Ideally, all women of childbearing age should discuss pregnancy plans with their general practitioner, gastroenterologist and any treating obstetrician and gynaecologist from the time of IBD diagnosis. In these discussions, practitioners should inform patients that pregnancy outcomes are very good when IBD is in remission and that active disease increases the risk to the baby. Establishing and documenting disease remission before conception and determining who is in the obstetric care team is important. Most IBD medications are low risk during pregnancy and breastfeeding, and their use should be continued.

**Preconception clinical and objective assessment**

Ideally 3 to 6 months before conception, patients with IBD should attend for preconception counselling to confirm disease remission, receive pregnancy-related education and establish a pregnancy treatment plan that is also communicated to the patient’s general practitioner and obstetrician.

Previous medical, surgical and obstetric history should be discussed, and clinical disease activity assessed. Objective assessment should be performed to confirm remission, including endoscopy and/or imaging, where relevant, and measurement of inflammatory markers, including C-reactive protein (CRP), nutritional markers (iron, vitamin B₁₂, red blood cell [RBC] folate, haemoglobin and albumin) and faecal calprotectin. Thiopurine metabolite concentrations should be measured, where available, and thiopurine dose optimised. It is strongly recommended that women achieve sustained remission, as confirmed by faecal calprotectin level or endoscopy, for at least 3 to 6 months before conception to maximise chances of a successful pregnancy.

The risk of adverse pregnancy outcomes associated with active disease should be discussed, and a recommendation to delay conception should be considered for patients with active disease, depending on the woman’s age and situation.

General preconception health considerations should be addressed, including folate supplementation at least 1 month before conception, and ensuring patients have had their immunity to measles, mumps and rubella (MMR) checked.

Patients often worry about heritability of IBD and should be informed that the chance of a child developing IBD is about 5–8% when there is one affected parent and about 35% when there are two affected parents.
Table 1: Preconception checklist: 3–6 months before conception

- Discontinue teratogenic medications (e.g. methotrexate)
- Screen for substance use and advise cessation (e.g. smoking, alcohol)
- Ensure folate supplementation (500 mcg daily or 2 mg daily if taking sulfasalazine; 5 mg folate daily if extensive small bowel Crohn’s disease)
- Update status of immunisation to MMR
- Establish remission (endoscopy, faecal calprotectin level, imaging)
- Blood tests, including full blood examination, vitamin B12, RBC folate, iron studies and vitamin D
- Cease allopurinol and optimise thiopurine metabolites
- Record baseline weight
- Plan pregnancy IBD medication(s)
- Detailed letter to GP +/- obstetrician

Effect of IBD on fertility

Fear of infertility is common among patients with IBD. However, women with quiescent IBD generally have normal fertility, with the exception of women with very active Crohn’s disease or past ileoanal pouch surgery. Ileoanal pouch surgery is associated with a 2–3 times increased risk of infertility, but this is lower with the newer laparoscopic-assisted approach. In vitro fertilisation results in women with IBD, including those who have had ileoanal pouch surgery, are similar to results seen in women without IBD. IBD does not affect fertility in men, but some medications, including sulfasalazine and methotrexate, may cause reduced sperm count. If women are unable to conceive after 6 months, assistance should be sought from a fertility specialist.

Effect of IBD on pregnancy

The chances of a successful pregnancy and a healthy baby are excellent if IBD is in remission at the time of conception and during pregnancy. For women with active IBD, rates of adverse pregnancy outcomes, including spontaneous abortion, intrauterine growth retardation, preterm birth and low birth weight, are slightly higher than in the general population. Active disease at conception is strongly associated with disease relapse during pregnancy. Cessation of IBD treatment is associated with a high rate of disease relapse.

Monitoring during pregnancy

Patients should undergo regular clinical assessment of their IBD during pregnancy, with concurrent obstetric care. Patients should be reviewed at least once per trimester and more regularly if they have active disease. Clinical and laboratory markers are altered in pregnancy; albumin level is low and CRP level may be mildly elevated in normal pregnancy. Monitoring of faecal calprotectin level is helpful to detect relapse. Exposure to radiation should be avoided, and imaging, when required, should ideally be done using intestinal ultrasound or magnetic resonance enterography without gadolinium.

A small increased risk of preterm delivery after endoscopy has been shown in women with IBD, but this risk is not seen in women without IBD, suggesting that the risk is related to active disease rather than endoscopy (Ludvigsson et al, Gastroenterology 2017). Endoscopy can be performed if clinically necessary (e.g. flexible sigmoidoscopy in patients with severe acute ulcerative colitis) and with monitoring of the patient’s blood pressure and oxygen saturation throughout the procedure, use of the minimum dose of sedating medication and left pelvic tilt position to avoid vena cava compression.

Management of a flare during pregnancy

In patients with a flare of IBD during pregnancy, appropriate treatment should be initiated without delay. Medication choices are similar to those for non-pregnant patients (see Table 2). A course of steroids may be prescribed when necessary to treat active disease, but steroids should not be used as maintenance therapy. Thiopurines and anti-tumour necrosis factor (TNF) therapy can be initiated or recommenced during pregnancy, including in the third trimester (Julsgaard et al, Gastroenterology 2016). Time to onset of action for thiopurines is 3–6 months, meaning a covering course of steroids is often required, whereas response to anti-TNF therapy is usually rapid. Patients who are naïve to thiopurines should be counselled about standard adverse events at initiation (10% discontinuation rate) and the need for blood monitoring. Thiopurine methyltransferase testing should be performed before commencing thiopurines.

