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# When is ventilatory support necessary?

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EDITORIAL

GUTTORM BRATTEBØ

E-mail: [guttorm.brattebo@helse-bergen.no](mailto:guttorm.brattebo@helse-bergen.no)

Guttorm Brattebø, consultant at the department of anaesthesia and intensive care at Haukeland University Hospital and professor in traumatology at the University of Bergen. He also represents the Norwegian Association of Anaesthesiologists on the European Board of Anaesthesiology (EBA UEMS).

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## **Perhaps we should be more reticent about providing invasive ventilatory support to COVID-19 patients with severe respiratory failure.**

The Spanish Flu, which wreaked havoc in 1918–19 and took some fifty million lives, was one of the world's most lethal pandemics [\(1\)](#). There have been many warnings about new and similar pandemics, but few people imagined that the world would experience a situation such as the one we have found ourselves in for the past six months.

COVID-19 attacks most organ systems in the body, and respiratory failure is a prominent feature. Many patients become critically ill and require intensive care and respiratory support, thereby putting hospitals under massive strain. The Lombardy province of Italy, which has a well-developed specialist health service, found its capacity totally swamped by the huge numbers of patients requiring intensive care [\(2\)](#).

It has been pointed out that Norway is far from having the necessary capacity in its intensive care units (ICU), and that we are actually one of the European countries with the lowest number of ICU beds in relation to population [\(3\)](#). Therefore it is important to determine how best to treat patients with COVID-19 and respiratory failure, so that we do not initiate invasive ventilatory treatment of patients who can manage with simpler measures.

In the Journal of the Norwegian Medical Association, Gudem et al. present the results of treating 26 intensive care patients with COVID-19 and respiratory failure at Oslo University Hospital (4). The main finding is that those who received supplemental oxygen therapy without intubation managed quite well, and that the mortality rate for all patients was relatively low. However, this is an observational study, and not a scientific comparison of different therapeutic approaches. The findings are interesting nonetheless. Although patients who were put onto mechanical ventilation were somewhat more severely ill than the others were, the patients who only received supplemental oxygen therapy or non-invasive ventilatory support also had severe respiratory failure.

As the authors discuss, it has been postulated that respiratory failure in patients with COVID-19 can take two forms: failure of perfusion regulation and hypoxic vasoconstriction, but with relatively intact lung compliance, or as a scenario with more pronounced oedema, low thoracic gas volume, pronounced lung stiffness and hence low compliance (5).

The question is whether invasive treatment in patients suffering mainly from the first type of lung pathology increases the risk of these patients also developing the other, more severe, condition. The general view early on in the pandemic was that these patients should be promptly placed on a ventilator without attempting non-invasive ventilatory support. Now that we have more experience of the disease, however, the question is whether early invasive ventilation increases the risk of the disease taking a more serious course and of patients developing other complications (6). This has also been the subject of debate because there is a great difference in the resources required for an independently breathing patient compared to one who is sedated and on a ventilator (7).

*«The question is now whether early invasive ventilation increases the risk of the disease taking a more serious course and of patients developing other complications»*

The prone position is often used in cases of severe pulmonary failure in ventilated patients, but is equally important in independently breathing patients. The British Intensive Care Society therefore recommends self-proning, where patients adopt a prone position themselves (8). Treatment of patients with COVID-19 is resource-intensive under any circumstances. Self-breathing patients also have to be monitored continuously for any exacerbation of their condition, and hence need care that is more extensive. Optimal cooperation between the staff who treat these patients is therefore important, both in and outside the ICUs. This is also stressed by Gudem et al., as is the need for change of position, active physiotherapy, treatment of dyspnoea and effective pain relief.

It is praiseworthy that in the middle of the first, demanding phase of the COVID-19 pandemic, colleagues at Oslo University Hospital gathered data and studied patient disease courses in order to learn. Now it is important that we study the national data collected in the Norwegian intensive care and pandemic register to confirm the findings of Gudem et al.

We must spend time going forward on preparing for a possible new wave of COVID-19 patients and the next pandemic. Relevant issues here are the need for personal protective equipment, ICU capacity (beds, equipment and personnel), medication and procedures. After the avian flu in 2009, we had an opportunity to prepare for the next pandemic. Unfortunately, we did not make the most of it (9). Let us make better use of this window of opportunity.

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