

# Gastrointestinal and liver disease in pregnancy

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## Abstract

Gastrointestinal and liver disorders of pregnancy may be present before a woman becomes pregnant, or they can be specific to pregnancy. They can be complicated by severe morbidity or mortality. Women with pre-existing disorders should have pre-pregnancy counselling. This will enable the potential risks of pregnancy for the mother and fetus to be evaluated, clinical interventions that improve outcomes to be performed, and drug regimens to be reviewed. Once pregnant, it is important to adopt a multidisciplinary approach with the input of obstetricians, midwives, anaesthetists and physicians with experience and expertise in the management of medical disorders of pregnancy.

**Keywords** disease; gastrointestinal; liver; pregnancy

## Introduction

Gastrointestinal and liver diseases in pregnancy may be due to pre-existing conditions or be specific to pregnancy. Many of these conditions are associated with increased risks of maternal and fetal morbidity and mortality. For reasons unknown, some have a more severe course when diagnosed during pregnancy, whilst others have little effect on either the mother or baby. Here we review the presentation, management and perinatal outcomes of common gastrointestinal and liver diseases.

## Gastrointestinal disease

### Inflammatory bowel disease

Inflammatory bowel disease is a collective term used to describe the chronic inflammatory conditions, Crohn's disease (CD) and ulcerative colitis (UC). Both CD and UC are characterised by relapsing and remitting inflammation affecting several parts of the gastrointestinal tract, but there are some important differences that are useful to distinguish them. CD can affect any part of the gastrointestinal tract, although there is often rectal sparing, and involves transmural inflammation. In comparison, UC affects only the colon and rectum and involves the submucosa and mucosa.

IBD is more common in women than men, and is most frequently diagnosed in the reproductive years, with at least 50% being diagnosed before the age of 35 years and 25% before conception. The worldwide incidence of CD varies between 0.1

and 1.6/100,000 and that of UC varies between 0.5 and 24.5/100,000.

The symptoms associated with IBD include diarrhoea, constipation, increased frequency of bowel movements, cramping abdominal pain, nausea and vomiting. Both CD and UC are also associated with several extra-gastrointestinal manifestations, which can affect almost any other body system. Furthermore, scarring from surgery, fistula formation, fat and vitamin malabsorption may pose complications to pregnancy in women with IBD.

**Pre-pregnancy care:** overall fertility rates among women with active IBD may be reduced compared to unaffected, age matched women. Population studies show infertility rates in CD to be between 5 and 14%. The reasons for this are complex and multifactorial; major factors include dyspareunia resulting from previous pelvic surgery, low libido, depression and active avoidance of pregnancy. Fertility rates in women with inactive disease are comparable to age matched unaffected women.

Pre-conceptual counselling for women with IBD should focus on the importance of optimizing their disease control and nutrition. Women with IBD should be advised to take high dose (5 mg) folic acid, and to ensure that their vitamin D levels are optimized. Aminosalicylates, cyclosporin and azathioprine have good safety data for use during pregnancy and can be continued, and courses of steroids should be used if required. Methotrexate should be stopped several months prior to conception due to teratogenic effects. Knowledge about the use of biologic agents in pregnancy is improving, and varies depending upon the mode of action of the drug. If women require biologic agents, they can continue using them for the first two trimesters if required. However, women should be aware that IgG1 antibody therapies (infliximab, adalimumab and golimumab) cross the placenta, and if taken in the 3rd trimester the neonate should not have live vaccinations in the first 6 months of life. The risk and complications arising from previous pelvic/abdominal surgery will vary greatly depending on the exact nature of the surgery, and should be discussed with the surgeon who performed the procedure. There is no increased incidence of congenital malformations in babies born to women with IBD.

**Antenatal care:** the course of IBD during a pregnancy appears to be related to the level of disease activity at the time of conception. Women with inactive disease at the time of conception have a similar risk of relapse to non-pregnant women, which is approximately 30% over 12 months. Women with active disease at the time of conception, have an increased risk of flares during pregnancy. These should be managed in conjunction with a gastroenterologist with experience of IBD in pregnancy.

Active IBD during pregnancy is associated with increased risk of pre-term delivery, intrauterine growth restriction and low birth weight. These complications are more often seen in women with CD compared to women with UC, but the reasons for this are unclear.

In addition, IBD is also associated with increased risks of venous thromboembolism (UC more than CD), antepartum haemorrhage (CD more than UC) and delivery by caesarean section.

