



Effectiveness of Immunotherapy in Changing Allergic Disease Management

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DESCRIPTION

Immunotherapy, often referred to as allergy shots or Allergen-specific Immunotherapy (AIT), is a medical treatment designed to alleviate the symptoms of allergic diseases by modifying the body's immune response to allergens. Allergic diseases, such as allergic rhinitis (hay fever), allergic asthma, and allergic dermatitis, result from an exaggerated immune reaction to normally harmless substances like pollen, dust mites, animal dander, or certain foods. This comprehensive exploration of the role of immunotherapy in allergic diseases will cover its mechanisms, effectiveness, potential benefits, and considerations.

Mechanisms of immunotherapy

Immunotherapy functions by exposing the patient to small, controlled amounts of the allergen(s) that trigger their allergic reactions. The process involves two primary mechanisms:

Desensitization: Immunotherapy aims to decrease the sensitivity of the immune system to specific allergens. Over time, with regular and gradually increasing exposures to the allergen(s), the immune system becomes less reactive, resulting in reduced allergic symptoms.

Tolerance induction: Immunotherapy also seeks to induce allergen-specific immune tolerance. This means teaching the immune system not to overreact when exposed to the allergen(s). It helps the body recognize the allergen as harmless, thereby reducing allergic responses.

Effectiveness of immunotherapy

Immunotherapy has been shown to be effective in the management of various allergic diseases. Its impact is well-documented in treating conditions such as:

Allergic rhinitis: Immunotherapy can significantly reduce the severity of symptoms associated with allergic rhinitis, including sneezing, runny nose, nasal congestion, and itchy or watery eyes.

It is especially beneficial when symptoms are not adequately controlled with other medications.

Allergic asthma: For individuals with allergic asthma triggered by allergens like pollen or dust mites, immunotherapy can reduce asthma exacerbations and improve lung function. It may also reduce the need for asthma medications.

Hymenoptera allergy: Immunotherapy can be life-saving for individuals with severe allergies to insect stings, such as bees or wasps. It helps prevent anaphylactic reactions upon future stings.

Atopic dermatitis (Eczema): Some studies suggest that immunotherapy may benefit individuals with atopic dermatitis, although the evidence is not as strong as for other allergic diseases.

Types of immunotherapy

There are two primary forms of immunotherapy used in the treatment of allergic diseases:

Subcutaneous immunotherapy (SCIT): SCIT, commonly known as allergy shots, involves injecting small amounts of allergens under the skin. The frequency and dosage of injections gradually increase during an initial build-up phase and then continue with maintenance injections. This form of immunotherapy is typically administered by an allergist in a clinical setting.

Sublingual immunotherapy (SLIT): SLIT is an alternative approach in which allergen extracts are administered in the form of drops or tablets that dissolve under the tongue. It is considered a more convenient option for some patients and can be administered at home after an initial consultation with an allergist.

Benefits and considerations of immunotherapy

Immunotherapy offers several benefits in the management of allergic diseases, but it is essential to consider the following factors when deciding on this treatment.

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Long-term relief: Immunotherapy can provide long-lasting relief from allergic symptoms, even after treatment has ended. Some individuals experience continued benefits for several years.

Reduced medication dependency: Successful immunotherapy can lead to a decreased reliance on allergy medications, including antihistamines and corticosteroids.

Prevention of progression: Treating allergies with immunotherapy may prevent the progression of allergic diseases. For example, addressing allergic rhinitis may reduce the risk of developing asthma.

Treatment of underlying cause: Unlike symptomatic relief medications, which manage symptoms but do not address the root cause of allergies, immunotherapy aims to modify the immune response itself.

Improved quality of life: Many patients report an improved quality of life after successful immunotherapy, as they can enjoy

outdoor activities and environments that previously triggered allergic reactions.

CONCLUSION

Immunotherapy plays an important role in the management of allergic diseases by modifying the immune response to allergens. It offers long-term relief, reduces medication dependency, and can prevent the progression of allergic diseases. However, it requires a time commitment, consideration of costs, and careful monitoring for safety. As research continues, immunotherapy is likely to become more personalized and accessible, offering even greater benefits to individuals with allergies. Ultimately, the decision to pursue immunotherapy should be made in consultation with a qualified healthcare provider who can assess the individual's specific needs and circumstances.