Medical Nutrition Therapy in Acute Pancreatitis: A Case Report

Department of Nutritional Sciences | Texas Christian University

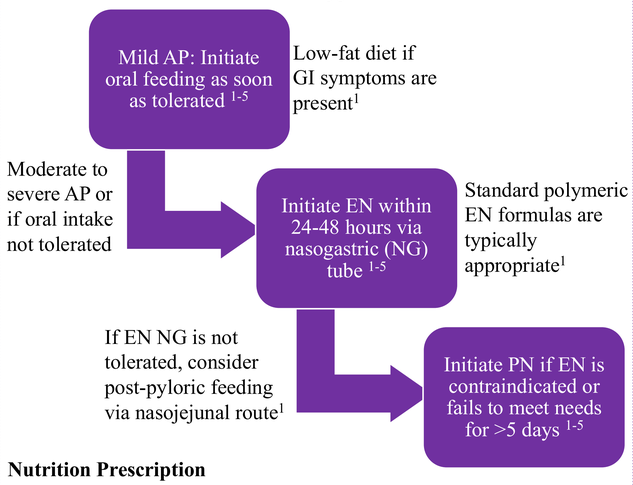
Olivia Landis, BS Ashley Mullins, MS RD, LD, CNSC

BACKGROUND

Acute pancreatitis (AP) is an inflammatory condition characterized by premature pancreatic enzyme activation leading to autodigestion of pancreatic tissue and systemic inflammation.[1] Patients commonly present with abdominal pain, nausea, vomiting, and ileus, which can significantly impair oral intake and increase the risk of malnutrition.[1-5] Historically, management of AP emphasized bowel rest and delayed feeding.[3] However, more recent evidence-based guidelines suggest early nutrition intervention improves outcomes, including reduced infectious complications, shorter hospital length of stay, and preservation of gut mucosal integrity.[1, 2, 5] When oral intake is insufficient, nutrition support may be required through enteral nutrition (EN), which delivers nutrients through the gastrointestinal (GI) tract, or parenteral nutrition (PN), which provides nutrients intravenously when the GI tract cannot be used.[1] Despite these recommendations, implementing nutrition therapy can be challenging in patients with complex clinical presentations and multiple comorbid conditions.[2] Because inadequate intake and gastrointestinal dysfunction frequently occur during hospitalization, careful assessment of nutrition risk and feeding tolerance is essential.[3] This case report reviews current nutrition considerations for AP and highlights the challenges of implementing evidence-based nutrition strategies in a patient with complex gastrointestinal comorbidities and increased nutrition risk.

NUTRITIONAL CONSIDERATIONS

Evidence-Based Nutrition Support in Acute Pancreatitis



Nutrition Prescription

- Energy: 25–35 kcal/kg [3,4]
- Protein: 1.2–1.5 g/kg (up to 2.0 g/kg in critical condition) [3, 4]
- Avoid overfeeding during acute phase [4]

Monitor

- Feeding tolerance: abdominal pain, nausea, vomiting, bloating, diarrhea
- Labs: lipase, amylase, electrolytes, glucose, white blood cell count, triglycerides (if lipids administered)
- Fluid balance and hydration status

CASE REPORT

Case Summary

- Patient is a 37-year-old female presenting with abdominal pain, nausea, and vomiting
- Diagnoses: AP, acute kidney injury, thrombotic microangiopathy

Relevant Medical History

- Crohn's disease, anemia, dehydration, peritonitis, ileitis, gastritis, cholelithiasis, recurrent abdominal pain
- Surgical History: appendectomy, cholecystectomy, subtotal colectomy with permanent end ileostomy and rectovaginal fistula repair
- Admitted for abdominal pain 2 weeks prior
  - Grade B esophagitis with Candida infection

Assessment

Anthropometrics

- Height: 5'5" | Weight: 89 kg | Usual Body Weight: 116 kg
- Body Mass Index (BMI): 33.42 kg/m²
- Weight loss: 21.5% in the last year, 13.2% in last 3 months

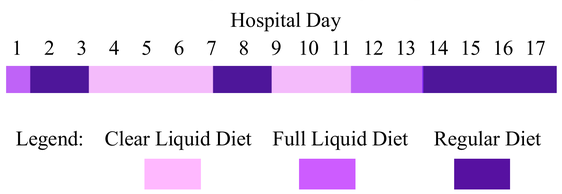
Intake

- Poor oral intake for several weeks prior to admission
- Hospital Intake: ~25% of meals
- Persistent nausea, vomiting, and abdominal pain

