

ABSTRACT

Introduction: Data on airway adjunct use in the setting of traumatic injury is limited. The goal of this study was to describe the frequency of use of airway adjuncts in the emergency department (ED) for trauma resuscitation.

Methods: We analyzed data from the American College of Surgeons Trauma Quality Improvement Program (TQIP) database that had documentation of an emergency department endotracheal intubation (ETI) and analyzed concomitant use of supraglottic airway (SGA), nasopharyngeal (NPA), oropharyngeal (OPA), and noninvasive positive pressure ventilation (NIPPV). We sought to describe ED airway adjunct utilization and determine what factors were associated with the selection of airway adjuncts.

Results: From 2017 to 2022, there were 6,714,002 encounters within the TQIP datasets, of which, 236,217 (4%) underwent ETI in the ED and met inclusion for our analysis. Among these patients, 15,401 (7%) were <18 years of age and met inclusion for our pediatric sub-analysis. Among all eligible patients, airway adjuncts were employed in 2,389 cases (10%). Overall, the median age was 41 years and 76% were male. Of patients that received an airway adjunct, collisions were the most common mechanism of injury identified in 1,180 cases (75%), and the thorax was the most commonly injured body segment in 1,109 cases (59%). Among 15,401 eligible pediatric patients, airway adjuncts were employed in 181 cases (1.2%). The median age was 14 years and 74% were male. Of these 181 cases, collisions were also the most common mechanism of injury among pediatric patients with 107 cases (59%), while the head/neck was the most commonly injured body segment in 106 cases (59%). Of the 236,217 eligible patients, NIPPV was used in 1,586 (6.7%) cases. NPA was used in 223 (0.1%) cases. OPA was used in 580 (0.2%) cases. Within the pediatric sub-group, NIPPV was used in 118 (0.8%) cases. NPA was used in 22 (0.1%) cases. OPA was used in 41 (0.3%) cases. There were no documented SGA uses with a concomitant documented ETI, but there were five uses without a documented ETI, exclusively in adult patients.

Conclusions: Among trauma patients undergoing endotracheal intubation in the emergency department, airway adjunct use was rare, and supraglottic airways were used least frequently. The reasons for the low utilization of airway adjuncts remain unclear.