

Allergy and parasites reevaluated: wide-scale induction of chronic urticaria by the ubiquitous fish-nematode *Anisakis simplex* in an endemic region.

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Allergy and parasites reevaluated: wide-scale induction of chronic urticaria by the ubiquitous fish-nematode *Anisakis simplex* in an endemic region

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Abstract

Background

The ubiquitous fish-nematode *Anisakis simplex* produces acute urticaria or angioedema in the course of gastro-allergic anisakiasis. We studied the relationship between this nematode and chronic urticaria (CU), as well as the clinical usefulness of measuring specific IgG₄ in *A. simplex*-sensitized patients with CU.

Methods

First, the prevalence of sensitization to *A. simplex* was estimated in 135 consecutive CU patients and the result was compared with known data about sensitization in a healthy population. Then, clinical response to a 2-month diet without fish was analyzed in 76 CU patients. The improvement rate in patients with and without sensitization to *A. simplex* was compared. Finally, the improvement rate, other clinical data and specific immunoglobulins in sensitized patients with and without detectable specific IgG4 were compared.

Results

a) The *A. simplex* sensitization rate in CU patients was 52.6 % compared with a known prevalence of between 16 and 20 % in our region.

b) Of 65 sensitized patients, 52 experienced clinical improvement after the diet compared with only three of 11 patients without sensitization to *A. simplex* ($p = 0.001$).

c) Of 43 patients with detectable specific IgG₄, 38 showed clinical improvement compared with only 14 of 22 patients without detectable IgG₄ ($p = 0.02$). Eight of nine patients with previous fish-associated cutaneous symptoms had detectable specific IgG₄ compared with 15 of 32 patients who reported no previous fish-associated symptoms or acute urticaria ($p = 0.03$).

Conclusions

Our results indicate that *A. simplex* is a possibly widespread etiologic agent able to induce CU. This parasite model constitutes the first report that associates an infectious agent with CU on a large scale. The detection of IgG₄ antibodies reflects a previous acute parasitic infection and a temporary diet without fish improves symptoms in most patients with detectable specific IgG₄.

Resumen

Antecedentes

El nematodo *Anisakis simplex* (A.s.), presente en el pescado, produce urticaria o angioedema agudos en el curso de la anisakiasis gastroalérgica (AGA). Hemos estudiado la relación entre este nematodo y la urticaria crónica (UC), así como la utilidad clínica de la medición de la IgG₄ específica en pacientes sensibilizados al A.s. con urticaria crónica.

En primer lugar, evaluamos la prevalencia de la sensibilizaciÃ³n al *A.s* en 135 pacientes con-secutivos de UC y la comparamos con los datos conocidos sobre la sensibilizaciÃ³n de la poblaciÃ³n sana. A continuaciÃ³n, analizamos la respuesta clÃnica de 76 pacientes de UC a una dieta de dos meses sin pescado. Comparamos el Ãndice de mejorÃa en los pacientes con y sin sensibilizaciÃ³n al *A.s*. Finalmente, comparamos el Ãndice de mejorÃa, otros datos clÃnicos y las inmunoglobulinas especÃficas en los pacientes sensibilizados con y sin IgG₄ especÃfica detectable.

Resultados

- a) El Ãndice de sensibilizaciÃ³n al *A.s* en los pacientes de UC fue del 52,6 %, frente a una prevalencia conocida del 16 al 20 % en nuestra regiÃ³n.
- b) 52 de 65 pacientes sensibilizados experimentaron una mejorÃa clÃnica tras una dieta sin pescado, frente a sÃlo 3 de 11 pacientes no sensibilizados al *A.s*. ($p = 0,001$).
- c) 38 de 43 pacientes con IgG₄ especÃfica detectable mostraron una mejorÃa clÃnica, frente a sÃlo 14 de 22 pacientes sin IgG₄ detectable ($p = 0,02$). 8 de 9 pacientes con sÃntomas previos asociados al pescado presentaron IgG₄ especÃfica detectable, frente a 15 de 32 pacientes que manifestaron no haber padecido previamente ningÃn sÃntoma ni urticaria aguda asociados al pescado ($p = 0,03$).

Conclusiones

Nuestros resultados ponen de manifiesto que el *A.s* es un posible agente etiolÃgico muy extendido capaz de inducir la UC. Este estudio del parÃsito supone la primera informaciÃ³n que asocia a gran escala una infestaciÃ³n con la UC. La deteccÃ³n de los anticuerpos IgG₄ refleja un parasitismo agudo previo, y una dieta temporal sin pescado mejora los sÃntomas en la mayorÃa de los pacientes con IgG₄ especÃfica detectable.



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Palabras clave

ParÃsito; Nematodo; Urticaria crÃnica; Isotipos especÃficos IgG; IgG y especÃficos

Key words

Parasite; Nematode; Food-allergy; Chronicurticaria; Immunoglobulin isotypes; Specific IgG; Specific IgG4

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