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Effect of asthma and asthma medication on the prognosis of patients with COVID-19

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Asthma increases the total medical cost burden and mortality rate associated with COVID-19. Asthma patients should not be concerned about using asthma medication during the COVID-19 pandemic, except for the use of oral short-acting β_2 -agonists. <https://bit.ly/35L1yY8>

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ABSTRACT

Background: Coronavirus disease 2019 (COVID-19) has spread worldwide rapidly. However, the effects of asthma, asthma medication and asthma severity on the clinical outcomes of COVID-19 have not yet been established.

Methods: The study included 7590 de-identified patients, who were confirmed to have COVID-19 using the severe acute respiratory syndrome coronavirus 2 RNA-PCR tests conducted up to May 15, 2020; we used the linked-medical claims data provided by the Health Insurance Review and Assessment Service. Asthma and asthma severity (steps suggested by the Global Initiative for Asthma) were defined using the diagnostic code and history of asthma medication usage.

Results: Among 7590 COVID-19 patients, 218 (2.9%) had underlying asthma. The total medical cost associated with COVID-19 patients with underlying asthma was significantly higher than that of other patients. Mortality rate for COVID-19 patients with underlying asthma (7.8%) was significantly higher than that of other patients (2.8%; $p < 0.001$). However, asthma was not an independent risk factor for the clinical outcomes of COVID-19 after adjustment, nor did asthma medication use and asthma severity affect the clinical outcomes of COVID-19. However, use of oral short-acting β_2 -agonists was an independent factor to increase the total medical cost burden. Patients with step 5 asthma showed significant prolonged duration of admission compared to those with step 1 asthma in both univariate and multivariate analysis.

Conclusions: Asthma led to poor outcomes of COVID-19; however, underlying asthma, use of asthma medication and asthma severity were not independent factors for poor clinical outcomes of COVID-19, generally.