Obesity is associated with increased asthma severity, and several biologics are currently approved for treatment-resistant asthma, based on either fixed- or adjustable-dosing regimens. Some studies suggest that response to biologics in patients with higher body mass index (BMI) may be diminished. The reasons for this are unclear, but may relate to fixed-dosing regimens.

Objective

To estimate the effect of omalizumab by BMI classification in patients with moderate-to-severe allergic asthma.

Methods

Study design and clinical characteristics were generally similar across treatment groups and BMI subgroups (Table). However, compared with normal and overweight patients, obese patients tended to have:

- Lower mean immunoglobulin E (IgE) levels, worse mean symptom scores, and poorer quality of life at baseline.

Baseline demographics and clinical characteristics were generally similar across treatment groups and BMI subgroups (Table). There was a trend towards slightly greater improvements in normal BMI and overweight patients compared with obese patients.

Results

Asthma Exacerbation Rate by BMI Category

Compared with the placebo group, asthma exacerbation rates were consistently lower across all BMI categories in patients receiving omalizumab (Figure 2A).

Conclusions

- Omalizumab reduced asthma exacerbations and improved FEV1, TASS, and asthma-related quality of life across all BMI groups compared with placebo.
- Lung function improvements were similar across BMI groups.
- Differences in asthma exacerbations were greater in obese patients versus nonobese patients, whereas improvements in TASS and AQLQ scores tended to be greater in nonobese patients.
- These findings suggest that omalizumab may provide clinical benefit irrespective of BMI.
- Limitations were inherent to the post hoc nature of the analyses.

Change in AQLQ Score by BMI Category

Improvements in AQLQ score were observed across all BMI categories in patients receiving omalizumab compared with placebo (Figure 4).

Safety

- Safety for the subgroups presented has not been evaluated. Safety results from the overall study population have been published in Busse et al and Soler et al.

References