Review Article

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Gastrointestinal Disorders in Pregnancy: Clinical Challenges and Management Approaches

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Abstract:

Gastrointestinal (GI) symptoms and disorders are among the most common medical issues encountered during pregnancy, ranging from benign physiologic complaints (nausea, reflux, constipation) to life-threatening conditions (acute fatty liver of pregnancy, severe pancreatitis). Proper recognition of physiologic changes, accurate diagnosis to distinguish pregnancy-specific disorders from preexisting disease, and evidence-based management that balances maternal benefit with fetal safety are essential. This review summarizes epidemiology, pathophysiology, diagnosis, and current management strategies for the major GI problems in pregnancy, highlighting practical clinical approaches and areas where evidence is evolving.

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Introduction

Pregnancy imposes profound hormonal, mechanical, and metabolic changes that affect the gastrointestinal tract. Many women experience GI symptoms—reported rates for nausea and vomiting can be as high as 50–80%—and other problems such as gastroesophageal reflux disease (GERD), constipation, hemorrhoids, biliary disease, liver disorders, pancreatitis, and flares of inflammatory bowel disease (IBD) are clinically important because of their implications for maternal health and fetal outcomes. Clinicians must balance symptom relief and treatment efficacy with fetal safety, using stepwise, guideline-driven approaches where available.

Physiologic changes of pregnancy that affect the GI tract

Key pregnancy changes that predispose to GI symptoms include:

- **Hormonal effects:** Elevated progesterone relaxes smooth muscle, slowing gastrointestinal motility and lowering lower esophageal sphincter (LES) tone—contributing to constipation and reflux. Estrogen and progesterone also influence bile composition, increasing lithogenicity.
- **Mechanical effects:** Progressive uterine enlargement elevates intra-abdominal pressure and alters gastric emptying and biliary dynamics.
- **Metabolic changes:** Altered lipid metabolism can increase triglyceride levels (relevant to pancreatitis risk), and pregnancy alters drug pharmacokinetics, affecting dosing and choice of therapies.

Understanding these mechanisms helps explain common presentations and guides targeted management.

Common gastrointestinal problems in pregnancy

Nausea and vomiting of pregnancy (NVP) and hyperemesis gravidarum (HG)

NVP affects a majority of pregnant women; however, hyperemesis gravidarum—the severe end of the spectrum

with dehydration, >5% weight loss, ketonuria, and electrolyte disturbances—occurs in roughly 0.3–3% of pregnancies and is a leading cause of early pregnancy hospitalization. Early recognition and escalation (oral antiemetics → parenteral fluids/nutrients → specialist care) are crucial. First-line pharmacotherapy for NVP commonly recommended is a combination of doxylamine and pyridoxine (vitamin B6), with a stepwise addition of antihistamines, dopamine antagonists (metoclopramide, promethazine), and, where needed, ondansetron—bearing in mind continuing debate and evolving data about ondansetron safety (most observational data are reassuring, but some studies have raised questions about rare malformation risks). Nonpharmacologic measures (small frequent meals, ginger, acupressure) are useful adjuncts.

Gastroesophageal reflux disease (GERD) and dyspepsia

GERD symptoms are common due to decreased LES tone and delayed gastric emptying. Management follows a step-up approach: lifestyle and dietary modification (smaller meals, avoid late meals, elevate head of bed), antacids/alginate preparations for symptom relief, then H2-receptor antagonists or proton pump inhibitors (PPIs) when needed. PPIs are generally considered safe in pregnancy when clinically indicated, though clinicians should use the lowest effective dose and document indication.

Constipation and anorectal disease (hemorrhoids, anal fissure)

Constipation affects roughly one-third of pregnant women globally (pooled prevalence ~32%), worsened by progesterone-induced hypomotility, iron supplementation, and reduced activity. Consequent straining contributes to hemorrhoids and fissures. Management emphasizes preventive measures—high-fiber diet, adequate fluids, exercise, stool softeners (docusate), and bulk-forming laxatives (psyllium). Topical measures and sitz baths relieve hemorrhoid symptoms; invasive treatments are rarely required during pregnancy.

Biliary disease: gallstones and cholecystitis

Pregnant women have increased risk of biliary sludge and gallstones due to estrogen-induced cholesterol supersaturation and progesterone-mediated gallbladder hypomotility. Symptomatic cholelithiasis, biliary colic, or acute cholecystitis may occur—acute biliary pancreatitis, though less common, is a serious complication. Laparoscopic cholecystectomy in pregnancy can be performed safely when indicated (often in second trimester but also in urgent situations across gestation), and delaying necessary surgery may increase maternal and fetal risks. Close collaboration between obstetrics, surgery, and anesthesiology is advised.

