

ACUTE PANCREATITIS

Amber Schilling, PharmD

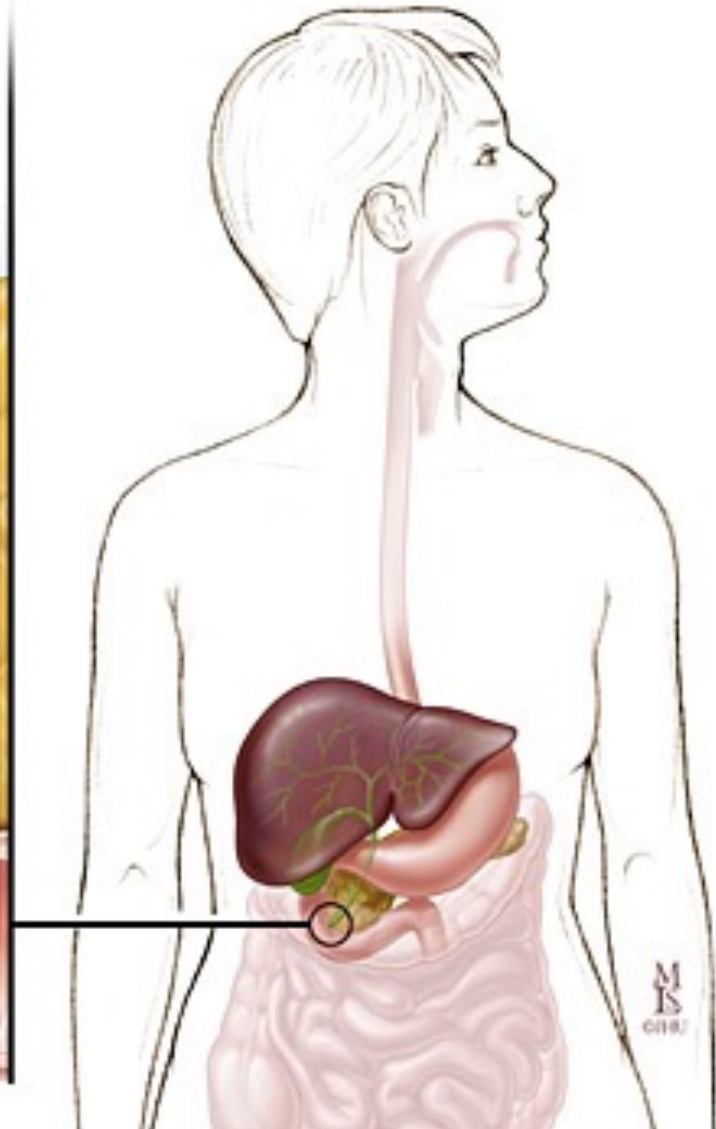
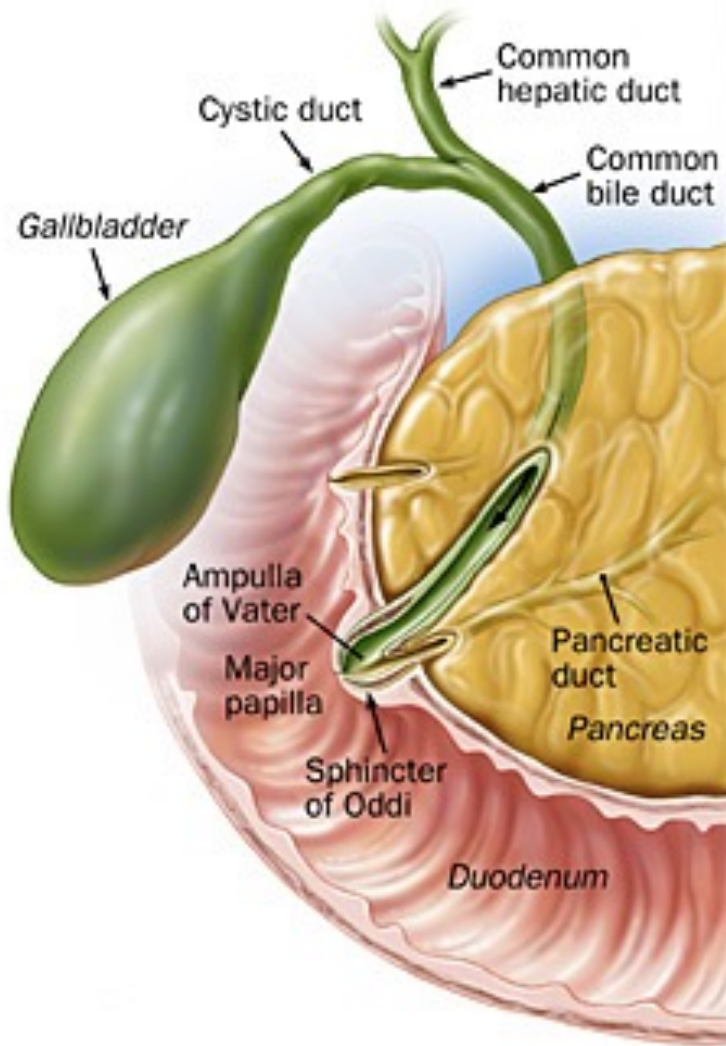
May 29, 20XX

