), 8/10 schoolchildren (10.2 years (8.0 – 13.8)) and 2/7 adults (28 years (18 – 33)) whereas sensitization to Cor a 9 was observed in 16/20 preschoolchildren, 7/10 schoolchildren and 3/7 adults. A minority of 13/37 and 5/37 was sensitized to Cor a 11 and Cor a 8. Combining of Cor a 14 and Cor a 9 enables us to correctly diagnose respectively 100 %, 80 % and 43 % of systemic reactions in preschool-, schoolchildren and adults. In contrast sensitization to

Cor a 1.04 was generally associated with OAS, IgE reactivity to Cor a 1.04 was observed in respectively 6/7, 8/9 and 22/22 of preschool-, schoolchildren and adults. Sensitization to Cor a 14 was seen in two patients with OAS, although these sIgE levels to Cor a 14 were significantly lower. Twenty-one percent of the infants with AD showed Cor a 14 sensitization, whereas 4/14 and 1/14 showed IgE reactivity to Cor a 9 and Cor a 11.

Conclusion

Quantification of Cor a 14 can be of great value in hazelnut allergy diagnosis. Sensitization to Cor a 14 predominantly occurs in pre- and schoolchildren with severe hazelnut allergy and can have early onset (< 1 year of age).

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