

Timing of intubation in critically ill COVID-19 patients: a multicentre retrospective study

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Introduction

The optimum respiratory management of adult patients with coronavirus disease 2019 (COVID-19) is still debated. Since the earliest stage of the COVID-19 epidemic, different guidelines recommended early intubation of critically ill patients. Nonetheless, strong evidence in favor of early intubation is still lacking.

The aim of our study was to investigate the impact of “early” versus “late” endotracheal intubation on in-hospital mortality of COVID-19 patients admitted to intensive care unit (ICU). Moreover, we determined whether the use of high-flow oxygen therapy (HFNC) or non-invasive ventilation (NIV) prior to endotracheal intubation was associated with mortality.

Methods

All consecutive COVID-19 adult patients who were admitted to one of the 25 ICUs belonging to the COVID-19 Veneto ICU Network and underwent endotracheal intubation were included. Patients who received conventional and/or HFNC oxygen therapy or NIV as the ceiling of care were excluded. Patients were divided in two groups: the “early intubation” group included all patients who underwent endotracheal intubation without previous NIV or HFNC trials.

Patients who experienced NIV or HFNC failure before endotracheal intubation were accounted in the “late intubation” group.

Results

Among 704 screened patients, 132 were excluded and 572 were finally enrolled: 228 (40%) in the “early intubation” group and 344 (60%) in the “late intubation” group.

No difference in the cumulative incidence of in-hospital mortality was found (43.4% in the “early intubation” vs 39.8% in the “late intubation” group; $p = 0.56$).

ICU mortality, length of invasive mechanical ventilation, ICU and hospital stay were similar between groups. The use of HFNC or NIV prior to endotracheal intubation was not associated with in-hospital mortality. (Figure 1)

Conclusions

In COVID-19 patients with acute respiratory failure a trial of NIV or HFNC should always be attempted before endotracheal intubation since its failure seems not to impact clinically relevant outcomes.

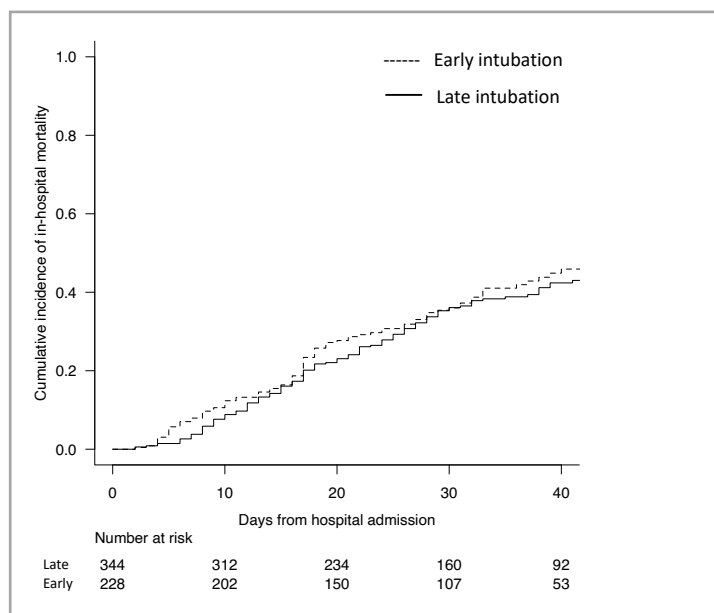


Figure 1. Cumulative incidence of in-hospital mortality