



LETTER TO THE EDITOR

“INTUPROS”: an opportunity to reflect upon and improve



“INTUPROS”: una oportunidad para reflexionar y mejorar

Dear Editor:

Recently, the first Spanish multicenter study on the process of orotracheal intubation in intensive care medicine has been published in *Critical Care Medicine*. A total of 43 ICUs have participated in this study, including 1837 patients from 2019 through 2020.¹ The authors highlight that 973 major adverse events were recorded, affecting 40.4% of patients, the most frequent being hemodynamic instability (26.5%) and severe hypoxemia (20.3%), both independently predicting mortality. The first pass success (FPS) rate—an index of intubation quality—was 70.8%. Maximum preoxygenation and hemodynamic optimization before induction, as well as the drugs used in it, impact the FPS.² In INTUPROS, the use of ketamine and etomidate—which offer advantages in unstable patients—dropped (6.6% and 27.4%, respectively), neuromuscular relaxation, essential for RSI, was not performed in 14.6% of patients, videolaryngoscopy was used as the first device only in 11%. Finally, it is concerning that only 9 of the 43 participating ICUs had a written intubation protocol.

Regarding training and clinical practice, the results of INTUPROS confirm what was previously observed in a Spanish multicenter study whose main objective was to determine the level of competence of intensive care medicine residents at the end of their 3rd year of residency through a simulation-based OSCE.³ The worst results were obtained in the scenario management of septic shock, ARDS, and endotracheal intubation; where most participants correctly applied sepsis and protective ventilation protocols, however, the omission of critical elements essential for achieving safe endotracheal intubation in an unstable patient was a common finding. As in INTUPROS, heterogeneity in clinical practice was the norm.

The importance of endotracheal intubation in intensive care medicine requires ensuring that this competence is

acquired by 100% of residents. To achieve this goal, the following measures are proposed: (1) standardizing residents' rotation through the anesthesiology/operating room service; the operating room provides a controlled learning environment, stable patients, expert supervision, and exposure to a sufficient number of cases to acquire this competence; it is estimated that a minimum of 50 intubations is necessary to achieve a FPS of 90%⁴; (2) conducting structured bedside intubation assessments; (3) Designing workshops addressing intubation of hypoxemic/hypotensive patients (physiologically difficult airway); (4) protocolization including a checklist, and, (5) implementing a continuous airway management quality improvement program that, similar to the US and Australia,⁵ includes a national registry for monitoring and feedback, which could be created based on INTUPROS.

In conclusion, the INTUPROS study has revealed important areas for improvement in the intubation process in the ICU and the need to take urgent actions to standardize this practice with high quality standards.

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Andrea Viviani^{a,*}, Carlos Vicent^b,
Álvaro Castellanos-Ortega^b

^a *Servicio de Medicina Intensiva, Hospital Universitario
Sant Joan, Reus, Spain*

^b *Servicio de Medicina Intensiva, Hospital Universitario y
Politécnico La Fe, Valencia, Spain*

* Corresponding author.

E-mail address: andrea.viviani@salutsantjoan.cat
(A. Viviani).