Acute pancreatitis

Rare but potentially severe; common causes in pregnancy include gallstones and hypertriglyceridemia (pregnancy may elevate triglycerides, particularly in women with underlying dyslipidemia). Management mirrors nonpregnant care (supportive care, fluid resuscitation, analgesia, nutritional support) with attention to fetal monitoring; in gallstone-related disease, definitive biliary management may be necessary.

Liver disorders unique to pregnancy: intrahepatic cholestasis of pregnancy (ICP), acute fatty liver of pregnancy (AFLP), HELLP syndrome

- Intrahepatic cholestasis of pregnancy (ICP) typically presents in the third trimester with pruritus (often nocturnal) and raised bile acids; it is associated with increased risk of preterm birth and stillbirth at higher bile acid levels. Ursodeoxycholic acid (UDCA) is commonly used for symptom relief and possibly fetal benefit, and fetal surveillance with consideration of early delivery timing is recommended based on bile acid level and gestation.
- Acute fatty liver of pregnancy (AFLP) and HELLP (Hemolysis, Elevated Liver enzymes, Low Platelets) are obstetric emergencies occurring in late pregnancy; prompt recognition and delivery are lifesaving. FIGO and other bodies have published guidance on diagnosis and management of liver disorders in pregnancy.

Inflammatory bowel disease (IBD) in pregnancy

Women with Crohn's disease or ulcerative colitis require preconception counselling: the best predictor of pregnancy outcome is disease activity at conception—quiescent disease is associated with better maternal and fetal outcomes. Many IBD medications (mesalazine, thiopurines, biologics such as anti-TNF agents) have data supporting relative safety in pregnancy, whereas certain therapies (e.g., methotrexate, tofacitinib, and possibly some newer small molecules) are contraindicated. Management focuses on maintaining remission, appropriate medication adjustments, and coordination between gastroenterology and obstetrics. Recent international consensus statements provide updated guidance on specific agents and timing (e.g., some biologics may be continued through pregnancy with

timing considerations for live vaccines postpartum). PMC+2CGH Journal+2

Diagnostic approach — practical considerations

History and timing

Determine onset relative to gestational age, severity, progression, red flags (fever, severe pain, bleeding, jaundice, neurologic symptoms). Many pregnancy-specific disorders cluster in early pregnancy (HG) or late pregnancy (ICP, AFLP).

Physical exam focused on abdominal signs, jaundice, hemodynamic status, and obstetric assessment.

Laboratory testing

CBC, electrolytes, liver function tests, serum bile acids (if ICP suspected), amylase/lipase (for pancreatitis), urinalysis, and appropriate metabolic panels. In HG, assess electrolytes and ketones; in AFLP consider tests for coagulopathy and hypoglycemia.

Imaging

Ultrasound is first-line for biliary disease and obstetric assessment; MRI without contrast is safe in pregnancy for more detailed evaluation. Endoscopy is reserved for urgent indications and can be performed with obstetric precautions when necessary (e.g., severe GI bleeding, diagnostic uncertainty).

Management principles

General principles

- *Stepwise, evidence-based escalation*

Start with conservative and nonpharmacologic measures when appropriate; escalate to pharmacotherapy or intervention when symptoms are significant or maternal/fetal risks exist.

- *Multidisciplinary care*

Many complicated GI disorders in pregnancy require coordination among obstetrics, gastroenterology/hepatology, surgery, nutrition, and anesthesia.

- *Balance maternal benefit and fetal risk*

Choose medications with the best established safety profiles for pregnancy and use the minimum effective dose. Document risk–benefit discussions.

Nonpharmacologic measures (first-line for many complaints)

- Dietary modifications: small frequent meals (for NVP/GERD), high fiber for constipation, avoid triggers (fatty food with biliary colic).
- Hydration and electrolyte correction (especially in HG).
- Physical measures: head-of-bed elevation for reflux, sitz baths for hemorrhoids, pelvic floor exercises.
- Nutritional support: in prolonged HG consider enteral nutrition; reserve parenteral nutrition for refractory cases with malnutrition or inability to tolerate enteral feeding.

Pharmacologic therapy — safety highlights

- *NVP/HG*

First-line doxylamine-pyridoxine; antihistamines and phenothiazines or metoclopramide as next steps; ondansetron may be used when alternatives fail, with counseling regarding evolving safety data. Severe HG may need IV fluids, thiamine, and nutritional support.

- *GERD*

Antacids and alginate preparations are safe initial options; H2 blockers and PPIs for persistent symptoms—evidence supports PPI use when indicated.

