Letter to the Editor

Comparing video and direct laryngoscopy for intubation during cardiopulmonary resuscitation

Sir,

Based on the large multicentre prospective data of ED patients with cardiac arrest, Okamoto et al.[1] compared video laryngoscopy (VL) and direct laryngoscopy (DL) for urgent intubation during cardiopulmonary resuscitation (CPR), and showed that the use of VL was associated with a higher first-attempt success rate, with a better glottic visualisation and lower oesophageal intubation rate. Strengths of this study are a relatively large sample and the use of consistent patients with cardiac arrest needing urgent intubation. Furthermore, the authors had applied appropriate statistical methods including multivariable logistic regression analysis, propensity score matched analysis and sensitivity analysis to determine the associations of intubation devices and outcomes. Other than the limitations described in the discussion, however, there are several issues in this study that need further discussion and clarification.

First, this study used the modified LEMON score to predict the difficult laryngoscopy in each patient before the intubation attempt. However, the National Emergency Airway Management Course originally developed the LEMON score for identification of the difficult DL, rather than identification of the difficult VL.[2] As there are numerous differences between DL and VL in the glottic visualisation, tube delivery to the glottis and tube advancement into the trachea, the reasons of difficult or failed intubations using them may be different.[3] The available evidence shows that standard clinical risk factors of difficult DL are not effective predictors of VL failure at the first attempt.[4] In multivariable logistic regression analysis, thus, the use of the LEMON score as an important factor of difficult laryngoscopy for statistical adjustments would have biased the intubation outcomes in the favor of the VL.

Second, in this study, 56% of intubators were the transitional-year residents with less experience on airway management. The use of VL was associated with a higher first-attempt success rate compared to DL, but the highest first-attempt success rate with VL only was 80%. It has been shown that as tracheal intubation must be completed quickly without serious interruption of chest compression during the CPR, becoming proficient at tracheal intubation for patients with cardiac arrest needs more experience than that required for patients without cardiac arrest.[5] There is no robust evidence favoring the use of tracheal intubation compared with bag-mask ventilation or an advanced airway device in relation to overall survival or favorable neurologic outcome of CPR patients.[6] Given that tracheal intubation is a difficult skill to acquire and maintain, the European Resuscitation Council Resuscitation Guidelines 2015 emphasize that tracheal intubation should be attempted only by the healthcare personnels who are trained, competent and experienced in this skill.[7] Thus, the design of this study including many inexperienced operators to performed urgent intubation during the CPR is questioned.

Finally, the reasons of failed intubations with DL and VL at the first-attempt were not provided. Most important, specialty of the intubators used in this study cannot accurately indicate whether the intubators are equal proficient in the use of the DL and VL. Thus, it is difficult to determine whether a higher first-attempt success rate with VL is really attributable to a better performance. We are concerned that the results of this study only map the different learning curves of DL and VL for intubators, do not measure the real efficiency of studied devices for urgent intubation during the CPR.

Conflict of interest statement

None.

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