Women presenting with new symptoms suggestive of IBD during pregnancy, or with flares, can be safely investigated using

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ultrasound or MRI. Flexible sigmoidoscopy is often the endoscopic investigation of choice, but colonoscopy may be used if clinically indicated.

The indications for surgery in pregnant women with IBD are the same as those for non-pregnant women.

**Labour and delivery:** although there is no specific guidance regarding the optimal mode of delivery, there are some specific considerations. For women with CD and active perianal or rectal disease, an elective caesarean section is almost always advised. Delivery by caesarean section is commonly preferred where there is an ileo-anal pouch or ileo-rectal anastomosis, but it is advisable to have multidisciplinary review of the merits of different modes of delivery for individual cases.

**Post-partum care:** women should be counselled about the importance of continuing their medications in the post-partum period to reduce the risk of a flare. Most of the medications used to maintain IBD are safe in breastfeeding. Babies born to women treated with infliximab should not receive live vaccines in the first six months of life.

### Coeliac disease

Coeliac disease is a gluten sensitive enteropathy predominantly affecting the small bowel. In affected individuals, exposure to gluten causes an inflammatory reaction, which results in villous atrophy and malabsorption. Characteristic symptoms of coeliac disease are chronic diarrhoea, abdominal distension, malabsorption and loss of appetite. It can present at any age, and is slightly more common in women than men.

The only effective treatment of coeliac disease is a life-long gluten free diet. Adherence to this improves symptoms, and reduces the risk of long-term complications including the risk of intestinal lymphoma.

**Pre-pregnancy care:** there is conflicting evidence regarding fertility rates and miscarriage rates in women with coeliac disease, but it has been suggested that both can be improved with a gluten free diet. Women with coeliac disease should receive high dose folic acid pre-conceptually, and there should be a focus on optimizing nutrition whilst maintaining a gluten free diet.

**Antenatal care:** coeliac disease is associated with an increased risk of intrauterine growth restriction, low birth weight and pre-term delivery. The increased risk for pre-term delivery is significantly reduced in women who are treated with a strict gluten free diet. Women with coeliac disease should therefore be regularly screened for fetal growth, and also monitored for malabsorption.

Routine serological testing and endoscopy can be performed during pregnancy in women presenting with symptoms suggestive of coeliac disease for the first time.

**Labour and delivery:** there are no specific considerations for labour or delivery in women with coeliac disease.

### Bariatric surgery

The number of women becoming pregnant with a history of bariatric surgery is increasing, and these women present new

challenges in antenatal care. Bariatric surgery includes gastric banding, gastric bypass and biliopancreatic diversion surgery. The main benefit is weight loss, but this occurs at the risk of marked malabsorption.

**Pre-pregnancy care:** women are generally advised against becoming pregnant in the first year following surgery, due to concerns over conceiving during a period of marked weight loss. However, there are no studies to support or refute this advice. Particular care should be taken in the pre-conceptual period to optimize nutrition, particularly with regards to fat-soluble vitamins, calcium and iron.

**Antenatal care:** women who have had bariatric surgery have reduced rates of gestational diabetes mellitus, but have higher rates of small-for-gestational age babies and pre-term delivery. Thus far there are no specific requirements for care during the antenatal period. However, the presentation of a woman with abdominal pain should be taken seriously and the differential diagnosis should include band slippage, herniation or intussusception.

Management strategies for other gastrointestinal disorders in pregnancy are summarized in [Table 1](#).

### Liver disease

The liver undergoes several adaptive changes during normal pregnancy to enable it to cope with increased demands on

#### Management strategies for pregnant women with gastrointestinal disorders

Condition	Considerations in pregnancy	Management
Gastro-oesophageal reflux	More common in pregnancy.	H2 receptor antagonists and proton pump inhibitors can be safely used in pregnancy.
Peptic ulcer disease	Incidence in pregnancy unclear, but may be lower.	<i>Helicobacter pylori</i> eradication is safe if indicated. Endoscopy can be safely performed in pregnancy.
Pancreatitis	Incidence of and risk factors for pancreatitis are unchanged by pregnancy.	Supportive management as per non-pregnant women. Monitor for malabsorption and gestational diabetes.
Appendicitis	May present with atypical pain and therefore be harder to diagnose. Location of appendix may be altered in third trimester.	Surgical management as per non-pregnant women.
Gastroenteritis	None	Supportive as per non-pregnant women.

**Table 1**

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