VICKERSTAFF HEALTH SERVICES INC.

FACTSHEET

Food-dependent Exercise-induced Anaphylaxis

Food-dependent exercise-induced anaphylaxis (FDEIA) is very rare and occurs only when an individual eats a specific food and exercises within three to four hours after eating. Consuming the same food without exercise does not elicit any symptoms. FDEIA is considered to be a sub-type of exercise-induced anaphylaxis (EIA) that is characterized by airway obstruction, urticaria and hypotension following exercise. Other symptoms may include angioedema, gastrointestinal symptoms, bronchial constriction and vascular collapse.

Food-dependent exercise-induced anaphylaxis usually starts about 1-4 hours after consumption of the causative food allergen while the individual is involved in (usually strenuous) exercise. Anaphylaxis or development of symptoms may or may not follow ingestion of the allergenic food depending on a number of variables:

Factors identified as possibly contributing to the onset of symptoms during exercise include:

- Asthma
- Seasonal allergies (hay fever)
- Intake of medications such as aspirin and non-steroidal anti-inflammatory drugs NSAIDs
- Consumption of alcohol with the food allergen
- Climatic conditions (temperature and humidity)
- Menstruation in women

Many foods are capable of triggering FDEIA in susceptible individuals, and a variety of factors have been identified as possibly contributing to the development of symptoms in the condition.

The foods most commonly implicated in case reports of FDEIA include:

- Grains (wheat, rye; barley; oats; buckwheat)
- Shellfish and seafood (shrimp; crab; oyster)
- Nuts (hazelnut; almond)
- Legumes (peanut)
- Fruit (apple; peach; grapes)
- Vegetables (celery; cabbage; tomato)
- Milk products (cheese)
- Egg
- Alcohol

Diagnosis of FDEIA

The diagnosis of exercise-induced anaphylaxis is one of the most difficult in allergy practice. Challenge with the suspect food without exercise is often negative, and in some cases any suspicion of food allergy had not been evident prior to the event itself.

The diagnosis of FDEIA is usually made on the basis of the patient's history. Development of signs of anaphylaxis during exercise, often starting with urticaria (hives), pruritus (itching), and erythema (reddening) that may be followed by breathing difficulty, and/or digestive tract symptoms in a food-allergic individual suggests FDEIA.

FDEIA appears to be twice as common in females as in males and is especially prevalent in individuals 25 - 35 years of age. Individuals experiencing this type of reaction typically have asthma and other allergic conditions.

Some studies have attempted to identify individuals who are likely to develop FDEIA by determining their sensitization to specific foods by RAST and skin tests and subjecting the test-positive individuals to treadmill stress tests. However, because other variables not included in the test protocols may be contributing to the development of symptoms, most studies have been only partially successful in predicting which food-allergic subjects are likely to develop anaphylaxis while exercising.

Management of FDEIA

Avoidance of the combination of the allergenic food with exercise is the most important method in the management of FDEIA. When the specific food allergen is unknown, individuals with a history of FDEIA should avoid exercise for 4 hours after eating (some authorities recommend 6 hours), and avoid aspirin, non-steroidal anti-inflammatory drugs (NSAIDs), and alcoholic beverages before exercising.

The person with a history of FDEIA should always carry an Anakit or Epipen with antihistamines and injectable adrenaline, and wear an appropriate medic-alert bracelet detailing the condition while exercising.

Useful References

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- (7) Romano A, Di Fonso M, Giuffreda F, Papa G, Artesani MC, Viola M, Venuti A, Palmieri V, Zeppilli P. Food-Dependent Exercise-Induced Anaphylaxis: Clinical and Laboratory Findings in 54 Subjects. International Archives of Allergy and Immunology 2001;125:264-272