

A Publication of Asthma & Allergy Affiliates of the North Shore

James A MacLean MD Jeanne E. Gose MD, PhD Andrew I. Ober, MD Cristina Palumbo MD Eyal Oren, MD

Highland Medical Park 114R Highland Ave. Salem, MA 01970 (978) 745-3711 Hunt Medical Building 80 Lindall Street Danvers, MA 01923 (978) 777-0970 Willow Professional Park 865 Turnpike ST. N. Andover, MA 01845 (978) 683-6256

Anaphylaxis: How to Recognize and Treat It

What is anaphylaxis?

Anaphylaxis is a severe allergic reaction that may involve the entire body. It can result in trouble breathing, loss of consciousness and even death. Anaphylaxis is a medical emergency that requires immediate medical treatment

Anaphylaxis can occur in some people after they are exposed to a substance to which they are severely allergic. The most common substances that trigger anaphylaxis are foods, medications, and insect stings. It has been estimated that up to 15% of the population is at risk for anaphylaxis.

Mechanisms

Anaphylaxis is triggered the same way other allergies are: the immune system-which serves as the body's defense against potentially dangerous substances such as germs-overreacts to a harmless substance (an allergen) and in that process can damage the body. As part of the normal immune response, proteins called antibodies are produced that can detect and help destroy "invaders" in the When allergens first enter the body of a body. person predisposed to allergies, the immune system produces the allergen-specific IgE antibodies. The IgE antibodies attach themselves to the surface of cells called mast cells. The next time that allergic individual comes into contact with the allergen, the IgE identifies it and quickly initiates the release of chemicals - such as histamine - from the mast cells. These potent chemicals cause the symptoms seen in allergic reactions and anaphylaxis.

Symptoms of anaphylaxis

Anaphylaxis is a "systemic reaction," which means that various parts of the body are affected that are a distance from the allergen's initial entry site (e.g., a sting site for insects or the stomach for foods). Symptoms of anaphylaxis can vary from mild to severe and are potentially deadly. Here is a list of possible symptoms that may occur alone or in any combination:

Skin: hives, swelling, itch, warmth, redness, rash

<u>Breathing</u>: wheezing, shortness of breath, throat tightness, cough, hoarse voice, chest pain/tightness, nasal congestion/hay fever-like symptoms, trouble swallowing

<u>Stomach</u>: nausea, pain/cramps, vomiting, diarrhea, itchy mouth/throat

<u>Circulation</u>: pale/blue color, poor pulse, passing-out, dizzy/lightheaded, low blood pressure, shock

<u>Other</u>: anxiety, feeling of "impending doom," r e d / itchy/watery eyes, headache, cramping of the uterus

Reactions usually begin within minutes of exposure, but may be delayed. Sometimes symptoms resolve, only to recur or progress a few hours later. The most dangerous symptoms are low blood pressure, breathing difficulties, and loss of consciousness.

There are a variety of medical conditions that may mimic anaphylaxis. These include heart attacks, anxiety attacks, choking and seizures, among others. If you experience any unusual symptoms, it is vitally important to call 911 for prompt treatment and to determine the cause of the symptoms.

Substances that trigger reactions

<u>Foods</u>: Any food can trigger an allergic reaction, but some of the most common ones that cause severe anaphylaxis are: peanuts, tree nuts (e.g., walnut, cashew, Brazil nut), shellfish, fish, milk and eggs.

<u>Stinging insects</u>: The venom of stinging insects such as yellow jackets, honeybees, paper wasps, hornets and fire ants can all cause severe reactions.

<u>Medications</u>: Virtually any medication can trigger an allergic reaction. Common drugs that cause anaphylaxis are antibiotics and anti-seizure meds.

Latex: The greatest danger of severe reactions occurs when latex comes into contact with moist areas of the body or internal surfaces during surgery.

<u>Exercise</u>: Although rare, exercise can also trigger anaphylaxis. Oddly enough, it does not occur after every exercise session and in some cases, only occurs after eating certain foods before exercise.

<u>Other</u>: Anaphylaxis has rarely been associated with exposure to seminal fluid, hormones and exposure to extreme temperatures. When no cause is found and the reaction is definitely anaphylaxis, it is termed idiopathic anaphylaxis.

Treatment and prevention

The most important medication used in the treatment of anaphylaxis is epinephrine (adrenaline). This medication comes in the form of a self-injectable pen (EpiPen, TwinJect). If you or your child are at-risk for anaphylaxis, you should carry one of these devices with you at all times. The device should remain at room temperature and not be kept in the car or refrigerator.

When to use epinephrine

You should use epinephrine if you or your child experiences any of the following:

- General hives or flushing
- Swelling of the tongue or tightness of the throat
- Trouble breathing, change in voice, difficulty swallowing
- · Shortness of breath, chest tightness, wheeze
- Vomiting, severe stomach cramps
- Lightheadedness, fainting

The sooner epinephrine is given for an anaphylactic reaction, the better the chances of recovering quickly and completely. The epinephrine device should be administered in the outer part of the middle of the thigh. It should be kept in place for at least 3 After using epinephrine, you should call seconds. 9-1-1 so that you or your child can be transported to the local emergency department for further care of the anaphylactic reaction. This is important because 1 in 3 anaphylactic reactions will be treated with more than one dose of epinephrine. Also, up to 1 in 5 reactions can experience a 'late phase' reaction with similar symptoms occurring up to 6 hours after the original anaphylaxis. The ER can also provide other treatments such as Benadryl and steroids.

How to avoid anaphylactic reactions

An allergist can help guide you in avoiding further anaphylactic reactions in the future by providing information on the following:

Food: how to interpret ingredient labels, manage restaurant dining, avoid food cross-contact.

Insects: reducing perfumes, bright color clothing, and "high risk" activities, wearing long sleeves/pants.

Medications: which drugs/treatments to avoid, a list of alternative medications that should be tolerated.

You may also want to wear a special bracelet or necklace that identifies you as having a severe allergy. These tags can also supply other important information about your medical condition.

If you have had an anaphylactic reaction, you may want to inform family, health care workers, employers and school personnel about your allergy so they can watch for symptoms and help you avoid your allergy triggers. Above all, make sure to work in partnership with your allergist/immunologist to ensure your safety and health.