

A Review on the Management of Acute Pancreatitis

Presented By:

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Objectives:

- To discuss the most recent guidelines published by the American College of Gastroenterology on acute pancreatitis.
- To discuss in detail changes and current treatment paradigms of acute pancreatitis.
- To create an avenue to discuss recent changes in evaluation, diagnosis and management in common conditions that may present as pancreatitis.



Question 1

- Contrast enhanced CT and or MRI is necessary in making the diagnosis of acute pancreatitis.
 - A. True
 - B. False



Acute Pancreatitis (AP)

- 2009: most common GI discharge diagnosis led to \$2.6B in costs
- Incidence: 4.9-73.4 per 100,000 worldwide
- National Hospital Discharge Survey: hospital admissions 40/100,000
- Case fatality has decreased, overall mortality unchanged



Diagnosis

- Established by the presence of 2 of the 3 following criteria:
 - **abdominal pain:** epigastric or left upper quadrant, constant with radiation to the back, intensity is severe
 - serum amylase and/or lipase greater than 3x the upper limit of normal
 - characteristic findings from abdominal imaging



2 Phases of AP

- Early (within 1 week)
 - SIRS and/or organ failure
- Late (>1 week)
 - local complications (peripancreatic fluid collections, pancreatic and peripancreatic necrosis (sterile or infected), pseudocysts, and walled off necrosis (sterile or infected))



Diagnosis: Abdominal Imaging

- CECT: >90% sensitivity and specificity for the diagnosis of AP
- Indicated-failure to improve after 48-72hrs
- CECT and MRI are comparable
- MRCP: advantage of detecting cholelithiasis down to 3mm and pancreatic duct disruption
- MRI: helpful in patients with contrast allergy and renal insufficiency



Question 2

- All patients with suspected/confirmed AP should get an abdominal US.
 - A. True
 - B. False



Abdominal Imaging: US

- SHOULD BE PERFORMED IN ALL PATIENTS WITH AP (strong recommendation, low quality evidence)
- Advantage: quick
- Limitation: cannot detect subtle signs like small stones or sludge and diffuse inflammation can obscure findings.



Etiology

- Gallstones: 40-70%
- Alcohol: 25-35%
- Uncommon: medications, infections, hypercalcemia, hypertriglyceridemia, hyperparathyroidism



Alcohol-induced Pancreatitis

- discrete episodes of AP to chronic irreversible chronic changes
- history of over 5 years heavy alcohol consumption
- “heavy” >50g per day
- *clinically evident AP occurs in <5% of heavy drinkers



Idiopathic AP

- no etiology established after initial laboratory & imaging
- Possible etiologies: pancreas divisum, sphincter of Oddi dysfunction
- Genetic defects: cationic trypsinogen mutation, SPINK or CFTR mutations
- Pancreatic cancer



Severity of Disease

- **Mild AP:** absence of organ failure and/or pancreatic necrosis
- **Moderately severe:** transient organ failure or local or systemic complications ; absence of persistent organ failure
- **Severe disease**
 - presence of persistent organ failure
 - pancreatic necrosis



Table 3. Definitions of severity in acute pancreatitis: comparison of Atlanta and recent revision

Atlanta criteria (1993)	Atlanta Revision (2013)
Mild acute pancreatitis	Mild acute pancreatitis
Absence of organ failure	Absence of organ failure
Absence of local complications	Absence of local complications
Severe acute pancreatitis	Moderately severe acute pancreatitis
1. Local complications AND/OR	1. Local complications AND/OR
2. Organ failure	2. Transient organ failure (<48h)
GI bleeding (>500cc/24 hr)	Severe acute pancreatitis
Shock – SBP $\leq$ 90 mm Hg	Persistent organ failure >48h ^a
PaO ₂ $\leq$ 60 %	
Creatinine $\geq$ 2 mg/dl	

GI, gastrointestinal; SBP, systolic blood pressure.