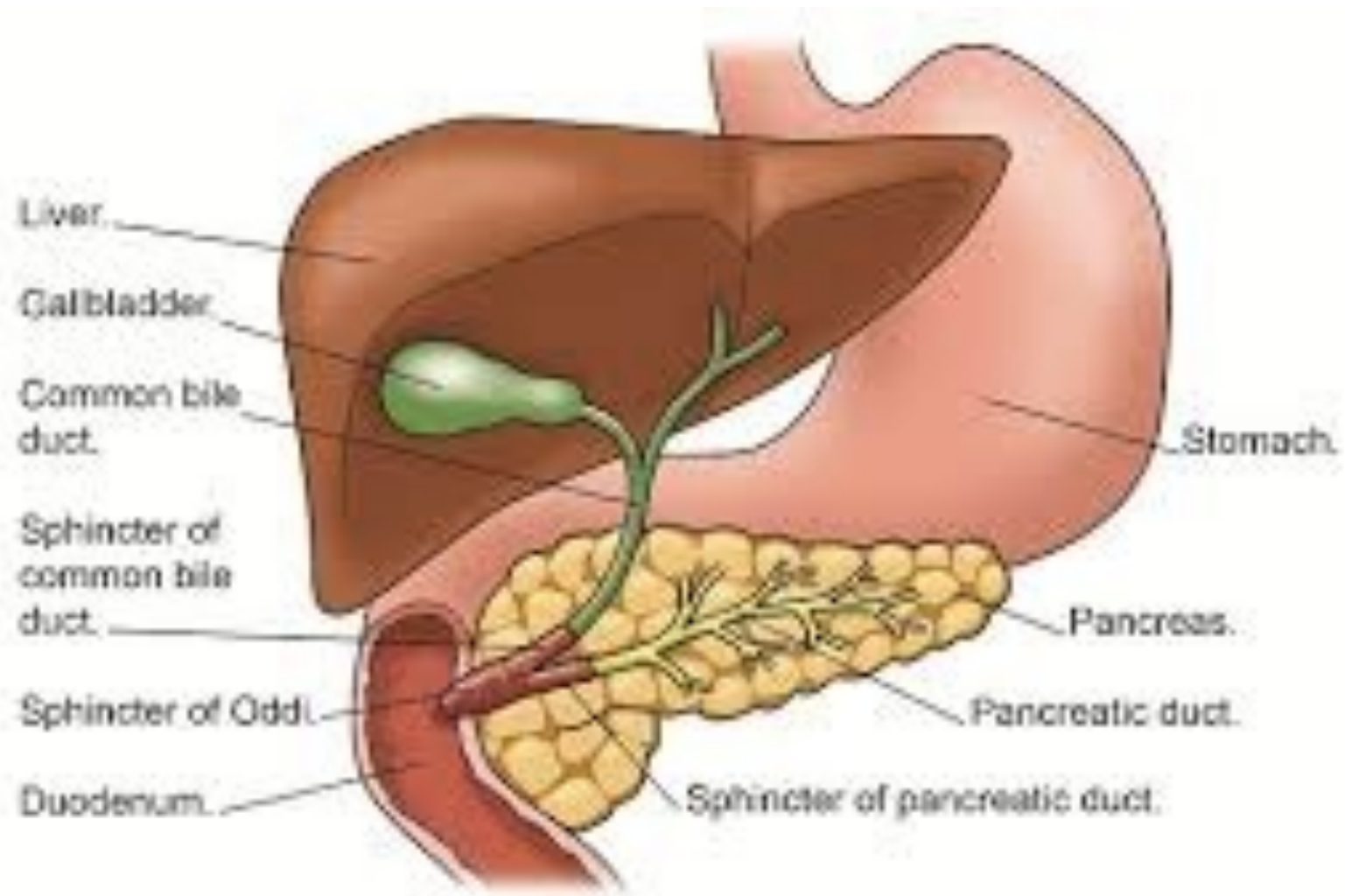
Objectives

- Describe the clinical presentation of acute pancreatitis.
- List the treatment modalities for acute pancreatitis.

Definition

- Pancreatitis is inflammation of the pancreas
- Precipitating Factors:
 - Gallstones (Cholelithiasis) **
 - Alcoholism **
 - Trauma
 - Smoking
 - Hypertriglyceridemia (TG >1000 mg/dL)
 - ERCP (endoscopic retrograde cholangiopancreatography)
