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Controlled Modes Can Be as Effective as CPAP and BiPAP in Non-invasive Ventilation in COVID-19

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Dear Editor,

Coronavirus disease 2019 (COVID-19) is an infectious disease caused by the newly discovered severe acute respiratory syndrome Coronavirus 2 (1). Non-invasive ventilation (NIV) is the transfer of oxygen (ventilation support) through the face mask; therefore, it can reduce the need for endotracheal intubation (2). The proper and timely use of non-invasive and invasive ventilation in COVID-19 patients can reduce respiratory mortality (3, 4). The optimum ventilator support with NIV, indications, modes, and parameters are the issues that can be discussed. This study aimed to prove that when a patient is diagnosed with COVD-19 and is nominated for NIV, other modes, such as synchronized intermittent mandatory ventilation (SIMV), can be used that can make ventilation easier and more effective. Continuous positive airway pressure (CPAP) or bilevel positive airway pressure (BiPAP) is positive airway pressure ventilation in which a constant level of pressure greater than atmospheric pressure is continuously applied to the patient's upper respiratory tract (5). Patients with COVID-19 are usually ventilated primarily by this mode that is the most popular ventilation method (6, 7).

Controlled modes can be as effective as CPAP and BiPAP in NIV in COVID-19, which is why SIMV mode is recommended among the primary modes, such as CPAP or BiPAP. The SIMV is a type of volume or pressure control mode of ventilation. By the utilization of this model, the ventilator performs several forced breaths (sets) with the volume adjusted and at the same time makes spontaneous breathing possible (8, 9). The SIMV has the benefits of avoiding acute respiratory alkalosis and allows patients to achieve normal alveolar ventilation through a healthy ventilation drive (10). This study used SIMV in these patients and made oxygenation and blood gas exchange more efficient. Other invasive approaches were also important in COVID-19 patients (11). Therefore, further clinical studies are recommended in this regard.

Footnotes

Authors' Contribution: A.A. developed the original idea and the protocol, abstracted and analyzed the data, wrote the manuscript, and was the guarantor. S.F. and S.L. contributed to the development of the protocol, abstracted the data, and prepared the manuscript.

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