

## Characterising the impact of sex on severe asthma (SA) in the UK Severe Asthma Registry (UKSAR)

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**Introduction:** Women are more likely to develop SA than their male counterparts. This analysis examines sex differences in disease, biological phenotype and treatment from UKSAR.

**Methods:** Data for patients meeting the ERS/ATS SA criteria in UKSAR (n=3,679) was analysed by sex using univariate and multivariate logistic regression analyses.

**Results:** SA patients were predominantly female (60.9%). Women were more likely to be obese (OR 1.67, 95% CI: 1.45, 1.93) and to have uncontrolled disease on asthma control questionnaire 6 (OR 1.14, 95% CI: 1.09, 1.18), more likely to have exacerbations (OR 1.13, 95% CI: 1.10, 1.17) and report asthma hospital admissions (OR 1.46 95% CI: 1.26, 1.70). Lung function was better in women, with percent predicted FEV<sub>1</sub> 3.9% higher than their male counterparts. Women had lower mean IgE (129 vs 208 IU/mL, p<0.001) and mean FeNO (36 vs 46ppm, p<0.001) type-2 biomarkers but no significant difference in blood eosinophils or biologic therapy. Women were less likely to be on long-term OCS (OR 0.86, 95% CI: 0.75, 0.99). Results are displayed in figure 1.

**Conclusion:** Significant differences were seen between the characteristics of men and women with SA. Women had worse asthma control, increased exacerbations and obesity despite higher FEV<sub>1</sub> percent predicted, lower FeNO and Total IgE compared with their male counterparts. Understanding these disparities is important to deliver personalised SA treatment.

**Figure 1. Regression analysis of sex differences in severe asthma**

