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CHOOSING WISELY®: THINGS WE DO FOR NO REASON™

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Things We Do for No Reason™: Nil per os for acute pancreatitis

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The "Things We Do for No Reason™ (TWDFNR)" series reviews practices, which have become common parts of hospital care, may provide little value to our patients. Practices reviewed in the TWDFNR series do not represent "black and white" conclusions or clinical practice standards, but are meant as a starting place for research and active discussions among hospitalists and patients. We invite you to be part of that discussion.

CLINICAL SCENARIO

A 60-year-old man presents to the emergency department with 1 day of epigastric pain that radiates to his lower back. His serum lipase is 1350 units/L. His other laboratory data is unremarkable. The hospitalist admits him to the hospital with mild interstitial acute pancreatitis. The admitting physician orders intravenous fluid resuscitation with lactated ringers, analgesia, and a diet of nil per os (NPO) for the patient.

BACKGROUND

Acute pancreatitis, a common gastrointestinal cause of hospital admission in the United States, accounts for more than 275,000 admissions each year with an associated $2.6 billion in cost to the healthcare system.[1] Pancreatologists classify acute pancreatitis as mild ("no organ failure, local or systemic complications, and usually resolves in the first week"), moderate ("presence of transient organ failure, local complications, or exacerbation of co-morbid disease of less than 48 h"), or severe ("organ failure greater than 48 h").[2] Conventional inpatient management of acute pancreatitis has long included intravenous fluids, pain management, and bowel rest. A majority of patients recover with general supportive care, but some patients may develop local or systemic complications, with an overall mortality rate of roughly 5%.[3]

WHY YOU MIGHT THINK NPO FOR ACUTE PANCREATITIS IS HELPFUL

Traditional teaching suggested a clinical benefit to delaying oral nutrition to prevent stimulation of the pancreas. Many hospitalists typically ordered a strict NPO diet with concomitant parenteral feeding to provide nutritional support. While oral feeding has now replaced parenteral feeding as the recommended method of nutrition in this patient population, the tendency to delay oral nutrition remains commonplace. An international physician survey conducted between 2017 and 2019 found that only 26.7% of physicians routinely initiate oral feeding on the first day of admission for mild acute pancreatitis and more than 40% wait at least 2 days to start oral feeding.[4] Moreover, an international audit of compliance with clinical guidelines for the management of acute pancreatitis between 2019 and 2020 found that providers started diets within 24 h of admission for fewer than one-third of patients admitted to an internal medicine service with mild acute pancreatitis.[5]

Experimental models of acute pancreatitis in rats demonstrating that stimulation of pancreatic exocrine function worsened pancreatic inflammation informed the traditional approach of avoiding early oral feeding.[6] Retrospective studies in humans also suggested that feeding increased serum lipase and the risk of peripancreatic infectious complications.[7,8] Thus, guidelines for acute pancreatitis recommended keeping patients NPO until symptoms had markedly improved.[9] For instance, the American College of Gastroenterology's 2006 guidelines for the management of acute pancreatitis state that patients may generally be given diets after their symptoms have resolved, bowel sounds are present, and the physician feels the patient has improved.[9] After that time, the hospitalist could introduce an oral diet gradually within 3–7 days of hospitalization.[9,10]

Clinicians worry that initiating a solid diet early in the course of acute pancreatitis may exacerbate symptoms, increase the risk of aspiration, and prolong hospitalization. Indeed, a review of three studies evaluating oral feeding in acute pancreatitis supported some

of these concerns.[11] The review found that 78% of patients experienced a relapse in pain within 48 h of commencing oral feeding which resulted in an increased hospital length of stay.[11]

WHY THERE IS NO REASON TO ROUTINELY ORDER NPO FOR PATIENTS WITH ACUTE PANCREATITIS

Current data suggests that patients admitted with acute pancreatitis benefit from hospitalists initiating early oral nutrition. Initial studies investigating the benefit of feeding in pancreatitis revealed an association between bowel rest therapy, usually with parenteral nutrition, and an increased likelihood of the development of disruptions of the gut–mucosal barrier, persistence of the systemic inflammatory response, and admission to the intensive care unit.[12] Indeed, data from human trials demonstrate that these gut-mucosal barrier disruptions cause microbial gut translocation which in turn leads to infection, worsening inflammation, and severe disease.[12,13] More recent evidence supports the benefits of early oral feeding as compared with delayed oral feeding in the initial management of acute pancreatitis, with several systematic reviews and meta-analyses further clarifying the positive effect of early oral feeding on patient outcomes.

