Enteral Feeding in Critically Ill Patients on Mechanical Ventilation in Prone Positioning: A Quality Endeavor

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PROJECT AIM

We aim to increase average patient enteral nutrition both during and after prone positioning in patients receiving mechanical ventilation.

PROJECT DESIGN/STRATEGY

• Early enteral nutrition in critically ill patients is associated with improved patient outcomes and decreased hospital length of stay.1
• There has been growing evidence for tolerance of enteral nutrition in prone positioned mechanically ventilated patients in recent small-scale studies.2,3
• Research and quality improvement efforts within this domain are needed as the Covid-19 pandemic has led to an increase in the number of patients undergoing prone positioning.
• Before initiation of our project, there was not a formalized protocol in ECU Health Medical Center’s MICU resulting in inconsistent practices for the provision of enteral nutrition both during and after prone positioning to patients on mechanical ventilation.

BACKGROUND

CHANGE MADE (PDSA CYCLES) & TREATMENT PROTOCOL

1. Education efforts and distribution of protocol to MICU staff, dietitians, and pulmonary critical care fellows
2. Implementation of protocol
3. Optimization of nutrition

1/21: Education efforts and distribution of protocol to MICU staff, dietitians, and pulmonary critical care fellows
1/18-21/2-21: Implementation of protocol
2/22-6/21-22: Optimization of nutrition

1. Screen patients for inclusion and exclusion criteria
2. Insert NG or OG tube if not already in place
3. Prior to position change enteral formula should be disconnected from NG/OG tube
4. Prone/supinate patient per nursing protocol
5. 10-25 degrees reverse Trendelenburg
6. Initiate or continue enteral feeding at minimum of 10 cc/hr titrating up to 80% of nutritional support as calculated for nutritional needs
7. If intolerance is suspected or observed then stop enteral feeds and proceed with GI physical exam

RESULTS/OUTCOMES

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<th>Patients</th>
<th>Prone Events</th>
<th>Total Hours Prone</th>
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Average Percentage of Recommended Goal Intake in Prone Positioning

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LESSONS LEARNED

Enteral nutrition during prone positioning appears to be well tolerated with only 2% of prone event enteral nutrition held due to increased GRV and only 5% of prone events with emesis

Optimization of nutrition is limited by critical status of patients in the MICU and the team’s clinical decision to place NPO order

Challenge of implementing new protocol that differs from previous practice within MICU

NEXT STEPS

Continue to encourage optimization of nutrition in MICU patients in ECU Health Medical Center through use of protocol.

ACKNOWLEDGEMENTS

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REFERENCES


DATA VISUALIZATION

- Patients Receiving Enteral Nutrition While Prone: 74%
- Prone events with enteral nutrition held due to increased GRV: 2%
- Prone events with emesis: 5%