

Development of practice management guidelines for continuous neuromuscular blockade agent infusions in the surgical intensive care unit

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INTRODUCTION

Topic

- Continuous neuromuscular blockade agents (NMBA) or paralytic infusions are utilized in patients mechanically ventilated with acute respiratory distress syndrome (ARDS) to assist with ventilator desynchrony and reverse hypoxemia or when indicated in the post operative setting to aid recovery.
- NMBAs are intrinsically a high-risk medication. Risks exponentially increase when clinicians lack confidence in or understanding of the intricacies of appropriate NMBA management
- The Society of Critical Care Medicine advises that the utilization of paralytic infusions requires a protocol that includes management of mechanical ventilation, analgesia, sedation, nursing care, and equipment to monitor degree of neuromuscular blockade.

Problem

- No standardized process for administration, monitoring, or discontinuation of continuous NMBA infusions can lead to unfavorable patient outcomes.

Aim

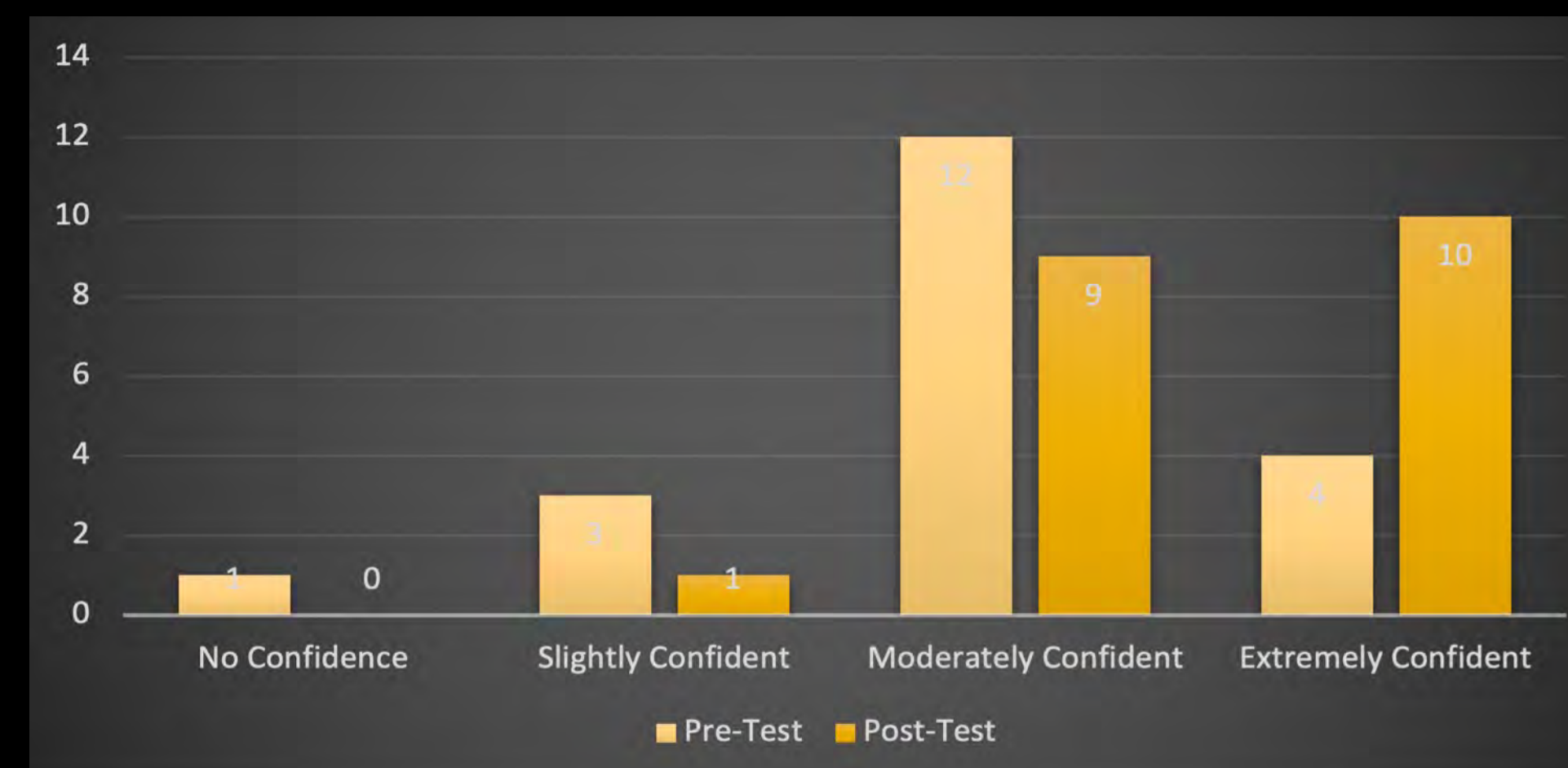
- Primary Aim: To increase SICU Staff confidence and understanding of appropriate management of paralytics in the Surgical ICU by 25% in the next 3 months.
- Secondary Aim: To develop and implement a continuous paralytic infusion management practice management guideline (PMG) in the surgical intensive care unit to standardize care within the next 3 months.

RESULTS

Current Role	N (%)
RN	32 (84.2%)
NP	4 (10.5%)
MD	2 (5.3%)
Years Experience in Role	
<1	8 (21.1%)
1-2	12 (31.6%)
3-5	9 (23.7%)
6-9	1 (2.6%)
10 or more	8 (21.1%)
Test Scores	Mean (SD)
Pretest Score	76.3 (10.9)
Matched Pretest Score**	75.3 (10.9)
Posttest Score**	84 (9.9)

Sample Characteristics (N=38) ** (N=20)

- Clinician's level of confidence managing a continuous paralytic infusion increased (n=3.45; SD 0.6) when compared to pre intervention (n=2.82; SD 0.83).
- Clinicians understanding of appropriate management of continuous paralytic infusions improved (N=20; n=84; SD 9.9) when compared to pre intervention (N=38; n= 76.3; SD 0.60 and N=20; n=75.3; SD 10.9).



Clinician level of confidence managing NMBA infusions pre and post intervention N=20

METHODS

- Quality improvement project in a 23 bed Surgical Intensive Care Unit (SICU) in a large, quaternary care academic medical center
- Developed and implemented PMG and education module over four months
- A survey was sent to all SICU clinicians (RNs, MDs, APPs) to assess pre and post intervention level of confidence and understanding.
- 38 Surveys were analyzed to obtain demographic information and pre-test scores
- Respondents rated level of confidence pre and post intervention module as no confidence (1), slightly confident (2), moderately confident (3), or extremely confident (4).
- 20 respondents completed both the pre and post test; therefore, level of confidence pre and post implementation of PMG and education was calculated only using data from these surveys

IMPLICATIONS FOR PRACTICE

- Implementing a standardized PMG when coupled with education, increases clinician level of confidence and understanding of the appropriate management of continuous NMBA infusions.
- Standardization of care and improved clinician confidence and understanding could lead to a reduction in variability in practice and ultimately, improved patient outcomes.
- Next steps: developing an order set in our electronic health record and collecting data to determine if adherence to the PMG reduces variability and improves patient outcomes.

REFERENCES

