Pediatric Allergy/Immunology Conditions Evaluated and Treated

The immune system has a very important role of protecting the body from, and responding to, infections. Allergic disorders, such as food allergies and Hayfever occur when the immune system responds inappropriately to things in the environment that are otherwise harmless to others. Immunodeficiency disorders occur when the immune system cannot properly fight infections, resulting in either recurrent or severe infections.

Conditions Evaluated and Treated:

Allergic conditions include:
- Allergic rhinitis (Hayfever) + Allergic conjunctivitis
- Anaphylaxis
- Asthma
- Eczema/atopic dermatitis
- Food allergies
- Hives/urticaria

Immune disorders and immune deficiencies include:
- Common variable immunodeficiency
- Congenital immunodeficiencies such as severe combined immunodeficiency, chronic granulomatous disease, and DiGeorge syndrome.
- Hereditary angioedema

What is immunotherapy (allergy shots)?

Immunotherapy is a type of treatment for allergic children with hay fever and/or asthma. It is also called desensitization, hyposensitization, and allergy shots. A mixture of the various pollens, mold spores, animal danders, and dust mites to which the child is allergic is formulated. This mixture is called an allergy extract. There is no medication in the mixture. The mixture is injected under the skin, usually in the fatty tissue in the back of the arm. It is not painful like an injection into the muscle. Over time, the child’s immune system builds up an immunity to the allergen. The injections are usually given weekly or twice a week for about a year. Then every other week to finally once a month.

About 80% to 90% of children improve with immunotherapy. It usually takes 12 to 18 months before definite reduction in allergy symptoms is noticed. In some children, a reduction in symptoms is seen in as soon as 6-8 months.

Immunotherapy is only part of the treatment plan for allergic children. Since it takes time for immunotherapy to become effective, your child will need to continue the allergy medications, as
prescribed by his or her doctor. It is also important to continue eliminating allergens, such as dust mites, from your child’s environment.

Are there side effects to immunotherapy?

There are two types of reactions to immunotherapy: local and systemic. The local reaction is redness and swelling at the injection site. If this condition occurs repeatedly, then the extract strength or schedule is changed.

A systemic reaction is one that may involve the whole body. The symptoms may include nasal congestion, sneezing, hives, swelling, wheezing, and low blood pressure. Such reactions can be serious and even life-threatening. However, deaths related to immunotherapy are rare. If a systemic reaction occurs, your child may continue taking shots, but of a lower dosage.

Medication as treatment for allergy

For children who suffer from allergies, there are many effective medications. This is a brief overview of the most commonly used types of medications.

What are antihistamines?

Antihistamines are used to relieve or prevent the symptoms of allergic rhinitis (hay fever) and other allergies. They prevent the effects of histamine, a substance produced by the body during an allergic reaction. Antihistamines come in tablet, capsule, liquid, or injection form and are available both over the counter and by prescription.

What are decongestants?

Decongestants are used to treat nasal congestion and other symptoms associated with colds and allergies. Decongestants cause the blood vessels to narrow, leading to the clearing of nasal congestion. Decongestants are available both over the counter and by prescription. The most commonly used forms are liquid and tablet. However, nose sprays or drops may be prescribed by your child’s doctor. The American Academy of Family Physicians does not recommend decongestants for children younger than age 4. Regular use of decongestants can cause the symptoms to worsen as the body becomes dependent on the medication. This is called a “rebound effect.”

What types of medications are used for asthma and respiratory symptoms resulting from an allergic reaction?

The use of medications for asthma or respiratory symptoms from allergies is highly individualized based on the severity of the symptoms. The following are the most commonly used medications:

- **Bronchodilators**: These medications are used to help open the narrowed airway and may relieve coughing, wheezing, shortness of breath, or difficulty in breathing. These are usually considered rescue medications for acute attacks of asthma. Types of bronchodilators are beta agonists, and anticholinergics. These medications come in
inhalers, or in pill form, liquid, or injectable. The short-acting bronchodilators are used as needed, as symptoms occur. Longer-acting bronchodilators may be used for maintenance or on a daily basis to help control flare-ups.

- **Anti-inflammatory medications.** These medications help decrease the inflammation that occurs in the airways with asthma. These include two types of medications:
  - Nonsteroidal anti-inflammatory medications. Cromolyn and nedocromil are two types of non-steroidal medications that are usually inhaled.
  - Corticosteroids. These medications can be given in a variety of ways. Some of them are inhaled, while others may be taken as a pill or liquid, or even injected. The steroids taken by mouth can have more side effects than those that are inhaled.
- **Antileukotrienes:** This medication is sometimes used to help control the symptoms of asthma. These medications help to decrease the narrowing of the lung and decrease the chance of fluid in the lungs. These are usually given by mouth.
- **Immunotherapy.** Omalizumab (Xolair), a monoclonal antibody that attacks an immunoglobulin associated with allergic reactions, can be used for severe asthma attacks in adults and children older than age 12.