

Category : **Respiratory: mechanical ventilation**

A166 - Excess oxygen administration and adverse outcomes in patients with sars-cov-2 pneumonia requiring invasive mechanical ventilation: a retrospective study.

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Introduction:

Even if life-saving in most cases, excess O₂ may have adverse effects. We described the prevalence of hyperoxemia and excess O₂ administration in patients with severe acute respiratory syndrome due to novel coronavirus (SARS-CoV-2) and explored the association with mortality in the Intensive Care Unit (ICU) or ventilator-associated pneumonia (VAP).

Methods:

Retrospective single-centre study on 134 patients with SARS-CoV-2 requiring mechanical ventilation for ≥ 48 hours. We calculated the excess O₂ administered based on an ideal arterial O₂ tension (PaO₂) target of 55-80 mmHg. We defined hyperoxemia as PaO₂ >100 mmHg and hyperoxia + hyperoxemia as an inspired O₂ fraction (FiO₂) >60% + PaO₂ >100 mmHg. Risk factors for ICU-mortality and VAP were assessed with multivariate analyses.

Results:

Each patient received an excess O₂ of 1121 [829-1449] L per day of mechanical ventilation. Hyperoxemia was found in 38 [27-55] % of arterial blood gases, hyperoxia + hyperoxemia in 11 [5-18] %. The FiO₂ was not reduced in 69 [62-76] % of cases of hyperoxemia. Adjustments were more frequent with higher PaO₂ or initial FiO₂ levels. ICU-mortality was 32%. VAP was diagnosed in 48.5% of patients. Hyperoxemia (odds ratio [OR] 1.300 95% confidence interval [1.097-1.542]) and hyperoxia + hyperoxemia (OR 1.144 [1.008-1.298]) were associated with higher risk for ICU-mortality, independently of age, Sequential Organ failure Assessment score at ICU-admission and mean PaO₂/FiO₂. Hyperoxemia (OR 1.033 [1.006-1.061]), hyperoxia + hyperoxemia (OR 1.038 [1.003-1.075]) and daily excess O₂ (OR 1.001 [1.000-1.001]) were identified as risk factors for VAP, independently of body mass index, blood transfusions, days of neuromuscular blocking agents before VAP, prolonged prone positioning and mean PaO₂/FiO₂ before VAP.

Conclusion:

Excess O₂ administration and hyperoxemia were common in mechanically ventilated patients with SARS-CoV-2 and may be associated with ICU-mortality and greater risk for VAP.