

BACKGROUND: Current airway management for most first-responder basic emergency medical technicians (EMT-Bs) does not include the use of blind-advanced-airway devices.

OBJECTIVE: To compare the speed, success rates, and skill retention with which EMT-Bs providers can place three blind-advanced-airway devices.

METHODS: Prospective study of 43 EMT-Bs trained in the use of the Esophageal-Tracheal-Combitube® (ETC), King LT® (KLT), and Laryngeal Mask Airway™ (LMA). The time it took each participant to place each device correctly and ventilate a human patient simulator was assessed. Primary outcome measures were the success rate of proper insertion for each device and time interval from initiation of mouth insertion to initiation of chest rise. To assess skill retention, at 3 months the providers were reassessed under exact conditions.

RESULTS: At Day 1, times required to place an ETC, LMA, and KLT were 32.7 ± 12.3, 19.2 ± 6.2, and 20.1 ± 6.6 s, respectively. Using paired t-tests, LMA and KLT were faster than ETC, p < 0.0001. At 3 months, pair-wise comparisons showed the ETC took longer to place than the KLT and LMA, p < 0.0001; and the LMA took longer to place than the KLT, p = 0.0034 (36.4 ± 13.1 ETC, 24.8 ± 12.4 LMA, 19.0 ± 6.9 KLT). There was no statistical difference of failures in placing any device.

CONCLUSIONS: Comparison of three rescue airway devices placed by EMT-Bs providers showed that it takes significantly longer to place an ETC compared to an LMA and KLT both on Day 1 and 3 months later. Three-month retention studies revealed that it took significantly longer to place an LMA compared to the KLT.