 - Hypercalcemia
 - Drugs
 - more rare: “there are limited data supporting most medications as causative agents”¹
 - Idiopathic (anatomic / structural abnormalities)
 - Sphincter of Oddi dysfunction





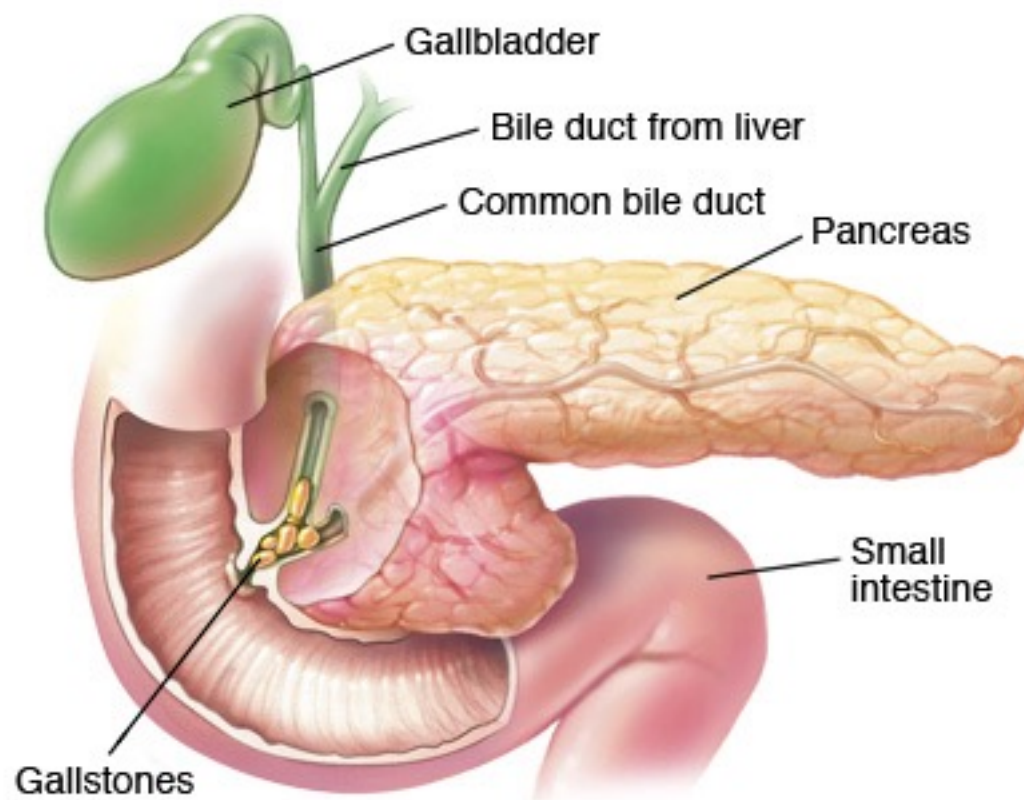
Epidemiology

- Prevalence
 - Acute Pancreatitis was the most common gastroenterology discharge diagnosis in 2009¹.
- Gallstones (40-70%)¹
- Alcoholism (25-35%)¹
- Hypertriglyceridemia (1-4%)¹

