



Asthma and COVID-19 risk: a systematic review and meta-analysis

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The risk of being infected with SARS-CoV-2 was reduced in patients with asthma compared to the non-asthma group. No significant differences in hospitalisation, ICU admission, ventilator use and mortality were found between groups. <https://bit.ly/3izKB9h>

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Abstract

Background Individual case series and cohort studies have reported conflicting results in people with asthma on the vulnerability to and risk of mortality from coronavirus disease 2019 (COVID-19).

Research question Are people with asthma at a higher risk of being infected or hospitalised or poorer clinical outcomes from COVID-19?

Methods A systematic review and meta-analysis based on five main databases including the World Health Organization COVID-19 database between 1 December 2019 and 11 July 2021 on studies with a control (non-asthma) group was conducted. Prevalence and risk ratios were pooled using Sidik–Jonkman random-effects meta-analyses.

Findings 51 studies with an 8.08% (95% CI 6.87–9.30%) pooled prevalence of people with asthma among COVID-19 positive cases. The risk ratios were 0.83 (95% CI 0.73–0.95, $p=0.01$) for acquiring COVID-19; 1.18 (95% CI 0.98–1.42, $p=0.08$) for hospitalisation; 1.21 (95% CI 0.97–1.51, $p=0.09$) for intensive care unit (ICU) admission; 1.06 (95% CI 0.82–1.36, $p=0.65$) for ventilator use; and 0.94 (95% CI 0.76–1.17, $p=0.58$) for mortality for people with asthma. Subgroup analyses by continent revealed a significant difference in risk of acquiring COVID-19, ICU admission, ventilator use and death between the continents.

Interpretation The risk of being infected with severe acute respiratory syndrome coronavirus 2 was reduced compared to the non-asthma group. No statistically significant differences in hospitalisation, ICU admission and ventilator use were found between groups. Subgroup analyses showed significant differences in outcomes from COVID-19 between America, Europe and Asia. Additional studies are required to confirm this risk profile, particularly in Africa and South America, where few studies originate.

