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Regional standards for the management of pregnant women with Inflammatory Bowel Disease

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Contents

1. Introduction

Why are these standards needed?

We recognise that many women may not consider that their IBD can be affected by pregnancy and that IBD has implication on the course and outcome of pregnancy. Pregnancies are often unplanned and the window of opportunity for preconceptual counselling is often missed. Health professionals also may not be aware of the impact of IBD.

Inflammatory Bowel Disease (IBD) is an umbrella term for two main conditions: Ulcerative Colitis and Crohns Disease. IBD affects 30,000 people in the United Kingdom, with the peak age of onset being 15-30 years. The aetiology of IBD remains unknown, however the symptoms include abdominal pain, fatigue, anaemia, diarrhoea and loss of appetite. IBD should not be confused with Irritable Bowel Disease (IBS).

Women with IBD have a similar fertility rate to the general population unless they have had pelvic surgery which can decrease their conception rate. (1). Approximately 25% of women will get pregnant following the diagnosis of IBD (2).

Pregnancy for women with IBD increases the risk of complications, which include: gestational diabetes, preterm birth, both spontaneous and iatrogenic through induction or labour or elective caesarean section, low birth weight and increased risk of caesarean section (3)

Disease activity at conception can be a good indicator of the course of disease during pregnancy including the risk of maternal and fetal complications.

Women who conceive when there is active disease are more likely to have active disease during pregnancy compared to those who are in remission[1] (3). Active disease during pregnancy increases the risk of complications.

2. Considerations

Women who stop taking medication during pregnancy because of fear of complications may not be aware of the risks linked to disease activity (4). National reporting highlights the importance of informed decision-making and planning.

To encourage women to consider how their pregnancy will impact on their IBD using national resources for example https://www.crohnsandcolitis.org.uk/

As the first line of contact for women with IBD is likely to be a GP or IBD specialist doctors and nurses, it is important that the issue of pregnancy is considered for those in the childbearing age.

Women who have no immediate plans for pregnancy or during acute flare-up should be offered reliable contraception. Those planning for pregnancy should be offered the safest possible medication. If needed, preconceptual counselling from either an obstetrician with expertise in the area or and gastroenterologist should be available.

3. Standards

These standards have been developed using the available evidence, guidance and professional consensus.

1. Healthcare professionals should be aware that IBD can influence pregnancy outcome and vice versa.

2. Health Promotion resources should be available to women.

3. Pharmacists and HCP who are in contact with women in pre-conception and early pregnancy should be aware of disease impact.

4. Preconceptual care and advice should aim at disease control prior to conception.

5. Women planning a pregnancy should receive a preconception review of medication and appropriate plans made for early post-conception period.

6. Health professionals must be aware that IBD may first present during pregnancy.

7. Women with IBD should receive multidisciplinary care in pregnancy, intrapartum planning and post-partum care follow-up planning. There should be good communication and access to members of the team.

8. Women with IBD should have an early opportunity for intrapartum care planning.

9. Women with IBD should be signposted to available information resources.

Template Guideline

Local Trusts may use these standards as a template and the responsibility for updating any subsequent guidance therefore rests with each implementing Trust.

4. Education

Education of healthcare professionals by signposting to up to date guidelines.

Education to ensure that the difference between IBD and IBS is understood by all HPA.

Irritable bowel syndrome (IBS) is a common, long-term condition of the digestive system. It affects up to one in five people at some point in their life, usually in the first 20–30 years of age. It usually has a benign course during pregnancy and it not linked to adverse effects on the fetus.

No markers exist for IBS, and the diagnosis is made based on symptoms. IBS is characterized by bouts of cramps, bloating, diarrhoea and/or constipation. It is assessed using ROME III criteria, a diagnostic criteria used specifically for IBS.

In contrast, IBD is a defined disease with histological confirmation.

The management of IBD should include:

Preconceptual Advice:

- Medication review: this should be undertaken by the GP, IBD clinic, or IBD specialist nurse according to local practice, see appendix 1.
- Advice regarding the use of approved medication (before and once pregnancy is confirmed).
- Consider the continued use of teratogenic medication in relation to disease severity and pregnancy planning. Any changes should be made in consulting with IBD team in a multidisciplinary approach.
- Check and correct folate, iron, B12 and vitamin D
- High dose folic acid, see appendix 1
- Advice regarding optimisation of pregnancy timing in relation to disease severity.