Pathophysiology

- Mechanisms by which precipitating factors cause inflammation in the pancreas are not fully understood.
- One theory:
 - Autodigestion
 - Pancreatic enzymes become activated in the pancreas rather than in the intestine → digestion of pancreatic tissues → leukocytes and macrophages migrate to area of injury → inflammation

Pathophysiology, cont'd



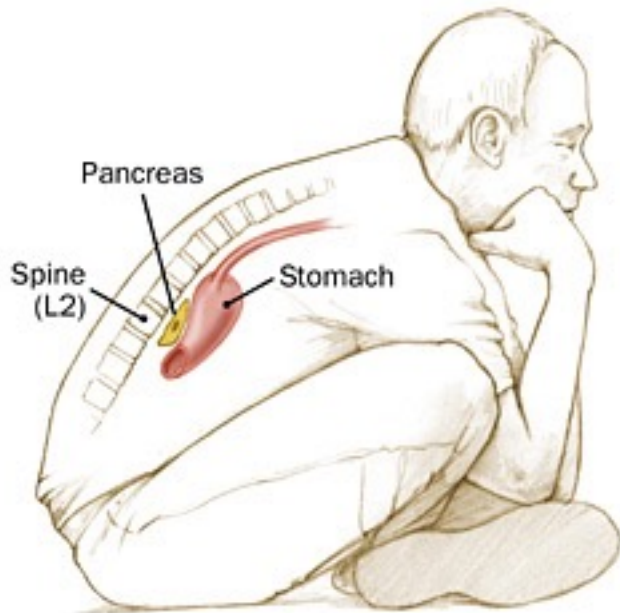
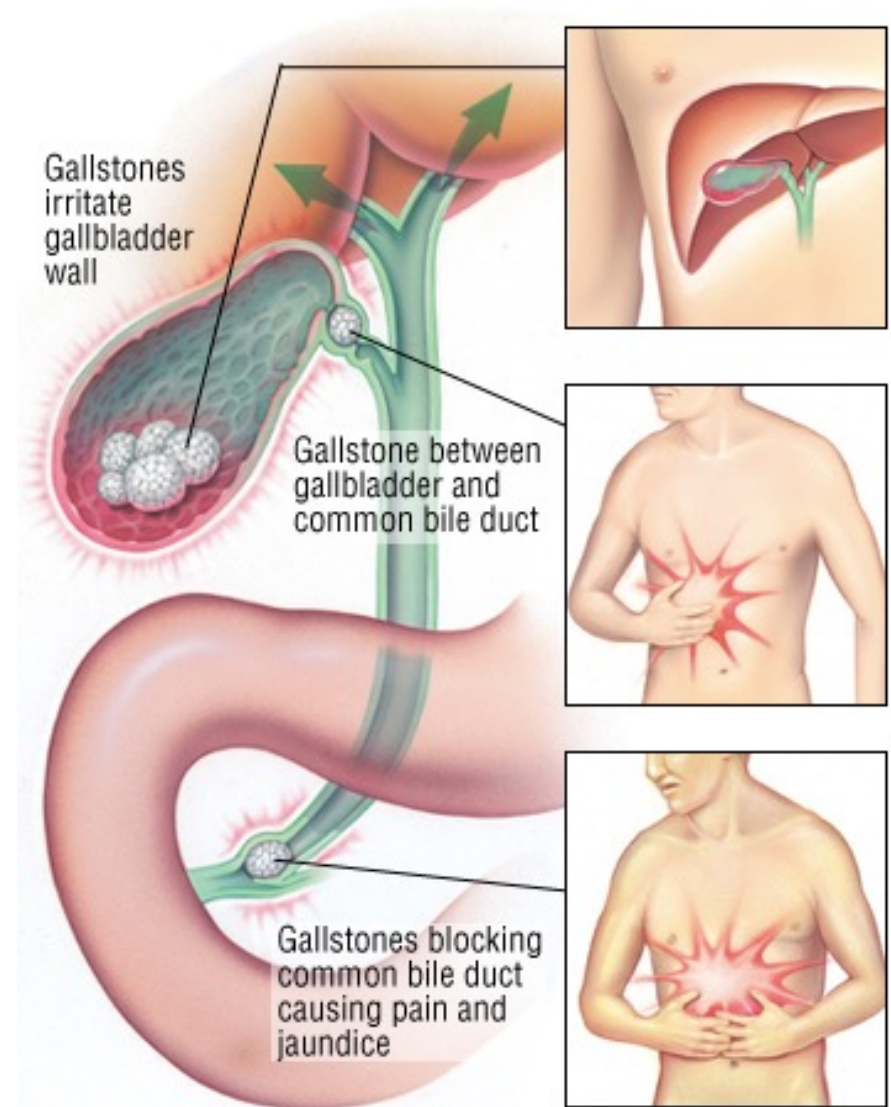
© MAYO FOUNDATION FOR MEDICAL EDUCATION AND RESEARCH. ALL RIGHTS RESERVED.

