

# THE HEALTH AND ECONOMIC IMPACT OF ALLERGEN THERAPY IN PATIENTS WITH ALLERGIC RHINOCONJUNCTIVITIS: REAL-WORD EVIDENCE FROM THE CZECH REPUBLIC

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## Introduction

The prevalence of allergic rhinitis/rhinoconjunctivitis in the population is high (10-20% in adults and 10-40% in children)<sup>[1]</sup>. This leads to a significant socioeconomic burden due to lowering of quality of life, increase in direct healthcare costs, decrease of work productivity and school or work absenteeism<sup>[2]</sup>.

The objective of this study was to compare the changes in clinical outcomes and healthcare costs during the usage of subcutaneous allergen immunotherapy (AIT) with tyrosine adsorbed allergoids in patients with allergic rhinoconjunctivitis (AR) before and after initiation of AIT in the Czech Republic.

## Methods

Data were based on prospective, non-interventional, single arm, multi-center cohort clinical study with 3-year follow-up. Data were obtained from routinely collected medical records and only patients with three completed pollen seasons with AIT were included (n=317).

Each patient was assessed before the start of AIT and then during three consecutive years treated with subcutaneous AIT. Patients received 3 initial and 3 maintenance injections of either Grass MATA or Tree MATA (Modified Allergen Tyrosine Adsorbed) within each pollen season.

Information about the daily occurrence, severity and symptomatic treatment used in the pollen season was obtained from patient questionnaires. In addition, demographic data and healthcare resource use and costs connected to AR were collected.

## Conclusions

Statistically significant differences between the results in the last pollen season without AIT and after the first, the second and third season with AIT illustrate the effect of the treatment.

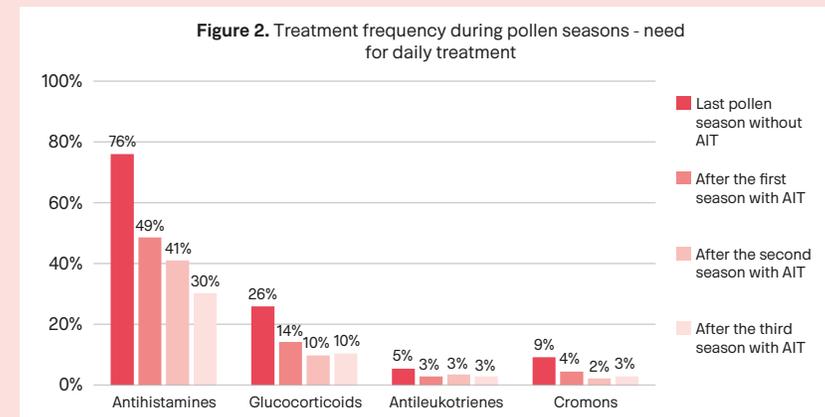
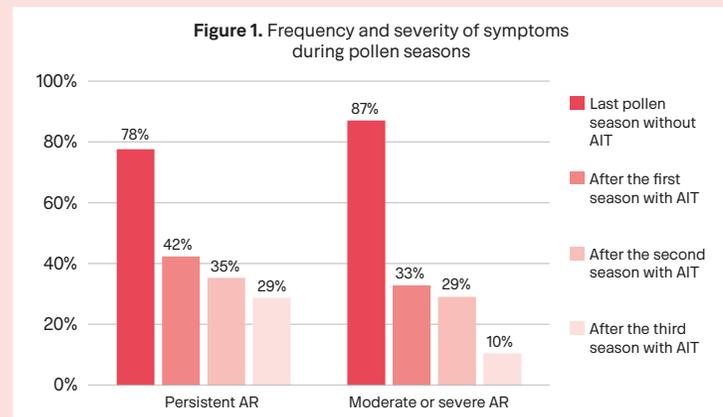
Subcutaneous AIT treatment with tyrosine adsorbed allergoids is an efficacious and cost saving treatment for AR based on medical records from real clinical practice in the Czech Republic. However, it should be taken into consideration that any environmental changes between different seasons might affect the results.

### References:

- Nathan RA. The burden of allergic rhinitis. *Allergy Asthma Proc.* 2007 Feb;28(1):3-9.
- Simoens S, Laekeman G. Pharmacotherapy of allergic rhinitis: a pharmaco-economic approach. 2008. *Allergy* vol. 64 (1).

## Results

Grass MATA was prescribed to 36.3% of patients and the remaining 63.7% received Tree MATA therapy. The mean age was 32.9 years and the mean time between the diagnosis and the first application of AIT was 4.8 years. 89.6% of patients did not use any allergen immunotherapy more than 5 years ago. The average duration of pollen season was 3.7 months.



As shown in figure 1, a statistically significant decrease in frequency and severity of clinical symptoms was reported by clinicians and patients: from 78% to 29% after the third season with AIT with persistent AR and from 87% to 10% after the third season with AIT with moderate or severe AR (both p-values < 0.001). Figure 2 illustrates that the number of patients who required medication each day during the pollen season decreased for each class of medication. For antihistamines, the number of patients decreased from 76% to 30% after the third season with AIT. Decrease was also observed in other classes of medication (glucocorticoids, antileukotrienes, and cromons).

The mean ARMS score (Average Rescue Medicine Score) which represents the amount of the usage of symptomatic medicine decreased from 1.8 points to 1.2 points after the first and the second season, and to 0.9 points after the third season with AIT (all p-values < 0.001).

The main aim was to compare healthcare costs in patients before and after AIT. Healthcare costs of medication including antihistamines, glucocorticoids, antileukotrienes and cromons decreased by 49.0% after the third season with AIT compared to the baseline (last pollen season without AIT). The cost of unscheduled physicians visit decreased by 73.3% after the third season with AIT compared to the baseline. Total healthcare costs apart from administration of tyrosine adsorbed allergoids decreased by 53.9% after the third season compared to the last pollen season without AIT.

Total costs	Reduction in annual healthcare cost of medication	Reduction in annual cost of unscheduled physicians visit	Reduction in annual healthcare cost
After the first season with AIT	41.0%	56.5%	44.5%
After the second season with AIT	40.5%	66.2%	45.7%
After the third season with AIT	49.0%	73.3%	53.9%