Allergies and Anaphylaxis

OVERVIEW

Definitions

According to Mosby’s Medical Dictionary an allergy is a “hypersensitive reaction to common, often intrinsically harmless, substances most of which are environmental. More than 50 million Americans have allergic reactions to airborne or inhaled allergens, such as cigarette smoke, house dust, and pollens.

Symptoms of mild allergies, such as those associated with rhinitis, conjunctivitis, and urticaria, can be suppressed by antihistamines, with glucocorticoids administered as supplements to primary therapy. Severe allergic reactions, such as anaphylaxis and angioedema of the glottis, can cause systemic shock and death and commonly require immediate therapy with subcutaneous epinephrine or IV steroids, such as dexamethasone.

The following, simpler definition is a summary from the U.S. National Library of Medicine- Pub Med: An allergy is an immune response or reaction to substances that are usually not harmful. In a person with allergies, the immune system is oversensitive. Chemicals such as histamines are released and cause allergy symptoms. Common allergens are drugs, dust, food, insect venom, mold, pet and other animal dander, and pollen. Occasionally, some people have allergy-like reactions to hot or cold temperatures, sunlight, or other environmental triggers. Allergies may make conditions such as eczema and asthma worse.

Anaphylaxis is a life threatening allergic reaction.

Symptoms

Symptoms of an allergic or anaphylactic reaction may come from any system in the body. Symptoms may include stuffy nose, itchy nose and throat, mucus production, cough, and wheezing; itching watery, red, swollen eyes; skin rash, hives, itching, blisters. A food allergy reaction may cause nausea, vomiting, abdominal pain, and diarrhea.

Anaphylaxis Symptoms - usually occur within minutes of exposure to an allergen. Sometimes, however, anaphylaxis may occur a half-hour or longer after exposure. Symptoms may include: skin reactions, including hives along with itching, flushed or pale skin (almost always present with anaphylaxis), a feeling of warmth; the sensation of a lump in the throat; constriction of the airways and a swollen tongue or throat, which can cause wheezing and trouble breathing; a feeling of impending doom; a weak and rapid pulse; nausea, vomiting or diarrhea; dizziness or fainting.

Last updated April 2016
Incidence

The incidence of allergies and allergic reactions has been on a steady increase in the industrialized world for at least the past 50 years. And worldwide, sensitization rates to one or more common allergens among school children are currently approaching 40%-50%. A more extensive description of the incidence can be found at http://www.aaaai.org/about-the-aaaai/newsroom/allergy-statistics.aspx

According to the Food Allergy and Anaphylaxis Network’s research (FAAN), 15 million people have food allergies. Nearly 6 million or 8% of children have food allergies with young children affected the most. Boys appear to develop food allergies more than girls. Food allergies may be a trigger for or associated with other allergic conditions, such as atopic dermatitis and eosinophilic gastrointestinal diseases.

The most common food allergens are milk, egg, wheat, soy, peanuts, tree nuts (e.g., walnuts, almonds, cashews, pistachios, and pecans), fish and shellfish. Some allergies are out-grown. Most likely to be outgrown are allergies to milk, egg, wheat, and soy. On the other hand, allergies to peanuts, tree nuts, fish, or shellfish are generally lifelong allergies.

According to a study released in 2008 by the Centers for Disease Control and Prevention, about an 18% increase in food allergy was seen between 1997 and 2007. The prevalence of peanut allergy among children appears to have tripled between 1997 and 2008.

Treatment & Medications

The best treatment is avoidance of the allergen. There are a number of medications that can be used to prevent reactions and treat allergies depending on the type and severity of the allergy. These may include antihistamines, decongestants, corticosteroids, leukotriene inhibitors such as zafirlukast (Accolate) and montelukast (Singulair), and allergy shots.

A severe allergic reaction (anaphylaxis) needs to be treated with epinephrine, which can be life-saving when given right away. If epinephrine is administered at school, call 911 and make sure the student (or adult) is transported to ensure appropriate follow-up which may include treatment with additional epinephrine and observation for a biphasic reaction.

