



GENETICS AND GENODERMATOSES

WHEAT-DEPENDENT EXERCISE-INDUCED ANAPHYLAXIS IN CHINESE PEOPLE? A CLINICAL RESEARCH ON 24 CASES AND ANTIGENIC ANALYSIS OF WHEAT PROTEINS

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Introduction: Wheat-dependent exercise-induced anaphylaxis (WDEIA) is a severe allergic condition where wheat ingestion together followed by physical exercise induces anaphylaxis, with unclear mechanism. For patients with WDEIA, ω -5 gliadin and high-molecular-weight glutenin subunit (HMW-glutenin) are considered to be major allergens.

Objective: The aim of this study was to analyze the clinical features and allergen spectrum of WDEIA, and to evaluate the effect of wheat protein allergen test on diagnosis of WDEIA.

Methods: Medical histories and conditions of 24 suspected cases of WDEIA were collected and summarized, with allergen tests of wheat proteins performed simultaneously.

Results: All patients experienced severe allergic reaction during exercise. Manifestations of anaphylaxis appeared to be facial edema, generalized urticaria and respiratory symptoms. Unconsciousness was also observed in 13 cases. All 24 subjects completed wheat protein allergen tests and 19 of which showed positive results. 16 patients were confirmed as hypersensitive to glyceraldehyde-3-phosphate-dehydrogenase (GAPDH), and 14 were allergic to ω -5 gliadin. Besides, some patients were sensitive to tetrameric alpha-amylase inhibitor and triosephosphate-isomerase or other wheat proteins.

Conclusion: WDEIA is a rare type of anaphylaxis. Not restricted to clinical history, allergen tests of wheat proteins tended to be a useful approach in the diagnosis and prevention of WDEIA. GAPDH and ω -5 gliadin may be the most common allergic wheat proteins among Chinese people.

Key words: Food allergy; Wheat-dependent Exercise-induced Anaphylaxis; Wheat; Allergen Test; Glyceraldehyde-3-phosphate-dehydrogenase; ω -5 gliadin.

