Efficacy and safety of house dust mite sublingual immunotherapy tablet for allergic rhinoconjunctivitis in subjects ≥50 years

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Introduction

- Allergic rhinitis/conjunctivitis (AR/C) affects individuals of all ages[1]
- Sublingual immunotherapy (SLIT)-tablets are FDA-approved up to age 65 years for the treatment of AR/C
- Previous analyses of grass and ragweed SLIT-tablet trials indicate that patients ≥50 years manifest an adequate immunological response and clinical effect from SLIT-tablet treatment similar to younger adults[2]

Objective

- This post hoc analysis evaluated the efficacy, immunologic response, and safety of house dust mite (HDM) SLIT-tablets in subjects aged 18-49 years or 50-64 years

Methods

- Efficacy data were pooled from 2 randomized, double-blind, placebo-controlled trials in subjects with AR/C (**Table 1**)
  - The primary efficacy endpoint in the trials was the total combined rhinitis symptom and medication score (TCRS) during the last 8 weeks of treatment
- Immunology data were pooled from 4 AR/C or asthma trials and analyzed for change from baseline in the full analysis set (**Table 1**)
- Safety data were pooled from 5 AR/C or asthma trials and analyzed for all randomized subjects (**Table 1**)
- All data were analyzed in subgroups of subjects ages 18-49 years and 50-64 years who received the 12 SQ-HDM dose or placebo
  - TCRS was analyzed in the full analysis set by analysis of covariance for observed data only (with no imputation of missing data) using square root transformed endpoint as the response, with trial, treatment, and baseline asthma status as fixed effects and the square root transformed baseline endpoint value as a covariate

Funding: Funding for these studies was provided by ALK, Hørsholm, Denmark and Merck & Co., Inc., Kenilworth, NJ, USA. This analysis was funded by ALK, Bedminster, NJ.

Table 1. HDM SLIT-tablet trials included in the analysis

Study	Study Population	Randomized, N		Inclusion Age, y	Data Pooled for AR/C Efficacy Analysis	Data Pooled for Immunology Analysis	Data Pooled for Safety Analysis
		12 SQ-HDM	Placebo				
MT-06	AR/C with or without asthma	318	338	≥18	√	√	√
P001	AR/C with or without asthma	741	741	≥12	√	√	√
MT-04	Asthma with AR/C	282	277	≥18		√	√
P003*	AR/C with or without asthma	42	41	≥18		√	√
MT-02	Asthma with AR/C	-	143	≥14			√†

AR/C, allergic rhinitis/conjunctivitis; HDM, house dust mite.
*Environmental exposure chamber trial.
†Only placebo data was used in the analysis because the 12 SQ-HDM dose was not evaluated.

Results

- The TCRS versus placebo with HDM SLIT-tablet improved 17.6% (95% CI, 10.2%, 24.5%) in subjects aged 18-49 years (n=652) and 18.0% (95% CI, 0.3%, 32.8%) in subjects aged 50-64 years (n=112) (**Figure 1**)
- Increases in allergen-specific IgE and IgG_4 from baseline were similar in both age groups (**Figure 2**)
- The percentages of subjects aged 18-49 years and 50-64 years reporting any treatment-related adverse events (TRAEs) were 68% and 61%, respectively (**Table 2**)
  - Treatment-emergent AEs, serious TRAEs, and discontinuations due to TRAEs also had similar frequencies between the age groups (**Table 2**)

Table 2. Summary of adverse events in subjects aged 18-49 and 50-64 years (all randomized subjects)

Population	Any TEAE, %	Any TRAE, %	Serious TRAE, %	Discontinued Due to TRAE, %
Aged 18-49 y				
HDM SLIT-tablet (n=1105)	82	68	0.2	7
Placebo (n=1247)	62	26	0.2	0.8
Aged 50-64 y				
HDM SLIT-tablet (n=169)	79	61	0.6	4
Placebo (n=164)	68	31	0	0.6

HDM, house dust mite; SLIT, sublingual immunotherapy; TEAE, treatment-emergent adverse event; TRAE, treatment-related adverse event.

References

1. Blaiss MS, et al. *Ann Allergy Asthma Immunol.* 2014;112(4):322-328 e321.
2. Creticos P, et al. *Ann Allergy Asthma Immunol.* 2014;113(Suppl 5):A14.

Figure 1. Average total combined rhinitis score (TCRS) during the last 8 weeks of treatment in subjects aged 18-49 and 50-64 years (full analysis set)

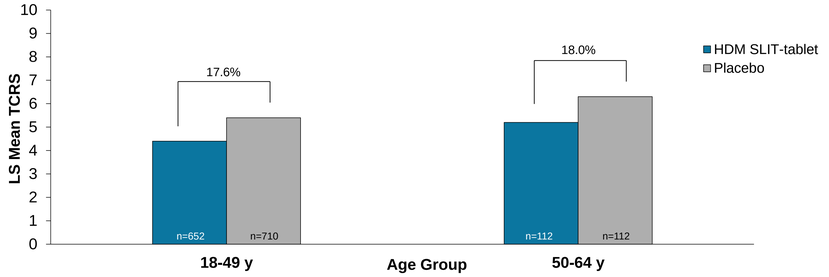
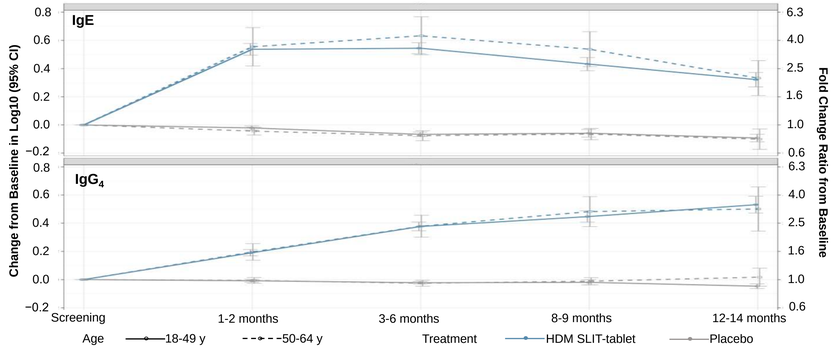


Figure 2. Changes in IgE and IgG_4 from baseline in subjects aged 18-49 and 50-64 years (full analysis set)



Conclusions

Efficacy and immunological changes with HDM SLIT-tablets in subjects aged 50-64 years are consistent with those observed in younger subjects, suggesting an adequate immunological and clinical response in older patients. The adverse event frequency was similar between the age groups.