For patients with mild to moderate acute pancreatitis, early oral feeding, generally defined as initiation of an oral diet within 24–48 h of admission, improves outcomes and does not exacerbate symptoms. In 2021, Yao et al.[14] performed a systematic review with meta-analysis of eight randomized controlled trials (RCTs) of patients with mild to moderate acute pancreatitis undergoing immediate oral feeding (on admission or when subjectively feeling hungry) versus delayed oral feeding. They included 748 patients with mild to moderate acute pancreatitis. Of the 748 total patients, 381 received immediate oral feeding. In their pooled analysis, immediate oral feeding reduced both hospital length of stay, with a standard mean difference (SMD) of −1.01 (95% confidence interval [CI] −1.17, −0.85, <.001), and, in the two studies that reported it, costs of hospitalization, with an SMD of −0.83 (95% CI −1.17, −0.5, <.001). The pooled, subgroup analysis of four studies reporting on pain relapse and six studies reporting on feeding intolerance showed no statistically significant differences between immediate and delayed feeding.

The benefits of early oral nutrition in severe acute pancreatitis are less certain. Song et al.[15] performed a meta-analysis of 1051 patients across 10 RCTs comparing early enteral nutrition (within 48 h of admission) with delayed enteral nutrition or total parental nutrition in patients with severe or predicted severe acute pancreatitis. They found early enteral nutrition reduced mortality, multiorgan failure, and infections. However, the inclusion of patients receiving total parental nutrition in the control group and the inclusion of patients with predicted rather than confirmed severe acute pancreatitis obscures their analysis. Furthermore, the included studies evaluated either nasogastric (NG) or nasojejunal (NJ) rather than oral nutrition. Notably, data from The Dutch Pancreatitis Study Group found little difference in outcomes when treating patients with severe acute pancreatitis via oral versus nasoenteric feeding.[16] The Dutch study compared early nasoenteric tube feeding with on-demand oral feeding in 208 patients with severe acute pancreatitis. In their randomized trial, they found no statistically significant differences in the rate of major infections, death, nausea, vomiting, aspiration, ileus, or diarrhea between the groups. Moreover, the majority of patients (69%) in the on-demand oral feeding group tolerated oral feeding and did not require nasoenteric tube feeding.

WHAT YOU SHOULD DO INSTEAD

Several professional societies, both in the United States and Europe, have guidelines pertaining to nutritional support in the management of acute pancreatitis. The 2018 guideline from the American Gastroenterology Association recommends early (within 24 h of admission) oral feeding for patients with acute pancreatitis.[17] They also have a strong recommendation for enteral rather than parenteral feeding in patients unable to tolerate oral feeding. In the United Kingdom, the 2018 National Institute for Health and Care Excellence guideline on pancreatitis states that patients should not be made NPO without a clear reason.[18] They also recommend offering patients with severe acute pancreatitis enteral nutrition within 72 h of presentation. If patients cannot tolerate enteral nutrition or if enteral nutrition is contraindicated, then the hospitalist can consider parenteral nutrition.

In keeping with the recommendations of various professional societies on the management of acute pancreatitis, we suggest offering patients with any degree of acute pancreatitis a diet on admission to the hospital. Researchers have not extensively studied the optimal diet (i.e., soft vs. solid, low-fat vs. full-fat). Some patients with severe acute pancreatitis may not tolerate early oral feeding. The Dutch Pancreatitis Study Group showed that nearly 30% of patients with severe acute pancreatitis could not tolerate oral diets by 72 h after admission and required nasoenteric tube feeding.[16] If patients cannot tolerate early oral diets, hospitalists may need to provide nutrition through a nasoenteric tube for early nutritional support. A 2020 Cochrane Review comparing NG versus NJ tube feeding in patients with severe acute pancreatitis did not favor one nasoenteric feeding route over the other.[19]

WHEN MIGHT AN NPO DIET BE INDICATED?

Situations, where a diet on admission may not be feasible or recommended, include: 1) if the patient is obtunded or significantly confused, 2) a procedure is imminent, or 3) ileus is present.

RECOMMENDATIONS

- Do not routinely order an NPO diet for patients admitted with acute pancreatitis.
- Initiate early oral feeding if possible.
- Use clinical judgment to determine when a diet needs to be held.
- Initiate nasoenteric feeding in patients who cannot tolerate early oral feeding.
- Prescribe parenteral nutrition if the patient cannot tolerate enteral nutrition or it is contraindicated.

CONCLUSION

Routine ordering of an NPO diet for patients with acute pancreatitis is a Thing We Do For No Reason. Early oral feeding may improve various outcomes in these patients and does not worsen symptoms. Returning to our case, the hospitalist should avoid the dogma of "bowel rest" and initiate early oral feeding in the patient admitted with acute pancreatitis.

What do you do? Do you think this is a low-value practice? Is this truly a "Thing We Do for No Reason™"? Let us know what you do in your practice and propose ideas for other "Things We Do for No Reason™" topics. Please join in the conversation online at Twitter (#TWDFNR)/ Facebook and don't forget to "Like It" on Facebook or retweet it on Twitter.

FINANCIAL DISCLOSURES

None pertinent to report.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

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