Education should highlight that serious complications such as bowel obstruction, toxic megacolon, obstruction to Ileostomy due to the growing fetus, and the presence of adhesions can occur during pregnancy or after delivery.

Ulcerative Colitis can be classified depending upon symptoms and disease activity, as outlined in the table below.

Figure1. Severity Index (5)

Activity	Mild	Moderate	Severe
Number of bloody stools per day (*n*)	<4	4–6	>6
Temperature (°C)	Afebrile	Intermediate	>37.8
Heart rate (beats per minute)	Normal	Intermediate	>90
Haemoglobin (g/dl)	>11	10.5–11	<10.5
Erythrocyte sedimentation rate (mm/h)	<20	20–30	>30

Pregnancy can affect IBD and IBD can affect pregnancy and therefore women should receive appropriate counselling regarding this as outlined below.

Figure 3: Effect of pregnancy on IBD and IBD on pregnancy

ACTIVE DISEASE AT CONCEPTION (fertility reduced)	**CONTROLLED DISEASE AT CONCEPTION**
EFFECT OF PREGNANCY ON DISEASE	EFFECT OF PREGNANCY ON DISEASE
IBD will remain active in two thirds of those affected	Fertility normal
Active disease tends to deteriorate in two thirds of cases	If in remission at conception- a flare up occurs in one third of women
Indications for surgery during pregnancy are similar to non-pregnant state. Temporary ileostomy is preferred to primary anastomosis. Surgery may be delayed to allow critical fetal maturation if clinically appropriate.	
Endoscopy can safely be used if necessary	
Increased risk of low birth weight	No excess adverse pregnancy outcomes
Increased risk of preterm delivery	
No increased risk congenital malformation	
If surgery is required during pregnancy, this is linked to 18-40% rate of fetal death	
This risk is more pronounced if active disease at conception (6). Hence the aim to optimise clinical condition prior to conception. (7)	

5. Diagnosis in Pregnancy

The symptoms of increased disease activity, such as rectal bleeding may be wrongly attributed to common pregnancy ailments such as haemorrhoids leading to delays. New onset of PR bleeding during pregnancy may be the first symptom of IBD (8). Symptoms of IBD may mimic the onset of preterm labour leading to unnecessary interventions.

6. Antenatal Care

- Optimal care is through a multidisciplinary approach including an obstetrician with interest in maternal medicine, a gastroenterologist, and an IBD nurse/midwife.
- The Gastroenterology team should take the lead in IBD management. This should be clearly identified
- Close working relationships with the obstetric team and clear communication must be standard.
- Women should be seen initially by at least 16 weeks in antenatal clinic to review disease status, previous surgery, perianal disease, VTE status. Women are particularly at risk of VTE during a flare (9),(10).
- Women with poorly controlled disease should have early access to specialist services in both antenatal and gastroenterology clinic.
- Mode of birth should be considered at an early stage.
- Anti TNF should be stopped in the third trimester, in most cases.

Fetal Surveillance Scanning

Serial Growth scans will be required if:

- Using medication that can affect birth rate such as corticosteroids, calcineurin inhibitors
- If the patient has a severely affected nutritional **status**
- **Active disease at the onset of pregnancy**
- Other obstetric indications.

Flare-up in Pregnancy

Flare ups in pregnancy can occur, which need additional considerations to management during pregnancy.

Perianal sepsis in Crohns

Metronidazole and ciprofloxacin can be used (recognising the recent risks identified for Ciprofloxaxcin)

Surgery in Pregnancy

Severe IBD can be treated with the same surgical indications as for non-pregnant patients.

- Best tolerated in 2nd trimester but consider preoperative IM steroids if risk of preterm birth.
- Surgery at a later date may need to be combined with caesarean section.

IBD Investigations in Pregnancy

- Ultrasound of small bowel.
- It is safe to undertake colonoscopy, flexible sigmoidscopy and gastroscopy if the results will affect the antenatal management (11). The risks of the procedures should be explained by the gastroenterology team.
- MRI can be used with Klean Prep in the 2nd and 3rd trimester (12)(13)

Place of birth

Planning for birth should include discussion of the risks of needing caesarean section. Where the surgical risks of CS are small delivery should be planned close to home.

