053.
The Efficacy of a Standard Training Program for Trachlight® Endotracheal Intubation

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Purpose: We sought to evaluate the success rate, intubation time interval, and complication rate of transillumination-guided intubation following two hours of instruction in the use of the Trachlight® (TL).
Methods: We conducted a prospective, randomized crossover laboratory trial, conducted at a Commonwealth of Pennsylvania-approved Emergency Medical-Service Training Site with 30 nonpaid volunteer paramedic students, one month prior to graduation. Students were instructed in the use of the Trachlight® in a standardized curriculum consisting of didactic, video, and demonstration sessions. Each student was required to intubate successfully a training mannequin with the TL five times. Approximately three weeks later, students were asked to intubate the mannequin 20 times, alternating between direct laryngoscopy (DL) and TL.
Results: The success rate for DL was 94% vs 63% for TL (p <0.0001). The mean intubation time interval was 14.6 seconds for DL and 16.8 for TL (p <0.001). The incidence of trauma was 7.3% for DL versus 1.4% for TL (p <0.001).
Conclusion: We conclude that this two-hour training session, including five successful light-guided intubations using the Trachlight,® was inadequate for producing acceptable success rates during mannequin intubations by paramedic students. The time difference was not clinically meaningful. The incidence of trauma in our mannequin model during Trachlight® intubations was significantly less than direct laryngoscopy.

033.
Comparison of the Esophageal-Tracheal Combitube™ and Endotracheal Intubation in the Out-of-Hospital Management of Cardiac Arrest

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Purpose: To determine whether the Esophageal-Tracheal Combitube™ (ETC) is a useful and effective alternative to endotracheal intubation in the out-of-hospital management of cardiac-arrest patients. The ETC is a double-lumen tube that can oxygenate, ventilate, and provide airway protection for a patient, following blind insertion into either the esophagus or trachea. Several in-hospital studies have demonstrated its effectiveness.
Methods: A prospective, randomized experimental design was employed. The airway management of adult cardiac arrest victims treated by participating out-of-hospital providers was randomized to two treatment groups. On even-numbered days an endotracheal tube (ETT) was placed, and on odd-numbered days an ETC was used. Resuscitation then proceeded according to ACLS guidelines and local EMS protocols. Data concerning intubation success, ease of intubation, and arterial blood gas analysis were recorded and analyzed using unpaired t-tests and chi-square analyses.
Results: Fifty patients were enrolled in the study. A comparison between treatment groups is outlined below:

	Successful Intubation	Ease of Use (1=easy;10=difficult)	Mean pH	Mean $PaCO_2$	Mean PaO_2	Intubation Success "on the first try"
ETT (n=36)	30 (83%)	4.3	7.17	32	387	20/30 (67%)
ETC (n=14)	11 (79%)	3.1	7.29	28	367	9/11 (82%)

No statistically significant differences (p <0.05) between treatment groups were demonstrated.
Conclusions: This out-of-hospital study provides further evidence that the ETC is comparable to the ETT as measured by paramedic ease of use, intubation success rates, oxygenation, and ventilation. The ETC should be considered a useful and effective alternative to endotracheal intubation for out-of-hospital airway management.

https://doi.org/10.1017/S1049023X00050561 Published online by Cambridge University Press