Time to Intubation in Immunocompromised Patients. Minutes or Hours? That Is the Question

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To the Editor:

We have read with interest the study by Xu et al (1) published in a recent issue of *Critical Care Medicine*. The authors presented a retrospective analysis of a Chinese population of more than 36,000 immunocompromised patients with sepsis. Among those, 27,145 patients underwent to invasive mechanical ventilation (IMV); 7,657 patients underwent noninvasive ventilation (NIV) without transition in IMV; and 1,385 NIV patients later required IMV and were categorized by time to IMV: immediate (≤ 1 d) transition, early (2–3 d) transition, delayed (4–7 d) transition, and late (≥ 8 d) transition. Delaying IMV with a prolonged NIV support strategy worsens outcome in a dose-response relationship (mortality hazard ratios 1.65 in immediate transition, 2.51 in late transition).

The study by Xu et al (1) is a real-life comparison between NIV and IMV for immunocompromised patients with sepsis in low- and middle-income countries. It confirms the results of the latest observational studies that following therapeutic advances in cancer and HIV/AIDS patients suggest a more aggressive approach and early IMV (2). However, most of patients treated with NIV (7657 patients) did not need IMV. Furthermore, septic patients treated immediately with IMV were not all suffering from respiratory failure but had also been intubated for other reasons; therefore, the real impact of IMV on respiratory failure may be distorted. In addition, the patients treated with NIV who needed an immediate transition to IMV, and who had therefore mostly undergone a very brief trial of NIV and immediately intubated were almost equal in number to the sum of the other later converted patients who had a more congruent time of NIV. Therefore, the sample of patients who had NIV treatment converted to IMV was smaller and unbalanced. The strength of the study is its extremely on field nature. In these patients, acute respiratory failure is a dreaded complication that is difficult to treat, and objective criteria are still lacking to clearly discriminate time to intubation. Furthermore, the diagnosis approach may influence the rates of intubation or death. Conversely, a higher death rate has been linked to a lack of diagnosis.

In conclusion, it is critical to include parameters and severity scores that are closely related to outcome in order to select the population that would best benefit from either support.

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