

COVID-19 and Increased Requirements for Sedation

Surgeons and other physicians offer their recommendations for providing sedation and analgesia to COVID-19 patients. They also offer recommendations for using multimodal regimens to control to help limit the use of drugs that may be in short supply.

Retrospective studies have suggested that among patients who develop critical illness secondary to COVID-19, the most common organ failure is pulmonary. Invasive mechanical ventilation is the main organ replacement therapy in patients presenting with these manifestations. Clinical anecdotal experience suggests these patients have increased requirements of sedation in comparison with patients in pulmonary failure for other reasons.

Propofol drip is regularly used for sedation on ventilated patients; however, in many COVID-19 cases it is falls short of adequate sedation and pain control when used alone. Some circumstantial experience suggests that these patients respond well to benzodiazepines and ketamine.

In some instances, barbiturates combined with opioids have effectively maintained sedation. For patients with severe desynchronization with the ventilator, paralysis might be necessary. Cisatracurium, a nondepolarizing skeletal muscle relaxant, has shown to have some utility as it not dependent on liver or kidney function to metabolize.

The increased need for the use of sedatives had some consequences nationally and globally. The Food and Drug Administration (FDA) has declared shortages for sedation drugs used during mechanical ventilation, such as midazolam and ketamine, as a result of the high demand for COVID-19 patients. Critical care physicians need to find alternatives for sedation and analgesia and to adopt different practices shared by places where COVID-19 has been more prevalent. For example, consider controlling pain adequately with multimodal regimens (possibly consider oral drug combinations, delivered via enteral feeding tube, similar to those used for postoperative pain) before moving to sedatives, and reserve the use of dexmedetomidine for patients with agitation to avoid intubation, or to wean patients off mechanical ventilation if they cannot tolerate being off sedation to help manage these shortages.

Suggested Readings

Huang C, Wang Y, Li X, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet*. 2020;395(10223):497. Epub 2020 Jan 24.

Grasselli G, Zangrillo A, Zanella A, et al. COVID-19 Lombardy ICU Network. Baseline characteristics and outcomes of 1,591 patients infected with SARS-CoV-2 admitted to ICUs of the Lombardy region, Italy. *JAMA*. 2020 Apr 6. doi: 10.1001/jama.2020.5394. [Epub ahead of print]

Bawazeer M, Amer M, Maghrabi K, Alshaikh K, et al. Adjunct low-dose ketamine infusion vs standard of care in mechanically ventilated critically ill patients at a tertiary Saudi Hospital (ATTAINMENT Trial): Study protocol for a randomized, prospective, pilot, feasibility trial. *Trials*. 2020 Mar 20;21(1):288. doi: 10.1186/s13063-020-4216-4.

Merkel A, Massey K, Bellamy C, Miano T, Fuchs B, Candeloro C. Predictors of Cisatracurium continuous infusion dose in acute respiratory distress syndrome. *J Pharm Pract*. 2019 Nov 18:897190019888103. doi: 10.1177/0897190019888103. [Epub ahead of print]