

and removed, one after 60 min and the other after 48 h. Both gave negative results in the patient (also after 72 and 96 h) and in five healthy people, with negative anamnesis for eczema, as control.

- 3) SPT for *V. rhytidophyllum* was prepared as follows: 5 g of the leaves was left for 1 h in 45 ml of Frugoni solution (3). The solution was centrifuged twice at 2500 g for 10 min and then passed through a 0.2-µm Millipore filter and diluted. The SPT was done with the following concentrations, 1:100, 1:10, 1:5, and 1:2. (negative control, physiologic saline solution; positive control, histamine). The patient was positive (+ + - -) at the 1:2 dilution. The same dilution was used for SPT on 10 subjects as control (five nonatopic subjects and five pollen-sensitized subjects) to exclude the possibility of an aspecific reaction.
- 4) Total IgE in the patient's serum was measured with the PRIST CAP System FEIA (Pharmacia-Upjohn, Milan, Italy), and the result was 220 kU/l.
- 5) RAST was done with a solid phase (polystyrene beads) sensitized with an extract of *V. rhytidophyllum* leaves extracted at 5% in PBS with a commercial product (Sferikit Lofarma, Milan, Italy). No specific IgE was detected.

By the most useful diagnostic protocol (4), we excluded other possible causes of angioedema and urticaria.

V. rhytidophyllum is not a widespread plant, a fact which possibly explains the lack of reports on its allergenicity. Nevertheless, the reactions observed in this patient and the

positive skin reaction to the raw extract obtained from the plant suggest that it plays an important role in clinical manifestations.

We know little about the allergenic determinants of *V. rhytidophyllum*; therefore, it is hard to explain the negative specific IgE findings. The multiple sensitization to inhalant allergens suggests that further study might ascertain whether cross-reactions are likely with this plant.

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Accepted for publication 20 January 2000
Allergy 2000; 55:512–513
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ISSN 0105-4538

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Exercise-induced anaphylaxis to snails

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Key words: house-dust mites; specific-food-dependent, exercise-induced anaphylaxis; snails.

● EXERCISE-INDUCED anaphylaxis (EIA) is a reactive syndrome characterized by the clinical features of systemic anaphylaxis such as hypotension, collapse, urticaria, angioedema, upper respiratory obstruction, bronchial constriction, and gastrointestinal symptoms (nausea, cramps, vomiting, and diarrhea) after exercise (1).

Intake of food has been recognized as a precipitating factor in EIA (food-dependent EIA) (2), and, in some cases, the episode was linked to the ingestion of certain foods (specific-food-dependent EIA) before physical exercise. The specific-food-dependent reactions appear to be IgE-mediated in light of the reports of skin test and/or RAST positivity

A severe food reaction in a dust-mite-allergic boy.

for the foods reportedly consumed before the EIA such as shellfish, vegetables, fruits, wheat products, and hen's egg (3). Ingestion of the implicated food without subsequent physical exertion is not sufficient to provoke the systemic allergic reaction.

Cross-reactions between airborne allergens and foods are well known, and anaphylaxis has been described. IgE cross-reactivity has been identified between house-dust mites and snails, and anaphylactic reactions after consumption of snails by patients sensitized to house-dust mite have been reported several times.

We describe a case of specific-food-dependent anaphylaxis after eating snails in a child sensitive to house-dust mites. There was a history of repeated ingestion of snails without any problem in the past, but never with subsequent physical exertion. To our knowledge, this is the first report of specific-

Table 1. Positive SPT results

<i>Parietaria</i> +---	<i>Artemisia absinthium</i> +++-
<i>Olea</i> +---	<i>Artemisia vulgaris</i> +++---
<i>Quercus ilex</i> +---	<i>Iva axillaris</i> +---
Compositae ++++	<i>Helianthus annuus</i> +---

food-dependent EIA in which snails were involved.

B.D., a 14-year-old boy, was referred to our clinic because he had suffered one episode of systemic anaphylaxis after exercise. There was a history of allergy to house-dust mites with mild asthma, which was treated with courses of inhaled beclometasone delivered by MDI and spacer, and salbutamol when needed, achieving satisfactory control.

He had occasionally experienced exercise-induced asthma, but at the time of the event he was routinely participating in athletics and swimming twice a week without problem. He had eaten a meal including beefsteak, ham, snails, and bread 1 h before the onset of his symptoms.

About 15 min after a period of training at the athletic field (simple running), he developed chest pain, bronchial constriction that did not respond to salbutamol by MDI, dizziness, urticaria, vomiting, cyanosis, and finally collapse. Taken to an emergency department, he eventually developed respiratory failure, which required intubation, and a seizure. He was maintained in mechanical ventilation for 12 h.

The prick test was positive for *Dermatophagoides pteronyssinus*, and negative for other airborne allergens. The CAP System FEIA RAST (Pharmacia) for food was positive (third class) for snail and crab.

A specific food challenge without subsequent exercise was negative, and an exercise challenge without specific food was negative as well. We did not perform a specific-food-exercise challenge because the patient's parents feared that he might experience a potentially severe reaction, and the specific food was very easy to avoid before exercise.

Even if we could not perform a specific-food-dependent test, which is the reference standard for the diagnosis of specific-food-dependent anaphylaxis, we believe that the

history (previous consumption of snails without problems), the clinical data (anaphylaxis which led to intubation 1 h after the meal), and the negative food challenge for snail, as well as the negative exercise-induced aspecific food challenge, strongly support the diagnosis of specific-food-induced anaphylaxis.

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Accepted for publication 20 January 2000
Allergy 2000; 55:513–514
Copyright © Munksgaard 2000
ISSN 0105-4538

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