^aPersistent organ failure is now defined by a Modified Marshal Score (6,8)



Table 4. Clinical findings associated with a severe course for initial risk assessment^a

<i>Patient characteristics</i>	<i>Laboratory findings</i>
Age >55 years (53,57)	BUN >20 mg/dl (63)
Obesity (BMI >30 kg/m ²) (68)	Rising BUN (63)
Altered mental status (69)	HCT >44% (62)
Comorbid disease (53)	Rising HCT (62)
<i>The systemic inflammatory response syndrome (SIRS)</i> (6,53,54,70,71)	Elevated creatinine (72)
Presence of >2 of the following criteria:	
– pulse >90 beats/min	<i>Radiology findings</i>
– respirations >20/min or PaCO ₂ >32 mm Hg	Pleural effusions (73)
– temperature >38°C or <36°C	Pulmonary infiltrates (53)
–WBC count >12,000 or <4,000 cells/mm ³ or >10% immature neutrophils (bands)	Multiple or extensive extrapancreatic collections (67)



Question 3

- What is the hallmark of AP management?
 - A. Early ERCP
 - B. CT with contrast or MRCP
 - C. Aggressive hydration
 - D. Early refeeding

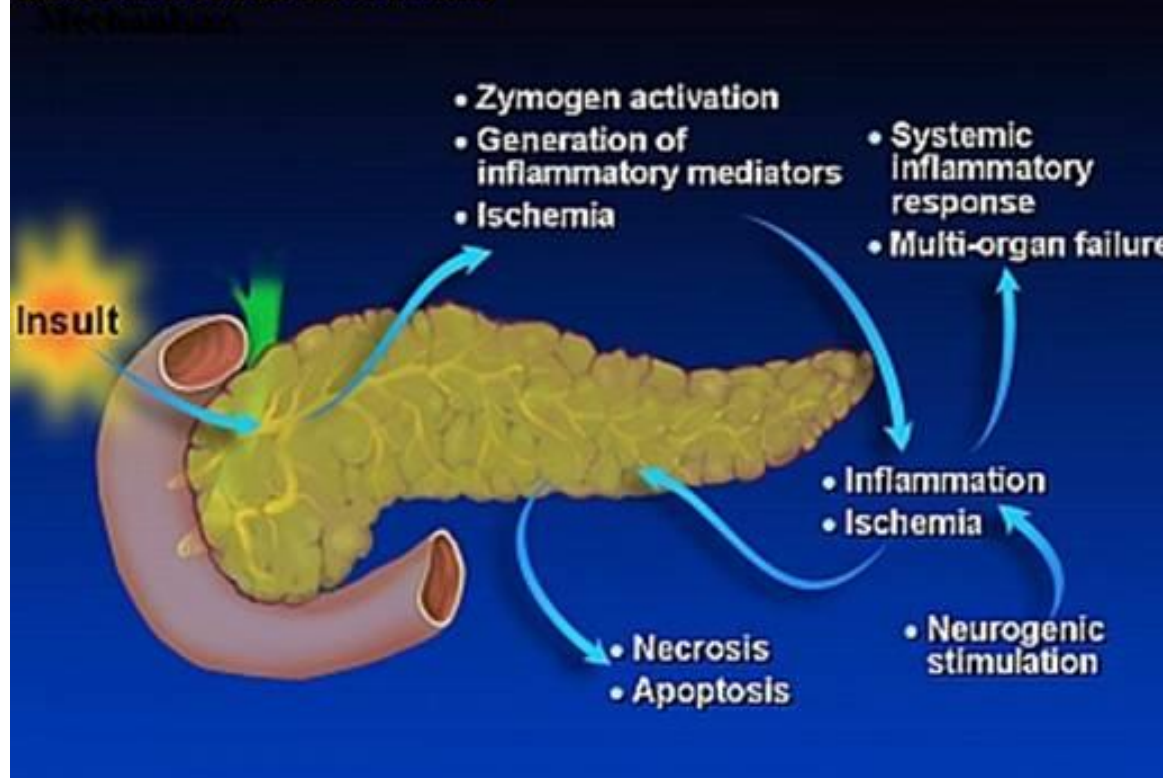


Initial Management

- Early aggressive hydration
 - 250-500ml per hour of isotonic crystalloid solution
 - most beneficial during the first 12-24 hours
 - Lactated Ringer's solution
 - goal: decreasing BUN and reassessed periodically



Acute Pancreatitis: Mechanisms



Role of Antibiotics

- Given for extrapancreatic infection: cholangitis, catheter-acquired infections, bacteremia, UTI, pneumonia
- Routine use even in severe AP is not recommended
- Use in sterile necrosis is not recommended
- Infected necrosis: failure to improve after 7-10 days of hospitalization



