Lower Oxygen Saturation Goals Are Safe in Mechanically Ventilated Patient

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Targeting to 88% - 92% did not cause harm.

The optimal oxygenation goal for patients who are receiving invasive mechanical ventilation remains unclear. Clinicians usually target resolution of hypoxemia and pay little attention to weaning levels of oxygen once 100% saturation has been achieved. However, harms caused by hyperoxia, including effects on cardiac function and lung parenchyma, are of concern.

To assess the safety of a lower oxygenation target, investigators randomized 104 patients who were receiving invasive mechanical ventilation to either a conservative strategy (peripheral oxygen saturation, 88%-92%) or a liberal strategy (peripheral oxygen saturation, >95%) for the duration of ventilator support. Positive end expiratory pressure (PEEP) levels were determined by treating physicians who were not blinded to the intervention. Three quarters of enrolled patients had medical diagnoses. Mean fraction of inspired oxygen (FiO2) at randomization was 0.44.

No differences were detected between groups in organ dysfunction or mortality. Mean saturation in the conservative arm was 93.4% (vs. 97.0% for the liberal arm), and more arterial blood gases were drawn. These two findings suggest some clinician discomfort with targeting lower oxygen saturation levels. Patients in the conservative arm were more likely to have episodes of severe desaturation, although these events were rare in both groups.

Comment: This study reassures us that a lower oxygen saturation target is not harmful. Whether this practice confers benefit is unclear, but these results should allow researchers to comfortably conduct larger randomized, controlled trials with lower oxygen saturation goals.

Citation(s):

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