Surgery is rarely performed during pregnancy due to the risk of precipitating spontaneous abortion or preterm labour. Non-IBD abdominal surgery (e.g. cholecystectomy, appendicectomy) carries a risk of preterm labour of about 1.8% for open surgery and 0.4% for laparoscopic surgery (Shigemi et al, J Minim Invasive Gyneocol 2018). Evidence of outcomes of surgery for IBD complications is limited to case reports suggesting that laparoscopic ileal resection and right hemicolectomy are relatively safe, but that a need for colectomy is associated with preterm labour. Alternatives to surgery, such as ultrasound-guided abscess drainage, should be considered if clinically appropriate.

Standard venous thromboembolism prophylaxis with low molecular weight heparin should be administered to pregnant IBD patients requiring hospital admission. If the patient has evidence of active disease or a history of complex IBD, high-risk obstetric monitoring is recommended, including management in a high-risk antenatal clinic and additional ultrasounds in the third trimester to assess fetal growth.

Medication safety during pregnancy and lactation

Most IBD medications are considered low risk to the baby. Patients should be educated about the risk of birth defects in babies of healthy women (3–4%), and informed that current evidence does not suggest an increase in birth defects from use of IBD medications (with the exceptions of methotrexate, allopurinol and thalidomide). It is important to communicate with the patient’s GP and obstetric team regarding the IBD treatment plan. Please refer to Table 2: IBD Medication Safety during Pregnancy and Lactation.

Mode of delivery

The mode of delivery is primarily guided by the obstetrician. Most women with IBD can have a vaginal delivery. The only IBD-specific indications for caesarean section are a history of active perianal disease, anal stenosis, significant prior sphincter damage or an ileoanal pouch.

Postpartum management

There is an increased risk of disease flare after childbirth in women with ulcerative colitis or colonic Crohn’s disease. Patients should be closely monitored, including measurement of faecal calprotectin level at delivery and six weeks postpartum. If anti-TNF agents or other IBD medications have been stopped, they should be restarted as soon as possible after the birth.

Mothers should be told to seek medical advice if babies are unwell (particularly if exposed to combination immunosuppressive and anti-TNF therapy). All standard vaccinations should be given to the baby, except for babies exposed to anti-TNF therapy, in whom rotavirus and live travel vaccines should be avoided. Catch-up vaccination is not required, as the risk of significant consequences following rotavirus infection reduces with age.

Breastfeeding

Breastfeeding should be encouraged. IBD drugs, including 5-aminosalicylic acids, thiopurines and anti-TNF medications, are considered safe while breastfeeding. Low levels of IBD medications may be found in breast milk, but this is not thought to be clinically significant. Please refer to Table 2: IBD Medication Safety during Pregnancy and Lactation.

References and suggested reading

### Table 2: IBD Medication Safety during Pregnancy and Lactation

<table>
<thead>
<tr>
<th>Medication</th>
<th>Use in pregnancy</th>
<th>Use in breastfeeding</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfasalazine (SSZ) and S-ASA</td>
<td>Safe</td>
<td>Safe</td>
<td>2 mg/day folate required with SSZ.</td>
</tr>
<tr>
<td>Corticosteroids (prednisolone and budesonide)</td>
<td>Safe</td>
<td>Safe</td>
<td>Increased maternal risks of gestational diabetes, hypertension and pre-eclampsia.</td>
</tr>
<tr>
<td>Thiopurines (azathioprine and 6-mercaptopurine)</td>
<td>Safe</td>
<td>Safe</td>
<td>Potential concerns about neonatal anaemia not confirmed with recent studies.</td>
</tr>
<tr>
<td>Allopurinol</td>
<td>Safety uncertain</td>
<td>Safe</td>
<td>Consider original indication and current disease activity. Alternatives include split dosing to reduce shunting, or reduced-dose thiopurine monotherapy if on biologics.</td>
</tr>
<tr>
<td>Anti-TNF antibodies (infliximab [IFX], adalimumab [ADA] and golimumab)</td>
<td>Safe</td>
<td>Safe</td>
<td>No safety reason to cease early. Continued therapy recommended due to risk of relapse and small risk of failure to recapture response. Women in deep remission may elect to stop at 32 weeks (IFX) or 36 weeks (ADA). No live vaccinations for infant until 12 months of age.</td>
</tr>
<tr>
<td>Combination thiopurine–anti-TNF therapy</td>
<td>Safe</td>
<td>Safe</td>
<td>Increase in neonatal childhood infections (e.g. chickenpox).</td>
</tr>
<tr>
<td>Vedolizumab</td>
<td>Limited data but likely to be safe</td>
<td>Limited data but likely to be safe</td>
<td>Use only in patients with no alternatives.</td>
</tr>
<tr>
<td>Ustekinumab</td>
<td>Limited data but likely to be safe</td>
<td>Limited data but likely to be safe</td>
<td>Use only in patients with no alternatives.</td>
</tr>
<tr>
<td>Ciprofloxacin</td>
<td>Safe in short course</td>
<td>Safe – may cause diarrhoea in infant</td>
<td>Safe in meta-analysis. Use in short course.</td>
</tr>
<tr>
<td>Tacrolimus</td>
<td>Limited data from transplant registries but appears safe</td>
<td>Avoid – baby may have therapeutic levels that may lower seizure threshold</td>
<td>Monitor carefully for hypertension.</td>
</tr>
<tr>
<td>Cyclosporine</td>
<td>Limited data from transplant registries but appears safe</td>
<td>Avoid – baby may have therapeutic levels that may lower seizure threshold</td>
<td>Monitor carefully for hypertension.</td>
</tr>
<tr>
<td>Methotrexate</td>
<td>Teratogen</td>
<td>Unsafe – excreted in breast milk and accumulates in neonate</td>
<td>Cease 6 months before pregnancy ideally, but minimum of one ovulatory cycle.</td>
</tr>
</tbody>
</table>