



Adult IgE-mediated cow's milk allergy – a rare phenotype

Alergia IgE mediada ao leite de vaca no adulto – fenótipo raro

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ABSTRACT

Cow's milk protein allergy is the most common food allergy in children, but it is rare in adults, with an estimated prevalence of 0.49%-0.60%. Previous studies have shown that spontaneous tolerance rarely occurs in adults and that, during follow-up, the double-blind, placebo-controlled oral food challenge should be used to assess tolerance acquisition. We report the case of an adult patient with cow's milk protein allergy, sensitized to casein.

Keywords: Milk hypersensitivity, cow's milk allergy, IgE, casein, adult.

RESUMO

A alergia às proteínas do leite de vaca é a alergia alimentar mais frequente em crianças, mas, na idade adulta, é rara, com uma prevalência estimada de 0,49-0,6%. Estudos prévios demonstraram que a tolerância espontânea na idade adulta raramente ocorre e que, durante o seguimento, a prova de provocação oral duplamente cega controlada com placebo deve ser usada para avaliação de aquisição da tolerância. Os autores apresentam um caso clínico de uma doente adulta com alergia às proteínas do leite de vaca, sensibilizada à caseína.

Descritores: Hipersensibilidade ao leite, alergia ao leite de vaca, IgE, caseína, adulto.

Introduction

Food allergy is a major public health problem, affecting individuals at any age.¹ It is characterized by a specific immune response that occurs reproducibly on exposure to a given food.²

Cow's milk protein allergy (CMPA) is the most common food allergy in children under 3 years of age, but it is rare in adults, with an estimated prevalence of 0.49%-0.60%. The mechanisms underlying sensitization after the first years of life are unknown,

with only a few cases reported in the literature.^{2,3} CMPA is likely to be more severe and persistent in adults.⁴⁻⁶

Cow's milk contains 20 potentially sensitizing proteins, with structural homology and consequently cross-reactivity >90% with allergens from other mammals' milk (eg, sheep, goat, and camel milk).⁷ Casein (Bos d8-12) and beta-lactoglobulin (Bos d5) are most frequently responsible for the occurrence of

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CMPA, with casein being highly heat stable.^{8,9} Studies also suggest that sensitization to casein is common in cases of persistent allergy and in patients with atopic comorbidities.¹⁰

Food allergy should be diagnosed based on the patient's medical history, skin tests, specific IgE assays, and double-blind placebo-controlled food challenge (DBPCFC). Previous studies have shown that spontaneous tolerance in CMPA rarely occurs in adults and that, during follow-up, DBPCFC should be used to assess tolerance acquisition. Desensitization in these patients is a solution. However, anaphylactic reactions occur in 25% of these phenotypes, and it is important to note that there is no allergen-specific immunotherapy for CMPA.^{11,12}

Case report

A 59-year-old woman was referred to the immunoallergology department due to an episode of anaphylaxis after having caramel ice cream, with no previous history of CMPA. A few minutes after having the ice cream, she developed oropharyngeal itching, lip swelling, a sensation of dyspnea and tightness in the oropharynx, dysarthria, and diffuse macular rash. She went to the emergency department and received intravenous medication (which she was unable to describe), with resolution of the condition in less than 4 hours. She did not have ice cream again. Until her first appointment, she used to consume butter and coffee latte, showing associated oropharyngeal pruritus. She did not drink raw milk or yogurt because she did not like the taste. She consumes beef without any symptoms.

Investigation included skin prick tests using commercial extracts from LETI Pharma® for milk and proteins, wheat, egg, shrimp, fish mix, meat mix, peanut, and hazelnut, and the mean papule diameters were: histamine 5 mm, milk 7 mm, and casein 7 mm.

Total IgE assay: 1098 KU/L; and assay for specific IgE using the ImmunoCAP FEIA system® (Thermo Fisher Scientific, Uppsala, Sweden): milk 8.41 kUA/L, casein 13.30 kUA/L, alpha-lactalbumin 0.01 kUA/L, and beta-lactoglobulin 0.02 kUA/L.

The patient refused to undergo both oral food challenge testing and milk desensitization.

She is currently avoiding cow, sheep, and goat milk proteins in all forms, with no new episodes of anaphylaxis or oropharyngeal pruritus. She was

warned about the importance of reading labels. She carries an epinephrine autoinjector and has a treatment plan with oral corticosteroids and antihistamines for use in case of accidental ingestion, according to the symptoms.

Discussion

We reported the case of an adult patient with CMPA and draw attention to the rarity of the development of this entity after the first years of life. We warned the patient about the persistence of the allergy and the possibility of severe reactions occurring after the consumption of raw, boiled, or processed cow's milk, since she became sensitized to casein. The patient's refusal to undergo oral food challenge testing and desensitization hinders the assessment of tolerance acquisition. CMPA in adults is still poorly characterized in the available literature, and is probably underdiagnosed. Further studies with larger cohorts are needed to better understand its risk factors, different phenotypes, and prognosis.

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