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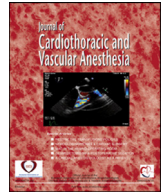
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Editorial

Consider Adjunctive Ketamine in Mechanically Ventilated Coronavirus Disease-2019 Patients



THE 2019 novel coronavirus has infected patients in nearly every country and has resulted in the deaths of more than 40,000 people worldwide.¹ The predominant cause of critical illness and death in coronavirus patients is acute respiratory distress syndrome.² Another important cause that is frequently present with acute respiratory distress syndrome is cytokine storm, which can result in vasodilatory shock and multiorgan dysfunction.³ The hyperinflammation associated with cytokine storm is similar to that found in secondary hemophagocytic lymphohistiocytosis.³ Elevated levels of molecules, including, but not limited to, interleukin (IL) 2, 6, and 7, are found in patients who experience this hyperinflammatory response.³ Immune modulation of this cytokine storm, with the IL-6 inhibitors sarilumab and tocilizumab, is an approach that is gaining interest and an active area of investigation.^{4,5} Anesthesiologists are in a unique position to blend a unique skill set of knowledge in mechanical ventilation, hemodynamic management, procedural expertise, and pharmacology to treat the most critically ill coronavirus disease-2019 (COVID-19) patients.

Ketamine, a popular agent with a recent resurgence, is a phencyclidine dissociative amnestic that acts as an antagonist to the N-methyl-D-aspartate receptor.⁶ The use of ketamine has gained significant interest in sedation and anesthesia in a myriad of settings. It is well-known that ketamine increases blood pressure and heart rate by releasing endogenous catecholamines, causes bronchodilation, is a potent analgesic and sedative, and has minimal effects on respiratory status.⁶ Occasionally, the use of ketamine can result in increased thin secretions and unpleasant hallucinations. Ketamine also does not have the same negative effects on gastrointestinal tract motility that narcotics do, likely reducing the need for aggressive bowel regimens. A somewhat less well-known effect of ketamine is its anti-inflammatory effect.⁷ Inflammatory markers, in particular IL-6 and CRP, are reduced significantly after the administration of ketamine in general surgical and cardiac surgical patients.^{7,8} These beneficial effects could be an opportunity for anesthesiologists to bring their knowledge of this less commonly used sedative to the intensive care unit during the COVID-19 pandemic.

It would be exciting to study ketamine as part of a sedation regimen in a double-blind randomized fashion for patients

with respiratory failure due to COVID-19. If the anti-inflammatory effects it confers reduce the risk of cytokine storm and the negative effects of inflammation, there may be a morbidity and mortality benefit. A new use for this cost-effective, safe, and readily available medication could revolutionize the efforts to treat this global pandemic.

Conflict of Interest

The author reports no conflicts of interest relevant to this work.

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