Limited Success with Prehospital RSI

In the U.S., at least 2 million cases of traumatic brain injury (TBI) that requires emergency medical services transport occur each year. Appropriate airway management is imperative to the successful treatment of severely injured patients; timely management that includes oxygenation and ventilation has been linked to improved outcome in TBI patients. These authors evaluated the ability of San Diego County paramedics who received 7 hours of didactic training to perform rapid sequence intubation in adult patients with severe head trauma.

Inclusion criteria were a Glasgow Coma Scale score of 3 to 8, unsuccessful intubation without neuromuscular blockade, and an estimated transport time longer than 10 minutes. The RSI protocol included use of midazolam and succinylcholine before laryngoscopy, administration of rocuronium after confirmation of tube placement (by capnometry, syringe aspiration, and pulse oximetry), and use of the Combitube as a rescue device. Of 114 patients enrolled during a 1-year period, 96 (84.2%) were successfully intubated, 17 (14.9%) were Combitube ventilated, and 1 (1.0%) was an airway failure; there were no undetected esophageal intubations. The total out-of-hospital time was twice as long when RSI was performed at the scene versus en route (26 vs. 13 minutes). The authors conclude that paramedics can perform RSI on TBI patients.

Comment: The authors' conclusion seems at odds with the data. Despite long field times, alternative means of oxygenation and ventilation were required in 16% of cases, roughly 5 times the rate for patients in the emergency department. The logistics of training large numbers of paramedics to reliably perform a relatively uncommon, technically difficult intervention argue for exploration of alternatives to RSI in the field. This study certainly does not support use of prehospital RSI.

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