

Early Intubation in Trauma Patients Is Safe and Effective

The success rate of orotracheal intubation within three attempts was 98.9% in this retrospective study of acute airway management at a single level I trauma center.

Acute airway management is integral to the successful management of trauma patients, but little has been reported about its indications, methods, and success rates. Researchers retrospectively reviewed medical records and trauma registry data at a single level I trauma center from 2001 to 2006 for 1000 consecutive trauma patients (10% of all trauma patients) who underwent early (within 2 hours) intubation.

Intubation was initially attempted (maximum of twice) by emergency medicine residents, with oversight or assistance, if needed, from EM attending physicians, trauma surgeons, or, rarely, anesthesiologists. An intubation attempt was defined as a single pass of a laryngoscope blade or an endotracheal tube. The center's standard protocol for orotracheal intubation in awake patients included preoxygenation with 100% oxygen and administration of etomidate (0.3 mg/kg), succinylcholine (2.0 mg/kg), and, for patients with suspected head injury, lidocaine (1.5 mg/kg). Manual in-line cervical stabilization was maintained, and cricoid pressure was applied continuously.

Immediate intubation (very early in resuscitation) was performed in 56% of patients; the remaining patients were intubated in the emergency department later during resuscitation (37.3%) or within 2 hours of leaving the ED (delayed intubation). Indications for intubation were altered mental status or coma (38%); hypoventilation/hypoxemia (19%); airway obstruction (15%); combativeness (13%); severe hemorrhagic shock (8%); and preoperative management (5%), usually to control pain. Delayed intubation was performed most often because of combativeness, neurological deterioration, or airway/respiratory distress. The overall success rate of orotracheal intubation within three attempts was 98.9%. Only 0.7% of patients required cricothyroidotomy. Major complications occurred in 1.6% of patients, including aspiration pneumonitis (1.1%) and oral trauma (0.5%). All esophageal intubations were detected promptly.

Comment: This large retrospective study demonstrates that active airway management, when performed mostly by EM residents and faculty with oversight and adherence to a predefined intubation protocol, can result in a high rate of successful orotracheal intubation with few complications and rare need for cricothyroidotomy.

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Published in Journal Watch Emergency Medicine February 13, 2009

Citation(s):

Sise MJ et al. Early intubation in the management of trauma patients: Indications and outcomes in 1,000 consecutive patients. *J Trauma* 2009 Jan; 66:32.