Time to Adopt High-Flow Oxygen Delivery Systems for Emergency Airway Procedures

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High-flow oxygen delivery via nasal cannula improved oxygen saturations and prevented desaturation in patients with difficult airways undergoing flexible bronchoscopic intubation.

Flexible bronchoscopic intubation, although not a common procedure in the emergency department, is usually performed in the setting of an airway difficulty. Maintaining adequate oxygenation during intubation is challenging because of sedation, patient illness, and the procedure itself. Low-flow oxygen delivery systems are often insufficient for creating oxygen reservoirs and preventing desaturation.

In a prospective observational study, investigators evaluated use of high-flow humidified oxygen delivered via nasal cannula in a convenience sample of 50 adults with predicted difficult airways undergoing flexible fiberoptic intubation in the operating room. Patients were oxygenated and intubated upright with flow rates of 50–70 L/minute. All patients were prepped and sedated in a similar fashion.

Median oxygen saturations were 98% at baseline and 100% after high-flow oxygenation. Among 13 patients with baseline saturations <97% (range, 83%–96%), all but one had a saturation of 100% after high-flow oxygenation. All patients were intubated successfully and reported feeling comfortable with the apparatus. There were no episodes of desaturation.

Comment: Maximizing oxygen reserves during emergency airway management is safest for patients. High-flow nasal cannula oxygenation is well tolerated and effective, and should be considered instead of low-flow systems for patients at high risk for desaturation.

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