Title: Comparing the efficacy of dexmedetomidine monotherapy to continuous infusion fentanyl in the treatment of pain in intubated patients

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Introduction: The 2018 Clinical Practice Guidelines for the Prevention and Management of Pain, Agitation/Sedation, Delirium, Immobility, and Sleep Disruption in Adult Patients in the ICU recommend opioid medications as first line therapy for pain in critically ill patients. Studies published comparing dexmedetomidine infusions to different opioid regimens for the treatment of post-operative pain exist, but data in the critically ill patient population is limited. The purpose of this study was to compare the efficacy of dexmedetomidine to fentanyl for the treatment of pain in intubated ICU patients.

Methods: After IRB approval was obtained, a retrospective chart review was performed to assess analgesic effect of study drugs at a community teaching hospital. The primary outcome of this study was the percentage of Critical-Care Pain Observation Tool (CPOT) scores at goal. Secondary outcomes included adverse effects, post-discharge opioid requirements, and the need for additional opioid administration within one hour of a documented CPOT score. Adverse effects were defined as heart rate less than 55 bpm, SBP < 90 mmHg, or the need for a vasopressor agent.

Results: The percentage of CPOT scores at goal was 94.3% v 86.3 ($p < 0.001$) with fentanyl and dexmedetomidine, respectively. Secondary endpoints showed no difference in adverse effects or need for a discharge opioid. Additionally, patients on dexmedetomidine were more likely to require an additional opioid for uncontrolled CPOT scores (47.1% vs 8.7% $p = 0.001$)

Conclusions: Continuous infusion fentanyl was found to be better than dexmedetomidine for controlling CPOT scores.