

Respiratory Complications in COVID-19: Clinical Features and Management.

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Introduction

The COVID-19 pandemic, caused by the novel coronavirus SARS-CoV-2, has presented an unprecedented challenge to healthcare systems worldwide. Among the most concerning aspects of COVID-19 are the respiratory complications it can induce, particularly in severe cases. This article explores the clinical features of respiratory complications in COVID-19 and outlines the strategies for their management [1].

COVID-19 can lead to the development of ARDS, a severe form of lung injury characterized by rapid-onset, profound hypoxemia and bilateral infiltrates on chest imaging. Patients with COVID-19-related ARDS often require mechanical ventilation. Hypoxemia, or low blood oxygen levels, is a hallmark of COVID-19 respiratory complications. Patients may experience increasing shortness of breath, cyanosis (bluish skin or lips) and confusion as a result of oxygen deprivation. COVID-19 primarily affects the respiratory system, causing viral pneumonia [2]. Common radiological findings include ground-glass opacities and consolidations in the lungs. In severe cases, COVID-19 can lead to respiratory failure, requiring mechanical ventilation or advanced respiratory support such as high-flow nasal cannula oxygen therapy. Mechanical ventilation in critically ill COVID-19 patients can lead to ventilator-induced lung injury. This risk necessitates a balance between providing adequate respiratory support and minimizing lung damage. COVID-19 patients are at an increased risk of developing blood clots, which can further exacerbate respiratory complications due to impaired blood flow to the lungs.

The cornerstone of managing respiratory complications in COVID-19 is supplemental oxygen therapy. High-flow nasal cannula oxygen, non-invasive ventilation and invasive mechanical ventilation are employed as needed, with a focus on maintaining adequate oxygen saturation. Prone positioning, where patients are turned onto their stomach, can improve oxygenation in patients with COVID-19-related ARDS. This technique is increasingly utilized to optimize lung function. In patients requiring mechanical ventilation, a lung-protective ventilation strategy with low tidal volumes is recommended to minimize ventilator-induced lung injury [3, 4].

Some antiviral medications, such as remdesivir, have been used to manage COVID-19. Additionally, anti-inflammatory drugs like corticosteroids (e.g., dexamethasone) can help mitigate the cytokine storm that contributes to severe respiratory complications. Given the prothrombotic nature of COVID-19, anticoagulation therapy is often considered to prevent or treat blood clots. Maintaining an appropriate fluid balance is crucial in COVID-19 patients, as fluid overload can exacerbate respiratory distress. Conservative fluid strategies are often preferred. In refractory cases of respiratory failure, ECMO may be considered. ECMO provides temporary support for oxygenating and removing carbon dioxide from the blood, allowing the lungs to rest and heal. Following the acute phase of COVID-19, many survivors may experience residual respiratory and functional deficits. Pulmonary rehabilitation can play a vital role in restoring lung function and improving overall well-being. While managing respiratory complications is crucial, efforts to prevent COVID-19, such as vaccination, mask-wearing and social distancing, remain the most effective strategies to reduce the burden of severe respiratory cases [5].

Conclusion

Respiratory complications in COVID-19 represent a major clinical challenge, particularly in severe cases where patients may develop ARDS, respiratory failure and other life-threatening conditions. Timely diagnosis, supportive care and effective management are essential in addressing these complications. The key to reducing the burden of respiratory complications ultimately lies in public health measures to prevent COVID-19 transmission and in advancing medical research to better understand and treat the virus. The medical community continues to learn and adapt its strategies in response to this evolving global health crisis.

References

1. Sikandar MZ, Fatima A, Shah SI. Past, present and future of Covid-19 pandemic; review of the pathophysiology and clinical management. *Ann Clin Anal Med.* 2021;12:822-8.
2. Hu B, Wang D, Hu C, et al. Clinical features of critically ill patients with COVID-19 infection in China.
3. Kassirian S, Taneja R, Mehta S. Diagnosis and management of acute respiratory distress syndrome in a time of COVID-19. *Diagnostics.* 2020;10(12):1053.

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4. Khanal H, Khanal U, Koirala J. Medicinal plant vasaka could be a therapeutic option for the management of COVID-19 symptoms. *J Med Plant Res.* 2020;8(5):44-8.
5. Thierry AR. Host/genetic factors associated with COVID-19 call for precision medicine. *Precis Clin Med.* 2020;3(3):228-34.