

# Sublingual immunotherapy with allergen specific immunotherapy tablet

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## ABSTRACT

Allergen specific immunotherapy is now recognized as an allergic disease modifying treatment. Studies have shown that allergen specific immunotherapy (AIT) can prevent new allergic sensitization, reduce medication use in allergic respiratory disease and prevent the development of asthma in patients suffering from allergic rhinitis. The benefits from AIT also translates into lower health care costs. Many society and national guidelines on allergic rhinitis and asthma now endorses the use of AIT in the treatment of patients with allergic sensitization with relevant trigger for their allergic respiratory disease. Patients on AIT are found to mount immunological changes during therapy, there is production of specific IgG4 and induction of regulatory T-cells. The regulatory T-cells are thought to be the key player in modulating the allergic inflammation through the production of IL-10 and TGF-B and is responsible for the prolonged persistent clinical benefits that we see in patients who have completed their AIT treatment. Acarizax is a sublingual immunotherapy product that is FDA approved for the treatment of allergic respiratory disease triggered by house dust mites. This product is a unique fast dissolving sublingual tablet formulation of standardized amounts of the major Group 1 and Group 2 allergens found in house dust mites *Dermatophagoides farinae* and *D. pteronyssinus*. There are 3 major well-designed double blinded placebo trials that were conducted on Acarizax in subjects with house dust mite sensitization that demonstrated clinical benefits and the effective dose. One trial, P003 showed that the SQ12 dose reduced allergic rhinitis symptoms in an environmental chamber challenge with onset of effect as early as 8 weeks and demonstrated persistent benefits 1 year after treatment was discontinued. The MERIT trial demonstrated that Acarizax can decrease symptoms scores, medication use with improvement in the Rhinitis Quality of Life Scores. The MITRA trial was conducted in subjects with allergic asthma and demonstrated the ability to reduce medication use in asthma and reduce risk of exacerbations of asthma when inhaled corticosteroids were stopped. In the current Covid-19 pandemic, Acarizax provides an option for patients to safely receive AIT through the sublingual route by self-administration at home. This can help reduce medical visits compared to injection AIT which requires multiple clinic visits for administration along with a 30 minutes observation post injection in a medical setting. Allergen specific immunotherapy is now recognized as an allergic disease modifying treatment. Studies have shown that allergen specific immunotherapy (AIT) can prevent new allergic sensitization, reduce medication use in allergic respiratory disease and prevent the development of asthma in patients suffering from allergic rhinitis. The benefits from AIT also translates into lower health care costs. Many society and national guidelines on allergic rhinitis and asthma now endorses the use of AIT in the treatment of patients with allergic sensitization with relevant trigger for their allergic respiratory disease.