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ANALYSIS OF MODERN INTERNATIONAL CLINICAL GUIDELINES FOR THE DIAGNOSIS OF ACUTE PANCREATITIS

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Abstract. Acute pancreatitis is a common and potentially life-threatening gastrointestinal disorder that requires prompt and accurate diagnosis to reduce morbidity and mortality. Over the past two decades, several international clinical guidelines have been developed to standardize diagnostic approaches and improve patient outcomes. This article provides a comparative analysis of modern international clinical guidelines for the diagnosis of acute pancreatitis, including recommendations issued by the American College of Gastroenterology, the American Gastroenterological Association, and the Revised Atlanta Classification. The study examines diagnostic criteria, laboratory and imaging modalities, severity assessment tools, and recommended diagnostic algorithms. The analysis demonstrates a high level of consensus regarding core diagnostic criteria, while differences persist in the timing and choice of imaging techniques and the role of prognostic scoring systems. The findings highlight the importance of guideline-based, integrated diagnostic strategies in contemporary clinical practice.

Keywords: acute pancreatitis, clinical guidelines, diagnosis, Revised Atlanta Classification, imaging, laboratory markers.

Acute pancreatitis (AP) is an inflammatory disease of the pancreas characterized by a wide spectrum of clinical manifestations, ranging from mild self-limiting illness to severe necrotizing pancreatitis associated with multi-organ failure. The global incidence of acute pancreatitis has increased steadily, making it one of the leading causes of hospitalization for gastrointestinal disorders. Early and accurate diagnosis is essential for risk stratification, timely intervention, and prevention of complications.

To address variability in clinical practice, several international professional organizations have developed evidence-based clinical guidelines aimed at standardizing the diagnostic approach to acute pancreatitis. These guidelines emphasize a combination of clinical assessment, laboratory testing, and imaging studies. However, differences in recommendations regarding diagnostic algorithms and severity assessment remain. Therefore, a systematic analysis of modern international clinical guidelines is necessary to identify common principles and existing discrepancies in the diagnostic approach to acute pancreatitis.

This study is based on a narrative and comparative analysis of major international clinical guidelines for the diagnosis of acute pancreatitis. Key documents were selected from authoritative professional organizations, including the American College of Gastroenterology (ACG), the American Gastroenterological Association (AGA), and the Revised Atlanta Classification consensus statement. Peer-reviewed articles, systematic reviews, and guideline updates published in leading medical journals were also analyzed.

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The guidelines were evaluated according to the following criteria: diagnostic definitions, clinical and laboratory criteria, imaging recommendations, severity classification systems, and diagnostic algorithms. Emphasis was placed on identifying areas of agreement and divergence among guidelines, as well as their practical implications for clinical decision-making.

Modern international guidelines demonstrate strong consensus regarding the fundamental diagnostic criteria for acute pancreatitis. According to the Revised Atlanta Classification and endorsed by both ACG and AGA guidelines, the diagnosis of acute pancreatitis is established when at least two of the following three criteria are met: characteristic abdominal pain consistent with acute pancreatitis, serum amylase and/or lipase levels elevated to at least three times the upper limit of normal, and imaging findings characteristic of pancreatic inflammation.

This unified diagnostic framework has significantly improved consistency in clinical practice and research. The guidelines emphasize that imaging is not mandatory when the first two criteria are clearly present, thereby reducing unnecessary exposure to radiation and healthcare costs.

International guidelines consistently identify serum lipase as the preferred laboratory marker for diagnosing acute pancreatitis due to its higher sensitivity and specificity compared to amylase. Lipase levels remain elevated for a longer duration, making it particularly useful in patients who present later in the disease course. While amylase is still considered acceptable, its limitations are clearly acknowledged in all modern guidelines.

In addition to pancreatic enzymes, inflammatory markers such as C-reactive protein are recommended for assessing disease severity rather than for primary diagnosis. Procalcitonin is increasingly discussed in guidelines as a useful marker for identifying infected pancreatic necrosis, although its routine use remains controversial.

Differences among international guidelines are more apparent in recommendations regarding imaging. Transabdominal ultrasonography is universally recommended as the initial imaging modality, particularly to identify biliary etiology. However, its limited sensitivity in visualizing the pancreas is widely recognized.

Contrast-enhanced computed tomography is considered the imaging modality of choice for assessing local complications and pancreatic necrosis. Most guidelines recommend delaying CT imaging until 72 hours after symptom onset unless the diagnosis is unclear or the patient deteriorates clinically. Magnetic resonance imaging and MRCP are recommended as alternatives in patients with contraindications to CT or when detailed evaluation of the pancreatic ductal system is required.

Endoscopic ultrasound is highlighted in recent guidelines as a valuable tool for identifying occult biliary disease and structural abnormalities in cases of idiopathic or recurrent acute pancreatitis.