- *Constipation/hemorrhoids*

Bulk laxatives and stool softeners are preferred. Avoid stimulant laxatives as first choice. Topical therapies for hemorrhoids provide symptomatic relief.

- *Biliary disease*

Analgesia and IV fluids for biliary colic; antibiotics and percutaneous or surgical drainage for complicated cholecystitis as needed. Laparoscopic cholecystectomy is safe when indicated, with timing individualized.

- *ICP*

UDCA is commonly used to reduce maternal pruritus and may improve fetal outcomes; management requires fetal surveillance and timing of delivery decisions based on bile acid levels and gestational age.

- *IBD medications*

Continue maintenance therapy that is safe in pregnancy to prevent flares; many biologics and thiopurines are continued, but teratogenic medications (e.g., methotrexate) must be avoided. Specialist guidance and consensus statements inform individual drug decisions.

Maternal and fetal outcomes — what the evidence shows

- *Controlled disease yields better outcomes*

For chronic GI diseases (e.g., IBD), active disease at conception or during pregnancy increases risk of preterm birth, low birth weight, and other complications—hence

controlling disease is the primary preventive strategy. PMC

- *Severe pregnancy-specific disorders can threaten both lives*

AFLP and HELLP carry significant maternal morbidity and mortality risk without prompt delivery; ICP at high bile acid levels is associated with higher stillbirth risk, informing management strategies that may include earlier induction. PMC+1

- *Medication safety is agent-specific*

Many commonly used GI drugs have reassuring safety data in pregnancy (e.g., doxylamine-pyridoxine, many PPIs, mesalazine), while others (methotrexate, some newer immunomodulators) are contraindicated. For certain drugs (e.g., ondansetron), large observational studies and meta-analyses generally show no major increase in most malformations, but debate continues over rare specific risks—clinicians should stay current with literature and guideline updates and discuss uncertainties with patients.

Practical clinical algorithms (summary)

- *Nausea/vomiting*

lifestyle → doxylamine/pyridoxine → antihistamine/dopamine antagonist → ondansetron/IV fluids/enteral nutrition for severe HG. Monitor weight, electrolytes, and ketones.

- *Reflux/dyspepsia*

lifestyle/dietary measures → antacids/alginate → H2RA/PPIs if refractory. Evaluate for other causes if atypical features.

- *Constipation/hemorrhoids*

fiber, fluids, stool softeners → topical care for hemorrhoids → specialist intervention only if severe.

- *RUQ pain / biliary disease*

ultrasound → supportive care/antibiotics if infected → consider laparoscopic cholecystectomy when indicated (multidisciplinary decision).

- *Pruritus with abnormal LFTs*

Measure serum bile acids → if ICP suspected initiate UDCA and enhanced fetal surveillance; plan delivery based on bile acid level and gestation.

- *Suspected AFLP/HELLP*

Urgent obstetric evaluation, maternal stabilization, and delivery as definitive therapy.

Table 1: Approximate prevalence of selected GI conditions in pregnancy

Condition	*Prevalence (%)*
Nausea & Vomiting of Pregnancy	70–80
Hyperemesis Gravidarum	0.5–2
GERD/Heartburn	40–50
Constipation	30–40
Acute Pancreatitis	0.02–0.1
Intrahepatic Cholestasis	0.5–15

Pathophysiology

Hormonal changes (progesterone, estrogen, hCG) and mechanical compression from the enlarging uterus contribute to relaxation of the lower esophageal sphincter, delayed gastric emptying, and altered gut motility. Additionally, immune adaptations influence the course of inflammatory bowel disease during pregnancy.

Common GI Symptoms

Nausea and vomiting of pregnancy affects up to 70–80% of women, while hyperemesis gravidarum occurs in 0.5–2%. GERD affects nearly half of pregnant women. Constipation is reported in 30–40%, primarily in the second and third trimesters.

Serious GI Complications

Acute fatty liver of pregnancy (AFLP) and intrahepatic cholestasis (ICP) represent unique liver disorders. AFLP occurs in 1 in 7,000–15,000 pregnancies and requires urgent delivery. ICP, with prevalence up to 15% in some populations, is associated with increased risk of stillbirth.

Acute Pancreatitis in Pregnancy

Acute pancreatitis is rare (1 in 1,000–5,000 pregnancies) but carries significant maternal and fetal morbidity.

