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A Non-Profit Cooperative to Improve Health Care and Reduce Members' Costs

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(Study conducted jointly with Clara Maass Medical Center Emergency Department)

Preliminary Analyses of Prehospital Rapid Sequence Intubation in a Large Emergency Medical Services System

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Objective:

Rapid sequence intubation (RSI) remains a relatively new modality of airway management in the prehospital arena and its role is in the process of being more clearly defined in the literature. RSI was introduced as an airway management option to the Monmouth-Ocean County Hospital Service Corporation (MONOC) Emergency Medical Services (EMS) system in the state of New Jersey in 2007. We evaluated various data points and outcome measures for 280 patients that underwent RSI to evaluate our initial experience.

Methods:

A retrospective review was conducted and records abstracted from the MONOC EMS system database. MONOC provides services to various hospital systems, both academic and community based. This EMS system utilizes an electronic medical record system. Data points included heart rate (HR), Systolic and Diastolic Blood Pressures (SBP, DBP), Pulse oximetry and End-Tidal CO₂ prior to and after RSI. Intubation attempts and success rates were also analyzed.

Results:

280 patient records were retrospectively reviewed and analyzed. Mean HR was 98 prior to RSI and 93 after RSI. This difference was not statistically significant ($P>0.01$). Similar results were obtained for mean SBP (prior to RSI (161) after RSI (149), $P>0.01$) and Mean DBP (prior to RSI (88), after RSI (82), $P>0.01$). Mean Pulse Oximetry was 88% prior to RSI and 97% after RSI ($P<0.01$). No differences were observed in End-tidal CO₂ at 5 min after intubation and upon hospital arrival; Overall intubation success rate was 98% and 86% on first attempt. 5 patients were not intubated successfully and alternative airway methods were utilized without apparent deterioration.

Conclusion:

In this large EMS system, prehospital RSI did not show negative impact on HR or BP measurements and improvement in Pulse oximetry was noted. End-tidal CO₂ measurements did not show deterioration. Intubation success rates were slightly above national average. Larger studies are required to further define the role of RSI in the prehospital arena.