Question 3

- NJ feeding is preferred over NG feeding in acute pancreatitis.
 - A. True
 - B. False



Nutrition in AP

- Mild: feedings can be started immediately
 - start low fat is as safe as clear liquid diet
- Severe: enteral nutrition to prevent infectious complications
 - avoid parenteral nutrition
 - NG vs NJ have comparable efficacy



The role of ERCP

- ERCP is not needed in most patients with gallstone pancreatitis who lack laboratory or clinical evidence of ongoing biliary obstruction.
- MRCP or endoscopic ultrasound (EUS) rather than diagnostic ERCP if no Cholangitis/jaundice



The Role of ERCP

- Acute pancreatitis with concurrent cholangitis-ERCP within 24 hours
- Lab or clinical evidence of ongoing biliary obstruction
- Sphincterotomy if cholecystectomy can't be performed due to underlying co morbidities.
- Pancreatic divisum



**Common bile duct stone on endoscopic retrograde
cholangiopancreatography (ERCP)**



Cholangiogram showing large (2 cm) common bile duct stone (arrow).

Courtesy of Martin L. Freeman, MD.

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The role of EUS

- In a patient older than 40 years, a pancreatic tumor should be considered as a possible cause of acute pancreatitis –if no etiology identified with initial work up.
- Benign or malignant pancreatic tumor blocking PD can cause pancreatitis



