


Clinical Guideline

Acute Pancreatitis

Pediatric Gastroenterology

 This guideline should not replace clinical judgment.

I. Diagnosis of pancreatitis: 2 out of the following 3 criteria are required

1. Abdominal pain: epigastric, radiating to back (this is less common in children), vomiting, Irritability in young children, nausea, eating refusal in infants and young children
2. Lipase and amylase levels that are three times (3X) > Upper Limit of Normal for the reporting lab's reference range (Note: every lab has different reference range!)
 - a. Lipase is more specific for AP than amylase
 - b. Lipase stays elevated longer
 - c. Lipase without amylase is sufficient to help diagnose AP
 - d. Degree of elevation of lipase has NO prognostic value and does NOT predict severity of disease
3. Imaging findings that support acute pancreatitis include edema, peripancreatic fluid, peripancreatic fat stranding, etc.
 - a. US - to exclude biliary etiology, especially if there are other concerning labs: elevated liver enzymes, elevated direct bilirubin
 - b. CT (contrast enhanced)- if concerned about severe pancreatitis, such as necrotizing pancreatitis
 - c. MRCP – mostly valuable after resolution of AP to assess ductal changes in the pancreas several weeks following an attack.

Additional supportive and diagnostic laboratory evaluation:

- d. Hepatic panel and bilirubin – helps determine etiology
- e. Calcium level
- f. Triglyceride level
- g. C-reactive protein-inflammatory marker-not essential


II. Management

1. Please admit to pediatric GI service or consult GI service on admission.
2. Fluids: Hypovolemia on admission is predictor of severe pancreatitis.
Early aggressive fluid management has been shown to reduce mortality and severity of pancreatitis. In children, early aggressive fluid administration has been associated with decreased length of stay and decreased complications, including decreased rate of development of severe AP.
 - Give at least a 10-20 ml/kg NS bolus on admission, then run D5 NS at 1.5-2 x maintenance. This should be continued for at least the first 24-48 hours of admission. Maximum volume is 3-4 Liters in 24 hours.
 - Daily Chemistry panels may be helpful for electrolyte balance while on IV fluids alone.

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3. Nutrition: Patients do NOT need to be NPO. Early enteral feeds are associated with reduced mortality in adult patients, and decreased rates of development of severe pancreatitis. Early enteral nutrition is associated with reduced rates of development of severe pancreatitis and decreased hospital stay in children. Enteral nutrition helps keep gut integrity and reduces SIRS response.

A. Enteral nutrition is recommended to start within the first 24-48 hrs. We monitor tolerance based on clinical symptoms (pain, vomiting), not lipase or amylase values.

- a. PO - If patient is able to tolerate oral feeds, it should be allowed. Start with small amounts of fluids. No data supports low fat vs regular diet, though most physicians still recommend low fat diet.
- b. Enteral formula -There is no consensus as to what formula is recommended, no data supports low fat formula or elemental formula vs polymeric formula.
- c. If patient is unable to take PO, place NG at the end of 72 hours and start slow volume liquids or formula. There is no evidence that post-pyloric tube placement to 'bypass' the pancreas is of benefit.

Contraindications to enteral nutrition:

- a. Ileus
- b. Compartment syndrome
- c. Complex fistulae
- d. Necrotizing pancreatitis is NOT a contraindication

Unclear cases:

- a. Pancreatic laceration
- b. Pancreatic duct disruption

B. Parenteral nutrition: Enteral nutrition is still preferred over this route. Consider if enteral intake has been unsuccessful (more emesis than intake, dehydration) for a period of 2-3 day. Malnutrition and dehydration have been associated with poor outcomes and more complications.

Peripheral or Central/Total routes can be used.

There is no evidence that Intralipids are contraindicated.


4. Pain management: There is no consensus on appropriate pain medication regimen. Consult Pain Team if pain is difficult to control with opioids after first 48 hours.

- a. Acetaminophen or NSAIDS (Ibuprofen or Toradol) are appropriate
- b. Morphine has no contraindication. It had been suspected of causing sphincter of Oddi spasm, but this has not been proven.
- c. Dilaudid or Fentanyl-may be used if Morphine not available

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5. Antibiotic use: Routine prophylactic antibiotic use is NOT recommended, even in severe acute pancreatitis. It is the most controversial area of discussion.

- a. Use antibiotics:
 - i. in documented infected necrosis
 - ii. necrosis is present and clinically patient is deteriorating, febrile
 - iii. gas collections are present on imaging
- b. antibiotic choice (those that penetrate into necrotic tissue):
 - i. Carbapenem
 - ii. Quinolones
 - iii. Metronidazole

6. Surgical consult/interventional endoscopy consult – general recommendations

- a. Obstructive gallstone pancreatitis – ERCP within 48 hours
- b. Mild gallstone pancreatitis – cholecystectomy should be performed during index admission
- c. Abdominal compartment syndrome – emergent surgical consult
- d. Pancreatic necrosis – if persistent for weeks; preferably wait till > 4 weeks

Early necrosectomy results in increased morbidity and mortality

Preferred procedure: endoscopic or percutaneous necrosectomy

- e. Pancreatic pseudocysts – non emergent, usually develop and mature over several weeks and can resolve on their own over several weeks or months. No acute indication to involve surgery unless causes significant mass effect

7. Discharge criteria include:

- a. Pain controlled with oral medications.
- b. Enteral/oral intake sufficient for hydration and nutrition and there is no need for IV fluid support.
- c. Outpatient follow up with Primary Care Provider, Pediatric GI service and surgery if biliary surgery is needed.

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Executive Summary

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References

Abu-El-Haija M, Kumar S, Quiros JA, et al. Management of Acute Pancreatitis in the Pediatric Population: A Clinical Report From the North American Society for Pediatric Gastroenterology, Hepatology and Nutrition Pancreas Committee. *J Pediatr Gastroenterol Nutr.* 2018 Jan; 66(1):159-176.

2018 American Gastroenterology Association Guideline (April) by Crockett SD, Wani S, Gardner TB, et al. American Gastroenterology Association Institute Guideline on Initial Management of Acute Pancreatitis. *Gastroenterology* 2018; 154:1096

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