Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letter to the Editor

Our insight about Mukhtar et al.'s outcome of non-invasive ventilation in COVID-19 critically ill patients

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To the Editor,

We read the article by Mukhtar A et al. with great interest [1]. The study analyses the outcome in Coronavirus disease of 2019 (COVID-19) patients with non-invasive and invasive ventilation approaches, which is very timely. Although this is a retrospective study, we think that some key aspects need to be examined and clarified for practical implications.

Firstly, patient characteristics at admission like partial pressure of oxygen/fraction of inspired oxygen and computed tomography score did not differ between the non-invasive and invasive mechanical ventilation (IMV) groups. However, the values before recruiting for mechanical ventilation are lacking. The lack of discrimination between characteristics of patients who received non-invasive ventilation (NIV) and those who received IMV raises the concern about the appropriateness of the use of NIV in all patients and delaying the IMV more than 48 h in 5/9 patients. It is important to know the main determinants of late NIV failure i.e. primary COVID-19 pneumonia or other secondary non-pulmonary infections, pulmonary embolism, etc. [2].

Secondly, mortality is a compelling determinant in decision-making for the use of IMV or NIV. This is more so for severe COVID-19 cases where the rate of mortality is high in ventilated patients [3]. While the high mortality rate reported in the authors' study is not surprising and correlate with literature, this data interpretation needs further consideration. The comparison of the outcomes of the study groups does not appear to be fair because the nine patients who expired in the IMV group had already initiated their course in the NIV group. Thus, comparison of the mortality is actually performed between patients who succeeded in getting NIV and patients who failed in the NIV. In this context, the criteria for NIV failure used and starting of IMV are also imperative. Early initiation of IMV in place of NIV when the patients fulfilled the criteria for IMV might have an impact on complications including mortality, as shown in acute respiratory distress syndrome and respiratory failure from other causes [4,5].

We again congratulate the authors for their work and welcome their comments on these aspects. These are important for assessing whether this high mortality is related to IMV or the methodology and variability. It would be beneficial if the authors provide more details about the five patients who died after late failure of NIV.

Human and animal rights

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Informed consent and patient details

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Conflicts of interest

Authors declare no conflict of interest.

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