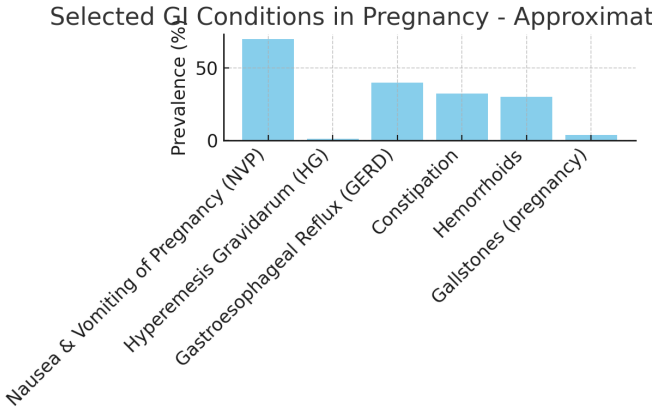

Figure 1: Approximate prevalence of selected gastrointestinal conditions in pregnancy

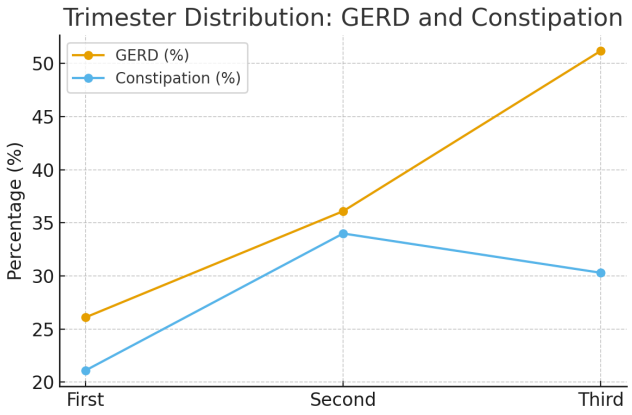

Figure 2: Trimester distribution of GERD and constipation

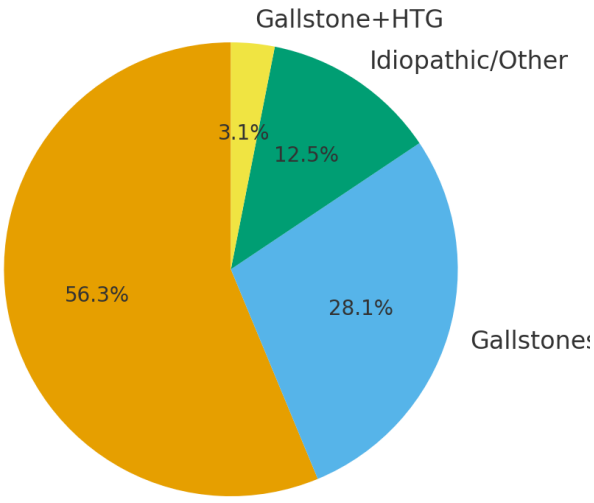

Figure 3: Reported causes of acute pancreatitis in pregnancy (selected series)

Gallstones account for ~50% of cases, followed by hypertriglyceridemia. Mortality has declined with improved critical care.

Inflammatory Bowel Disease (IBD)

The course of IBD during pregnancy depends on disease activity at conception. Remission generally continues, but active disease worsens outcomes. Medications such as mesalamine and biologics are considered relatively safe.

Diagnostic Challenges

Radiologic studies must be balanced with fetal safety. Ultrasound and MRI are preferred, while ionizing radiation should be avoided unless essential.

Management Approaches

Therapeutic strategies prioritize maternal benefit and fetal safety. Non-pharmacological measures are first-line for GERD and constipation. Safe medications include antacids, H2 blockers, proton-pump inhibitors, stool softeners, and laxatives. Severe conditions like AFLP require multidisciplinary management and early delivery.

Key takeaways for clinicians

- GI symptoms in pregnancy are common; discern physiologic from pathologic causes using history, focused exams, and judicious testing.
- Use stepwise, guideline-based management prioritizing conservative measures first; escalate therapy when maternal health or fetal well-being is at risk.
- Maintain disease control for chronic conditions (e.g., IBD) using pregnancy-safe medications rather than stopping therapy and risking flares.
- Manage obstetric liver emergencies (AFLP, HELLP) and severe biliary or pancreatic disease with multidisciplinary teams and timely interventions.

Conclusion

Gastrointestinal disorders during pregnancy span a spectrum from benign, self-limited symptoms to obstetric and surgical emergencies. Evidence-based, individualized care—grounded in understanding pregnancy physiology, informed selection of therapies, and close collaboration between specialties—optimizes outcomes for mother and fetus. Ongoing research into medication safety, timing of interventions (especially in conditions like ICP), and preventive strategies for biliary and metabolic complications will continue to refine practice.

Gastrointestinal disorders in pregnancy are common and vary in severity. While most are benign and manageable, some carry significant maternal-fetal risks. A multidisciplinary approach, evidence-based diagnosis, and safe treatment strategies are essential. Future research should focus on optimizing management guidelines and long-term outcomes.

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