Asthma Exacerbation Severity Is Greater for Women than for Men

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Abstract

Rationale: Although asthma prevalence is greater for women than men, less is known about their companies disease severity. Methods: This post-hoc analysis of pooled data from SIROCCO and CALIMA (56 weeks; men: N=568, women: N=969) was conducted to determine if women had more severe baseline disease than men. Differences in exacerbation rates, physician-assessed asthma severity, blood eosinophil counts (BEC) and mean IgE concentrations were compared between men and women. Results: Women had more severe baseline disease (e.g., increased number of exacerbations ≥300 cells/µL, history of mechanical ventilation for asthma, and increased number of ER visits). Women had lower mean IgE concentrations than men. Methods: Baseline characteristics were similar between men and women. Conclusions: Women had more severe asthma than men. Possible sex-specific asthma treatment has been suggested, with men and women receiving similar benefits for patients of both sexes.

Conclusions

• More women than men experienced ≥3 exacerbations prior to study entry (35.1% vs. 24.3%, p=0.006). (Figure 1)

• To further assess reported sex differences in asthma characteristics, data were stratified by current smokers and non-smokers and differences were evaluated. Women had more severe baseline disease than men in both smoking categories. The trend was similar to that observed with and without adjustment for smoking status. (Table 2)

• The results of this analysis are consistent with other investigation to determine asthma exacerbation severity for men and women with baseline ≥300 cells/µL BEC, and the effect of sex on exacerbation response. (Figure 2)

• Women and men were comparable in age, BEC, and body mass index (BMI) as assessed by baseline and prebronchodilator lung function tests. (Table 1)

• Patient sex was a pre-specified subgroup for analyses of the primary endpoint exacerbation rate, and formal statistical analyses were tested a priori. (Table 2)

• The current analysis is a continuation of the previous analysis to determine asthma exacerbation severity for men and women with baseline ≥300 cells/µL BEC. (Figure 3)

• Baseline characteristics differed between the sexes with severe eosinophilic asthma (Poster 56, AAAI 2019) and concluded that baseline characteristics were similar between women and men enrolled with baseline ≥300 cells/µL BEC. (Figure 4)

• The sex analysis was a post hoc analysis of pooled data from SIROCCO and CALIMA. (Figure 5)

• Prior to study entry, more women than men had exacerbations leading to hospitalization in emergency department visits. (Figure 5)

• Women had more severe baseline disease (e.g., increased number of exacerbations ≥300 cells/µL, history of mechanical ventilation for asthma, and increased number of ER visits). Women had lower mean IgE concentrations than men. Possible sex-specific asthma treatment has been suggested, with men and women receiving similar benefits for patients of both sexes. (Figure 6)

• Women had more severe baseline disease than men (increased number of exacerbations ≥300 cells/µL, history of mechanical ventilation for asthma, and increased number of ER visits). Women had lower mean IgE concentrations than men. Possible sex-specific asthma treatment has been suggested, with men and women receiving similar benefits for patients of both sexes. (Figure 7)

• These data support differences in severe eosinophilic asthma between women and men that facilitate into their clinical care.