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## The authors' response: Propofol in COVID 19: From basic science to clinical impact



Dear Editor:

We thank you for your valuable comments on our manuscript.

Authors pointed out the usefulness of propofol for sedating patients with coronavirus disease 2019 (COVID-19) infection because of its multiple actions, such as significant anti-inflammatory and antithrombotic effects, apart from angiotensin-II-induced endothelial dysfunction attenuation [1-7].

This is an interesting idea that needs further investigation in patients with COVID-19. In both cases that we recently reported, propofol was administered on the first day of admission as a first-line sedative agent.

In case 1, propofol was initially used during tracheal intubation and maintained for 7 days with continuous sedation. In addition to propofol, dexmedetomidine (DEX) and midazolam were administered. The dosage of propofol was gradually reduced and eventually discontinued on day 7 to prepare for extubation. After the discontinuation, DEX was administered, and extubation was successful on day 9 without respiratory deterioration. Serum C-reactive protein (CRP) level gradually improved until extubation. Finally, he was discharged from the hospital without any thrombotic episode.

In case 2, propofol and midazolam were administered as sedative agents after intubation until day 5. Afterward, the patient was treated with propofol in combination with DEX up to day 12. CRP level gradually decreased, but he was not successfully weaned from the ventilator. After tracheostomy on day 13, weaning progressed, and propofol was replaced with DEX again on day 17. Thereafter, he was successfully weaned from the ventilator on day 22 without respiratory deterioration. Regarding thrombus formation, contrast computed tomography (CT) on day 11 showed a small deep vein thrombosis (DVT) and a small pulmonary embolism (PE). Therefore, an oral administration of edoxaban was initiated, and the thrombus disappeared as confirmed by ultrasound and contrast CT before discharge.

Both cases were successfully weaned from the ventilator with improved CRP level, which reflects inflammation while using propofol. Therefore, it may help improve the respiratory status, such as antiviral drugs and steroids. Respiratory status did not worsen after discontinuing propofol, switching to other sedatives, or tapering propofol dosage. Thus, whether propofol is involved in the improvement of the lung condition remains unclear. Regarding the antithrombotic effect of propofol, case 1 had no thrombotic event, whereas case 2 had DVT and PE before propofol discontinuation.

Thus, both anti-inflammatory and antithrombotic effects were not clearly observed during the medical management of these two patients with COVID-19.

## References

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