Poor Airway Management Skills After ATLS Course Are Improved by Simulation Training

Airway management is arguably the most critical skill in trauma resuscitation, but it can be covered only superficially during the Advanced Trauma Life Support (ATLS) course. Investigators in Israel evaluated whether additional airway training using a human patient simulator (HPS) could improve airway management skills in physicians who had finished internships and completed a 2-day ATLS course within the previous year. The investigators used a high-fidelity HPS (Air-Man, Laerdal, Norway) on which airway attributes, such as cervical spine mobility, tongue swelling, trismus, and laryngospasm, can be invoked.

Seventy-two physicians were randomized to undergo basic airway training (group 1) or basic airway training followed by a 45-minute airway training session on an HPS (group 2). Participants in each group were assigned to one of two simulated trauma patient encounters, and their performance of critical interventions was evaluated. The HPS airway training session for group 2 addressed errors made by group 1 during the simulated patient encounters. Performance of three actions common to both scenarios improved significantly in group 2 as compared with group 1: use of medication for intubation (89% vs. 58%), application of cricoid pressure during intubation (92% vs. 44%), and holding the endotracheal tube during fixation (100% vs. 72%).

Comment: The poor performance of group 1 physicians is not surprising given the lack of detailed airway training in the ATLS course, and it reinforces the notion that additional airway training beyond ATLS is necessary. Delayed, improper, or failed airway management is a major cause of patient morbidity, yet the ATLS course, as a "survey" course in trauma resuscitation, provides minimal airway training. Hospitals and emergency medical systems that require the ATLS course should be aware of the severe deficiencies that remain in airway management training and skills. This study also adds to a significant and growing body of research that suggests that training on a high-fidelity human patient simulator improves individual and team performance during patient resuscitation.

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