

Correspondence and Replies

Asthma and COVID-19



To the Editor:

I read with interest the article by Green et al¹ that presents the conclusion of lower coronavirus disease 2019 (COVID-19) susceptibility in patients with preexisting asthma in a cross-sectional study of a nationwide health maintenance organization member population in Israel. The author's conclusion is based on a statistically significant odds ratio for asthma of about 0.7 (varying based on adjustment for confounders). I find the causal interpretation of population-based susceptibility from these findings to be inappropriate based on the measure of effect used and the study design. Using the crude numbers from their report (Table I), I calculate a prevalence difference for asthmatics (4.3%) versus nonasthmatics (6.2%) indicating that the COVID-19 burden in asthmatics is lower by 1.9 cases per 100 members tested (95% confidence interval [95% CI], 1.1-2.6).

On the scale of population health impact, this slight difference measured by the prevalence difference in a cross-sectional study does not translate to a broad conclusion or prediction of "lower COVID-19 susceptibility" for asthmatics. Adjustment for cross-sectional confounders in the report furthered weakened measures.

Lastly, reporting of "lower COVID-19 susceptibility" for patients with preexisting asthma needs further caution when considering existing controversy in which diagnosed and undiagnosed asthmatics are requesting medical exemption from wearing a mask during the pandemic.²

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TABLE I. Asthma and COVID 19 RT-PCR findings among 37,469 HMO members in Israel

	COVID-19 RT-PCR +	COVID-19 RT-PCR –
Asthma +	153	3,388
Asthma –	2,096	31,832

HMO, Health Maintenance Organization; RT-PCR, reverse transcription polymerase chain reaction.

The impact of inhaled corticosteroid on SARS-CoV2 infection



To the Editor:

We read with great interest the study by Calmes et al.¹ in which inhaled corticosteroid (ICS) treatment was not independently associated with the risk of intensive care unit admission or death among patients with severe acute respiratory syndrome coronavirus 2 (SARS-CoV2) infection. Therefore, the authors provided the recommendations that patients with obstructive airway disease should not decrease the dose of ICS during SARS-CoV2 infection.¹ However, we have several concerns about this conclusion.

First, ICS may beneficially or adversely affect the development and evolution of coronavirus disease 2019 (COVID-19) in many ways, such as acquiring SARS-CoV-2 infection, development and progression of COVID-19.² Although Calmes et al's study¹ showed that ICS did not affect outcome of COVID-19 patients,¹ the effect of ICS on the risk of acquiring SARS-CoV2 infection among patients with obstructive airway disease remained unclear. Thus, we still need evidence regarding whether ICS could increase the risk of COVID-19, as reported for other types of pneumonia.³⁻⁵ Moreover, another large observational study reported contradictory findings: chronic obstructive pulmonary disease (COPD) patients using ICSs were at increased risk of COVID-19–related death compared with those prescribed long-acting β -agonist plus long-acting muscarinic antagonist (LABA-LAMA) combinations (adjusted hazard ratio 1.39; 95% confidence interval 1.10-1.76), and asthma patients using high-dose ICS were at an increased risk of death (adjusted hazard ratio 1.55; 95% confidence interval 1.10-2.18).⁶ Although this finding may be caused by unmeasured confounding owing to disease severity and not to ICS itself, further research is warranted to clarify the role of ICS in acquiring SARS-CoV2 infection and the development and the progression of COVID-19 disease.

Second, the effect of ICS was evaluated in this study using the overall population ($n = 596$), including patients without obstruction, asthma, and COPD. However, we need a subgroup analysis of patients with asthma ($n = 57$) or COPD ($n = 46$) only to investigate the usefulness of ICS among COVID-19 patients with obstructive airway disease. In this way, we can better understand the impact of ICS on the clinical outcomes of COVID-19 patients with asthma or COPD and decide how to prescribe ICS appropriately for the patients with obstructive airway disease.

Third, previous studies^{4,5} have demonstrated that the risk of pneumonia associated with ICS varied by specific drug and increased with increasing dose. Therefore, more detailed analysis is needed to investigate the effects of different ICS drugs and dosages.

Although we have raised some concerns regarding the work of Calmes et al,¹ this study still provides useful information. However, because ICS is an important and commonly used medication for patients with asthma or COPD, more analyses and research are warranted.

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