Intubation and Ventilation amid COVID-19: Comment

To the Editor:

We read with great interest the manuscript by Meng *et al.*[1] reporting their experience about intubation and ventilation in coronavirus disease 2019 (COVID-19) patients. They reported that prone ventilation was frequently used in Wuhan to improve both lung mechanics and gas exchange. The recent published literature regarding the occurrence of acute respiratory syndrome (ARDS) in COVID-19 patients have mainly focused attention on the role of computed tomography in evaluating the radiological manifestations and temporal progression of the disease,[2] while few data have been presented regarding the use of lung ultrasonography,[3] especially in the evaluation of the disease course. One of the major problems during the ventilation of these patients in the intensive care unit is to decide the correct positive end-expiratory pressure level, which requires in most cases a personalized care approach, and to determine the efficacy of prone positioning. In this regard, lung ultrasound can make a major contribution to meeting this challenge. Indeed, previous investigations have already demonstrated that prone position represents an important therapeutic strategy for ARDS patients, improving their oxygenation and short-term mortality.[4] Moreover, the serial evaluation of the effectiveness of positive pressure in these subjects remains fundamental. In this regard, chest computed tomography cannot be routinely used in daily clinical practice to monitor aeration improvement, while lung ultrasonography represents a valid bedside alternative for this purpose.[5] Indeed, ultrasound could be a viable option to reduce the need to transport patients to the radiology department, reducing the exposure of hospital staff and other subjects to COVID-19 patients. Pan *et al.* have recently highlighted that lung recruitability can be effectively assessed bedside in COVID-19 patients with ARDS.[2] Similar results were presented by Wang *et al.*, who reported that bedside lung ultrasonography can be adopted to guide response to prone positioning.[5] It is important to remember that the use of positive pressure cycles remains associated with potential adverse effects such as an increased risk of unintended extubation and/or secondary hemodynamic effects, and the real impact of this strategy in COVID-19 patients with previous cardiac disease remains unknown. For these reasons, the use of lung ultrasound could further implement the use of a personalized approach to the ARDS management and related ventilatory support. In this way, they will able to rapidly assess the patient's pulmonary aeration in every moment without the need to transport an infectious subject to a radiology ward. The authors did not report data regarding the use of lung ultrasonography for the cited purposes. It would be useful to know if lung ultrasonography has been used in their large clinical experience and if so, how it impacted in the patient's management. Since treatment of severe ARDS from COVID-19 is an ongoing challenge, it is important to learn from the patients who have been treated to gain an understanding of the disease's epidemiology, its biologic mechanisms, and the effects of new pharmacologic interventions. Treatment of ARDS from COVID-19 remains an ongoing challenge. It is important to continuously adapt the treatment strategy to the continuous presented evidence based on biologic mechanisms and clinical strategies using a step-up approach ranging from the high-flow nasal oxygen for those patients with moderately severe hypoxemia to endotracheal intubation and/or prone positioning, neuromuscular blockade, inhaled nitric oxide, and extracorporeal membrane oxygenation in case of refractory hypoxemia. Future data will also clarify if lung ultrasound has a role in early diagnosis and prognostication of COVID-19 infection.

Competing Interests

The authors declare no competing interests.

Gianluca Rigatelli, M.D., Ph.D., Marco Zuin, M.S., Alberto Rigatelli, M.D., Giovanni Zuliani, M.D., Ph.D., Loris Roncon, M.D. Santa Maria della Misericordia Hospital, Rovigo, Italy (G.R.). jackyheart@libero.it

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G.R. and M.Z. contributed equally to this article.

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