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

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

• Determine if early feeding affected the length of stay (LOS) Aims: Identify factors associated with early feeding

• Evaluate if an order set would improve early feeding rates

Y Orders

IC 2000027751 Acute Pancreatitis ♠

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From American Gastroenterological Association Institute Guideline on Initial Management of Acute Pancreatitis "Nutrition in Acute Pancreatitis (AP)

1. In mild AP, oral feedings can be started immediately if there is no nausea and vomiting, and abdominal pain has resolved (conditional recommendation, moderate quality of evidence).

2. In mild AP, initiation of feeding with a low-fat solid diet appears as safe as a clear liquid diet (conditional recommendati moderate quality of evidence).

3. In severe AP, enteral nutrition is recommended to prevent infectious complications. Parenteral nutrition should be avoi the enteral route is not available, not tolerated, or not meeting caloric requirements (strong recommendation, high qualit evidence).

4. Nasogastric delivery and nasojejunal delivery of enteral feeding appear comparable in effi cacy and safety (strong recommendation, moderate quality of evidence)."

To see full guidelines:

American Gastroenterological Association Institute Guideline on Initial Management of Acute Pancreatitis: URL https://www.gastrojournal.org/action/showPdf?pii=S0016-5085%2818%2930076-3

Methods

March 2020	Baseline Data Collection
	 Collected EMR data from April 2019-January 2021
	<u>Inclusion:</u> 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 ord entry
	AP order set implementation
October 2020	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

Clear All Orders	▼ Diet/ Nutrition in Acute Pancreatitis (AP)		
age User Versions	 File 2000027751 Diet Early feeding recommended within 24 hours of diagnosis Options: Clear Liquid Diet (if mild AP and no N/V) 		
ed	Low Fat (if mild AP and no N/V) Tube Feeds (In severe AP, preferred over parenteral) NPO (ONLY if they have another reason to be NPO; early feeding in acute pancreatitis is associated with improved our		
ided unless ty of	Diet Clear Liquid Clear Liquid Diet (if mild AP and no N/V)		
	Diet Fat Restricted Low Fat (if mild AP and no N/V)		
	Diet Tube Feed No Tray Starting 5/23/21, Tube Feeds (In severe AP, preferred over parenteral)		
	Diet Tube Feed With Tray Starting 5/23/21, Tube Feeds (In severe AP, preferred over parenteral)		
	Diet NPO Effective Now NPO (ONLY if they have another reason to be NPO; early feeding in acute pancreatitis is associated with improved outcomes)		

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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)

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- 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.









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.

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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				
	White/Caucasian	Reference	Reference	
	Black/African-American	0.92	0.63-1.36	0.92
	Other/Not Listed	0.98	0.63-1.52	
Ethnicity				
	Non-Hispanic	Reference	Reference	0.22
	Hispanic	1.16	0.75-1.79	0.33
	Other/Not Listed	0.22	0.02-2.40	

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



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