

Drug Order in Rapid Sequence Intubation.

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Abstract

BACKGROUND: The optimal order of drug administration (sedative first vs. neuromuscular blocking agent first) in rapid sequence intubation (RSI) is debated.

OBJECTIVE: We sought to determine if RSI drug order was associated with the time elapsed from administration of the first RSI drug to the end of a successful first intubation attempt.

METHODS: We conducted a planned secondary analysis of a randomized trial of adult ED patients undergoing emergency orotracheal intubation that demonstrated higher first-attempt success with bougie use compared to a tracheal tube + stylet. Drug choice, dose, and the order of sedative and neuromuscular blocking agent were not stipulated. We analyzed trial patients who received both a sedative and a neuromuscular blocking agent within 30 seconds of each other who were intubated successfully on the first attempt. The primary outcome was the time elapsed from complete administration of the first RSI drug to the end of the first intubation attempt, a surrogate outcome for apnea time. We performed a multivariable analysis using a mixed-effects generalized linear model.

RESULTS: Of 757 original trial patients, 562 patients (74%) met criteria for analysis; 153 received the sedative agent first, and 409 received the neuromuscular blocking agent first. Administration of the neuromuscular blocking agent before the sedative agent was associated with a reduction in time from RSI administration to the end of intubation attempt of 6 seconds (95% confidence interval = 0 to 11 sec).

CONCLUSION: Administration of either the neuromuscular blocking or the sedative agent first are both acceptable. Administering the neuromuscular blocking agent first may result in modestly faster time to intubation. For now, it is reasonable for physicians to continue performing RSI in the way they are most comfortable with. If future research determines that the order of medication administration is not associated with awareness of neuromuscular blockade, administration of the neuromuscular blocking agent first may be a logical default administration method to attempt to minimize apnea time during intubation.