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ONE MINUTE CONSULT
BRIEF ANSWERS TO SPECIFIC CLINICAL QUESTIONS

Q: Should an NPO order be placed for my patient with acute pancreatitis?

A 45-year-old man with a 10-year history of alcohol use disorder presents to the emergency department with constant severe pain in the epigastrium with radiation to the back. The abdominal pain is associated with fluctuating nausea without vomiting. His temperature on presentation is 99.1°F (37.28°C), blood pressure 142/77 mm Hg, heart rate 102 beats per minute, and oxygen saturation 99% on room air. Physical examination reveals a nondistended abdomen with decreased bowel sounds. Palpation of the epigastric area elicits voluntary guarding. Serum lipase is 591 U/L (reference range < 160 U/L). Computed tomography with intravenous contrast reveals an edematous pancreas with pancreatic fat-stranding and uniform enhancement of the pancreas without necrosis. A diagnosis of mild acute pancreatitis is made using the Atlanta criteria, given a lack of organ failure or acute complications. When is it safe to allow the patient to resume oral feeding?

A: Our patient has no contraindications to oral feeding, so he should resume oral feeding as soon as it is tolerated, ie, in the absence of emesis or severe pain.

Pancreatic rest through extended periods of nothing by mouth (NPO) status or total parenteral nutrition is no longer considered the standard of care.[1–3] Non-oral enteral nutrition is instituted instead of total parenteral nutrition if the patient does not tolerate oral feeding. Total parenteral nutrition and NPO status should be used only if there are contraindications to enteral nutrition, such as paralytic ileus.

GUT 'ROUSING' RATHER THAN REST

Historically, physicians treated acute pancreatitis with an NPO strategy, hoping to minimize pancreatic enzyme activation and thereby limit further pancreatic inflammation and injury.[1] Under normal physiologic conditions, oral or duodenal feeding stimulates pancreatic exocrine function. However, secretion of pancreatic exocrine enzymes, as measured through trypsin levels, is reduced in patients with acute pancreatitis compared with healthy controls. This reduction is associated with disease severity rather than nutrition intake, indicating that an oral feeding strategy would not exacerbate the enzymatic pathology of acute pancreatitis.[1,2]

The shift away from pancreatic rest to a new framework, called "gut rousing" by Petrov,[3] emphasizes the importance of restoring normal gut function as quickly as possible. Feeding through enteral routes rather than parenteral nutrition stimulates the gut and minimizes gut dysfunction, preventing complications of acute panceatitis.[3]

In a meta-analysis by Petrov et al[4] that included 5 randomized controlled trials with 95 patients who received enteral nutrition and 107 who received parenteral nutrition, the enteral group had lower rates of infectious complications, surgical interventions, and mortality. A meta-analysis by Chowdhury et al[5] found that patients who were immediately started on a full solid diet rather than having intake gradually increased through a stepwise diet had a shorter hospital length of stay; there were no differences between the groups in level of abdominal pain or rate of patients stopping their diet.

SOCIETY GUIDELINES

Multiple society guidelines support the use of enteral nutrition in acute pancreatitis.[6–9]

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The American College of Gastroenterology (ACG)[9] guidelinesfrom 2013 recommends oral feeding for mild acute pancreatitis. This recommendation was strengthened in the 2018[6] guideline with the removal of the qualifier "mild." The ACG recommendations allow for various diets, including diets low in fat or containing a normal amount of fat and diets consisting of solid or soft food, as tolerated, within 24 hours for all patients with acute pancreatitis. Oral feeding trials are preferred over NPO orders in patients with acute pancreatitis based on the combined results of 11 randomized controlled trials.[6]

The European Society for Clinical Nutrition and Metabolism (ESPEN) 2020 guideline[7] on clinical nutrition in acute pancreatitis includes the following recommendations:

- Nutrition decisions should not be based on serum lipase levels
- The oral diet should be low in fat and of soft consistency, as this type of diet provides more benefits and equal tolerability compared with clear liquid diets
- Enteral nutrition is recommended over parenteral nutrition for patients who are unable to tolerate oral feeding, which is in agreement with ACG guidelines
- Pancreatic enzyme replacement therapy should be started when patients present with clinical signs or symptoms of pancreatic insufficiency (eg, bloating, steatorrhea) or low fecal elastase, suggesting malabsorption.[7]

The guidelines of the UK Working Party on Acute Pancreatitis[8] largely agree with the above recommendations. For mild pancreatitis, the UK guidelines recommend starting oral feeding as soon as possible.[8] In regard to parenteral nutrition, the UK guidelines emphasize that enteral nutrition has better outcomes, but parenteral nutrition can be considered in certain scenarios, such as ileus persisting for more than 5 days.[8]

WHEN SHOULD ENTERAL NUTRITION BE STARTED IN PATIENTS WITH ACUTE PANCREATITIS?

The ACG guideline recognizes that not all patients will tolerate oral feeding because of pain, vomiting, or ileus.[6] A technical review of 12 randomized controlled trials that compared parenteral to enteral (oral or enteral tube) nutrition in patients with acute pancreatitis and inability to feed orally found enteral nutrition was associated with a decreased risk of infected peripancreatic necrosis and organ failure.[6] The meta-analysis by Petrov et al[4] also found that enteral feeding was associated with a decreased risk of necrosis.

Strong evidence or consensus on the optimal timing of enteral tube feeding is lacking. In the Pancreatitis, Very Early Compared with Selective Delayed Start of Enteral Feeding (PYTHON) trial[10] from the Netherlands, patients with severe acute pancreatitis at high risk for complications were randomized to nasoenteric feeding within 24 hours or an oral diet started after 72 hours with tube feeding if the oral diet was not tolerated. Infection rates and mortality did not differ between early nasoenteric feeding and oral diet.

If oral nutrition is not tolerated, the ESPEN guideline[7] indicates that enteral nutrition should be started via nasogastric or nasojejunal tube within 24 to 72 hours from admission. Nasogastric tubes are preferred because they cost less and have complication rates similar to nasojejunal tubes.[7] Absolute contraindications to enteral nutrition include ileus or bowel obstruction, open abdomen, and abdominal compartment syndrome.[7]

WHEN IS TOTAL PARENTERAL NUTRITION INDICATED?

The ESPEN guideline[7] lists several scenarios in which total parenteral nutrition is indicated over enteral routes, including bowel obstruction, abdominal compartment syndrome, prolonged paralytic ileus, and mesenteric ischemia. Approximately 20% of patients with severe acute pancreatitis may have an absolute or relative contraindication to enteral nutrition.[7] It is still important to emphasize that total parenteral nutrition and NPO orders should not be started without evidence of contraindications to enteral nutrition.[6]

THE BOTTOM LINE

Patients with acute pancreatitis should resume a solid diet as soon as it can be tolerated.[6] Guidelines recommend encouraging patients as soon as possible to start with an oral, nonliquid diet to minimize risk of infection and mortality, with initiation of enteral feeding through nasoenteral routes within 24 to 72 hours of insufficient oral intake.[6,7] Pancreatic enzyme supplementation should be started in patients with obvious signs of exocrine enzyme deficiency causing malabsorption.[7] Total parenteral nutrition and NPO orders should be placed only for patients with contraindications to enteral nutrition, such as prolonged paralytic ileus or bowel obstruction.[7]

DISCLOSURES

Dr. Sealock has disclosed serving as a co-principal investigator for Abbvie Pharmaceuticals. The other authors report no relevant financial relationships which, in the context of their contributions, could be perceived as a potential conflict of interest.

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