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Meat-specific IgG and IgA antibodies coexist with IgE antibodies in sera from allergic patients: clinical association and modulation by exclusion diet.

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Source

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Abstract

IgE-mediated responses play a pivotal role in allergic patients with food intolerance. However, the association of food-specific IgG and IgA antibodies with the clinical outcome of allergic patients is still a matter of controversy. In this study we investigate whether beef-specific IgG and IgA antibodies may coexist with beef-specific IgE antibodies in food-allergic patients and examined their clinical relevance in different allergic settings. Beef-specific IgE, IgG and IgA antibodies were determined by solid-phase enzyme immunoassay (ELISA) in a population of allergic patients (N=125) classified into patients with asthma, skin disease or gastrointestinal disorders, as well as in control subjects (N=80). IgE antibodies specific for citric fruits, tomato, cows milk, chickens egg and wheat were also determined. Beef was the predominant allergenic food in the whole population, not only for IgE (57.6 percent; P less than 0.001), but also for IgG and IgA isotypes (53.6 percent and 34.0 percent, respectively, P less than 0.001). Beef-specific IgE, IgG and IgA antibodies increased significantly in sera from patients with asthma, gastrointestinal disorders and skin allergy compared to sera from control subjects (P less than 0.001). Remarkably, IgG and IgA isotypes were significantly detected, even in the absence of IgE, in the three allergic conditions. All allergic patients, including those showing only IgG and IgA antibodies, significantly ameliorated their symptoms, and their levels of beef-specific antibodies were considerably reduced in response to a cow meat exclusion diet. While patients with gastrointestinal or skin allergic diseases were capable of tolerating beef following an established period of diet exclusion, asthmatic patients experienced a relapse of symptoms and showed a considerable increase in IgE, IgG and IgA-specific antibodies when re-challenged with a beef-enriched diet. Thus, beef-specific IgG and IgA antibodies coexist with IgE antibodies in sera from allergic patients and are significantly associated with the clinical course of allergic disorders, particularly asthma.