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EDITORIAL

We use non-invasive ventilation every day, but are we aware, in our center, of its real effectiveness?

Usamos ventilación no invasiva cada día, pero ¿conocemos su eficacia real en nuestro centro?

We recommend reading, in the current issue of *Medicina Intensiva*, the article by Carrillo-Alcaraz et al.[1] which analyzes the effectiveness of NIV in patients who are ineligible for intubation (DNI orders).

Its main strength lies in the large number of patients included—almost 6000—and the long 20-year observation period. Overall, it shows that these patients fail NIV more often than those without DNI orders and also have higher mortality. These results confirm previous research while raising interesting questions.

One such question is the suspicion that patients with DNI orders do worse because they are already more severely ill from the beginning. The authors approach this issue through a *propensity score* analysis, matching patients with similar severity levels, with and without DNI orders, and comparing their outcomes. They find that, for any severity level, the presence of DNI orders is associated with worse outcomes. Nevertheless, clinicians should be aware that *propensity score* analysis, although a good approach, does not account for subtle factors we intuitively associate with DNI orders—such as immunosuppression linked to senility, frailty from chronic or neoplastic diseases, polypharmacy interactions, or sarcopenia due to advanced age.

A unique aspect of the study is its long duration, which allows for insight into how DNI patients have evolved over the years. Their prevalence has declined, but not their severity, which has even increased. The authors identify some factors contributing to this change, such as the opening of a respiratory step-down unit at their hospital, which may have absorbed some DNI patients, although the most severe cases still end up in the ICU. We can suspect there are other factors that might increase or reduce this situation. Patients have gained a stronger voice in treatment decisions, particularly in chronic or end-of-life cases, but it is unknown whether, even as DNI orders increase, patients choose to accept NIV treatment or decline it. Of notem how the care team's growing experience with NIV in DNI patients affects this. On one hand, the high failure rate may foster a pessimistic view, reducing the likelihood of offering NIV to borderline patients. On the other hand, seeing that, at least, half of patients survive ICU admission might induce optimism—without knowing that their mid-term survival may be quite low. Of note too, some patients were considered eligible for DNI years ago may now be considered eligible for intubation, given improved survival in underlying diseases (e.g., cancer, autoimmune conditions).

When readers seek to draw conclusions for their daily practice—from this study or the broader literature—they should include other often unreported factors, such as how early these patients were admitted, since delays in initiating NIV likely reduce its effectiveness. Each ICU understands its own reality and the possible actions to allow priority admission for these patients. The duration of NIV and the definition of its failure are also crucial. Similarly, it is important to assess to what extent technological improvements—such as better interfaces or ventilators—may improve outcomes. The lack of studies on DNI patients using interfaces that allow prolonged NIV use, such as helmets, is notable. We also still await studies demonstrating whether analgosedation can improve tolerance, and therefore the effectiveness, of NIV in both DNI and non-DNI patients.

Lastly, it's worth reflecting on the fact that a DNI decision is based on the belief that progressing to intubation and mechanical ventilation would not benefit the patient. Various epidemiological studies have shown progressively better survival among intubated patients, lower rates of ventilator-associated pneumonia, and reduced weaning failure. In this

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light, patients who decades ago would not have expected to benefit from intubation may now actually be candidates.

Given how strongly results in clinical practice depend on the specific circumstances of each center and care team, it seems essential for each team to have access to data drawn from their own daily experience. Only then does it make sense to determine which patients should be offered NIV in critical situations—whether regarding life expectancy or current and future quality of life. It is unrealistic to make a DNI order without knowing the actual probability of surviving tracheal intubation or the emotional cost of attempting it. Unfortunately, in our setting, few ICUs are familiar enough with their actual outcomes to determine whether it is realistic to attempt intubation or to stop escalation and use NIV as a last resort. It is encouraging to think that the rapid expansion of artificial intelligence systems[2] may soon extract these critical outcomes from the vast amount of data stored continuously by hospital information systems.

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