

CORRESPONDENCE



Does nasal high-flow preoxygenation really reduce intubation-related adverse events?

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Dear Editor,

We would like to discuss several factors that could potentially affect the beneficial effects of preoxygenation with high-flow nasal cannulae (HFNC), during endotracheal intubation, as published in a recent issue of *Intensive Care Medicine* [1].

First, the authors evaluated the primary outcome of the lowest pulse oximetry (SpO₂) regardless of the intubation failure. However, as the number of intubation attempts increases, the incidence of intubation-related adverse events, predominantly desaturation, could potentially increase [2]. As the incidence of esophageal intubation was significantly higher in the cohort of standard bag-valve mask oxygenation, compared to the cohort of HFNC, we suggest that intubation failure should be excluded for the accurate evaluation of the effect of HFNC, on the lowest SpO₂.

Second, the procedure of changing two or more operators during intubation was unclear. The authors demonstrated that 28% of the HFNC cohort and 16% of the standard oxygenation cohort failed successful intubation in the first attempt. However, both cohorts underwent successful intubation within 1 min, which is incredibly short, given the time needed for operator change. Since the intubation duration is unlike that observed in daily practice, it would be helpful to know the precise procedure of intubation.

Finally, the bias of applying jaw-thrust maneuver should be considered in the analysis. Jaw-thrust maneuver is an important technique for keeping the airway open, which can facilitate apneic oxygenation [3]. Therefore, the use of jaw-thrust maneuver could affect the

incidence of desaturation, which will cause a significant difference in the results.

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Compliance with ethical standards

Conflicts of interest

The authors have no potential conflicts of interest to declare.

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References

1. Guitton C, Ehrmann S, Volteau C et al (2019) Nasal high-flow preoxygenation for endotracheal intubation in the critically ill patient: a randomized clinical trial. *Intensive Care Med* 45:447–458. <https://doi.org/10.1007/s00134-019-05529-w>
2. Sakles JC, Chiu S, Mosier J et al (2013) The importance of first pass success when performing orotracheal intubation in the emergency department. *Acad Emerg Med* 20:71–78. <https://doi.org/10.1111/acem.12055>
3. Ricard JD (2016) Hazards of intubation in the ICU: role of nasal high flow oxygen therapy for preoxygenation and apneic oxygenation to prevent desaturation. *Minerva Anestesiol* 82:1098–1106

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