Early Feeding Rates in Acute Pancreatitis Associated with Decreased Length of Hospitalization

Melanie L. Pascal MD[1]; Samantha J. Magier MD, MEng[2]; Ahmad Nawaz MD[2]; Thiruvengadam Muniraj, MD, PhD, FRCP[2,3]; Kenneth W. Hung MD, MS[2,3]

1. Section of Gastroenterology and Hepatology, Department of Medicine, Dartmouth-Hitchcock Medical Center, Lebanon, NH 2. Department of Internal Medicine, Yale School of Medicine, New Haven, CT 3. Section of Digestive Diseases, Yale School of Medicine, New Haven, CT

Introduction

- Per AGA guidelines, patients with acute pancreatitis (AP) should receive early oral feeding as tolerated or enteral feeding if unable to tolerate oral feeds within 24 hours of AP diagnosis
- Early feeding (initiation within 24 hrs) is associated with decreased risk of complications such as multiorgan failure, necrotizing pancreatitis, and the need for invasive procedures
- At Yale New Haven Hospital, a tertiary academic medical center, 31% of patients admitted with AP did not receive early feeding in 2019

Aims:

- Determine if early feeding affected the length of stay (LOS)
- Identify factors associated with early feeding
- Evaluate if an order set would improve early feeding rates

Methods

March 2020 — Baseline Data Collection

- Collected EMR data from April 2019-January 2021

Inclusion: Hospitalized AP patients age ≥ 18 years based on the ICD-10 or lipase >3x ULN

Exclusion: bowel obstruction, ileus, or other condition that prevents enteral or oral feeding

- Chart review to confirm AP diagnosis and time of order entry

October 2020 — AP order set implementation

Created and implemented EMR order set for AP with guidelines on diet, imaging, and consult orders (Figure 2)

December 2020 — Educational e-mail about order set and enteral access sent to internal medicine providers.

January 2021 — First cycle of post-intervention data collection completed

Figure 1. Methods Timeline and Details

Results

- 707 patients were hospitalized with AP
- 496 patients (70.2%) had early enteral feeds
- Early feeds cohort had shorter LOS 8.4 days [12.8] versus 5.4 days [8.2]) ($p < 0.01$) and were less likely to be hospitalized in the intensive care unit (ICU) (OD 0.45, 95% CI 0.32-0.63) (Table 1)
- No difference in age, gender, race, or ethnicity between the early feeding group and delayed feeding group (> 24 hrs)
- Implementation of an order set containing guidelines and orders for diet, imaging, and consults did not significantly improve early feeding (70.5% versus 68.9%)
- Poor results likely due to limited usage of order sets by providers.

Conclusions

Early enteral nutrition in AP is associated with shorter LOS.

AP patients receiving early enteral feeds were less likely to be in the ICU. Limitations to this includes lack of BISAP and CCI data, which will be collected.

Durable and effective quality improvement initiatives are needed to improve rates of early enteral feeding in patients with AP

Further Plan-Do-Study-Act cycles will be pursued to integrate early enteral feeding into either a highly utilized order set or clinical care pathway

References

Crockett SD, Wani S, Gardner TB, et al. American Gastroenterological Association Institute Guideline on Initial Management of Acute Pancreatitis. Gastroenterology 2018;154:1096-1101.

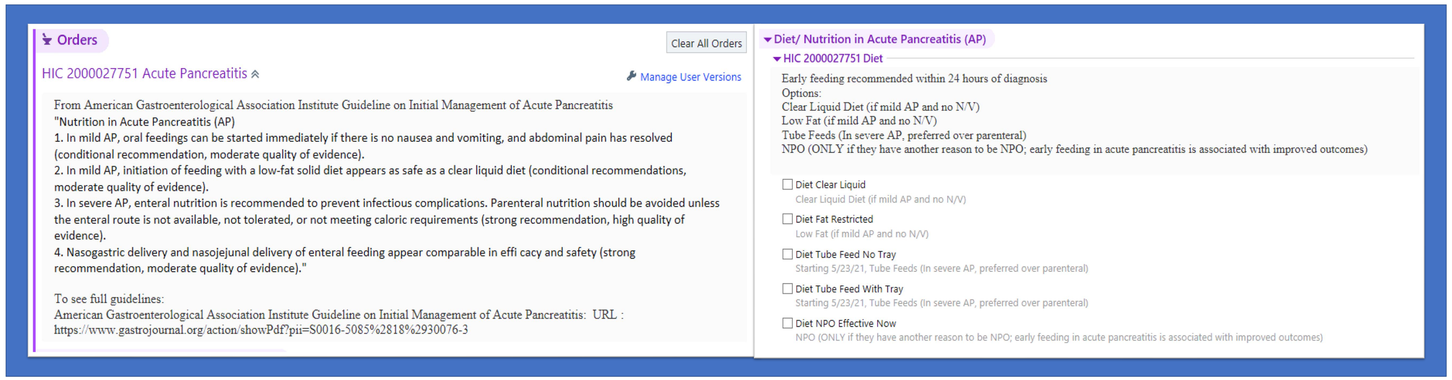

Figure 2. AP Order Set Section on Diet/Nutrition

Variable		Odds Ratio	95% Confidence Interval	p-value
Intensive Care Unit Hospitalization		**0.45**	**0.32-0.63**	**< 0.01**
Age		1.00	0.99-1.01	0.99
Race				0.92
	White/Caucasian	Reference	Reference	
	Black/African-American	0.92	0.63-1.36	
	Other/Not Listed	0.98	0.63-1.52	
Ethnicity				0.33
	Non-Hispanic	Reference	Reference	
	Hispanic	1.16	0.75-1.79	
	Other/Not Listed	0.22	0.02-2.40	

Table 1. Factors associated with early enteral feeding in acute pancreatitis