

The Pollen

Issue N°19 - Asthma

Asthma has often been shown to be preventable with allergen immunotherapy (IT), and the symptoms of allergic asthma may be improved with allergen IT.¹ In order to determine if a patient with asthma might benefit from this treatment method, we must examine the phenotype of asthma to determine if it is a type that will respond to IT. In this edition of The Pollen, we will look briefly at five common phenotypes of asthma and the role of IT in each.

Allergic Asthma

The majority of patients that suffer with asthma 45 to 88 percent have an allergic-based phenotype. This is differentiated by other types of asthma due to a positive skin prick test to an allergen and exacerbation of symptoms when exposed to the offending allergen(s). This phenotype of asthma is most prevalent in male children. Unlike other types of asthma, allergic asthma can be prevented with initiation of allergen immunotherapy early in one's life. Symptoms due to allergic asthma and medication usage can also be reduced with a full course of allergen immunotherapy.

Non-allergic Asthma

While the risk of asthma often increases with IgE levels, individuals with low or normal IgE levels AND a negative skin prick test can have non-allergic rhinitis. This phenotype is found in 10 to 33 percent of patients, typically presenting in females and later in life. Unlike the allergic classification, non-allergic asthma will not respond or improve with the use of allergy immunotherapy.

Aspirin-exacerbated Respiratory Disease (AERD)

AERD is considered a type of non-allergic asthma, and occurs in 3 to 5 percent of the asthmatic population. Onset of symptoms typically occurs within hours of ingestion of aspirin or other non-steroidal anti-inflammatory drugs. This is often a severe type of asthma posing greater risk to patients.

Infection-induced Asthma

Any instance where a respiratory tract infection, typically viral, influences a patient's asthma can be classified by this phenotype. This includes both the new onset and recurrence of asthma, as well as affecting a patient's control, persistence and/or severity of asthma. There is no prevalence of this phenotype, as it can occur in any population.

Exercise-induced Bronchospasm (EIB)

While EIB is not a unique form of asthma, most asthmatics and 7 to 20 percent of the general population will develop EIB after sufficient exercise. EIB only occurs within three to five minutes after exercise, peaking in severity at 10 to 15 minutes. Symptoms can easily be relieved with an inhaler.

While we only examined five common phenotypes of asthma, there are a number of types that may impact an individual's quality of life. Asthma is a serious medical condition that requires strict adherence to medical therapy to provide clinical relief, and identifying the correct phenotype will help to provide the proper treatment. While allergic asthma can be treated with allergen immunotherapy, it is recommended that your asthma be well controlled, as there is an increased risk for severe reactions while on immunotherapy. If you suffer from asthma, ask your doctor to see if allergen testing and immunotherapy is appropriate for you.

1. Jacobsen L, Niggemann B, Dreborg S, et al. Specific immunotherapy has long-term preventive effect of seasonal and perennial asthma: 10 year follow-up on the PAT study. *Allergy*. 2007; 62: 943-948.

2. Lockey RF, Haley JA. Defining Phenotypes: Expanding our understanding of asthma challenges in treating a heterogeneous disease. World Allergy Organization. Accessed 3/10/2014.