

Impact of Enteral Feeding Protocols on Enteral Nutrition Delivery: Results of a Multicenter Observational Study

Daren K. Heyland, MD, FRCPC; Naomi E. Cahill, RD, MSc; Rupinder Dhaliwal, RD; Xiaoqun Sun, MSc; Andrew G. Day, MSc; and Stephen McClave, MD
JPEN, Vol. 34. No. 6, November 2010, 675-684

Summary

This was an international, prospective, observational, cohort study conducted in 269 ICUs in 28 countries in 2007 and 2008 to evaluate the effect of enteral feeding protocols on key indicators of enteral nutrition in the critical care setting. The study included 5497 consecutively enrolled adult patients who had to be mechanically ventilated and have ICU LOS of at least 3 days. Each site collected data on patients from ICU admit to discharge for up to 12 days and sites using an enteral feeding protocol were compared to those that did not. An enteral feeding protocol was defined as a tool that enabled the bedside RN to initiate, monitor and modify the administration of EN to individual patients, and may include the use of preprinted orders or a bedside algorithm.

Major Results of Authors

77% of all ICUs participating in the study used a feeding protocol. EN was initiated earlier in sites with protocols compared to those without (41.2 hrs from admit vs. 57.1, $P = .0003$). In patients with high GRV, more patients in protocolized sites received motility agents (64.3% vs. 49.0%, $P = .0023$). Overall nutrition adequacy (defined as percent of nutrition received from EN and PN vs. prescribed) was higher in sites with protocols (61.2% of patients caloric requirements vs. 51.7%, $P = .0003$). EN adequacy (defined as percent of nutrition received from EN alone vs. prescribed) was also higher in sites with a protocol (45.5% of caloric requirements vs. 34.7%, $P = < .0001$). Protocolized sites also used more EN alone (70.4% of patients vs. 63.6%, $P = .0036$).

Authors Conclusions

Evidence-based, nurse-driven feeding protocols should be part of standard of care. Protocols should be tailored to each individual facility. Because overall nutrition adequacy is still low in protocolized sites (61%), further refinement and optimization of the elements of feeding protocols are warranted.

Take Home Message

Enteral feeding protocols can improve nutrition practice and nutrition adequacy. The magnitude of the effect was small, increasing overall adequacy by only 4-7%; however, the study did not standardize the specific nutrition interventions included in the feeding protocols or monitor the adherence to the protocols. The number of elements in the protocol, compliance by physicians, and implementation by nursing staff all affect the degree to which protocols improve patient outcomes.