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Food-dependent exercise-induced anaphylaxis – A case report
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Background: Food-dependent exercise induced anaphylaxis (FDEIA) is a distinct form of food allergy induced by physical exercise. The ingestion of specific food are usually tolerated if not followed by exercise. FDEIA patients generally have not experienced symptoms in response to warmth (such as a hot bath), or other condition that increases the core body temperature, and they have symptoms only in association with an ingestion of specific food(s). A variety of foods have been described as causal allergy inducing foods in FDEIA. Skin tests and in vitro serum food-specific IgE assays are currently used, but the results are frequently negative. A challenge test consisting of ingestion of assumed food followed by intense physical exercise is the only reliable method to diagnose the disease, but this is not always safe to perform. Monosodium glutamate is a common added ingredient to savoury foods, namely in Chinese food, and it has been previously linked to urticaria and angioedema.

Report: We present a case of a 16-year-old white boy that developed within a few minutes from onset of physical activity: periorbital edema, urticaria, generalized pruritus and cough. In the emergency department, he was hypotensive (79/50 mmHg). He was treated with intramuscular epinephrine, clemastine and methylprednisolone and symptoms resolved completely. 4h before the onset of physical activity he eats Chinese food, including pasta, shrimp and pork meat, which were previously tolerated by him. He regularly exercises without any problem. There was no past personal history of anaphylaxis, angioedema, food allergy, atopic dermatitis, drug allergy or vaccine allergy. He had no concurrent illness that day. He was not exposed to other foods, alcohol or medication (including NSAIDs, aspirin) several hours prior to exercise. There was no exposure to extreme temperature changes. Skin prick testing, serum-specific immunoglobulin E level and ImmunoCAP ISAC were negative. The challenge test was not performed due to severity of clinical presentation.

Clinical Relevance of Report: This case is an important reminder that although rare, food-dependent exercise-induced anaphylaxis exists. Making a diagnosis can be difficult but it can lead to life-saving preventative strategies. Besides some food additives, like monosodium glutamate, may be implicated in some of these reactions. In this case there is indication to avoid concomitant ingestion of the food and exercise.