Auto-injector epinephrine is the preferred method of epinephrine delivery at school. Auto-injector epinephrine is an emergency injectable medication that may be given by unlicensed school staff after appropriate training and following the recommendations for
medication administration in the California Department of Education’s (CDE) Program Advisory on Medication Administration (May 2005).

CA Ed Code  49423

CA Ed. Code also 49423 allows for students with a severe allergy to self-carry auto-injector epinephrine. In addition to physician and parent authorization, this requires a statement of release of liability to the school district. It is best practice to have an epinephrine auto-injector back-up in the health office in the event that the student’s medication is not available during an anaphylactic reaction.

Food Allergies at School

Unfortunately, deaths related to food allergy anaphylaxis continue to occur at school (January 2012, Virginia). Failure to promptly (i.e., within minutes) treat food anaphylaxis with epinephrine is a risk factor for fatalities. Teenagers and young adults with food allergies are at the highest risk of fatal food-induced anaphylaxis. According to FAAN, studies have indicated that 16-18% of school-age children who have food allergies have had a reaction in school. In an estimated 25% of the cases, the reaction occurs before the student has been diagnosed with food allergy.

Therefore, it is imperative for schools to develop policies to handle medical emergencies, and to take preventative measures to avoid a student’s exposure to a known food allergen. Physicians, families, and school staff should work together to formulate reasonable and practical plans that will keep students with food allergies safe (Food Allergy Research and Education (FARE) http://www.foodallergy.org/)

As of January 1, 2015 county offices of education, public and charter schools are required to have standing orders for auto.Injector epinephrine and volunteer staff trained on its administration thereby making this medication available for those students or staff who may have an undiagnosed allergy and have an anaphylactic reaction at school. Each private elementary and secondary school in the state may voluntarily determine whether or not to make emergency epinephrine auto-injectors and trained personnel available at its school. In making this determination, a school shall evaluate the emergency medical response time to the school and determine whether initiating emergency medical services is an acceptable alternative to epinephrine auto-injectors and trained personnel. Education Code  49414.

http://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=49414.&lawCode=EDC

School Food Allergy Plan Considerations:

A comprehensive plan includes having policies and protocols in place for:
the education of all members of a school community regarding the seriousness of food allergies and of a potential anaphylactic reaction
preventing exposure
student specific Food Allergy Action Plans
training and documentation
rescue medication orders and protocols
medication storage, access and administration
cafeteria protocols
emergency response protocols
and much more …..

Fortunately, schools have many resources available to them in developing a comprehensive school plan.

The online C.A.R.E. course is available for free at http://allergyready.com/. This course is designed to help teachers, administrators and other school personnel prevent and manage potentially life-threatening allergic reactions. The course includes visuals, guides, case studies, and more.

The C.A.R.E. acronym stands for:

C Comprehend the food allergy medical basics
A Avoid food allergens
R Recognize a reaction
E Enact emergency protocol


Both the Food Allergy Research and Education (FARE) and the National Association of School Nurses (NASN) offer a wealth of resources in the development of a comprehensive school plan.

Food Allergy Research and Education (FARE) http://www.foodallergy.org/managing-food-allergies/at-school

National Association of School Nurses http://www.nasn.org/ToolsResources/FoodAllergyandAnaphylaxis
References/Resources

National Library of Medicine

Food Allergy and Anaphylaxis Network
https://www.foodallergy.org/facts-and-stats

Centers for Disease Control & Prevention
http://www.cdc.gov/nchs/fastats/allergies.htm

Legal References

California Department of Education Program Advisory on Medication Administration
http://www.cde.ca.gov/ls/he/hn/documents/medadvisory.pdf

Education Code 49423 – Prescribed auto-injector epinephrine

Education Code 49414 – Requires emergency epinephrine auto-injectors at school (county offices of education, public and charter schools/optimal for private schools)

CA Codes may be retrieved here: http://leginfo.legislature.ca.gov/faces/codes.xhtml