Complete Summary

GUIDELINE TITLE

AGA Institute medical position statement on acute pancreatitis.

BIBLIOGRAPHIC SOURCE(S)

AGA Institute on "Management of Acute Pancreatitis" Clinical Practice and Economics Committee, AGA Institute Governing Board. AGA Institute medical position statement on acute pancreatitis. Gastroenterology 2007 May;132(5):2019-21. [1 reference] PubMed

GUIDELINE STATUS

This is the current release of the guideline.

According to the guideline developer, the Clinical Practice Committee meets three times a year to review all American Gastroenterological Association (AGA) Institute guidelines. This review includes new literature searches of electronic databases followed by expert committee review of new evidence that has emerged since the original publication date.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Acute pancreatitis

GUIDELINE CATEGORY

Diagnosis
Evaluation

Management
Prevention
Treatment

CLINICAL SPECIALTY

Emergency Medicine
Family Practice
Gastroenterology
Infectious Diseases
Internal Medicine
Radiology
Surgery

INTENDED USERS

Health Care Providers
Physicians

GUIDELINE OBJECTIVE(S)

- To suggest preferred approaches to specific medical issues or problems associated with acute pancreatitis
- To guide clinicians in the management of patients with both mild and severe acute pancreatitis

TARGET POPULATION

Adults with either mild or severe acute pancreatitis

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis

1. Amylase or lipase (preferred) levels
2. Assessment of patients admitted with multiorgan failure or systemic inflammatory response syndrome
3. Computed tomography (CT) with contrast

Assessment of Severity and Etiology

1. Assessment of organ failure progression
2. Acute Physiology and Chronic Health Evaluation (APACHE) II clinical assessment scoring system
3. Rapid-bolus contrast-enhanced CT
4. Laboratory blood tests (amylase/lipase, triglycerides, calcium, liver chemistries, C-reactive protein)
5. Medical history
6. Abdominal ultrasound
7. Endoscopic ultrasound
8. Endoscopic retrograde cholangiopancreatography (ERCP)

9. Genetic testing (in special cases)
10. Magnetic resonance imaging (MRI)
11. CT-guided fine needle aspiration, culture, and Gram stain for infection necrosis

Management/Treatment

1. Endoscopic therapy (minor papilla sphincterotomy and pancreatic duct stent placement)
2. Sphincter of Oddi manometry (for ERCP)
3. General supportive care (fluid resuscitation, supplemental oxygen, correction of electrolytes and metabolic abnormalities)
4. Nutritional support (enteral or parenteral)
5. Endoscopic sphincterotomy
6. ERCP and sphincterotomy
7. Cholecystectomy
8. Antibiotic prophylaxis
9. Surgery
10. Percutaneous removal of encapsulated cysts

Prevention of Recurrence

1. Counseling
2. Cholecystectomy
3. Pancreatic duct stents during ERCP

MAJOR OUTCOMES CONSIDERED

- Sensitivity and specificity of diagnostic procedures
- Predictive value of assessments
- Timing and effectiveness of procedures
- Complication rates
- Length of hospitalization and intensive care use
- Rates of recurrent pancreatitis
- Mortality

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review
Review of Published Meta-Analyses

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Recommendations are based upon the interpretation and assimilation of scientifically valid research, derived from a comprehensive review of published literature. Ideally, the intent was to provide evidence based upon prospective, randomized placebo-controlled trials; however, when this was not possible the use of experts' consensus occurred.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

- Studies have shown enteral nutrition to be less costly than total parenteral nutrition. The advantage in cost and improvement in at least some important outcomes has led to a general shift toward enteral nutrition in patients with acute pancreatitis.
- There is no evidence that routine preoperative endoscopic retrograde cholangiopancreatography (ERCP) reduces complications, cost, or length of stay. A randomized trial of routine preoperative ERCP compared with selective use of postoperative ERCP based on the results of intraoperative cholangiography noted shorter hospital stays and lower cost in the postoperative ERCP group. This trial excluded patients with associated cholangitis; urgent ERCP is obviously required in these patients. In patients with a high likelihood of persistent common bile duct stones, preoperative ERCP is appropriate. In one analysis, preoperative ERCP was the most cost-effective approach when the prevalence of common bile duct stones reached

>80%. In situations in which the prevalence of common bile duct stones was <80%, laparoscopic common bile duct exploration or, if unavailable, postoperative ERCP were most cost effective.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

The Medical Position Statements (MPS) developed under the aegis of the American Gastroenterological Association (AGA) Institute and its Clinical Practice and Economics Committee (CPEC) were approved by the AGA Institute Governing Board.

RECOMMENDATIONS

MAJOR 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 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 to 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.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation. Ideally, the intent was to provide evidence based upon prospective, randomized placebo-controlled trials; however, when this was not possible the use of experts' consensus occurred.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate diagnosis, treatment, and management of patients with both mild and severe acute pancreatitis

POTENTIAL HARMS

- A potential for intravenous contrast to impair pancreatic microcirculation and potentially aggravate the degree of pancreatic necrosis and worsen the course of acute pancreatitis.
- Complications of fluid therapy include electrolyte disturbances and fluid overload.
- Total parenteral nutrition (TPN) is associated with a number of complications, particularly hyperglycemia and catheter sepsis.
- Broad-spectrum antibiotics are not benign and are associated with increased risk of resistant organisms and possibly fungal superinfection.
- On occasion, a large area of necrotic pancreas may appear to be a pseudocyst on computed tomography, and it may not be easily apparent that the collection contains solid and semisolid material. Placing a tube (percutaneous or endoscopic) into this type of collection will not achieve drainage and will instead just convert an uninfected "necroma" into an infected one.

- Early surgery (within the first 14 days) should be avoided because it is associated with increased mortality.
- The risk of post-endoscopic retrograde cholangiopancreatography pancreatitis is very high when placement of a pancreatic duct stent is attempted but fails.

QUALIFYING STATEMENTS

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It is important to stress that these recommendations should not be construed as a standard of care. The American Gastroenterological Association (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.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

IMPLEMENTATION TOOLS

Staff Training/Competency Material

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Staying Healthy

IOM DOMAIN

Effectiveness
Timeliness

IDENTIFYING INFORMATION AND AVAILABILITY

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2007 May

GUIDELINE DEVELOPER(S)

American Gastroenterological Association Institute - Medical Specialty Society

SOURCE(S) OF FUNDING

American Gastroenterological Association Institute

GUIDELINE COMMITTEE

American Gastroenterological Association Institute Clinical Practice Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Author: John Baillie

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

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GUIDELINE AVAILABILITY

Electronic copies: Available from the *Gastroenterology* journal Web site.

Print copies: Available from the American Gastroenterological Association Institute, 4930 Del Ray Avenue, Bethesda, MD 20814.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- American Gastroenterological Association (AGA) Institute technical review on acute pancreatitis. Gastroenterology 2007 May; 132(5):2022-44.

Electronic copies: Available from the *Gastroenterology* journal Web site.

Print copies: Available from American Gastroenterological Association Institute, 4930 Del Ray Avenue, Bethesda, MD 20814.

Continuing Medical Education (CME) credit is also available from the *Gastroenterology* journal Web site.

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI Institute on August 8, 2007.

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DISCLAIMER

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Readers with questions regarding guideline content are directed to contact the guideline developer.

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