PANCREATIC CYST

TYPE OF CYST

PSEUDOCYST

SEROUS CYST

IPMN

MCN

PANCREATIC
CANCER

RISK

NO MALIGNANT POTENTIAL

MALIGNANT POTENTIAL

MALIGNANT

MANAGEMENT

No Surveillance

Surveillance/Surgery

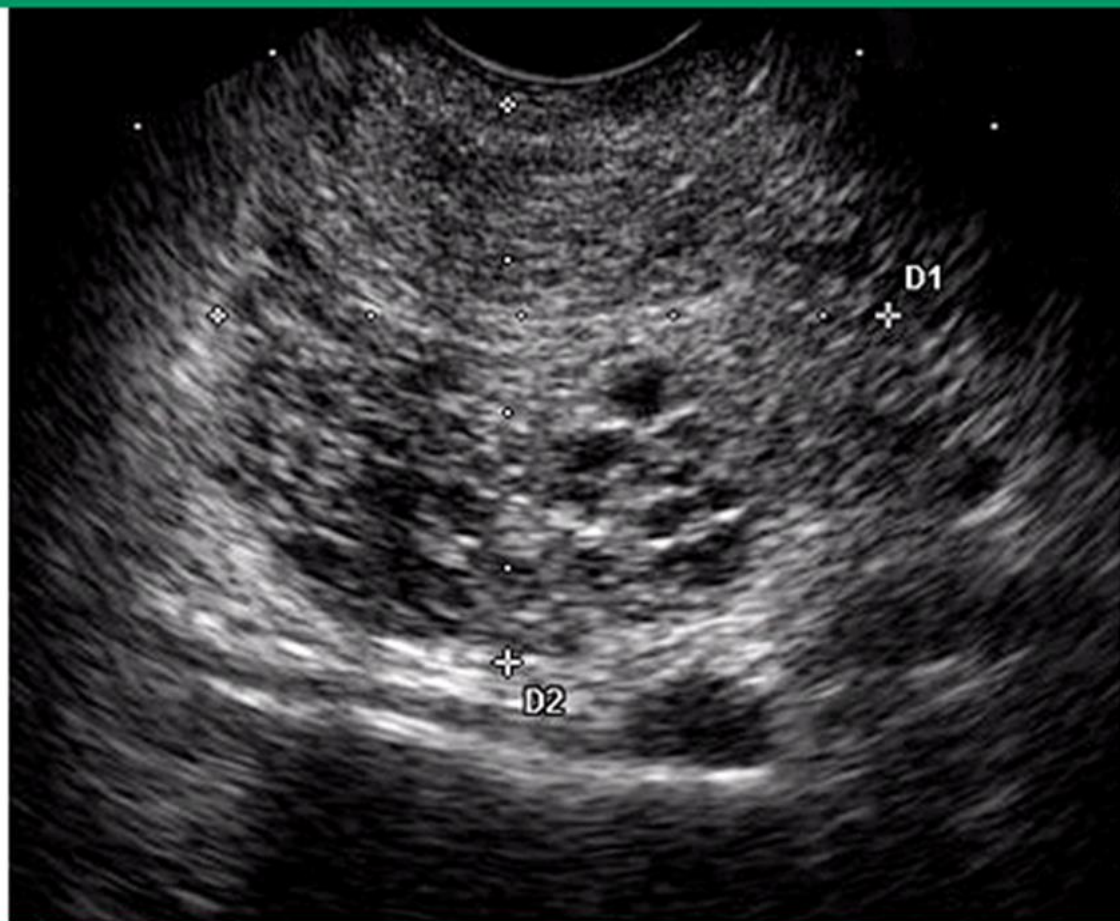
Surgery



WCOG@ACG2017
October 13-18
Orlando, Florida



EUS image of pancreatic serous cystadenoma (microcystic variety)



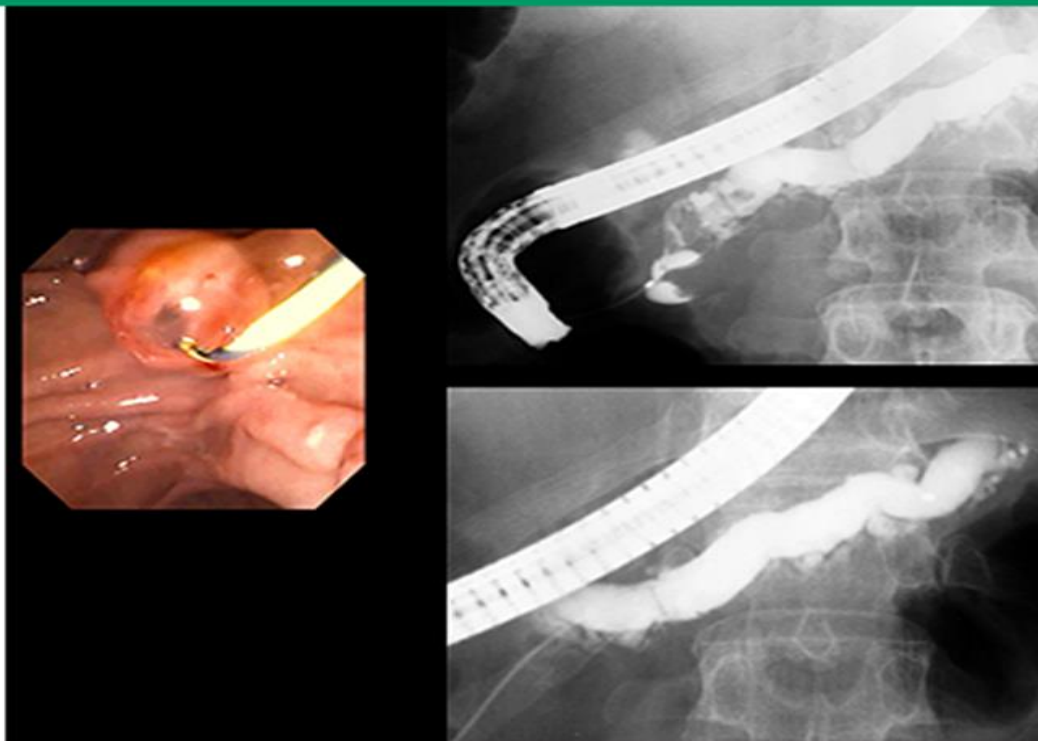
Endoscopic ultrasound image revealing a microcystic lesion with a honeycomb appearance.

Courtesy of Kevin McGrath, MD, and Asif Khalid, MD.

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Intraductal papillary mucinous neoplasm



Images obtained during endoscopic retrograde cholangiopancreatography in a 61-year-old patient with steatorrhea, weight loss, and diabetes. The left panel shows an endoscopic image of the papilla, which has a gaping "fisheye" appearance and is exuding mucin. The pancreatogram shows a dilated pancreatic duct and side branches with intraluminal filling defects. The patient underwent a pancreaticoduodenectomy, which confirmed an intraductal papillary mucinous neoplasm.

Courtesy of Maurits Wiersema, MD.

