

Asthma may not be a significant risk factor for severe COVID-19

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Asthma may not be significant risk factor for severe COVID-19. Credit: ATS

A new research letter published online in the *Annals of the American Thoracic Society* examines whether asthma is a significant risk factor for developing COVID-19 that is severe enough to warrant hospitalization and intubation. According to the Centers for Disease Control and Prevention, individuals with asthma are at higher risk for hospitalization and other severe effects from COVID-19, similar to the elevated risk from such health conditions as obesity, hypertension and diabetes.

In "Asthma in COVID-19 Hospitalizations: An Overestimated Risk Factor?," Fernando Holguin, MD, MPH, and co-authors compared the prevalence of asthma among patients hospitalized for COVID-19, as reported in 15 peer-reviewed studies, with that of the corresponding population's asthma prevalence. They also correlated the study's asthma prevalence with the four-year average asthma prevalence in influenza hospitalizations in the United States. In addition, they analyzed the medical records of 436 COVID-19 patients admitted to the University of

Colorado Hospital to evaluate the likelihood that patients with asthma would be intubated more often than patients without asthma.

"The CDC places people with asthma at higher risk for COVID-related hospitalization," said Dr. Holguin, professor, Asthma Clinical & Research Program, Pulmonary Division, University of Colorado Anschutz Medical Campus.

"However, many international studies show low numbers of asthmatics among hospitalized COVID-19 patients. These findings challenge the assumption about asthma as a risk factor."

The researchers performed a focused review of English-language scientific literature in order to identify studies reporting asthma prevalence among patients hospitalized for COVID-19 infection. Three independent reviewers agreed on 15 studies to include in the analysis. Using local data from hospitalized COVID-19 patients, they performed a statistical analysis to determine the relationship between asthma status and intubation, once they took into account patients' age, gender and body mass index (BMI).

The authors stated, "We found that the proportion of asthmatics among hospitalized patients with COVID-19 is relatively similar to that of each study site's population asthma prevalence. This finding is in stark contrast to influenza, in which asthmatics make up more than 20 percent of those hospitalized in the United States."

"Using data from our hospital, we also observed that among COVID-19 patients, those with asthma, which had a 12 percent prevalence rate, did not seem to be more likely to be intubated than non-asthmatics," they added. Dr. Holguin and colleagues theorize that the corticosteroid inhalers many people with asthma use make it more difficult for coronaviruses to enter their airways.

Specifically, these individuals may have lower levels of expression of ACE2, a protein that binds to SARS-CoV-2, the virus caused by COVID-19. People with asthma that is related to allergies may also have lower expression of ACE2, whether or not they use corticosteroids.

"The contribution of ACE2 receptor expression levels to COVID-19 susceptibility is still unclear, however, it should certainly be further investigated," said Dr. Holguin. Dr. Holguin adds that the [asthma](#)-COVID-intubation risk relationship should be studied further.

Provided by American Thoracic Society

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