Comparison of a Volume Based Tube Feeding Protocol to Traditional Rate Directed Tube Feed in the Surgical Trauma ICU

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Introduction

• Importance of early and adequate feeding is stressed by the American Society of Enteral and Parenteral Nutrition (ASPEN) and Society of Critical Care Medicine (SCCM), and volume based feeding protocols are encouraged to help obtain these goals.

• At our American College of Surgeons (ACS) verified Level 1 Trauma Center, we have been providing enteral nutrition using a volume based feeding regimen based on PEP uP protocol studied by Heyland and colleagues, with Impact Peptide 1.5. Our objective is to compare the volume-based feeding protocol to the traditional rate directed tube feed in the surgical trauma ICU.

Methodology

Statistical Analysis: We estimated the aggregate effects of the transition to PEP Up Protocol on achieving daily protein and caloric needs using generalized models. Odds ratios and adjusted means were reported to account for the repeated measures on each patient and the difference in length of stay across the cohorts. P value < 0.001 due to multiple comparisons.

Objective

Primary Objective:
• Improved delivery of enteral nutrition by meeting 80% of patients’ goal nutrient needs daily while in the STICU

Secondary Objective:
• Reduced infections, length of stay/ventilation, mortality, transfusions, improved glucose control, and gastric residual volumes and interruptions decreased.

Methodology (cont’d)

Methodology

This is a single-center, retrospective review of patients requiring enteral nutrition in a surgical trauma intensive care unit (STICU) at Prisma Health Midlands

Patient Population
• Inclusion Criteria:
  • Adult patients ≥ 18 years old
  • Admitted to the STICU
  • Required enteral nutrition for > 48 hours

• Exclusion Criteria:
  • ICU Length of stay < 72 hours
  • Prisoners and pregnant patients
  • Transferred patients already on nutrition support

Results

Results (cont’d)

Table 1: Patient clinical, demographic, and nutritional characteristics using t-tests, chi square tests, and Kruskal-Wallis test. P < 0.001 considered statistically significant.

Table 2: Odds ratios for meeting or exceeding 80% protein goals using the PEP uP Protocol. All models adjusted for patient injury severity and presence of complications.

Volume-based enteral nutrition utilizing the PEP uP protocol is a safe and effective way of delivering enteral nutrition in a surgical and trauma intensive care unit. Compared to a historical cohort, PEP Up delivers more calories, more protein, and is associated with less episodes of hyperglycemia and pneumonia.

Conclusion

References

McClave, S. MD. et al. JPEN J Parenter Enteral Nutr. 2016. 159-211.


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