

# Sensitization to *anisakis simplex* in atopics patients and its relation with reactivity to mites, cockroach, seafood and fish

## Abstract

**Background:** *Anisakis simplex* is a nematode of fish, crustaceans and cephalopods, accidental guest at the man. Infection may manifest as gastrointestinal disorders or hypersensitivity phenomena after promoting TH2 response by larva stage L3, associated with the release of parasitic enzymes which form insoluble immunocomplexes, mast cell degranulation, neutrophil chemotaxis mediated by parasite thermolabile factors and anticoagulant activity. Homology exists between *Ani s 2* (Paramyosin) and *Ani s 3* (Myosin) with other allergens such as dust mites (especially *B. tropicalis*), *B. germanica*, seafood and fish. *Ani s 3* isn't denatured by heat and may appear after the death of the larva.

**Objective:** To establish sensitization to *A. simplex* extract in allergic patients and evaluate its relation with sensitization to mites, fish and seafood

**Methods:** 52 Venezuelan patients with definitive diagnosis of allergy (31 women and 21 men) were studied, average age between 5 and 60 years. They were evaluated in allergology consultation at the Institute of Immunology "Dr. Nicolas Bianco", Caracas - Venezuela. Upon acceptance of informed consent, it was made a prick test with allergenic extracts of Bial Aristegui to *A. simplex*, mites, cockroach, seafood and fish. Patients with a positive test to *A. simplex* was performed specific IgE.

**Results:** The most frequent pathology in the group studied was allergic rhino conjunctivitis 38.46%, followed by rhinitis 25%, urticaria 15.38%, atopic dermatitis 5.77% and multiple allergy diseases 11.54%. Only 1.92% of the patients reported previous food hypersensitivity. 69.23% of patients had positive skin tests to *D. pteronysinus*, *D. farinae* and *B. tropicalis*, 26.92% to *B. germanica* and 13.54% presented positive prick to *A. simplex*. Of this group, all individuals showed positive specific IgE to *A. simplex*; and positive skin tests for mites studied, 57.14% showed reactivity to *B. germanica*. Also, 57.14% were positive to seafood and 42.86% to white fish, no reactivity to blue fish was evidenced.

**Conclusion:** *Anisakis simplex* is an important allergen that can be related to episodes of hypersensitivity. It is often associated with sensitization to mites, cockroach and seafood, either directly or by cross-reactivity. This makes its determination as relevant routine in the study of food reactions and other allergic diseases, since much of the atopic population has sensitization to it. Implementation of preventive measures to avoid eating food contaminated by the larvae is important.

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## Conflicts of interest

None.

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