



# Clinical Evaluation of Immunotherapy Effectiveness in Patients with House Dust Mite-Induced Allergic Rhinoconjunctivitis

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## Introduction

Patient selection for allergen immunotherapy (AIT) typically relies on clinical history and sensitization profiles. Challenge tests help stratify patients, with the Allergen Exposure Chamber (AEC) offering controlled allergen exposure, unaffected by external variables.

## Aim

This study aimed to assess the effectiveness of house dust mite (HDM) AIT in patients with allergic rhinitis, rhinoconjunctivitis, and/or asthma. Clinical improvement was evaluated both in real-world conditions using the Combined Symptom and Medication Score (CSMS) and through AEC after 3 years of AIT.

## Material and methods

Fifty patients with HDM-induced rhinoconjunctivitis were enrolled. Symptoms were assessed subjectively (symptom score, medication score, CSMS) and objectively (acoustic rhinometry) during peak HDM season and off-season in the AEC before AIT, and after 1 and 3 years of treatment.

## Results

AIT led to significant improvements in both subjective and objective measures. CSMS recorded in real-world settings after 1 year (69%) and 3 years (57%) of AIT showed substantial



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reductions from pre-treatment levels ( $p < 0.0001$ ), with no significant difference between scores at 1 and 3 years.

In the AEC, nasal symptoms decreased by 30% after 1 year and 41% after 3 years of AIT ( $p < 0.0001$ ). A strong correlation was observed between CSMS scores at 1 and 3 years ( $p < 0.005$ ,  $r = 0.99$ ). Additionally, a correlation was found between nasal symptoms at 1 and 3 years of AIT in the Total Nasal Symptom Score (TNSS) ( $p < 0.005$ ,  $r = 0.86$ ).

## Conclusions

Specific immunotherapy effectively manages allergic rhinoconjunctivitis in house dust mite-sensitive patients. The clinical outcomes in AEC align closely with AIT effectiveness, suggesting AEC as a potential alternative to conventional clinical trial methods.

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