CAAC
Carolina Asthma & Allergy Center
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Exercise Induced Anaphylaxis (EIA)

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What is exercise induced anaphylaxis?

It is an adverse reaction that occurs during or shortly after exertion. The symptoms include: hives (often giant-sized), sneezing, wheezing, light-headedness, shortness of breath, a feeling of throat closure, loss of consciousness, vomiting, diarrhea, and sometimes a feeling of impending doom. In some instances, it can occur only if someone has eaten a food (non-specific) within 4 hours of exertion; however, this can occur in some individuals irrespective of prior food ingestion.

Symptoms

- ***hives (often giant-sized)***
- ***sneezing***
- ***wheezing***
- ***light-headedness***
- ***shortness of breath***
- ***a feeling of throat closure***
- ***loss of consciousness***
- ***vomiting***
- ***diarrhea***
- ***feeling of impending doom***

Is it specific for age or sex?

No. Historically, it has been noted more commonly in females; however, this is more likely due to the fact that adult females in the US have tended to be more health conscious, and thus have exercised more frequently than their male counterparts.

Age does not seem to play a role. Of course, the older a person is, greater the ability to exercise, and thus, the greater likelihood of an adverse reaction. The reaction can occur even after years of uneventful exercise.

How common is EIA?

It is extremely rare. The exact number of individuals who suffer from this is unknown, as currently there is no national or international data bank to monitor the incidence.

What Causes This?

Unfortunately, the mechanism is unknown. Mast cells are found in every human being and in various parts of our bodies (skin, eyes, intestines, lungs, heart). They contain certain chemicals that when released can cause the symptoms noted above. In exercise-

induced anaphylaxis, the mast cell releases its contents for unknown reasons. A variation of exercise-induced anaphylaxis is food-induced exercise anaphylaxis. In a subset of individuals, ingestion of food within approximately 4 hours of exercise will lead to an adverse reaction; however, if the person does not eat anything 4 hours prior to exertion, no symptoms occur.

How Do We Diagnose EIA?

Obtaining a detailed history is imperative, as this often leads to the diagnosis. During an adverse reaction, blood can be obtained that will show an elevation of histamine and tryptase. This indicates that mast cells are involved in the reaction and may help to diagnose EIA.

Can Medicine Help Prevent EIA?

To date, pre-treatment with medicines have not consistently helped to prevent EIA. Antihistamines and leukotriene antagonists (example: Singulair) do not seemingly prevent the event from occurring. Interestingly, the reaction can occur quite randomly and may not occur every time a person exercises.

Management of EIA

1. Exercise may an important part of the lifestyle of the patient, and every attempt should be made to allow him/her to continue
2. Stop exercising at the first sign of symptoms
3. Keep an automatic injector of epinephrine available during exercise
4. Never exercise alone, and exercise with someone who has been instructed in the use of epinephrine
5. Do not exercise for at least 4 hours after eating

Prognosis

Exercise-induced anaphylaxis tends to stabilize or improve over time in most patients. However, studies which have looked at the prognosis may have been influenced by modification of the exercise program and lifestyle of the patient rather than by a true remission of the condition.

What Do I Do if I Think That I May Suffer from EIA? ***Immediately bring this concern to your physician***:

Evaluation by a board certified allergist is imperative if one presents with symptoms consistent with EIA.