

34-year-old woman who developed a generalized maculopapular exanthem beginning on the hands, one day after the administration of chlorazepate. The patch test with chlorazepate was positive. The prick test and intradermal test with chlorazepate were negative; the lymphocyte transformation test showed proliferative lymphocyte reactivity to chlorazepate in the culture supernatants of peripheral blood mononuclear cells, coincubated with human liver microsomes, whereas in the culture cells without the addition of microsomes no significant proliferation was observed.

We expose a case of probable immediate hypersensitivity to the chlorazepate dipotassium. Although the speed of the appearance of the symptomatology and the clinical characteristics of the episode would seem to point towards an IgE-mediated reaction, the negativity of the cutaneous tests prevents us establishing the pathogenic mechanism with total certainty. It seems clear that it is not a delayed hypersensitivity reaction, because of the quickness of the symptomatology and negative patch test result.

Our patient presented the same symptomatology after the administration of diazepam, although he tolerated the provocation with bentazepam. It is not surprising the existence of cross-reactivity between chlorazepate and diazepam, because of the similar chemical structure of both molecules (Fig. 1), composed by a benzodiazepinic ring with another benzene ring adhered to 5 carbon. In addition both molecules are metabolized in the liver giving rise to the same intermediate active metabolite, the nordiazepam, which probably also accounts for the immunological adverse effects (3, 6). On the contrary, bentazepam belongs to a different drug subgroup called tienodiazepines, which differ in their chemical structure, by the substitution of the benzene ring by a tiofene ring adhered to the diazepinic ring, maintaining the other benzene ring in the 5' carbon extreme. Brotizolam, clotiazepam and etizolam also belong to this group.

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\*Service of Allergology  
Clinical Hospital of Valencia  
Avda. Blasco Ibáñez, 17  
46010 Valencia  
España  
E-mails: raceraz@hotmail.com;  
pelaez\_ant@gva.es

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## IgE-dependent nephrotic syndrome due to inhalation of chironomid larvae

D. A. Moneret-Vautrin\*, J. M. Bertheau

**Key words:** *Chironomus thummi*; immunoglobulin E; nephrotic syndrome.

A 54-year-old man, without any specific past history, ground lyophilized chironomid larvae (*Chironomus thummi*) to feed exotic fish in November 2003. He had prepared this type of powder 5 months before, and had noticed a mild rhinitis. On this occasion, he presented an extensive facial angioedema and dyspnea

in < 15 minutes.

The symptoms subsided within the next hours without any treatment. Within 2 days a generalized edema and a weight increase occurred.

A week later, proteinuria was 3.8 g/24 h, the level of seric proteins was lowered at 44 g/l, total cholesterol had raised to 3.99 g/l (previously controlled at 2.17 g/l). Creatinine was 10 mg/l. A renal biopsy was carried out showing minimal changes with sparse mesangial immunoglobulin (Ig)M deposits, parietal vascular deposits of C3, and intracytoplasmic droplets of albumin in tubulae. A nephrotic syndrome was diagnosed. Simvastatin was prescribed. A prick test with the larvae composed powder gave an impressive reaction, the diameter of the wheal reaching more than 4 cm. After 2 months, a persistent proteinuria was noticed: 1.68 g/l. Seric protides were 62 g/l, total cholesterol 2.5 g/l. Three months later, proteinuria had disappeared. Spirography was normal, test to methacholin (1600 gamma) was negative. The immunologic screen was normal: anti-nuclear antibodies (ACAN), blood cell count, erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), total complement, C3 and C4, levels of IgM, IgA, subgroups of IgG, IgE, lymphocyte counts (CD3, CD4, CD8, CD57, B cells). Prick tests to 12 common inhalants were negative. Cap Rast to *C. thummi* was > 100 KU/l. The search for IgEs to *Artemisia salina*, mosquito, shrimp, mites, was negative.

These data support the diagnosis of IgE-dependent nephrotic syndrome because of the inhalation of chironomid larvae.

