

COMMENTARY

Allergen immunotherapy for allergic rhinitis due to birch pollen? A tasty proposal!

The apple is one of the most important fruits in the world; in 2017, the production was over 83 billion tonnes.¹ However, for more and more people, eating apples is becoming increasingly unpleasant and sometimes dangerous due to an allergic reaction (oral allergy syndrome, OAS) against certain apple proteins of the pathogen-related protein family (PR proteins).

About 50% of adults with allergic rhinitis from birch pollen and other tree pollen develop symptoms of an OAS.² The OAS is triggered by a cross-reactivity between the epitopes of Bet v 1 and Mal d 1, possibly also by other intermediate allergens from both allergen sources.

The OAS usually consists of the following symptoms in the mouth: itching, burning, scratching, swelling and redness, which are local to the oropharynx, which comes into contact with the allergen. The symptoms appear from a few minutes to an hour. People often report that if they eat certain types of apple, e.g. Golden Delicious, have severe symptoms, others less to none – these are usually old apple varieties.

In a prospective cohort study with an open study design, we examined whether tolerance development in OAS can be achieved through regular consumption of low-allergen apples. For this purpose, the expression of oral symptoms after eating a ‘Golden Delicious’ before and after daily consumption of an allergen-poor apple for 90 days was documented. The subjects showed significantly less symptoms when eating the ‘Golden Delicious’ after regular consumption of the low-allergen apples of old varieties.³ It appears possible to achieve an oral tolerance to highly allergenic apples through regular consumption of old varieties with a lower allergen content.⁴

Nothegger *et al.*⁵ go one step further. They assume that the regular consumption of apples induces not only a tolerance to the OAS but is also an appropriate immunotherapy for allergic rhinitis caused by birch pollen. They propose apple cultivars

suitable for daily consumption in a controlled and established dosage as a new kind of allergen immunotherapy in subjects with hay fever due to birch pollen.

With this proposal, a new chapter in the history of immunotherapy could be opened – should clinical studies confirm the proposal.

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Conflicts of interest

None to declare.

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