

Oxygen Delivery Devices in Postoperative Patients: Proper Selection of Patients Matters!

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Dear Editor,

We have read the study of Mishra, et al. with great interest.¹ While they had observed none of the devices proved superior in their efficacy, certain points need further clarification in better understanding of their valuable observed data.

First, although post-application partial pressure of oxygen in arterial blood (PaO₂) in all three groups are comparable, a considerably low value of baseline PaO₂ in the noninvasive ventilation (NIV) group translates into a greater magnitude of changes. Thus, it warrants a re-look into their displayed data that could really reveal any discernible effect of NIV compared with others.

Second, the author did not mention the type and site of surgery as the chance of postoperative hypoxemia is high in major surgery involving incision closure to the diaphragm. The study included a wide range of age-groups from 18 to 65 years. The reduction of functional residual capacity (FRC) and increase in closing capacity and their relation changes at around 44 years.² Hence, a patient aged 65 years behaves in a different way than younger patients after surgery in view of postoperative hypoxemic events. The distribution of aged patients (>50 years) was considerably higher in the NIV group than in the venture mask group (53 vs 30%, respectively). It would be prudent to identify the high-risk patients where postoperative oxygen therapy should be initiated to reduce these pulmonary adverse events.³

Third, we are curious to know how the author assessed pain, the mean VAS score, and pain medications used in the postoperative period. Postoperative pain can lead to shallow breathing resulting in hypoxemia owing to shallow breathing.³ On the other hand, the effect of sedative effect of narcotic analgesics contributing to reduced ventilator effort cannot be overruled.

Fourth, it would be further interesting to know the group-wise distribution of associated comorbidities, especially chronic obstructive pulmonary diseases (COPD) or any restrictive lung diseases that increase the chances of postoperative pulmonary complications (PPC). High-flow nasal cannula (HFNC) has the potential to improve thoracoabdominal asynchrony and may be beneficial in conditions where poor respiratory mechanics are contributing to acute respiratory failure.⁴

Although there was no superiority achieved by any of the devices over the other regarding postoperative hypoxemia, a better comfort score with HFNC and venture mask over NIV can yield reduced escalation of respiratory support.⁵

Last but not least, it is not clear from the description how the authors addressed the issues of performance bias as it was an

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open-labeled study. Further observation addressing the issues would yield other information.

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