Clinical Findings

- Weight ↑ to 108 kg during hospitalization (likely fluid shifts)
- Diet orders fluctuated between clear liquids, full liquids, and regular diet based on tolerance and patient preference

Diet Order Progression During Hospitalization



Labs

Lab	Patient Value*	Clinical Significance
Lipase	↑	Diagnostic indicator of AP
Amylase	↑	Pancreatic enzyme elevated in AP
BUN	↑	Marker of dehydration/renal dysfunction
Creatinine	↑	Consistent with AKI
Potassium	↓	Losses from vomiting/ileostomy
Hemoglobin	↓	Consistent with chronic anemia
WBC	↑	Marker of inflammatory response

* ↑ = above reference range; ↓ = below reference range

Nutrition Diagnosis

Severe protein-calorie malnutrition in the context of chronic illness related to inadequate energy intake and malabsorption as evidenced by 13.2% weight loss in the last 3 months, 21.5% weight loss in 1 year, and meeting <75% of estimated energy requirements for >1 month.

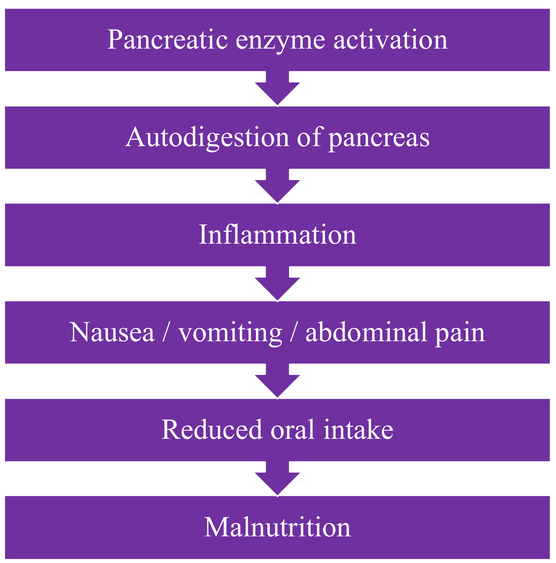
Interventions

- Diet advanced as tolerated
- Oral Nutrition Supplements provided (Ensure twice daily)
- IV fluids administered for hydration
- Electrolytes replaced as needed
- Care coordinated with interdisciplinary medical team
- Education on low-fat diet and symptom-based diet progression
- Discussion of potential EN if oral intake remained inadequate

Outcomes

- GI symptoms improved (↓ nausea, vomiting, abdominal pain)
- Oral intake improved but remained variable; EN deferred per patient preference
- Labs improved:
  - Lipase normalized
  - Electrolytes corrected (Na, K, Mg, Phos)
  - BUN normalized; Creatinine decreased
  - WBC count normalized
- Fluid status improved; AKI stabilized
- Advanced to regular diet prior to discharge
- Clinically stable for discharge

Acute Pancreatitis Pathophysiology & Nutrition Risk



DISCUSSION

Through this case study and literature review, current standards of medical nutrition therapy for AP are reviewed. Evidence-based guidelines support early nutrition intervention, including advancement to oral intake or initiation of EN when tolerated, to reduce complications and preserve gut integrity. However, implementing these recommendations can be challenging in patients with complex clinical presentations. In this case, the patient initially presented with multiple gastrointestinal comorbidities and recent major abdominal surgery, making the etiology of symptoms unclear and delaying recognition of AP. Additionally, significant pre-existing malnutrition increased nutrition risk and may have warranted earlier escalation of nutrition support, such as initiation of EN when oral intake remained inadequate. Diet progression during hospitalization highlighted the difficulty of determining the most appropriate diet order when tolerance fluctuates, particularly when full liquid diets may contain higher fat content than recommended for some patients with pancreatitis. This emphasizes the importance of not only advancing diet as tolerated but also considering nutrient composition when selecting diet orders. Patient preferences also influenced consideration of nutrition support, highlighting the need for ongoing, patient-centered communication. Early discussion of nutrition support options may help facilitate timely intervention and improve overall nutrition adequacy.

CONCLUSIONS

This case demonstrates the importance of early identification of nutrition risk and timely implementation of evidence-based nutrition strategies in patients with acute pancreatitis. Malnutrition, complex comorbid conditions, and evolving diagnoses can complicate nutrition management and delay optimal feeding interventions. Careful assessment of nutrition status, proactive advancement of oral or enteral nutrition when appropriate, and effective interdisciplinary communication are essential to support recovery and prevent further nutrition decline. Patient preferences and goals of care should also be considered when determining nutrition strategies. When oral intake remains inadequate, progression to more advanced nutrition support may be necessary to enhance recovery and improve outcomes in patients with complex clinical presentations.

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