**Impact of Pharmacist-Driven Post-Intubation Sedation and Hypotension Management in the Emergency Department**

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**Background:** Emergency medicine providers often manage intubated and mechanically ventilated patients in the emergency department (ED) while they await admission to the intensive care unit (ICU). Although the Guidelines for the Prevention and Management of Pain, Agitation/Sedation, Delirium, Immobility, and Sleep Disruption (PADIS) in Adult Patients in the ICU recommend both analgesic and sedative medications for mechanically intubated patients, pain and sedation are commonly undertreated in the ED. Published data evaluating the role of ED clinical pharmacists in post-intubation analgosedation highlight significant improvement in likelihood of appropriate analgosedative selection and time-to-administration.

**Objective:** The purpose of this study is to evaluate time-to-analgosedation in mechanically ventilated patients after implementation of a pharmacist-driven protocol for post-intubation management. The primary endpoint was administration of both a sedative and analgesic agent within 15 minutes of intubation. Secondary endpoints included administration of both a sedative and analgesic within 30 minutes of intubation, achievement of goal Richmond Agitation Sedation Scale (RASS) score within 45 and 90 minutes of intubation, achievement of goal Critical Care Pain Observation Tool (CPOT) score within 45 and 90 minutes of intubation, achievement of goal mean arterial pressure (MAP) within 45 minutes of intubation, utilization of vecuronium post-intubation, adherence to protocolized analgosedative agents, and adherence to approved titration parameters of continuous infusion sedative agent(s) within the first 60 minutes post-intubation.

**Methods:** This study is designed to prospectively analyze the impact of a pharmacist-driven post-intubation analgosedation and hypotension management protocol implemented in March 2022, compared to a retrospective analysis of patients receiving post-intubation sedation prior to the implementation of the protocol. Patients were included if they were at least 18 years old, intubated in the ED, and the ED physician consulted ED clinical pharmacy for post-intubation management. Patients receiving massive transfusion per facility protocol, with alternative MAP goals per ED provider discretion, receiving IV antihypertensives, post-cardiac arrest, pregnant, or incarcerated were excluded from the study. ED pharmacists managed patients via one of two protocolized algorithms: (1) SBP ≥ 90 mmHg and/or MAP ≥ 65 mmHg (2) SBP < 90 mmHg and/or MAP < 65 mmHg containing evidence-based analgosedatives and MAP-modulating agents most suitable for the respective post-intubation blood pressures. Descriptive statistics including frequencies and percentages for categorical variables were utilized to analyze baseline characteristics. Groups were compared using the Pearson’s Chi-square for categorical data. A kappa coefficient was also calculated to evaluate interrater reliability.

**Results:** Sixty-two patients were included in the pre-protocol arm and 13 patients were included in the post-protocol arm. For the primary endpoint of administration of both a sedative and analgesic agent within 15 minutes of intubation, 24% vs 38.5% (P=0.29) received both agents in the pre- and post-protocol arms, respectively and 41.9% vs 84.6% (P=0.001) of patients received both agents within 30 minutes. A statistically significant difference was found for achievement of goal RASS scoring within 45 (9.7% vs 46.2%, P=0.001) and 90 (11.3% vs 69.2%, P<0.0001) minutes. A statistically significant difference in adherence to titration parameters (8.10% vs 38.5%, P=0.003) was also found.

**Conclusion:** Emergency medicine pharmacists can play a vital role in post-intubation and hypotension management for mechanically ventilated patients in the emergency department.