

TerranearPMC Safety Share

Week of July 13, 2015 – Anaphylactic Reactions

For some people, allergic reactions can be very severe, causing adverse effects, not just to the immediate area where contact with a foreign substance occurs, but also affecting the whole body with life threatening results. Such life threatening allergic reactions are known as anaphylaxis and can come on fast. Anaphylaxis is an acute hypersensitivity reaction, involving the release of histamine that causes extreme inflammation to various biologic systems in humans. And many times this is a medical emergency.

Anaphylaxis affects everyone differently. About 2 million Americans have allergies to the venom of stinging insects causing about 50 deaths every year. No one really knows why certain people have severe allergies. But there are some known triggers. Some people may have a skin rash and difficulty breathing or swallowing, while others may experience nausea and vomiting. Although there are common symptoms for anaphylaxis, they can vary drastically from person to person and reaction to reaction.

For young people and young adults, the most common cause of anaphylaxis is food. Surprisingly, there are a large number of anaphylactic reactions reported where the cause can't be identified. Sometimes, the body quickly lets you know that it can't handle a substance (allergen) that you're allergic to, while other times, symptoms can take hours to show up. Obviously, the first line of defense against an anaphylactic reaction is to avoid your allergen. However, should you get stung or have eaten something that is causing an adverse reaction, it may seem like common sense, but you need to quickly remove the substance you're allergic to from the mouth or skin.

Ignoring allergies can be dangerous. If you have never been tested for allergies, but experience symptoms, it is time to talk to your doctor as so they can help you identify what you're allergic to. Living with, or being at risk for, a severe allergy usually means carrying an epinephrine auto-injector at all times. This is not an over-the-counter medication and must be prescribed by the doctor. Epinephrine auto-injectors usually come as a pair, because sometimes you need more than 1 dose to treat the anaphylactic reaction.

Some people seem to be more at risk for anaphylaxis than others. No one knows exactly why this is the case; however, there are three things one should know that may increase one's risk:

- A history of severe allergic reactions
- A history of personal or family allergies or asthma
- Family history of exercise-induced anaphylaxis

The symptoms of anaphylaxis can be unpredictable. After contact with an allergen, the symptoms can quickly develop within seconds or minutes. For some people, it may take hours. Sometimes the symptoms may even go away, only to come back 2, 4, or even 8 hours later.



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Knowing what sets off an allergic reaction is the primary step toward knowing how to avoid the allergen(s) for which you are sensitive. That is why you should visit your healthcare professional immediately if you think you may have experienced symptoms of anaphylaxis.

Solving your allergy sensitivities is not so easy and can even be a bit of a mystery. Therefore, it is important to provide as much information as possible to your doctor. This would include: what you felt, where you were, how long it took to happen, and how any symptoms evolved over time. To help doctors get to the bottom of your allergy mystery, they'll often give you an allergy test. While there's no specific test to predict if you are at risk for anaphylaxis, there are tests to help learn what your body is sensitive to and therefore, may cause an allergic reaction. Usually done right in your doctor's office, your doctor may place a drop of allergen (kind of like a food extract) on your arm or back and then prick the skin. This lets a little bit of the allergen enter your skin. About 15 minutes later, if you're allergic to that substance, you'll have a red, swollen bump.

Blood tests help doctors find out if your body's immune system produces a high level of an antibody called immunoglobulin E (IgE), which is a normal part of the immune system. The body produces it to attack things that you're allergic to. People with severe allergies tend to have a lot of IgEs show up. Blood tests can take a few days to get results back, since they're usually sent to a lab for testing.

A common over-the-counter medication is anti-histamines. Sometimes referred to as a histamine antagonist. Histamine (produced naturally within body cells, referred to as *mast cells*) is an organic nitrogenous compound that produces increased vascular permeability, causing fluid to escape from capillaries into tissues, which leads to the classic symptoms of an allergic reaction; a runny nose and watery eyes. Histamine also promotes angiogenesis (formation of new blood vessels). As its name implies, antihistamines are designed to suppress the histamine-induced responses of swelling and vasodilation (widening of the blood vessels which can result in a serious drop in blood pressure). This "antagonistic effect is created by blocking the binding of histamine to its receptors located on nerves, vascular smooth muscle, glandular cells, endothelium, and mast cells.

One of the most common antihistamines is Benadryl (developed and marketed by a major US drug manufacturer), and has become synonymous with the generalized term, antihistamine. These products are available for both oral and topical use. In addition, the active ingredient differs, depending on the country where it is purchased. For instance, in the United States, Benadryl contains the antihistamine diphenhydramine, while in the UK, it's acrivastine or cetirizine.

If you take an antihistamine, it is very important to read the label as some products can be a sedative, making it dangerous to operate equipment or to just drive a vehicle. Also, in some countries, diphenhydramine is considered a prohibited or controlled substances (such as Zambia...OK who's planning a trip to Zambia?) and travelers are advised not to bring this drug into the country. Several Americans have been detained overseas for possession of Benadryl and other over-the-counter medications containing diphenhydramine.

Avoiding a fight is a mark of honor; only fools insist on quarreling

Proverbs 20:3

