

Dr. Pène, *et al* reply

To the Editor:

We thank Drs. Faverio, Pesci, and Esquinas for their insightful comment¹ on our manuscript about the prognosis of critically ill patients with systemic sclerosis (SSc)². We fully acknowledge that the dismal prognosis of SSc patients with acute respiratory failure (ARF) raises a number of questions about the level of ventilatory support that should be provided, and feeds the ongoing controversy about indications of noninvasive ventilation (NIV) in immunocompromised patients. A number of questions remain unanswered because of the lack of data in the literature, and also the relatively low number of patients in the current study. The central question is whether findings from cohorts of immunocompromised patients with various underlying conditions such as human immunodeficiency virus infection, malignancies, or solid organ transplantation can be applied to subgroups with alternative factors of immunosuppression and related specific prognostic factors.

Besides the undisputed efficacy of NIV in acute pulmonary edema and acute exacerbation of chronic obstructive pulmonary disease (COPD), indications of NIV in non-hypercapnic ARF remain highly controversial, both in immunocompetent and immunocompromised patients. Despite improvement in oxygenation, NIV failed to improve outcomes such as endotracheal intubation and survival in immunocompetent patients, and intriguingly, was even associated with increased mortality when combined with high-flow oxygen through nasal cannula³. Regarding immunocompromised patients, the current indications of NIV remain based on 2 small randomized studies published 15 years ago, in which NIV was associated with a dramatic improvement in survival at a time when endotracheal intubation led to death in most patients. The benefit of NIV in immunocompromised patients has been challenged recently by the IVNIctus study, although the low overall mortality rate accounted at least in part for the negative result⁴. Of note, < 10% of patients of this latter study received immunosuppressive drugs for reasons other than malignancies and solid organ transplantation, making it difficult to draw any reliable conclusions in this subgroup.

The potential for alveolar recruitment and rapid reversibility in acute pulmonary edema as well as hypoventilation and muscular exhaustion in COPD provided a strong rationale for using NIV in those indications. In patients with extended interstitial lung diseases, the major alteration in gas diffusion makes the success of NIV unlikely regardless of the cause of acute respiratory deterioration, although patients with pneumonia may have a potential for alveolar recruitment with positive pressure-support ventilation. Beyond such theoretical discussions, we strongly argue against a definitive reluctance to admit SSc patients with ARF to the ICU. Our results should rather plead for proper identification of patients likely to benefit from NIV. SSc patients with ARF remain suited for a pragmatic approach through NIV trial along with appropriate diagnostic investigation as soon as respiratory deterioration is identified. Importantly, patients with advanced disease stage

and therefore subjected to “do not intubate” orders may still remain candidates for NIV⁵. As mentioned by Faverio and colleagues¹, the next research steps in the field will necessarily require larger and probably multicenter prospective studies.

Finally, we should stress that some patients with endstage organ dysfunctions without any reasonable probability to benefit from intensive care should not be admitted to the ICU and are rather eligible for exclusive palliative care. Indeed, death in the ICU is associated with pathological grief and further psychological distress and psychiatric illness in bereaved relatives⁶. It is our commitment to support continuous improvement in the prognosis of severe chronic diseases such as SSc, so referral to the ICU and the eventual application of NIV should be discussed in an individualized decision-making process.

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