Table. Comparison of Modern International Clinical Guidelines for the Diagnosis of Acute Pancreatitis

Aspect	Revised Atlanta Classification (2012)	American College of Gastroenterology (ACG)	American Gastroenterological Association (AGA)
Diagnostic definition	Diagnosis requires ≥2 of 3 criteria: characteristic abdominal pain, ≥3×	Adopts Revised Atlanta diagnostic criteria	Adopts Revised Atlanta diagnostic criteria

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	elevation of serum amylase/lipase, or imaging findings		
Role of clinical presentation	Central role; typical epigastric pain is a key diagnostic component	Emphasized as first diagnostic step	Emphasized as initial assessment
Preferred laboratory markers	Serum amylase and/or lipase	Serum lipase preferred over amylase due to higher sensitivity and specificity	Serum lipase recommended as primary diagnostic enzyme
Use of inflammatory markers	Not diagnostic; used for severity assessment (e.g., CRP)	CRP recommended for severity prediction	CRP discussed as a prognostic marker
Initial imaging modality	Imaging not mandatory if clinical and laboratory criteria are met	Transabdominal ultrasound recommended to identify biliary etiology	Ultrasound recommended as first-line imaging
Role of contrast-enhanced CT	Recommended for assessing complications and necrosis, preferably after 72 hours	CT advised when diagnosis is unclear or in severe cases	CT recommended selectively, not routinely
Timing of CT imaging	Optimal after 72 hours from symptom onset	Delayed CT preferred unless clinical deterioration occurs	Delayed CT recommended for accurate assessment
MRI / MRCP	Alternative to CT; useful for ductal and biliary evaluation	Recommended when CT is contraindicated or inconclusive	Recommended for biliary and ductal assessment
Endoscopic ultrasound (EUS)	Not primary; useful in idiopathic cases	Recommended for unexplained or recurrent pancreatitis	Recognized as valuable for occult biliary disease
Severity classification	Mild, moderately severe, and severe based on organ failure and complications	Uses Revised Atlanta severity classification	Uses Revised Atlanta severity classification
Prognostic scoring systems	Supports use of clinical scoring tools	BISAP, APACHE II, and Ranson discussed	BISAP favored for early risk stratification
Diagnostic approach	Integrated, criteria-based framework	Stepwise, evidence-based approach	Algorithm-based, patient-centered approach

Severity classification is a key component of modern diagnostic guidelines. The Revised Atlanta Classification categorizes acute pancreatitis into mild, moderately severe, and severe forms based on the presence and duration of organ failure and local complications. This

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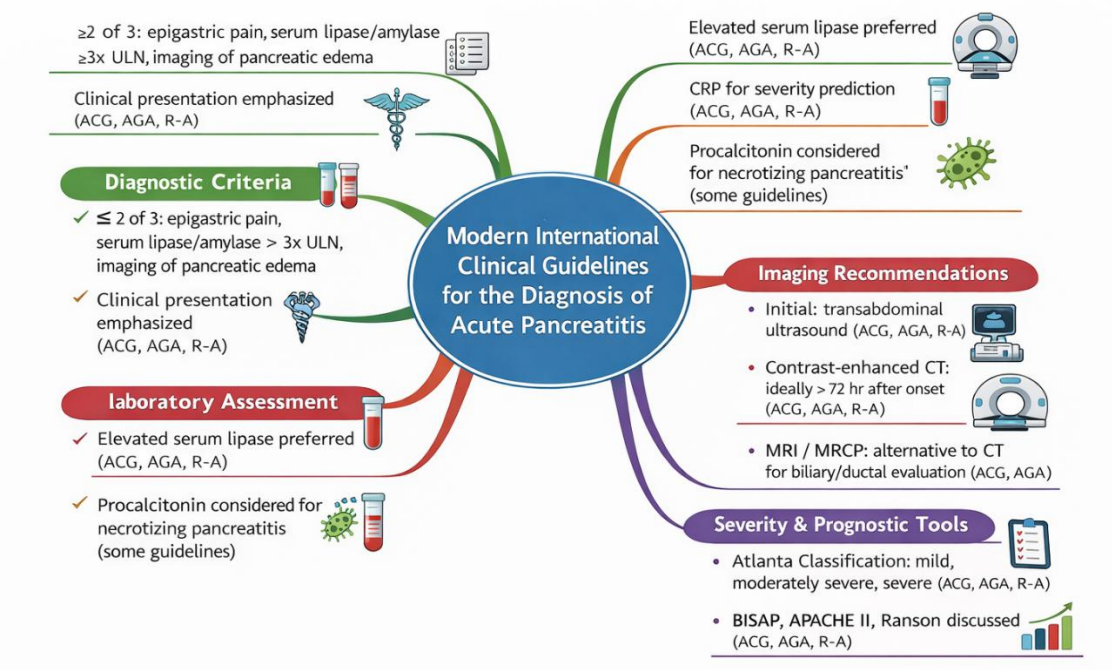
classification system is widely adopted due to its clinical relevance and simplicity.

Prognostic scoring systems such as BISAP, APACHE II, and Ranson criteria are discussed across guidelines, with BISAP favored for its simplicity and early applicability. While these scoring systems are not diagnostic tools per se, guidelines emphasize their importance in early risk stratification and management planning.

Modern guidelines advocate for an integrated, stepwise diagnostic approach that begins with clinical assessment and laboratory testing, followed by selective use of imaging and severity scoring systems. This approach minimizes unnecessary investigations while ensuring timely identification of severe disease and complications.

Despite minor differences, international guidelines converge on the principle that no single diagnostic test is sufficient for acute pancreatitis. Instead, a comprehensive and evidence-based diagnostic strategy is required to optimize patient outcomes.



The analysis of modern international clinical guidelines demonstrates a high degree of consensus regarding the diagnosis of acute pancreatitis, particularly in relation to diagnostic criteria and the central role of serum lipase and clinical presentation. Variations among guidelines mainly concern imaging strategies and the use of prognostic tools. Overall, guideline-based diagnostic approaches promote accuracy, consistency, and early risk stratification, which are essential for improving clinical outcomes in acute pancreatitis. Continued updates and harmonization of international guidelines are necessary to incorporate emerging evidence and advances in diagnostic technologies.

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