ASTHMA IS NOT ASSOCIATED WITH THE NEED FOR SURGERY IN CROHN’S DISEASE WHEN CONTROLLING FOR SMOKING STATUS: A POPULATION-BASED COHORT STUDY

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Background: Growing evidence suggests that asthma and Crohn’s disease (CD) commonly co-occur. The impact of asthma on the prognosis of CD is not known. Studies evaluating the risk of surgery in CD patients using health administrative data are limited by their inability to adjust for confounding variables not included in these data, such as smoking.

Aims: The aim of our study was to assess the impact of asthma on the need for intestinal resection in CD adjusting for smoking status, despite smoking status being unmeasured in health administrative data, using a secondary dataset and novel methodology.

Methods: Using population-based health administrative data from Alberta, we conducted a cohort study to assess the impact of asthma on the need for surgery in patients with CD diagnosed between April 1, 2002 and March 31, 2008 (n=2,113). Validated algorithms were used to identify incident CD cases, patients with co-occurring asthma, and intestinal resection surgeries. The association between asthma and intestinal resection was estimated using Cox proportional hazards regression. Smoking status was imputed using a method based on martingale residuals, leveraging information from a secondary dataset in which smoking status was measured. This second dataset included patients enrolled in the Alberta IBD Consortium between 2007 and 2014 who completed environmental questionnaires (n=485). All analyses were adjusted for age, sex, rural/urban status, and mean neighbourhood income quintile.

Results: Asthma did not increase the risk of surgery in either the health administrative data unadjusted for smoking status (HR 1.03, 95% CI 0.81 to 1.29) or in the secondary data adjusted for smoking status (HR 0.74, 95% CI 0.50 to 1.37). The association remained non-significant after using the secondary data to impute smoking status in the health administrative data (HR 0.92, 95% CI 0.75 to 1.15).

Conclusions: Although asthma is associated with an increased risk of CD, co-occurring asthma was not associated with the risk of surgery in patients with CD. This null association persisted after adjusting for smoking status. This study also demonstrates a novel method to adjust for smoking status in research using health administrative data when it is measured in a smaller secondary dataset.

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