AGA Institute Medical Position Statement on Acute Pancreatitis

This document presents the official recommendations of the American Gastroenterological Association (AGA) Institute on "Management of Acute Pancreatitis." It was approved by the Clinical Practice and Economics Committee on February 14, 2007, and by the AGA Institute Governing Board on March 15, 2007.

The Medical Position Statements (MPS) developed under the aegis of the AGA Institute and its Clinical Practice and Economics Committee (CPEC) were approved by the AGA Institute Governing Board. The data used to formulate these recommendations are derived from the data available at the time of their creation and may be supplemented and updated as new information is assimilated. These recommendations are intended for adult patients, with the intent of suggesting preferred approaches to specific medical issues or problems. They are based upon the interpretation and assimilation of scientifically valid research, derived from a comprehensive review of published literature.[1] Ideally, the intent is to provide evidence based upon prospective, randomized placebo-controlled trials; however, when this is not possible the use of experts' consensus may occur. The recommendations are intended to apply to health care providers of all specialties. It is important to stress that these recommendations should not be construed as a standard of care. The AGA Institute stresses that the final decision regarding the care of the patient should be made by the physician with a focus on all aspects of the patient's current medical situation.

Acute pancreatitis is a disease of increasing annual incidence and one that produces significant morbidity and mortality and consumes enormous health care resources. While many patients will recover from the attack with only general supportive care, about 1 in 5 will develop severe acute pancreatitis and 20% of these patients may die. The management of acute pancreatitis has evolved over several decades, and many treatments that were considered essential in the past have subsequently been abandoned based on more recent findings from clinical trials. Unfortunately, there are rather limited well-designed controlled clinical trials in this disease. This fact means that there remain today differences in opinion from center to center and country to country about the proper management of patients with acute pancreatitis. This has led in the past to several practice guidelines from various national and international professional societies that differ in their specific recommendations. These AGA Institute guidelines have been developed to guide clinicians in the management of patients with both mild and severe acute pancreatitis.

Recommendations

Diagnosis

- The diagnosis of acute pancreatitis should be established within 48 hours of admission. The diagnosis should be based on compatible clinical features and elevations in amylase or lipase levels. Elevations in amylase or lipase levels greater than 3 times the upper limit of normal, in the absence of renal failure, are most consistent with acute pancreatitis. Elevations in amylase or lipase levels less than 3 times the upper limit of normal have low specificity for acute pancreatitis and hence are consistent with, but not diagnostic of, acute pancreatitis. Elevation of lipase levels is somewhat more specific and is thus preferred.
- Acute pancreatitis should be considered among the differential diagnoses in patients admitted with unexplained multiorgan failure or the systemic inflammatory response syndrome.
- Confirmation of the diagnosis, if required, is best achieved by computed tomography (CT) of the abdomen using intravenous contrast enhancement. Clinicians should be aware that an early CT (within 72 hours of illness onset) might underestimate the amount of pancreatic necrosis.

Assessment of Severity

- Clinicians should define severe disease by mortality or by the presence of organ failure and/or local pancreatic complications including pseudocyst, necrosis, or abscess. Multiorgan system failure and persistent or progressive organ failure are most closely predictive of mortality and are the most reliable markers of severe disease.
- The prediction of severe disease, before its onset, is best achieved by careful ongoing clinical assessment coupled with the use of a multiple factor scoring system and imaging studies. The Acute Physiology and Chronic Health Evaluation (APACHE) II system is preferred, utilizing a cutoff of ≥ 8. Those with predicted or actual severe disease, and those with

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other severe comorbid medical conditions, should be strongly considered for triage to an intensive care unit or intermediate medical care unit.

- Rapid-bolus contrast-enhanced CT should be performed after 72 hours of illness to assess the degree of pancreatic necrosis in patients with predicted severe disease (APACHE II score ≥8) and in those with evidence of organ failure during the initial 72 hours. CT should be used selectively based on clinical features in those patients not satisfying these criteria.
- Laboratory tests may be used as an adjunct to clinical judgment, multiple factor scoring systems, and CT to guide clinical triage decisions. A serum C-reactive protein level >150 mg/L at 48 hours after disease onset is preferred.

Determination of Etiology

- The etiology of acute pancreatitis should be able to be established in at least three fourths of patients. The initial history should particularly focus on previous symptoms or documentation of gallstones, alcohol use, history of hypertriglyceridemia or hypercalcemia, family history of pancreatic disease, prescription and nonprescription drug history, history of trauma, and the presence of concomitant autoimmune diseases.
- At admission, all patients should have serum obtained for measurement of amylase or lipase level, triglyceride level, calcium level, and liver chemistries (bilirubin, aspartate aminotransferase, alanine aminotransferase, and alkaline phosphatase). If triglyceride levels cannot be obtained at admission, fasting triglyceride levels should be measured after recovery when the patient has resumed normal intake.
- Abdominal ultrasonography should be obtained at admission to look for cholelithiasis or choledocholithiasis. If the initial ultrasound examination is inadequate or if a suspicion of gallstone pancreatitis is still present, repeat ultrasonography after recovery should be performed. Endoscopic ultrasonography (EUS) can be used as an accurate alternative approach to screen for cholelithiasis and choledocholithiasis, either at admission or thereafter.
- CT or EUS should be performed in those patients with unexplained pancreatitis who are at risk for underlying pancreatic malignancy (age older than 40 years).
- Extensive or invasive evaluation is not recommended in those with a single episode of unexplained pancreatitis who are younger than 40 years of age. In those with recurrent episodes of pancreatitis, evaluation with EUS and/or endoscopic retrograde cholangiopancreatography (ERCP) should be considered. EUS is preferred as the initial test. If ERCP is undertaken in this setting, it should be performed by an endoscopist with the training, experience, and facilities to provide endoscopic therapy (including minor papilla sphincterotomy and pancreatic duct stent placement) and sphincter of Oddi manometry, if required. Genetic testing is not currently recommended as part of the initial workup but may be considered in selected patients.