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Role of cholecystectomy

- In patients with mild AP(acute pancreatitis), found to have gallstones in the gallbladder, a cholecystectomy should be performed before discharge to prevent recurrence of AP
- 18% readmission within 90 days with recurrent biliary pancreatitis if cholecystectomy not done . Some were severe AP as per literature



Question 4

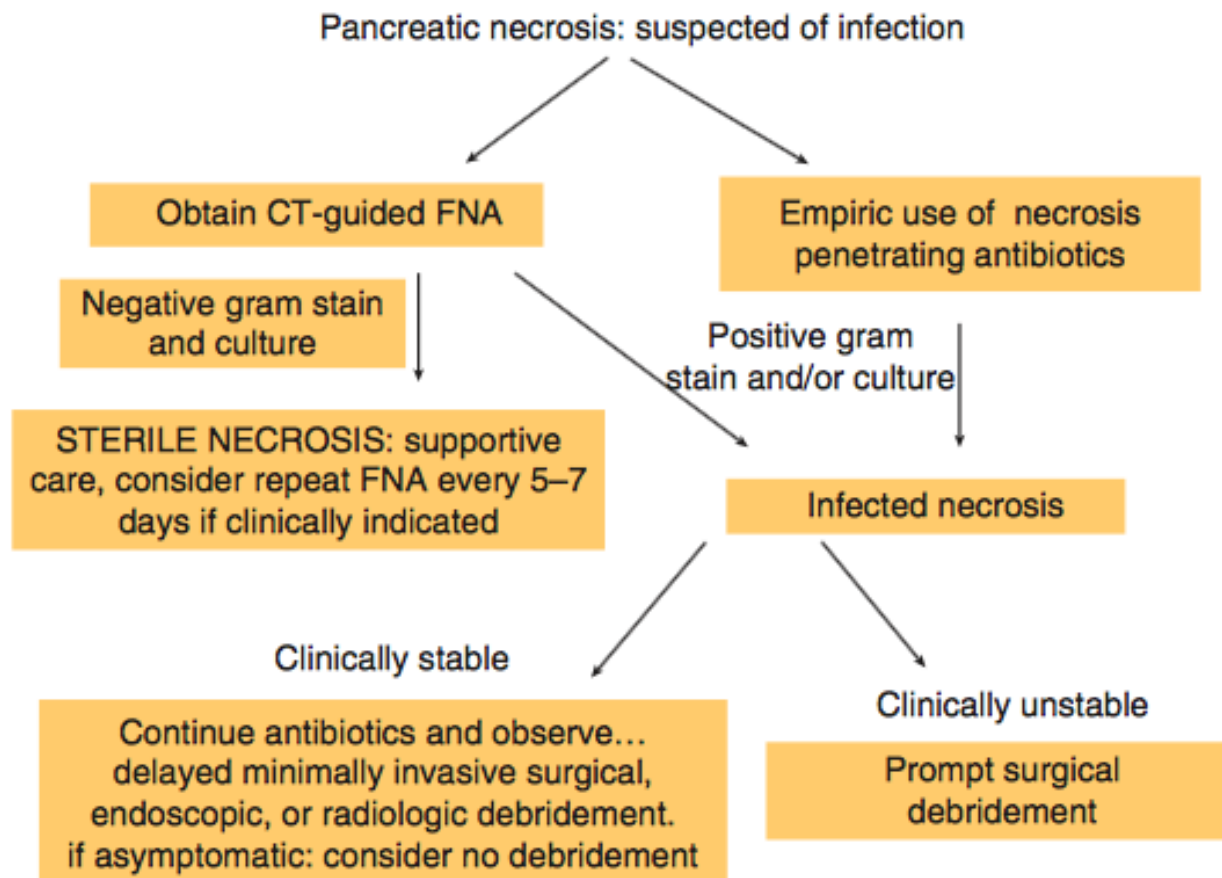
- Effective strategy/s to reduce the risk of post ERCP pancreatitis
 - A. Aggressive IV fluids
 - B. Pancreatic duct stent placement
 - C. Indomethacin pre or post procedure
 - D. All of the above



Post ERCP pancreatitis

- 5 – 10 % in general and 20 – 40 % in certain high-risk procedures
- Pancreatic duct stents and / or postprocedure rectal nonsteroidal anti-inflammatory drug (NSAID) suppositories should be utilized to lower the risk of severe post-ERCP pancreatitis in high-risk patients





Endoscopic Management of pancreatic necrosis

Axios stent

