

Pancreatitis in Pregnancy

See also Pancreatitis

Background

1. Definition
 - Acute inflammatory process of pancreas during pregnancy
2. General info
 - Rare but most common during third trimester
 - Gallstones cause more than 70% of cases
 - Pregnancy does not significantly alter presentation
 - Usually mild and responds to medical therapy
 - But complicated pancreatitis is assoc w/greater maternal and fetal morbidity / mortality

Pathophysiology

1. Pathology of dz
 - See Pancreatitis
2. During pregnancy, usually associated with biliary dz
3. Incidence/ prevalence
 - 0.1% to 1% of pregnancies
 - Directly correlated with gestational age and parallels incr incidence of cholelithiasis in pregnancy
 - Probably not incr incidence over nongravid states
4. Risk factors
 - Most commonly associated with gallstones
 - Other causes include:
 - Drugs
 - Abd surgery
 - Trauma
 - Hyperlipidemia
 - Hyperparathyroidism
 - Vasculitis
 - Infection
 - Idiopathic
5. Morbidity/ mortality
 - Maternal: mortality low if uncomplicated but exceeds 10% in complicated cases
 - Fetal: associated w/fetal wastage during first trimester and premature labor in third trimester
 - Both maternal and fetal outcomes have improved possibly due to:
 - Earlier dx
 - Intensive care
 - Improved perinatal mortality rates

Diagnostics

1. History
 - Epigastric pain is most common symptom with N/V and fever being common
 - See also: Pancreatitis

2. Physical exam

- Midabdominal tenderness
- Abdominal guarding
- Distention
- Tympani
- Hypoactive bowel sounds
- Possibly shock, pancreatic ascites
- Grey-Turner's sign or Cullen's sign
 - Suggesting retroperitoneal bleeding

3. Unique exam in later pregnancy

- Incr abdominal girth due to enlarging uterus may make exam more challenging
 - Abdominal tenderness may be diffuse

4. Dx tests

- Lab eval
 - Elevated amylase-to-creatinine clearance ratio is present in pregnant pts w/pancreatitis
 - Hyperamylasemia may occur in other conditions
 - Hypertriglyceridemia can falsely lower serum amylase levels in pancreatitis while lipase level remains elevated
- Lab values unique in pregnancy
 - Lipase level is unchanged in normal preg
 - Amylase level rises only mildly during a normal pregnancy
 - Leukocytosis associated with pregnancy may confound inflammation
- Dx imaging
 - In mild to moderate acute pancreatitis, abdominal ultrasonography is useful to gauge inflammation
 - CT scanning is superior for delineating pancreatic necrosis in severe cases
 - While US can detect cholelithiasis and duct dilatation
 - Endoscopic ultrasonography is required to reliably detect choledocholithiasis
 - Differences in view of fetal risk
 - While fetal risk should be considered, pregnancy should not cause delay of needed therapies
- Other studies
 - Fetal considerations/ monitoring
 - Fetal surveillance and monitoring for premature labor as indicated

5. Dx "Criteria"

- Most morbidity is associated with complications
 - Ranson calculator

Differential Dx

1. Key DDx

- Appendicitis
- Cholecystitis
- Pulmonary embolism
- Placental abruption
- Preeclampsia

- Gastroesophageal reflux dz
 - Peptic ulcer dz
 - Preterm or term labor
 - Gastroenteritis
 - Bowel obstruction
2. Extensive DDx
- UTI
 - Pyelonephritis
 - Uterine rupture associated w/labor
 - Trauma

Therapeutics

1. Mild acute pancreatitis
- Usually responds to medical therapy
 - Hospitalization indicated for :
 - Discontinuation of oral intake
 - Intravenous fluids
 - Gastric acid suppression
 - Sometimes nasogastric suction
 - Evaluation of fetus and risk for premature labor is indicated
 - Nutritional support
 - Pain mgmt
 - Meperidine
 - Traditional choice
 - Its short-term use appears to be relatively safe
2. Complicated or severe pancreatitis
- Examples include:
 - Large or persistent pseudocysts, infection, hemorrhage
 - Consultation and intensive care may be required
 - Tx may include surgery in addition to antibiotic therapy, total parenteral nutrition and supportive care
 - Cholecystectomy, if needed is ideally post-partum or second trimester
 - See Cholecystitis in pregnancy
 - ERCP may be performed during pregnancy when indicated
3. Mgmt of pregnancy-related complications
- Preterm labor
 - Fetal distress

Follow-Up

1. Watch for recurrence or chronic pancreatitis
- Risk recurrence based on etiology
 - Monitor pregnancy for fetal and premature labor risks
2. Specialty and post-partum follow up
- Post-partum cholecystectomy may be indicated

Prognosis

1. Maternal:
 - Related to severity, recurrence, and development of complications
2. Fetal:
 - Related to complications such as preterm delivery

Prevention

1. Hypertriglyceridemia related pancreatitis is rare but in some cases is familial and may be preventatively managed

References

1. Laraki M, Harti A, Boudarka MA, et al: Acute pancreatitis and pregnancy. *Rev Fr Gynecol Obstet* 1993; 88:514.
2. Ramin KD, Ramsey PS: Disease of the gall bladder and pancreas in pregnancy. *Obstet Gynecol Clin North Am* 2001; 28:571.
3. Gabbe: *Obstetrics*, 5th ed. - 2007 - Churchill Livingstone, An Imprint of Elsevier.
4. Ramin K, Richey S, Ramin S, et al: Acute pancreatitis in pregnancy. *Am J Obstet Gynecol* 173:187, 1995.
5. Joupila P, Mokka R, Larimi TKI: Acute pancreatitis in pregnancy. *Surg Gynecol Obstet* 1974;139:879-82.
6. Legro RS, Laifer SA: First-trimester pancreatitis: maternal and neonatal outcome. *J Reprod Med* 1995; 40:689.
7. Coleman MT, Trianfo VA, Rund DA: Nonobstetric emergencies in pregnancy: trauma and surgical conditions. *Amer J Obstet Gynecol* 1997; 177:497.
8. Devore GR, Bracken M, Berkowitz RL: The amylase/creatinine clearance ratio in normal pregnancy and pregnancies complicated by pancreatitis, hyperemesis gravidarum, and toxemia. *Am J Obstet Gynecol* 1980; 136:747-54.
9. Cappell MS, Friedel D.: Abdominal pain during pregnancy. *Gastroenterol Clin North Am* 2003; 32:1.
10. Karsenti D, Bacq Y, Brechot JF, et al: Serum amylase and lipase activities in normal pregnancy: a prospective case-control study. *Am J Gastroenterol* 2001; 96:697.
11. Briggs GG, Freeman RK, Yaffe SJ: *Drugs in Pregnancy and Lactation: A Reference Guide to Fetal and Neonatal Risk*, Philadelphia: Lippincott Williams & Wilkins; 2002:859.

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