Meeting: British Thoracic Society (BTS) Winter Meeting 2021
Meeting date: 24-26 November 2021
Abstract deadline: 24 June 2021 at 23:59 BST
Word count (limit, 350; does not include abstract title, figure/table legends, authors, and institutions): **302**
Special instructions:

- 1 table/figure permitted
- 1-2 references permitted (these are included in the word limit)
- Declarations of Interest: If there are specific issues related to conflicts of interest that the authors wish to declare in connection with a particular abstract, please send an email outlining the details to abstracts@brit-thoracic.org.uk and we will retain this information on file with your abstract.

Funding: This work was supported by AstraZeneca.

Mortality Analyses on Systemic Corticosteroid Use: a Long-term Observational Study

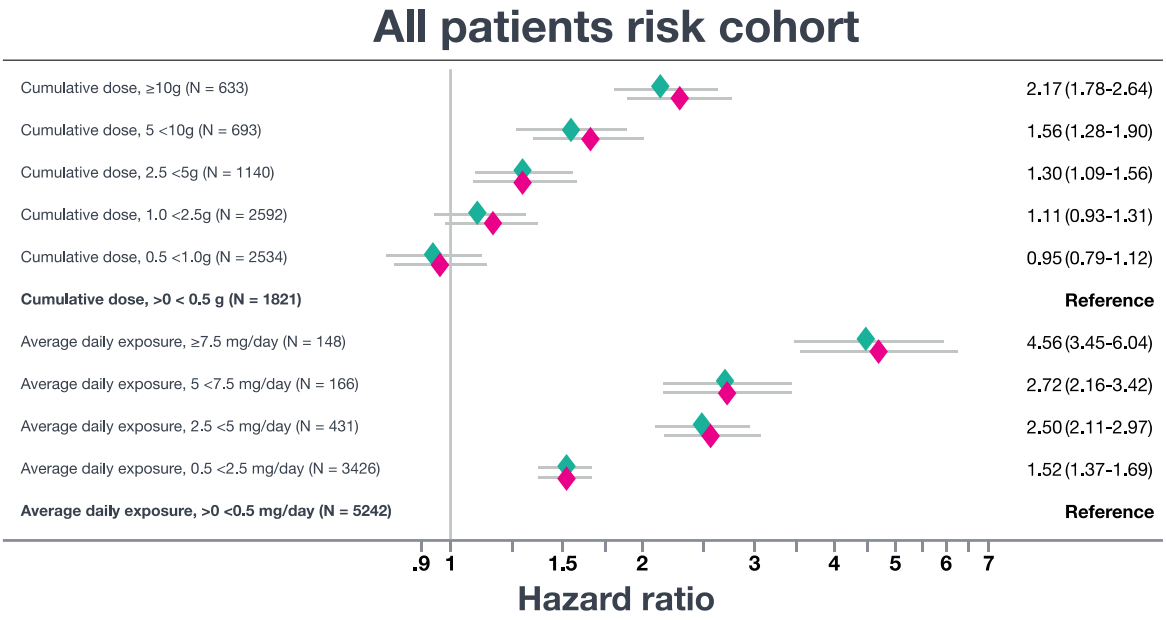
Xiao Xu,[1]Trung N. Tran,[1]Sarowar Golam,[2] Victoria Carter,[3] David B. Price,[3,4]

[1]AstraZeneca, Gaithersburg, MD, USA
[2]AstraZeneca, Gothenburg, Sweden
[3]Observational and Pragmatic Research Institute, Singapore
[4]Center of Academic Primary Care, Division of Applied Health Sciences, University of Aberdeen, Aberdeen, United Kingdom

Introduction and Objective: Exposure to systemic corticosteroids (SCS) is associated with higher risks of adverse outcomes, higher healthcare resource utilization, and associated costs in patients with asthma. There is limited information about the relationship between SCS exposure and mortality. The objective of this analysis was to evaluate the association between SCS exposure and mortality among patients with asthma in the United Kingdom.
Methods: In this retrospective open cohort analysis of the Clinical Practice Research Datalink (CPRD) database from 1979-2019, patients with asthma (≥18 years of age) were followed from the first recorded prescription of SCS until occurrence of death or end of follow-up. Mortality data was collected through linkage with death registration data from the Office of National Statistics. A time-to-event design with multivariable Cox proportional hazard models adjusting for confounders was used to assess the association between measures of SCS exposure (average daily exposure and cumulative dose) and overall and cause-specific deaths. Hazard ratios (HRs) were calculated for overall and each key adverse outcome-related mortality.
Results: Of 9,413 patients with asthma with SCS exposure who were followed for up to 28 years (median 8.7 years), 1,762 died. The most frequent primary cause of death was respiratory disease (30%). The mortality rate was 14-21 per 1000 person-years across SCS-related adverse outcomes of interest with incidence ratios ranging from 1.8 to 2.1. Dose-response relationships of average daily SCS exposure and cumulative SCS with higher risk of death were observed **(Figure)**. Patients exposed to a cumulative dose ≥10 g of SCS were more than twice as likely to die compared with those with <0.5 g. Patients with an average daily exposure ≥7.5 mg/day were almost 4.6 times more likely to die compared with those with <0.5 mg/day.

Conclusion: In patients with asthma, greater cumulative and average daily SCS exposure was associated with increased mortality.

Figure: Association of cumulative SCS dose and average SCS daily exposure with risk of death among patients with asthma (N=9413)



Red: unadjusted; Green: adjusted for gender and age