Red larvae of *C. thummi* are used to feed exotic fish. Their hemoglobin is a potent allergen: Chi t 1 (1). Respiratory allergies, urticaria and angioedema are observed (2, 3). Sensitization might not be so rare: 4% of patients with respiratory allergy have positive prick test to these larvae, with associated sensitivity to mosquito, shrimp, mites. However,

**Immediate facial angioedema and nephrotic syndrome induced by *Chironomus thummi*. An impressive sensitization was demonstrated.**

occupational asthma of aquarists is related only to hemoglobins (3).

The IgE-dependent steroid-sensitive nephrotic syndromes linked to allergy to pollens or to foods have been described (4, 5). A case was suspected to be related to a bee-sting in a young allergic girl, but was diagnosed 1 year later (6). In the reported case, the link proves obvious, inasmuch as the increase of weight with generalized edema occurred within 48 h following the handling and inhalation of this powder. The fact that it lasted more than 2 months questions the possible implication of the prick test that had been practiced before the patient was referred to the department. This case is likely to be the first nephrotic syndrome reported caused by chironomid larvae inhaled by a nonatopic non-asthmatic subject.

\*Department of Internal Medicine  
Clinical Immunology and Allergology  
University Hospital  
29 avenue du Maréchal de Lattre de Tassigny  
54035 Nancy  
France  
E-mail: a.moneret-vautrin@chu-nancy.fr

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## An allergic reaction to peanut in an exclusively breastfed infant

A. Des Roches\*, L. Paradis, S. Singer, E. Seidman

**Key words:** Breastfeeding; food allergy; peanuts.

A 2 week-old boy, exclusively breastfed, was seen for frothy, unformed stools like 'cappuccino mousse'. Otherwise, the infant was well. He was the first born of a mother known for seafood

allergies and allergic rhinitis. On the recommendations of her pediatrician, the mother eliminated all milk and soya products in her diet, without any improvement. Two weeks later, she decided to stop eating her daily toast with peanut butter. The infant's stool subsequently normalized.

Skin prick tests, first performed at 10 weeks of age, were negative for milk, soya, egg, and wheat. No reaction was observed with a commercial peanut extract, but there was erythema with fresh peanut. The complete blood counts revealed an eosinophilia ( $0.8 \times 10^9/l$ ). Serum total protein and albumin were normal. A sweat test performed to rule out cystic fibrosis was negative. Diet without milk, soya and peanut was maintained.

The child was reevaluated at 12 months. The skin prick tests now showed a significant reaction to commercial peanut extract, with a wheal of 15 mm associated with a prominent lymphangitic reaction. The skin prick

tests were still negative for milk and soya. Results were slightly positive for egg, with a wheal of 4 mm, while the histamine control was 6 mm. Specific immunoglobulin E (IgE) antibody titers to peanut by the EAST technique were positive (0.47 IU/ml) and were not detectable for egg. Total serum IgE was in the normal range with a level of 18 ku/l. Peripheral eosinophil count had returned to normal on a peanut-free diet ( $0.3 \times 10^9/l$ ). Milk and dairy products were then reintroduced without any reaction. Egg introduction was delayed, whereas the diet without peanut was maintained.

This infant presented an allergic reaction to peanut while he was exclusively breastfed. The clinical symptoms could be explained by occult ingestion of peanut through breast milk, rather than environmental exposure, as the only allergic symptom was the frothy stool. This case emphasizes the clinical importance of food allergens found in maternal milk. Food allergic reaction in the exclusively breastfed child is reported, with such diverse manifestations as eczema, colic, rhinorrhea, and diarrhea (1, 2). To explain the so-called immediate food hypersensitivity reaction to a first known exposure to a food, Van Asperen believes that one most likely route of sensitization was exposure to the food allergen through maternal breast milk (3). More recently, Vadas (4) has shown that the peanut protein is able to pass from the maternal diet to the mother breast milk.

Given the high prevalence of peanut allergy, the timing of sensitization is of considerable importance. Delaying the initial encounter with the allergen, one theoretically lessens the potential of a subsequent overt reaction. This is based on the concept that early sensitization occurs more easily in the immature bowel, where macromolecular allergen uptake is more likely to occur. If an allergen were introduced at a later point in time when a more mature gut barrier is functional, a decreased risk of sensitization would perhaps ensue. This case underlines the importance of the recommendations of the UK Department of Health about avoiding peanut, particularly during the lactation period.

## Food allergens found in maternal milk can trigger an allergic reaction.