KAPC Practice Guideline

Title: Perioperative Management of Patients with Latex Allergy

Date Approved: March 15, 2010

Definitions:

- Latex sensitization: the presence of IgE antibodies to latex, without regard to clinical manifestations
- Latex allergy: any immune-mediated hypersensitivity reaction to latex, including type I and IV hypersensitivity reactions, but not including irritant contact dermatitis
- Irritant Contact Dermatitis: non-immunologic; localized redness, soreness, or pruritus; usually associated with powdered latex glove use
- Type IV Hypersensitivity Reaction: cell-mediated reaction; erythema with vesicles or scales; far more common than Type I reactions; not life-threatening
- Type I Hypersensitivity Reaction: IgE-mediated reaction ranging from localized hives to anaphylaxis; least common form of latex allergy; may be life-threatening

Policy Overview: The aim of this policy is to facilitate the accurate identification and categorization of patients at risk for hypersensitivity reactions to latex, and to clearly outline those steps which have been shown to reduce the incidence or severity of those reactions. Additionally, it will provide a brief overview of the treatment of a type I hypersensitivity reaction.

Patient identification and latex avoidance is the goal, regardless of the type of latex reaction. An effort should be made to identify the probable type of latex reaction by history. It is misleading and potentially harmful to simply label all patients with a history of any reaction to latex as “latex allergic,” as this may lead to complacency in caring for the rare patient with true type I latex hypersensitivity.

For patients with a history consistent with type I hypersensitivity, additional steps beyond identification and latex avoidance are recommended. As no benefit to pharmacologic prophylaxis has ever been shown, and possible harm has been suggested, premedication is not recommended on a routine basis.

Policy Steps

1. Preoperative Evaluation:

   Determine, through careful history, the type of latex reaction the patient has experienced. The key points in the history are timing of onset, distribution of cutaneous symptoms, and types of symptoms. Certainly, the most important distinction is between a type I reaction, and milder latex-related reactions.

Irritant Contact Dermatitis is benign and localized, and may occur upon first exposure. Symptoms include localized redness, soreness, and pruritus. Severity can be related to duration of exposure, skin temperature, and presence of powder on latex gloves.

Type IV Hypersensitivity Reaction is delayed in onset (hours or days), and is characterized by erythema, scales, and blisters (poison ivy type reaction). This reaction is caused by chemicals used in processing rubber, and so may occur with some latex products and not with others. The diagnosis can be established using a "patch test."

Type I Hypersensitivity Reaction is a systemic reaction characterized by hives, rhinitis, conjunctivitis, edema, bronchospasm, GI spasm, and / or hypotension. Symptoms usually appear promptly after a reexposure. Elevated serum tryptase measured during or shortly after an episode helps confirm the diagnosis of anaphylaxis, but does not confirm latex as the cause.

2. Perioperative Management:

Irritant Contact Dermatitis: Avoid prolonged direct contact with latex.

Type IV Hypersensitivity: Avoid direct contact with latex; use non-latex gloves, breathing bags, and other supplies.

Type I Hypersensitivity:

1. Consider preoperative allergy consultation. Serologic tests are available, but are not completely reliable. *In vivo* testing (Skin Prick Test) is much more reliable, but is not readily available.
2. Attempt to schedule elective procedure as first case of the day.
3. Use only non-latex supplies. Remove vial stoppers if unsure of their composition
4. Attempt to create a latex-free or latex-reduced preop, OR, and PACU environment.
5. Keep appropriate resuscitative medications readily available throughout the patient's perioperative course. Prompt removal of latex sources and use of epinephrine are the most important steps in treatment of anaphylaxis:

epinephrine, <u>0.1 mcg/kg IV</u> (dilute to 10 mcg/cc); 0.1-0.5 mg to treat severe hypotension
diphenhydramine, 1 mg/kg IV (max dose 50 mg)
ranitidine, 1 mg/kg IV (max dose 50 mg) or cimetidine, 400 mg IV
methylprednisolone, 1 mg/kg IV
albuterol via nebulization
obtain serum tryptase levels during episode

Resources

Natural Rubber Latex Allergy: Considerations for Anesthesiologists. American Society of Anesthesiologists. http://www2.asahq.org/publications/pc-133-7-natural-rubber-latex-allergy-considerations-for-anesthesiologists.aspx

Anaphylaxis and Anesthesia. Dewachter, et. al. Anesthesiology 2009; 111: 1141-50.

Latex Allergy: An Update. Hepner and Castells. Anesth Analg 2003; 96: 1219-29.

Latex Allergy: Failure of Prophylaxis to Prevent Severe Reaction. Setlock, et. al. Anesth Analg 1993; 76: 650-2.

Guidelines for the management of latex allergies and safe latex use in health care facilities. Sussman G, Gold M. Arlington Heights, IL, American College of Allergy, Asthma and Immunology, 1996.

The Diagnosis and Management of Anaphylaxis: An Updated Practice Parameter. Joint Task Force on Practice Parameters for Allergy and Immunology. J Allergy Clin Immunol 2005; 115: S483-523.