

AN ALLERGY: CAUSES, SYMPTOMS AND TREATMENT

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Abstract

Working in the intensive care unit exposes me to patients with diverse medical conditions. At times, individuals show indifference to slight changes in their health. Neglecting these subtle shifts can result in serious repercussions later on. One instance of this is the emergence of Anaphylactic shock stemming from seasonal allergies and insensitivity. This article delves into the reasons behind allergies, their symptoms, and methods for prevention.

Keywords

Allergy, Anaphylactic shock, symptoms, treatment.

Introduction

Allergies are a common problem affecting people worldwide. From sneezing fits to life-threatening reactions, allergies can range from annoying to dangerous. Let's break down what allergies are, what causes them, how they affect us, and what we can do about them.

What is an Allergy?

Simply put, an allergy is when your body's defense system, the immune system, reacts to something harmless as if it's a dangerous invader. This "something" is called an allergen. Allergens can be found in foods, pollen, dust, pet dander, insect venom, and more. Allergies represent a significant health concern worldwide, affecting millions of individuals of all ages. They are the result of the immune system's abnormal response to otherwise harmless substances, triggering a cascade of symptoms ranging from mild discomfort to life-threatening reactions. In this article, we delve into the causes, symptoms, and treatment options for allergies, drawing upon current scientific research to provide a comprehensive understanding of this complex phenomenon.

Causes of Allergies

The development of allergies is influenced by a combination of genetic predisposition and environmental factors. Genetic studies have identified various susceptibility loci associated with allergic diseases, highlighting the hereditary component of allergic conditions. Additionally, environmental factors such as exposure to allergens during critical periods of immune system development play a crucial role in shaping allergic responses.

Allergens, the substances responsible for triggering allergic reactions, can be diverse and include pollen, dust mites, pet dander, food proteins, insect venom, and certain medications. When exposed to these allergens, susceptible individuals mount an immune response characterized by the production of immunoglobulin E (IgE) antibodies, mast cell activation, and the release of inflammatory mediators such as histamine.

Symptoms of Allergies

Allergic reactions can manifest in various organ systems, leading to a wide array of symptoms. Common symptoms of allergies include:

1. **Respiratory Symptoms:** Sneezing, nasal congestion, runny nose, coughing, wheezing, and shortness of breath are typical respiratory manifestations of allergies, particularly allergic rhinitis and asthma.
2. **Dermatological Symptoms:** Skin reactions such as itching, redness, swelling, and hives (urticaria) may occur following exposure to allergens, either through direct contact or systemic sensitization.
3. **Ocular Symptoms:** Allergic conjunctivitis presents with symptoms such as itching, redness, tearing, and swelling of the eyes, often accompanying nasal symptoms in allergic individuals.
4. **Gastrointestinal Symptoms:** Ingestion of allergenic foods can lead to gastrointestinal symptoms such as abdominal pain, nausea, vomiting, diarrhea, and in severe cases, anaphylaxis.
5. **Anaphylaxis:** Anaphylaxis is a severe, life-threatening allergic reaction characterized by a rapid onset of symptoms, including difficulty breathing, swelling of the face and throat, low blood pressure, rapid heartbeat, and loss of consciousness. Prompt medical intervention with epinephrine is essential to manage anaphylaxis effectively.

Treatment of Allergies

The management of allergies aims to alleviate symptoms, reduce the frequency and severity of allergic reactions, and improve patients' quality of life. Treatment strategies may include:

1. **Allergen Avoidance:** Identifying and avoiding known allergens is fundamental in managing allergic conditions. Environmental control measures, such as using air purifiers, allergen-proof bedding, and avoiding exposure to triggers, can significantly reduce symptoms.

2. **Pharmacotherapy:** Medications commonly used in the treatment of allergies include antihistamines, which block the effects of histamine and alleviate symptoms such as itching, sneezing, and nasal congestion. Nasal corticosteroids help reduce inflammation and congestion in the nasal passages, while decongestants provide temporary relief from nasal congestion. For severe allergies and anaphylaxis, epinephrine auto-injectors are lifesaving interventions that should be readily available to individuals at risk.

3. **Immunotherapy:** Allergen immunotherapy, commonly administered as subcutaneous or sublingual immunotherapy, involves the gradual desensitization of the immune system to specific allergens, leading to reduced sensitivity and symptom improvement over time.

4. **Biological Therapies:** Biological agents targeting specific molecules involved in allergic inflammation, such as monoclonal antibodies against IgE (omalizumab) or interleukin-5 (mepolizumab, reslizumab), have shown efficacy in the treatment of allergic asthma and chronic urticaria refractory to conventional therapy.

5. If you have a severe allergic reaction (anaphylaxis), it's crucial to seek immediate medical help. This might involve using an epinephrine injector (such as an EpiPen) and going to the emergency room for further treatment.

Conclusion

Allergies represent a complex interplay between genetic predisposition, environmental factors, and immune dysregulation. Understanding the causes, symptoms, and treatment options for allergies is essential in providing effective management and improving patients' quality of life. Ongoing research efforts aimed at elucidating the underlying mechanisms of allergic diseases and developing novel therapeutic strategies hold promise for the future management of allergies.

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