Scientific Assembly, Frequency and Variability of Advanced Airway Management in Trauma: The Resuscitation Outcomes Consortium (ROC) Epistry

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**Objective:**
- The purpose of this analysis is to describe the variation in type and frequency of advanced airway methods within the Resuscitation Outcomes Consortium (ROC) Epistry.

**Methods:**
- Analysis of a prospective population-based registry of trauma data and hospital outcomes.
- Prehospital data and outcomes were collected on all patients who suffered blunt, burn or penetrating injury with any one or more of:
  - GCS ≤3;
  - HR ≥150;
  - Respirations <10 or >29/minute;
  - BP <90;
  - Neurological or motor deficit.
- Advanced airways (SGA) and cricothyroidotomy attempts.
- For these analyses, data from all EMS treated patients enrolled between 12/2005 and 11/2006 from 10 of the 11 North American ROC sites are included.
- Patients declared dead in the field either without EMS treatment or with no physiologic criteria documented were excluded from the analysis.
- Advanced airway attempts described are limited to endotracheal (ET), cricothyrotomy (NTI), supraglottic airways (SGA), and cricothyroidotomy attempts.
- All advanced airways attempted in an episode are recorded and are not mutually exclusive.
- Advanced airway attempts described are limited to endotracheal (ET), supraglottic (NTI), and cricothyroidotomy attempts.
- Advanced airway attempts described are limited to endotracheal (ET), supraglottic (NTI), and cricothyroidotomy attempts at each of the ROC sites.
- Heterogeneity across the sites was assessed using Pearson chi-square tests.

**Results:**
- Data from 6295 EMS treated trauma patients were analyzed.
- Overall, 1,306 patients (21.7%) received at least one prehospital advanced airway attempt, with an inter-site range of 5.9-48.2% (p<0.0001).
- The most common advanced airway described was ETI, which was attempted in 1259 (20.0%) cases.
- The attempted use of NTI and SGA was unevenly distributed across sites and respectively was reported in 0.8% of cases (site range 0.1-1.7%, p<0.0001), and 1.5% of cases (site range 0.7-9%, p<0.0001).
- Two sites accounted for 54% of documented NTI attempts while two other sites accounted for 47% of SGA attempts.
- Half of the six cricothyroidotomies were performed by one site.

**Conclusions:**
- There is substantial cross-site variation both in whether an advanced airway is attempted, and which type of airway is attempted for major trauma patients within the ROC Epistry.
- ETI is most commonly reported.
- The infrequent use of cricothyroidotomy, SGA and NTI has training implications with regards to skill maintenance.

**Limitations:**
- Success rates were not specifically recorded.
- Cannot assess the impact of prehospital administration of neuromuscular drugs to facilitate intubation.
- Level ofskill possible managing the airway not recorded.

**The Resuscitation Outcomes Consortium Epistry - Frequency and Variability of Advanced Airway Management in Trauma**

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