

Paramedic - Evidence Based Medicine (P-EBP) Program

Paramedic CAT (Critically Appraised Topic) Worksheet

Title: Paramedic-administered RSI for airway management in trauma patients.

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Clinical Scenario: An urban EMS ACP crew have responded for a 40 year old male on a worksite who has been struck in the head with a palette with ~100 lb bags of soil swung by a crane. Vital signs are as follows: GCS: 6; RR: 30; BP: 90/60 HR: 118. The patient has vomited and the jaw is clenched, making laryngoscopy impossible. The paramedics insert two NPAs and transport. After the call, they contact their medical director to discuss the case. They want to know if the pt's outcome would have been improved if they had medications to do a Rapid Sequence Induction (RSI) for the intubation.

PICO (Population – Intervention – Comparison – Outcome) Question:

In adult EMS patients with head injury (P), does RSI assisted intubation (I) vs. standard practice (sedation only) (C) lead to differences in intubation success rates (O)?

Search terms: prehospital, trauma, intubation

Search Outcome: This search found 1 relevant paper

Relevant Papers:

AUTHOR, DATE	POPULATION: SAMPLE CHARACTERISTICS	DESIGN (LOE)	OUTCOMES	RESULTS	STRENGTHS/WEAKNESSES
Davis DP (2003)	114 patients, trauma, GCS 3-8 Medics used CT as rescue device when RSI unsuccessful	Prospective Controlled = LOE II (not randomized)	Data support the safety and efficacy of paramedic RSI in selected pts.	84% intubated 15% combitube	- Lg sample size - Specific pt group - Not randomized

Comments: Although the study shows that it is generally safe for paramedics to perform RSI, systems will require a back up airway, such as the combitube. My outcome of interest was ETI success rate, which was 84% in this study. 15% of the patients required the combitube. Only 1 pt was not successful.

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Consider: RSI almost doubles on scene time, which may be very detrimental to trauma patients who require definitive surgical care. This study was conducted in an air EMS service, so the results may not be directly generalizable to ground EMS, due to differences in paramedic training, and exposure to critically ill patients.

Clinical Bottom Line – Before RSI can be implemented into ground ambulance ACP protocols for airway management in trauma, further evidence of good clinical outcomes is necessary.

References:

Davis DP et al (2003). Paramedic-administered neuromuscular blockade improves prehospital intubation success in severely head-injured patients. *J Trauma*. 55; 4: 713-9.