Management

- General supportive care, consisting of vigorous fluid resuscitation, supplemental oxygen as required, correction of electrolyte and metabolic abnormalities, and pain control, must be provided to all patients.
- Nutritional support should be provided in those patients likely to remain "nothing by mouth" for more than 7 days. Nasojejunal tube feeding, using an elemental or semielemental formula, is preferred over total parenteral nutrition. Total parenteral nutrition should be used in those unable to tolerate enteral nutrition.
- **Gallstone pancreatitis.** Urgent ERCP (within 24 hours) should be performed in patients with gallstone pancreatitis who have concomitant cholangitis. Early ERCP (within 72 hours) should be performed in those with a high suspicion of a persistent common bile duct stone (visible common bile duct stone on noninvasive imaging, persistently dilated common bile duct, jaundice). Endoscopic sphincterotomy in the absence of choledocholithiasis at the time of the procedure is a reasonable therapeutic option, but data supporting this practice are lacking. Early ERCP in those with predicted or actual severe gallstone pancreatitis in the absence of cholangitis or a high suspicion of a persistent common bile duct stone is controversial, and endorsement of this practice varies from center to center and country to country. In those unfit for surgery, ERCP and sphincterotomy alone provides adequate long-term therapy. In all others with gallbladder in situ, definitive surgical management (cholecystectomy) should be performed in the same hospital admission if possible and, otherwise, no later than 2–4 weeks after discharge.
- **Management of necrosis.** Sterile necrosis does not usually require therapy. Clinicians should be able to recognize necrosis and appreciate the evolution and liquefaction that occurs over time, producing organized or "walled-off" necrosis. Clinicians should not mistake these collections of walled-off necrosis as a simple pseudocyst. The internal consistency of these necrotic collections is best determined by EUS or magnetic resonance imaging. The data supporting

the efficacy of antibiotic prophylaxis to prevent conversion of sterile necrosis to infected necrosis are mixed and difficult to interpret; no recommendation can be made at this time. Antibiotic prophylaxis, if used, should be restricted to patients with substantial pancreatic necrosis (>30% of the gland necrotic by CT criteria) and should continue for no more than 14 days. The development of infected necrosis should be suspected in those patients with preexisting sterile pancreatic necrosis who have persistent or worsening symptoms or symptoms and signs of infection, typically after 7–10 days of illness. In these patients, fine-needle aspiration guided by CT imaging should be performed and the sample should be cultured and Gram stained to document infection. Antibiotic therapy should be tailored based on the results of fine-needle aspiration. The management of infected necrosis depends on how acutely ill the patient is, the response to antibiotics, the consistency of the necrotic material, and the local expertise in surgical and nonsurgical management of necrosis. If possible, patients with infected necrosis should be managed in centers with specialist units with appropriate endoscopic, radiologic, and surgical expertise.

- **Management of fluid collections and pseudocysts.** Acute fluid collections around the pancreas in the setting of acute pancreatitis require no therapy in the absence of infection or obstruction of a surrounding hollow viscus. Symptomatic, mature, encapsulated pseudocysts should be managed based on local expertise with endoscopic, percutaneous, or surgical techniques.
- **Role of surgery in acute pancreatitis.** Surgery has no role in mild acute pancreatitis or in severe pancreatitis with sterile necrosis. Surgical therapy in infected necrosis can be considered, based on the availability of other therapeutic options and the consistency of the necrotic material.
- **Prevention of recurrences.** Those with alcoholic pancreatitis should be referred to counseling services and smoking cessation services, if applicable. Patients with gallstone pancreatitis should undergo prompt cholecystectomy and/or endoscopic sphincterotomy, depending on their overall medical condition.
- **Prevention of post-ERCP pancreatitis.** ERCP should be avoided if alternative diagnostic tests (in particular, CT, magnetic resonance cholangiopancreatography, or EUS) can provide similar diagnostic information. ERCP should be performed by endoscopists with appropriate training and experience. Informed consent must provide the patient with a realistic assessment of both risk and expected benefit. Endoscopists performing ERCP should have the technical skill and familiarity to place pancreatic duct stents in situations of high risk for post-ERCP pancreatitis.

Reference

1. Forsmark CE, Baillie J. AGA Institute Technical Review on acute pancreatitis. Gastroenterology 2007;132:2022–2044.

Address requests for reprints to: Chair, Clinical Practice and Economics Committee, AGA Institute, c/o Membership Department, 4930 Del Ray Avenue, Bethesda, Maryland 20814. Fax: (301) 654-5920.