

Study: video laryngoscopy does not improve ER/ICU intubation outcomes



A new analysis shows that compared with direct laryngoscopy, video laryngoscopy does not improve intubation outcomes in emergency and critical patients. Notably, prehospital intubation is even worsened by use of video laryngoscopy when performed by experienced operators, according to the systematic review published in the journal *Critical Care*.

Securing the airway with tracheal intubation (TI) is a fundamental treatment for emergency and critical care patients with respiratory dysfunction or decreased airway protection. Direct laryngoscopy (DL) can be challenging when performed in emergencies because the patient often is in life-threatening condition and has factors (i.e., limited mouth opening, unstable cervical spine, blood or secretions in the airway) that make TI difficult. Video laryngoscopy (VL) is a device with a miniaturised camera at the blade tip to visualise the glottis indirectly.

This review included only randomised controlled trials (RCTs) comparing the performance of VL and DL for emergency TI with respect to the intubation outcomes and complications. In this analysis, researchers used the first-attempt success rate as the primary endpoint because multiple intubation attempts performed outside the operating room can significantly increase the risk of life-threatening complications.

In all, 12 studies (2,583 patients) were included in the review for data extraction. Rapid sequence induction (RSI) with sedatives or narcotics and neuromuscular blockades (NMBAs) were chosen for all participants or as appropriate by choice of physicians in most included studies. Three studies did not use any NMBAs.

Results showed that laryngeal visualisation was improved by using VL. However, better visualisation did not translate into an improved first-attempt success rate or other intubation outcomes or complications, except for a lower rate of oesophageal intubation. There was significant heterogeneity among studies ($I^2 = 91\%$). In addition, prehospital intubation outcomes were even worsened with lower first-attempt and overall success rates with VL when TI was performed by experienced operators.

The researchers note that evidence derived from surgical patients shows that VL is associated with better intubation outcomes, especially for inexperienced operators and patients with difficult airways. This is because TI in the operating room is controllable, such as with the common use of RSI and NMBAs, patients' fasting state, and favourable oxygenation, as well as appropriate light or intubation position. However, emergent TI is quite another thing. Although TI in the emergency department or ICU is frequently performed by paramedics or emergency medicine physicians who do not practice TI with DL on a daily basis, and although the patients often have a higher risk of difficult airways, the operators may not benefit from using VL as novices in the operating room. There are also "uncontrollable factors" that may explain this difference – i.e., critically ill patients with a poor oxygen reserve capacity are more subject to hypoxia, which makes it more likely that operators will turn to alternatives such as DL, a flexible or rigid bronchoscope; and, secretions or blood in the airway might impair laryngeal visualisation with VLs.

"Further studies are still needed to determine whether the VL is beneficial for emergency and critical care patients with difficult airways, regardless of the operator's experience, and should be focused more on the impact of VLs on prognostic outcomes such as severe complications, length of hospital stay, and mortality," the researchers conclude.

Source: [Critical Care](#)

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