

LETTER

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Timing of intubation in COVID-19: Not just location, location, location?

David A. Thomson^{1*}  and Gregory L. Calligaro²

We read with interest the paper by Papoutsi *et al.* in which they synthesise the available evidence for early versus late intubation for COVID-19-related respiratory failure [1]. While many studies have reported on predictors of mortality in severe COVID-19, the majority of these factors are not modifiable. The selection for and timing of the escalation to mechanical ventilation are modifiable and of particular relevance in resource-constrained settings to optimise the use of ICU resources [2].

Differentiating between the timing of intubation once admitted to ICU for 24 h (the primary definition in their study) or intubation based on a trial of non-invasive mechanical support (their secondary definition) has vastly different implications. At our institution, a decision was made to reserve and expand ICU services only for COVID-19 patients requiring invasive mechanical ventilation, and to offer high-flow nasal oxygen (HFNO) in a non-critical care ward-based environment. Patients coming to the ICU were all intubated outside of the ICU having had a trial of HFNO [3]. Our patients would be considered early intubations by the primary definition, and late intubations in the secondary analysis.

In our cohort of 293 patients, we had 52.7% survival without mechanical ventilation (with a median P/F ratio of 68 on non-rebreather support at initiation of HFNO) and a median duration of HFNO support of 6 days in survivors, and 2 days in non-survivors. Unfortunately, this result needs to be balanced against the initial poor outcomes (8% survival) of those patients who progressed

to need invasive mechanical ventilation [4]. We would therefore caution against a definition of early intubation that is based on the patient accessing a physical location (ICU) or level of support (HFNO) without quantifying the severity of the patient's underlying respiratory failure or need for other organ support.

It is essential that studies provide consistent information on the severity of illness and information is given on context and setting when reporting studies on mechanical ventilation in COVID-19 pneumonia. We noted that 5 of the 12 studies did not report the SOFA score of the patients at the time of ICU admission and that 6 of the 12 publications analysed required the authors to supply additional information from that published in order to allow this analysis. Understanding the clinical triggers for accessing ICU care, the severity of respiratory failure prior to intubation, and the available resources in a particular setting is key to assessing time-sensitive interventions such as intubation.

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Availability of supporting data

Patient data has been previously published and is available on request [4].

Declarations

Ethical approval and consent to participate

Patient data in this letter has been published [4] under ethically approved protocol from the University of Cape Town and University of Stellenbosch (UCT HREC 295/2020 and SU HREC S20/05/001_COVID-19).

*Correspondence: Thomson.david@gmail.com

¹ Division of Critical Care, Department of Anaesthesia and Perioperative Medicine, University of Cape Town and Groote Schuur Hospital, Cape Town, South Africa

Full list of author information is available at the end of the article



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Consent for publication

No individual patient data is presented in this letter to the editor. Consent for publication of the included data was covered under the above ethical approval.

Competing interests

The authors declare they have no competing interests.

Author details

¹Division of Critical Care, Department of Anaesthesia and Perioperative Medicine, University of Cape Town and Groote Schuur Hospital, Cape Town, South Africa. ²Centre for Lung Infection and Immunity, Division of Pulmonology, Department of Medicine and UCT Lung Institute and South African MRC/UCT Centre for the Study of Antimicrobial Resistance, University of Cape Town, Cape Town, South Africa.

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