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COVID-19: Impact on Chronic Obstructive Pulmonary Disease

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Editorial

Chronic obstructive pulmonary disease is the world's third leading cause of death. Smoking cessation, pulmonary rehabilitation, and vaccinations are also important methods for reducing exacerbations and hospitalizations. During the COVID-19 pandemic, various public health initiatives were introduced to minimize SARS-CoV-2 transmission, including hygiene reinforcement, social distancing, and mandatory mask-wearing. Chronic respiratory conditions, such as chronic obstructive pulmonary disease (COPD) and asthma, are thought to increase the risk of SARS-CoV-2 infection. In patients with COVID-19, however, the confirmed incidences of both diseases were frequently lower than the prevalence of these conditions in the general population. COVID-19 patients with COPD had higher neutrophil percentages, CRP, various inflammatory cytokines, NT-proBNP, and cTnI, but lower albumin levels, compared to asthmatics. This suggests that COPD patients have exaggerated systemic inflammation and consequent multiple organ damage. Patients with COPD had higher ACE2 expression, while patients with asthma had lower ACE-2 expression, in both smokers and nonsmokers.

SARS-CoV-2 mainly infects alveolar epithelial cells in the lungs. While most SARS-CoV-2 infections are thought to be subclinical or mildly symptomatic, they may often lead to acute respiratory distress syndrome and multiorgan failure. Chronic inflammation of the broad airways, small bronchioles, and destruction of the lung parenchyma characterize COPD. Expiratory airflow restriction is a practical result of these anomalies. Pathogenic infections are a common cause of COPD acute exacerbation, which in many cases may lead to respiratory failure. The clinical symptomatology of COVID-19 and acute exacerbation of COPD are difficult to distinguish, which may lead to delayed or ineffective medical treatment. As a result, it is not shocking that COVID-19 has a worse prognosis in COPD patients.

Coronaviruses are a well-known seasonal cause of COPD acute exacerbations (AECOPD). The question of whether COVID-19 in a patient with underlying COPD should be considered a COPD exacerbation is still debated. This is because an exacerbation is currently described as a clinical condition based on a change in symptoms necessitating a change in care. As a result, a patient with COVID-19 and COPD who presents with a worsening cough and shortness of breath and requires treatment will meet the current concept of exacerbation. The use of bronchodilators, the benefits of NIV, and the constant need for antibiotics are all unique to treating COPD patients. There have been questions about whether and how these treatments can be given to COPD patients during the pandemic.

COPD patients have felt the effects of the pandemic in a variety of ways. Face-to-face outpatient visits with their doctors, as well as pulmonary therapy sessions and COPD home visit programs, have been reduced. Patients who would usually present to the hospital during an exacerbation may opt to stay at home for fear of being exposed, causing treatment to be delayed, as has happened with other conditions such as myocardial infarction. The long-term consequences of this break in routine treatment are still unknown. For the time being, healthcare services have had to adjust to these circumstances by increasing the use of telehealth and virtual visits. Fortunately, several randomized controlled studies evaluating telehealth for COPD patients have shown that it is feasible and, at the very least, non-inferior to standard treatment in terms of exacerbations, hospitalizations, and quality of life. Furthermore, it appears that online pulmonary therapy programs are as successful as in-person courses.

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