

POSTER 058. Digital Endotracheal Intubation for Patients Unsuitable for Laryngoscopy in an EMS Helicopter

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Purpose: Limited space at the patient's head in the Dauphin EMS helicopter results in conditions precluding laryngoscopy in tall patients. Substantial space at the side of the patient's head allows easy access for digital intubation (DI). The purpose of this study was to determine the feasibility of performing DI in the Dauphin.

Methods: A mannequin was placed in the Dauphin in position corresponding to that of a 6-foot-tall patient. Fourteen flight crew were introduced to the DI and allowed to practice the procedure on the mannequin up to 10 times. Each study subject then attempted three passes at DI. Tracheal versus esophageal position, and time required for DI, were noted and analyzed with descriptive statistics.

Results: Mean time required for DI was 22.7 ± 7.4 seconds (95% CI 20.4–25.1). Overall success rate for endotracheal (as opposed to esophageal) placement was 76.2%. With the exception of one subject who achieved endotracheal placement only once, all subjects correctly placed the endotracheal tube on at least two of three DIs. Five subjects correctly placed the endotracheal tube on all three attempts.

Conclusions: This pilot study demonstrates that with a minimum of training the air medical crew was able to achieve rapid placement of endotracheal tubes using the digital technique. This ability to use an alternative method for securing the airway could be of critical aid in the Dauphin, where limited space at patients' heads can preclude effective laryngoscopy. Digital intubation should be added to airway management options for use in Dauphin-transported patients who require endotracheal intubation.

POSTER 062. Delays in Air EMS Activation for Trauma Transports from Community Hospitals to Level-I Trauma Centers

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Purpose: This study's objective was to determine time lapses between trauma patient arrival at community hospitals and subsequent requests for air transport to Level-I trauma centers. N_0 : Triage to Level-I trauma center, measured by time of air medical transport request, occurs with equal rapidity in adult and pediatric patients of comparable injury severity.

Methods: One hundred sixteen consecutive interhospital trauma flights—93 adult, 23 pediatric—were analyzed retrospectively for time of patient arrival at referring hospital and time of request for air transport; interval between these times was defined as activation time (ActTime). Other data obtained: age, ISS, GCS, and endotracheal intubation (ETT). Means were compared using Kruskal-Wallis analysis; chi-square was utilized to compare proportions. Alpha was set at 0.05.

Results: Pediatric and adult patients were of comparable acuity. Air transport was initiated more rapidly for pediatric patients; 95% CIs for ActTimes were 16.9–65.8' (pediatric) and 63.4–115.1' (adult).

Group	Age	ActTime	ISS	GCS	ETT
Adult	37.7 ± 17.4	89.3 ± 125.4	19.9 ± 12.2	13.8 ± 2.8	30.4%
Pediatric	5.5 ± 4.1	41.4 ± 56.6	17.0 ± 14.5	13.6 ± 3.2	26.9%
p-value	0.000	0.046	0.283	0.764	0.733

Conclusions: 1) Pediatric trauma patients are referred for air transport more rapidly than adult patients of similar acuity; 2) Rapid triage of pediatric trauma patients to air medical transport demonstrates feasibility of equally rapid transport for adult patients; 3) Further study should analyze delays in referral of adults to trauma centers and perform cost-benefit analysis of time-intensive interventions performed at referring hospitals prior to transport.