Clinical Presentation

- Severe abdominal pain
 - Epigastric
 - LUQ (but could also be RUQ if gallstone pancreatitis)
 - Pain can radiate to the back, chest, or flanks
- Nausea, vomiting
- Hypotension
- Tachycardia
- Low-grade Fever
- Labs
 - Elevated Lipase (and Amylase)
 - Elevated LFT's (in gallstone pancreatitis)
 - Elevated WBC
 - Inflammatory markers: CRP, LDH



<http://living-with-pancreatitis.blogspot.com/2010/11/chronic-pancreatitis-and-pain-killers.html>



<http://www.pancreaspain.org/>

Diagnosis

- ACG guidelines:
 - Need 2 / 3:
 - Abdominal pain
 - Lipase $>3xULN$ (Normal = 17-51)
 - Ultrasound (showing cholelithiasis)

Goals of Therapy

- Relieve abdominal pain
- Relieve nausea and vomiting
- Prevent organ failure (heart, lung, kidney) and thus death
- Prevent pancreatic necrosis and infection

Pharmacological Therapy

- No drug exists to treat
- Aggressive hydration is most important
 - 250-500 mL/hr
 - Crystalloid soln (NS or LR)
 - Most benefit during 1st 12-24 hrs
 - Pts are often hypovolemic due to vomiting, poor PO intake, third spacing from inflammation
 - Hypovolemic → hypoperfusion of organs
 - Prevents pancreatic necrosis
- Pain management (opioids)
- Anti-emetics
- Resume PO intake as soon as possible
- Cholecystectomy if indicated
- Prophylactic antibiotics not recommended

References

1. Tenner S, Baillie J, DeWitt J, Vege SS. American College of Gastroenterology Guideline: Management of acute pancreatitis. *American Journal of Gastroenterology*. 2013; 108:1400-1415.
2. Bechien UW, Hwang JQ, et al. Lactated ringer's solution reduces systemic inflammation compared with saline in patients with acute pancreatitis. *Clinical Gastroenterology and Hepatology*. 2009; 9:710-717.
3. Hooton TM, Bradley SF, et al. Diagnosis, prevention, and treatment of catheter-associated urinary tract infections in adults: 2009 IDSA guidelines. *CID*. 2010; 50: 626-663.
4. James PA, Oparil S, et al. 2014 Evidence-based guidelines for the management of high blood pressure in adults: report from the panel members appointed to the eighth joint national committee (JNC 8). *JAMA*. 2014; 311(5): 507-520.
5. Kahn SR, Lim W, et al. Prevention of VTE in nonsurgical patients: antithrombotic therapy and prevention of thrombosis, 9th ed. American College of Chest Physicians Evidence-based clinical practice guidelines. *CHEST* 2012; 141(2) (Suppl): e195S-e226S.
6. Stone NJ, Robinson J, et al. 2013 ACC/AHA Guideline on the treatment of blood cholesterol to reduce atherosclerotic cardiovascular risk in adults. *Journal of American College of Cardiology* (2013), doi:10.1016/j.jacc.2013.11.002.
7. January CT, Wann LS, et al. 2014 AHA/ACC/HRS Guideline for the management of patients with atrial fibrillation: executive summary. *Journal of the American College of Cardiology* (2014), doi: 10.1016/j.jacc.2014.03.021.
8. Gelenberg AJ, Freeman MP, et al. Treatment of patients with major depressive disorder, 3rd edition. *American Psychiatric Association*. 2010.