

Mechanical Ventilation During the Coronavirus Disease 2019 Pandemic: Combating the Tsunami of Misinformation From Mainstream and Social Media

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In this issue of *Critical Care Medicine*, Auld et al (1) present some important data regarding ICU and hospital mortality of critically ill patients with coronavirus disease 2019 (COVID-19). Focusing on these results for their mechanically ventilated (MV) patients, we would begin by stating that their study was able to account for 147 of 165 or 89% of the patients, meaning that only 18 patients (11%) remained in hospital (ICU or otherwise) to potentially change the mortality results. This fact alone allows us to place significant weight in their results.

In terms of more detail, for patients on MV, ICU mortality was 33.9% (56/165), while their hospital mortality was similar at 35.8% (59/165). This is in dramatic contrast to recent studies demonstrating significantly higher mortality related to MV

in COVID patients (2–4). Although there are multiple reasons as to why ICU and hospital mortality of MV patients is lower than that which has been reported in other COVID literature, we believe these are the key sentences of their article: “During the study period, ICU capacity enabled the timely admission of all patients requiring critical care to a COVID-ICU. Further, all patients admitted to a COVID-ICU were cared for by a traditional ICU care team led by a critical care-trained attending physician with standard (i.e., pre-COVID) ICU staffing ratios. There were no critical shortages in medications, ventilators, dialysis machines, or other critical care equipment.” Their medical system was not overwhelmed. The standard of care that was applied did not change, and it was not a mass casualty situation such as happened in other part of the world where ICU capacity needed to increase by a factor of three or greater. What are some of the relevant points to be raised?

HOSPITAL SYSTEMS BEING ASKED TO FUNCTION BEYOND NORMAL ICU CAPACITY

As the authors emphasize, their hospital system was not overwhelmed by the pandemic. This allowed them to manage these patients as they would any other group of patients with respiratory failure: admit them to an ICU, intubate them in a timely manner when it was appropriate, and provide them pre-COVID level staffing ratios for the members of the multidisciplinary critical care team to offer clearly-proven, evidence-based strategies. For other parts of the world (and some in the United States) that were not so lucky to have adequate time and resources to provide pre-COVID level of care, the management approach was to rapidly increase the ICU capacity while making the best use of the resources available, both in terms of equipment and staff. But we believe it is the narrative that is the important point of discussion: although the literature describes different staffing ratios during a pandemic (5), the message in the social media and lay press was very different.

AVOIDING INTUBATION AT ALL COSTS

Rather than emphasize how hospitals were being overwhelmed, and that our frontline healthcare workers were doing their very best in highly challenging situations, the narrative turned to intubations, MV, and that being admitted to the ICU itself was the cause of suboptimal outcomes. This was not helped by

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erroneous data being published describing nonmedical entities such as “happy hypoxia,” feeding into the public’s (mis)understanding of this disease (6). Adding to the concept of “avoiding intubation at all costs” was the further confusion surrounding whether or not these patients had acute respiratory distress syndrome (ARDS), and should their ARDS be managed differently from a tried-and-true evidence-based approach (7–10). Although many of us in the critical care community are comfortable that there may be areas of consensus with fringes of controversy, this does not translate well during a crisis through the lens of mainstream and social media. In the rush of turning a limited number of clinical observations into dogma, discarding multiple decades of pulmonary science and research does not benefit our patients. Regardless of the subtleties of the underlying pulmonary physiology and pathophysiology, it is now completely ingrained in the public consciousness—through the power of the mainstream and social media—that being intubated is to be avoided at all costs and that the ICU, and specifically the ventilator, are the actual “cause” of the mortality associated with this disease.

RATIONING

Rationing was a word that was not used, and presumably did not happen, in the study by Auld et al (1). But for other parts of the country that were not given such a luxury, although there were enough ventilators, ICU beds were limited, as they often are during pre-COVID times. Therefore, appropriate evaluations had to be made as to which patients were the best candidates for the limited resource of ICU beds. But it is crucial when issues such as overall mortality are discussed that matters such as what the hospital criteria are for ICU admission are considered, as different hospitals may have different criteria for ICU admission, both before and during the COVID crisis.

Although ventilators, in general, did not have to be rationed, it also became a general agreed-upon consensus, that managing these complex patients truly mandated that modern current ventilators be used for optimal outcomes. Although this will take more research to prove if specific ventilator utilization has any relationship to important, relevant outcomes, from a clinical perspective, managing these patients with non-current ventilators and ventilators primarily used for transport has been a much greater challenge than with modern, current, state-of-the-art ventilators.

STAFFING MODELS FOR INTENSIVISTS DURING THE PANDEMIC

One other point is that the critical care staffing models promulgated by our own society have some limitations (5). Although they indicate that one intensivist, during an influx of patients and increase in ICU capacity, can care for up to 96 patients rather than the usual 15 or so, this does not actually operationalize smoothly in reality. What is truly required during such mass influx of highly complex critically ill patients is more intensivists. This also can be very difficult to implement during the course of a pandemic surge, but we did want

to clarify that the somewhat simplistic diagrams, charts, and statements implying that one intensivist can oversee a large number of critically ill patients with appropriate staff between them and the patients is not easily translated into a real-world situation for the weeks that are required with the detailed complex critical care challenges of this particular disease.

THE DANGEROUS DISTRACTION OF THE MEDIA AND SOCIAL MEDIA

Finally, we would like to describe the important role of the media and social media during this pandemic. Normally, the interactions in critical care are among providers, patients, and families. We work to provide evidence-based care to patients. When we are at the limits of what our medical therapy can offer, we have important discussions with patients, and, when that may not be possible because the patient is too ill to participate, then we have equally important family meetings with surrogates to discuss potential options and goals of care. As these events should be, they are deeply personal, intimate meetings where families have the opportunities to be heard; shared decision-making occurs to facilitate optimal outcomes. One constituent that is clearly absent is the media.

Such was not the case for COVID. The media saw a personal interest story going into ICUs and observing what we do, but the media is not savvy enough to separate truth from fiction during this pandemic. There were stories of courageous frontline healthcare providers doing the amazing work we all do in the field of critical care. But there were also confusing stories about how the ICU itself was a place to be shunned, and that specifically being intubated and put on a ventilator was synonymous with the primary likely outcome being mortality: implying that if only intubations, MV, and the ICU could be avoided, then lives could be saved. Rather than being seen as places where the sickest patients are taken to help get them through critical illness, the media has been portraying our field and our ICUs as places to be avoided at all costs (2, 11–13).

CONCLUSIONS

For years, when patients have had respiratory failure and require intubation, we intubate them. We use evidence-based lung protective strategies, we wean patients from the breathing machine, and we save lives. Suddenly, for the first time in our careers, we do what we have always done, and provide supportive care for those who need it, and the bright light of the media (social and mainstream) is upon us questioning our every move. Our response to the media should be crystal clear. We are doing what we have always done: we are providing the evidence-based supportive care that we know leads to the best possible outcomes. As a field, and as a medical society, we must redouble our efforts to get the message out that critical care SAVES LIVES. But in order to do so, the clarion call to our leaders has to be equally clear: if pre-COVID outcomes of our ICU patients is what is expected, then adequate levels of “staff, stuff, and space” must be provided.

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