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Nurse Education and Enteral Feedings in Mechanically Ventilated Patients

Georgina Campbell
Thomas Jefferson University, georgina.campbell@jefferson.edu

John Durison
Thomas Jefferson University, john.durison@jefferson.edu

Daniel Russo
Thomas Jefferson University, daniel.russo@jefferson.edu

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Georgina Campbell, RN, BSN – STU/NCC
John Durison, RN, BSN – STU/NCC
Daniel Russo, RN, BSN - MICU

Abington Jefferson Health
HOME OF SIDNEY KIMMEL MEDICAL COLLEGE

Introduction

Purpose

- To measure the effect of educating nurses in the ICU on the latest research on early initiation of enteral feedings in mechanically ventilated patients.

Problem Statement

- Research has shown that early initiation of enteral feeding in mechanically ventilated patients is associated with shorter lengths of stay in the ICU. (Schub, 2018). Some members of ICU care teams are not aware of this association.

PICO question

- In mechanically ventilated ICU patients, is exposure of the nursing staff to the most recent research on early initiation of enteral feeding beneficial to its implementation compared to patients whose care team had not been exposed to that research?

Methods

- Nursing staff in the Medical ICU and Trauma/Neuro ICUs were provided with a review of recent literature on the benefits of early enteral feeding in mechanically ventilated patients.

- A screening tool was distributed along with the literature review to gather data on timing of feed initiation, enteral access, consults and length of stay.

- Timing of enteral feed initiation after distribution of this literature was compared with timing of enteral feed initiation in a randomly chosen sample of previous MICU/STU/NCC patients in the three months before distribution of this literature. Sample sizes were similar (50 patients vs 43 patients). This was done through chart review.

Next Steps

We recommend that the clinical staff and in particular the policymakers in these units stay informed on the latest research on the benefits of early initiation of enteral feeding in mechanically ventilated adults in the ICU.

Evidence

Literature Review

- Artinian, DiGiovine, and Krayem found that starting enteral feeding within 48 hours of being placed on mechanical ventilator reduced mortality rates, infection rates, but also increased rates of VAP.

- Hsu, Huang, and Kang found that earlier feeding was associated with increased length of stay in the more ill patients, and also and increase in GI complications. Severity of illness, however, was linked for to mortality than feeding.

- Charney, Compher, Hise, Kattelmann, Russell, and Stokes found that early enteral feeding (24-48h) was associated with reduced incidence of grade 1 infectious complications and may be associated with decreased length of stay. However, no statistically significant correlation between feeding timing and mortality was noted.

- Yip, Rai, & Wong found that an escalating energy deficit was more tied to mortality rather than early enteral feeding. Additionally, delays in feeding were hard to overcome, especially in critically ill patients.

- Schub & Karakashian found that Initiation of nutritional support in ICU patients within 48 hours of admission to the ICU is associated with improved clinical outcomes, lower infection rates, and a reduced length of hospital stay. Additionally, early enteral feeding at a slow rate is more beneficial to ICU patients than other feeding approaches.

Results

Control Group

- Of the patients chosen randomly in the months before distribution of literature review & screening tool (n=50), 56% (28 pts) had enteral feeds initiated within 48 hours of intubation, with 32% (16 pts) starting later than 48 hours and 12% (6 pts) with no enteral feeds started.

- 80% of this population (40 pts) had enteral access established simultaneously with or on the same day as intubation, with 16% (8 pts) having access established 1 day or more post intubation and 4% (2 pts) having no enteral access established.

- A nutrition consult was placed for 86% of these patients.

-Among the 28 patients in the early enteral feeding group and not taking into consideration patients that expired in the ICU, (8), ICU length of stay was on average 9.4 days.

- Among the 16 patients in the late enteral feeding group and not taking into consideration patients that expired in the ICU (5), ICU length of stay was on average 13.2 days.

-Among the 6 patients that did not receive enteral feeding in the ICU and not taking into consideration patients that expired in the ICU, (2), length of stay was on average 5 days.

Experimental Group

- Of the patients considered after distribution of literature review & screening tool (n=43), 51% (22 pts) had enteral feeds initiated within 48 hours of intubation, with 37% (16 pts) starting later than 48 hours and 12% (5 pts) with no enteral feeds started.

- 86% of this population (37 pts) had enteral access established simultaneously with or on the same day as intubation, with 12% having access established 1 day or more post intubation and 2% (1 pt) having no enteral access established.

- A nutrition consult was placed for 88% of these patients.

-Among the 22 patients in the early enteral feeding group and not taking into consideration patients that expired in the ICU, (6), ICU length of stay was on average 11.8 days.

- Among the 16 patients in the late enteral feeding group and not taking into consideration patients that expired in the ICU, (4), ICU length of stay was on average 9.5 days.

- Among the 5 patients that did not receive enteral feeding in the ICU and not taking into consideration patients that expired in the ICU, (3), length of stay was on average 3.5 days.

Conclusions

- Based solely on the data collected, it would appear that exposure to the review of literature had a net negative effect on the early initiation of enteral feedings. Average length of stay in the ICU flipped from longer in the late-fed control group to shorter in the early-fed experimental group.

- That being said, there are a substantial number of confounding factors in the data (see previous two slides). Additionally, the sample size(s) for these groups were small (n=50 and n=43).

- We recommend that data continue to be collected and analyzed on timing of enteral feed initiation in mechanically ventilated adults in the ICU.

References

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