



Letter to the Editor

Non-invasive positive pressure ventilation in pneumonia outside ICU. Can it be definitely justified?



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Dear Editor

We have read with great interest the manuscript “Non-invasive positive pressure ventilation in pneumonia outside Intensive care Unit. An Italian multicenter observational study” by AM Brambilla et al. This reports the real-life experience in the treatment of severe acute respiratory failure (ARF) due to community acquired (CAP) and hospital acquired (HAP) pneumonia [1]. To help reader understand better the significance and clinical implications of this study, we would like to contribute four points of discussion.

- 1) The majority of non-invasive ventilation (NIV) treatment was carried out in Emergency Departments (ED) rather than High Dependent Respiratory Units (HDU) (14 EDs compared to 5 HDU). The authors noted that the NIV was started in ED in 77% and HDU in 23% of the patients: it is not specified where it has been continued. Transfer of treatment to areas such as ward based care may have been relevant to patients outcome.
- 2) Although the authors enrolled patients with both CAP (85.4%) and HAP (14.6%), the study lacks any direct comparison between these two pneumonia subtypes. This is significant given that current clinical guidelines suggest CAP and HAP have different outcomes and thus should be treated with two different approaches and treatment [2]. Similarly, the number of lobes involved on chest X-ray for each patient was not specified, despite emerging evidence that there is a correlation between increased involvement of lung lobes and failure of NIV [3,4]. Moreover, how have the authors considered this in choosing continuous positive airway pressure (CPAP) versus noninvasive positive ventilation (NPPV)?
- 3) The authors found that mortality was not associated to the severity of ARF: this conclusion is not consistent with pre-existing data [4,5]. However, these results need be considered in the context of the high percentage of patients with do not intubate (DNI) orders (29.7%) [1].
- 4) It is unsurprising that the authors noted that mortality was associated with both DNI status and comorbidity burden, since these

patients are unable or unsuitable to receive invasive mechanical ventilation. This raises an interesting consideration when deciding whether NIV treatment is appropriate: should patient selection be based on baseline morbidity or to respiratory compromise such as $\text{PaO}_2/\text{FiO}_2$ ratio and number of lung lobes involved?

Further clinical studies would be beneficial to determine the ideal approach to treating patients with ARF due to pneumonia.

Conflicts of interest disclosure

The authors declare no conflicts of interest.

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