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Allergy to food additives is rare

Many food and drug additives are used in the United States. As of this writing, 2922 food additives and 773 drug additives are officially allowed by the FDA. The food additives serve many functions including nutritive, coloring, favoring and antimicrobial functions and some of the additives serve more than one function. Similarly the drug additives are used as coloring, flavoring, emulsifier or thickener agents, binding agents, and preservatives. Although many additives may be used in a given food or drug, usually the amount is very small with few exceptions (example sugar). Virtually all intentionally added ingredients must be declared on the ingredient statement according to US regulation. The ingredient statement lists all of the ingredients in the composite food product in descending order of predominance. However, a few groups of ingredients are allowed to be declared collectively without a listing of all of the individual components; examples would include spices, natural flavors, and artificial flavors.

Read food labels and drug package inserts carefully

Recently, the United States has enacted the Food Allergen Labeling and Consumer Protection Act that mandates that any ingredient derived from a commonly allergenic food (defined as peanut, tree nuts [e.g., almond, walnut, etc.], soybeans, wheat, milk, egg, fish, and crustacean shellfish [e.g., shrimp, crab, lobster]) must be labeled clearly by source. Useful web sites that provide regulatory and other technical information on food additives can be found at http://www.cfsan.fda.gov (US FDA Center for Food Safety and Nutrition) and http://www.cfsan.fda.gov/~dms.efaus.html (EAFUS database). For prescription drugs, information on the added ingredients is provided in the package insert.

Allergy to food and drug additives is rare

Food additives have been blamed for several symptoms related to allergy, hives, rash and asthma. However several carefully conducted studies failed to confirm a relationship between these additives and the symptoms. A large Dutch study involving 1483 adults showed that only 0.2% (about 3 adults in the entire study) had symptoms attributable to the additives in question. Large study involving 4274 Danish school children and another large British study involving 18582 individuals came to the conclusion that no more than 0.13% to 0.23% of children and adults have true allergy to food additives. This is very small in comparison to the incidence of 2% in adults and 8% in children who are allergic to milk, wheat, soy, egg, peanut, tree nut, fish and seafood.

The incidence of allergic reactions to drug additives is truly unknown. Most of these are individual case reports. Carboxymethylcellulose in steroid injections causing anaphylaxis, arabic and tragacanth gums in steroid and antihistamine tablets causing hives, gelatin in certain vaccines causing anaphylaxis and benzalkonium chloride in eye drops, thimerosal in vaccines and ethylenediamine in certain topical creams and aminophylline causing contact sensitization and local rash have been reported.

Diagnosis

As mentioned in my previous article on sulfite allergy, in order to establish a causal link between a given food additive and reported symptoms, a carefully construed double blind placebo controlled additive challenge study should be conducted. This is often difficult, potentially dangerous and often available only in large allergy clinics located in university hospitals. Even where such studies have been conducted the doses of additives used in these studies often far exceeded typical doses naturally encountered in foods and drugs by patients. This further contributes to the skepticism regarding true allergy causing potential of these agents. For most patients, carefully documented retroactive food-drug-symptom diary is often sufficient to avoid these agents in future. The FDA approved allergy skin tests and blood tests are not available in diagnosing allergy to food and drug additives.

Conclusions

In summary, Adverse reactions to food and drug additives only occur in a limited segment of the population, with few exceptions, adverse reactions to food and drug additives are not IgE mediated, and proper diagnosis of an adverse food or drug reaction often requires a properly conducted double-blind, placebo-controlled challenge. With this introduction, we will examine the roles played by some of the commonly encountered food and drug additives in the next article.

About the author:

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