

00301 Clinical Evaluation of Laryngeal Tube and Laryngeal Mask Airway for Cardiac Arrest Treatment in Emergency Ambulances in Singapore

Goh Zi Xin¹, Chan Jing Jing¹, Koh Zhi Xiong¹, Masnita Rahmat², Jes Fergus², Ng Yih Yng², Ong Eng Hock Marcus¹

¹Singapore General Hospital, ²Singapore Civil Defence Force

Aims: It is unclear which advanced airway device is associated with better placement success and less adverse events in out-of-hospital cardiac arrest (OHCA). This study aimed to evaluate the efficacy of the VBM Laryngeal Tube (LT) as compared to the Laryngeal Mask Airway (LMA) in OHCA managed by emergency ambulances in Singapore.

Methodology: This was a real-world, prospective, cluster randomised, cross-over study. We included all OHCA aged 13 and above. We excluded cases not-for-resuscitation. The cases were randomised to receive two different airway devices (LT and LMA). The primary outcome was placement success with the secondary outcome being complication rates and presence of prehospital return of spontaneous circulation (ROSC). Per-protocol analysis was done to evaluate the results. We compared association between outcomes and airway devices using multi-variable binomial logistic regression.

Result: Of 965 patients with OHCA from March-2016 to January-2018, 905 met the inclusion criteria, of which 502 (55.5%) were randomised to receive LT while 403 (44.5%) were randomised to receive LMA. However only 174 patients in the LT group received the device, the others received LMA due to non-compliance. The placement success rate, complication rate and prehospital ROSC rate for LT was 82.8%, 19.0% and 9.2% respectively. For the LMA group, the rates were 89.4%, 8.6% and 10.3% respectively. Placement success for LT was significantly lower than LMA: adjusted OR 0.52 (0.31–0.90). Complications were more likely when using LT vs LMA: OR 2.82 (1.64–4.86). The adjusted OR for prehospital ROSC was similar in both groups: LT vs LMA OR 0.94 (0.49–1.79). A modified intention-to-treat analysis showed similar outcomes to the per-protocol analysis.

Conclusion: In this real-world implementation study, the LT was associated with poorer placement success and higher complication rates than LMA. Likelihood of prehospital ROSC was similar between the two groups. However, compliance to use of LT in the trial was low.