
2- Acute Pancreatitis

Approach



History

HPI:

Abdominal pain, nausea, vomiting, fever, previous similar episode, biliary pain, weight loss, jaundice, recent viral illness, recent surgery or endoscopy, alcohol (number of drinks/day, over how many years), recent critical illness or ICU admission, scorpion sting, exposure to insecticides, trauma, parotid gland swelling.

Associated symptoms:

Hematemesis, coffee-ground vomiting, melena, changes in bowel motion, skin rash, joint pain, visual changes.

PMH:

Surgical/procedure Hx.

Medical illness: DM, Cirrhosis, IBD, peptic ulcer, Cardiac conditions, Malignancies, others.

Medication Hx: Previous & newly started medications.

Previous hospitalization, drug allergy.

Family Hx: Acute or chronic pancreatitis, others.

Psychosocial & Menstrual Hx: last menstrual period (in women of childbearing age), smoking, alcohol.



Physical examination

General appearance, BMI and GCS

Vital Signs: BP ____, HR ____, Temp ____, RR ____

HEENT: Jaundice, parotid or submandibular glands swelling & pain, xanthomas, band keratopathy, purtscher retinopathy (visual disturbance or blindness), lipemia retinalis.

Chest: important findings include: tachypnea, dullness to percussion, decreased breath sounds, features of heart failure.

Abdomen: complete exam for finding such as tenderness, rigidity, guarding, palpable epigastric mass, hepatomegaly, bowel sounds, Gray–Turner sign, Cullen sign, stigmata of chronic liver disease.

Musculoskeletal: Features suggestive of rheumatological conditions, Panniculitis (painful skin nodules).



Investigations

Labs: Amylase, Lipase, CBC (WBC, Hb, MCV, HCT, PLT), LFT, electrolytes, BUN & Creatinine, coagulation profile, Glucose, Ca & Mg.

Abdomen x-ray: ileus & obstruction, gallstones, chronic pancreatitis, perforation, retroperitoneal gas.

Chest x-ray: Pleural effusion, lung infiltrate.

Abdomen US: Gallstone, CBD (PD) stone or dilatation, features of acute or chronic pancreatitis, ascites.

Abdomen CT: To R/O other differentials, severity & complications. (Balthazar grade & necrosis score)

Additional W/U in selected cases: IgG-4, CA19-9, Genetic testing, MRCP, ERCP, EUS, procalcitonin predict infected necrosis if the patient has necrosis.

- Abnormal ALT, bilirubin, ALP: ?biliary
- High MCV with alcoholic pancreatitis.
- WBC, high HCT/BUN/Creatinine predict severe pancreatitis.

Normal pancreatitis with high Lipase:
Intestine (celiac, perf., obstruction),
DM, CKD, chronic liver disease.

Biliary pancreatitis causes:
Gallstone, microlithiasis, sludge, SOD,
cholesterolosis, choledochocele.

Normal pancreatitis with high amylase:
Salivary gland, intestine (celiac, perf.,
obstruction), fallopian tube disorders, ovarian
& lung malignancy, CKD, Macroamylasemia.

Acute pancreatitis with normal amylase:
Fatal/mild/recovered pancreatitis,
acute on chronic pancreatitis, High TG



Management

1- In-hospital admission

2 - Assess severity within the 1st 24–72hrs. (Revised Atlanta classification, APACHE 2, BISAP, SIRS...)

- Moderate to severe consider ICU care.

3- NPO with nausea & vomiting; otherwise, start the oral diet as tolerated

- Start early feeding within 24hrs regardless of the severity as tolerated.
- Mild AP: full solid diet can be started safely, or a low-fat diet.
- Insert NGT/NJT after 3-5 days if oral intake is not tolerated, and start a low-fat diet.
- TPN if oral & enteral feeding is not possible or not tolerated.

4- IV Fluid Resuscitation: (Goal-targeted therapy)

- Type: Lactated Ringer (Preferred) decreases SIRS & CRP, but not important clinical outcomes (mortality and persistent organ failure) compared to normal saline.
- Suggested rate: Maintenance only 5-10ml/kg/hr or 250-500ml/hr, or bolus 20ml/kg followed by 3ml/kg/hr, during the 1st 24hrs.
- Monitor the goals: HR<120, MAP 65-85, CVP, BUN, HCT 35-44%, urine output >0.5-1ml/kg/hr.
- Vasopressors if persistent hypotension.

5- Antibiotics:

- Infection of the pancreas use: imipenem, fluoroquinolones & metronidazole.
- Fever with -ve blood culture: no antibiotics.

6- Analgesia: simple or potent analgesia such as morphine, hydromorphone and fentanyl.

7- NGT for gastric or intestinal ileus and intractable nausea/vomiting.

8- Respiratory care:

- Nasal cannula O₂ to all patients.
- Supplemental O₂ can be given if hypoxic.
- NNPV or ETT if hypoxia is not corrected by nasal/facemask, fatigue, or borderline respiratory reserve.

9- Treat the underlying cause: Cholecystectomy for gallstones, counseling to stop alcohol, etc.

10- Monitor and treat complications:

- i. Metabolic abnormalities:
 - Hyperglycemia: be careful with correction with insulin as glucose levels fluctuate, and it will improve with the resolution of the inflammation.
 - Hypocalcemia: if asymptomatic, no Rx needed. If symptomatic, check & correct hypomagnesemia 1st. IV calcium gluconate can be given if K is normal and the patient is not on digitalis to correct low Ca.
- ii. ERCP: if CBD stone, cholangitis, or abnormal LFT suggestive of biliary obstruction (T. bilirubin >85.5)
 - The timing of urgent ERCP is within 24-72 hours.
 - Assess risk for post-ERCP pancreatitis (PEP): low vs. high risk

- Consider PEP prophylaxis in high-risk patients: NSAID such as indomethacin 100mg rectally once, IV ringer lactate, or pancreatic stent.
 - If a pancreatic stent is inserted, do an abdomen x-ray after one week to assess if the stent is still in place or migrated. If still in place, schedule endoscopy for stent removal before two weeks from insertion.
 - Request amylase and lipase as early as 2 hrs after ERCP to detect PEP in a high-risk group.
 - If sphincterotomy is performed: might consider holding anticoagulation for three days after the procedure.
- iii. Drainage/debridement of local complications in case of infection, perforation, fistula, obstruction, persistent symptoms, disconnected PD syndrome:
- Symptomatic pseudocyst: endoscopic or surgical drainage.
 - Infected necrosis: necrosectomy can be considered once it becomes walled off (> 1month). Endoscopic necrosectomy is better than surgical necrosectomy.
 - Disconnected duct syndrome: self-expandable metal stent for a short duration (~ 3-weeks) then long-term pigtail catheter for drainage.
 - Bowel obstruction or fistula: surgical.
- iv. GI bleeding: Endoscopic, IR, surgical. Pseudoaneurysm should be treated by embolization or percutaneous thrombin injection.
- v. Splenic vein thrombosis: treat with anticoagulant for 3-6 months if no bleeding or hypercoagulable state.
- vi. Abdominal compartment syndrome due to aggressive hydration: treated by decompression laparotomy, initially can be treated by percutaneous drainage

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