RESULTS

Patient Characteristics

- Based on GINA, of the 5,049 eligible asthma patients:
  - 42% were classified as severe, and
  - 36% were classified as moderate.

- Patients were selected over a period of 5 years (October 2008 – September 2013) based on eligibility criteria: age- and sex-adjusted relative risk

- Asthma diagnosis & asthma medications within this period

- Comorbidities and Associated Conditions

- Controlling for age and sex, severe patients had:
  - a 25% increased risk of depression (RR=2.25; 95%CI=1.25, 3.97), and
  - a 63% increased risk of rhinosinusitis (RR=1.63; 95%CI=1.30, 2.03) (Figure 2).

- Statistical Analysis

- Differences in patient characteristics between mild/moderate and severe groups were assessed using univariate tests (e.g. Wilcoxon Rank Sum, Mantel-Haenszel).

- Differences in risk of uncontrolled asthma and comorbidities between:
  - a 50% increased risk of uncontrolled asthma

- Additional medications used for the uncontrolled asthma patients and adjusted relative risk estimated from Poisson regression with robust error variance estimation

- Relative to patients with the lowest blood eosinophil levels (0-200 cells/μL), the risk of uncontrolled asthma was significantly greater for patients with elevated eosinophil levels (Figure 3). Patients with blood eosinophil levels of:
  - 601-900 cells/μL had a 36% increased risk uncontrolled asthma,
  - > 900 a 56% increased risk.

- CONCLUSIONS

- Our study in Canadian patients corroborates the findings of Price et al. (2011) and Fitzgerald et al. (2004) that severe asthma is associated with uncontrolled asthma and with poorer asthma control.

- High blood eosin levels were found to be associated with uncontrolled asthma and increased eosinophilic inflammation in severe asthma and should be monitored as possible predictor of severity and poor control.

- When controlling for age and sex, correlations were found between depression and asthma, as well as between rhinosinusitis and asthma, as well as between associated conditions that may further improve asthma care.

- More studies are needed to further characterize the various outcomes of asthma in order to identify and validate predictive factors that can significantly improve asthma care.

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STUDY LIMITATIONS

- Pulmonary function and eosinophils were not available for all patients.
- Prescriptions may not have been filled and patients may not have been adherent: prescriptions were used to identify patients severity groups. These prescriptions were evidence of the physicians impression of asthma severity.
- Hospitalization data was linked to the EHR and may be under represented, possibly creating a bias.

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DISCLOSURES

This study was sponsored by Teva Pharmaceuticals (Fraser, PA, USA). SW is a member of the Asthma Society of Canada (ASC), and XS is employees of Teva Pharmaceuticals.

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