7. Mode of birth

- The mode of delivery should take into account the risks of unplanned caesarean section which may increase the risk in women with extensive previous surgery. The risks and benefits of planned caesarean section and vaginal birth must be discussed on an individual basis.
- If recurrent or active perianal Crohns disease then elective caesarean section should be discussed (14)
- In women with an ilioanal pouch, elective caesarean section is recommended to reduce problems with sphincter function (15)
- Birth planning should also include other obstetric indications.
- Preterm delivery requires IM steroids to help mature the fetal lungs as with any preterm birth
- If on daily steroids, in preceding three months before delivery, IV hydrocortisone cover will be required during delivery.

8. Postnatal

- Post-natal flares can occur. All women with IBD need to know how to access their IBD nurse or gastroenterologist at point of discharge from discharge from hospital
- NSAIDS can aggravate IBD. Opiates can cause constipation so consider a laxative if prescribing.
- If on Biologics (Anti-TNF), live neonatal vaccines (rota virus, BCG, oral polio) should be avoided for 6 months (11)
- Consider contraception and planning for next pregnancy
- See medication chart in APPENDIX 1 in relation to breastfeeding

9. Implementation of the Standards

An Action Plan to support the Implementation of these standards has been developed (Appendix 2). This action plan can be used by services to undertake a self-assessment of their progress against the nine standards. It is recommended a review is completed regularly to monitor progress.

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Appendix 1: Medication in IBD

Medication	Preconceptual	Pregnancy	Breastfeeding
Aminosalicylates (5-ASAs): Sulfasalazine (Salazopyrin) Mesalazine (Asacol, Ipocol, Mesren, Octasa, Pentasa, Salofalk) Olsalazine (Dipentum) Balsalazide (Colazide)	WOMEN - High dose Folic acid 5mg for Sulfasalazine (interferes with folate absorption) MEN - Sulfasalzine causes low sperm count so swap to a different 5ASA	Considered safe (up to 3mg a day) High dose 5mg Folic acid if on sulfasalazine. *Sulfasalazine:* *Exposure to sulfasalazine at any stage in pregnancy would not usually be regarded as medical grounds for termination of pregnancy or any additional fetal monitoring.* *In general, high dose folic acid (5mg) is recommended periconceptually for all women considered to be at increased risk of folate deficiency (e.g. those with a family history of neural tube defects, concurrent treatment with drugs which interfere with folate metabolism or maternal obesity). However, no studies have investigated whether there is increased benefit of this higher dose.*	LOW RISK Can occasionally cause diarrhoea in baby *Sulfasalazine:* *Sulfasalazine carries an additional small risk over the other aminosalicylates.* *Mesalazine has more evidence and clinical experience than balsalazide and olsalazine.* *Mesalazine:* *Mesalazine is the pharmacological basis for the four available aminosalicylates. A small number of poor, and largely anecdotal, cases of mesalazine-related diarrhoea have been reported. These drugs are not contraindicated but, if used, monitoring of the infant for diarrhoea is advised.*
Corticosteroids (steroids): Prednisolone Budesonide (Entocort)	Can use Disease control prior to conception is key, and aiming for not requiring steroids for 3 months prior to conception would indicate more stable disease.	Higher doses and prolonged course can be associated with- • Gestational diabetes- therefore GTT • Low birth weight therefore growth scans required • Maternal hypertension • Cleft lip and palate if used in early pregnancy.	Safe in low doses If daily dose larger than 40mg delaying feeding for 6 hours post dose will significantly reduce the levels in breast milk *There is very limited information on the use of corticosteroids during breastfeeding, although they are likely to be present in milk. Avoid prolonged high dose therapy where possible since adrenal suppression and other adverse*

Medication	Preconceptual	Pregnancy	Breastfeeding
		Long courses >4 weeks of >5mg prior to delivery, require hydrocortisone cover in labour. *Where use of systemic corticosteroids is clinically indicated for mother or fetus, treatment should not be withheld on account of pregnancy. Exposure to corticosteroids at any stage in pregnancy would not usually be regarded as medical grounds for termination of pregnancy or any additional fetal monitoring.*	*effects may occur in the infant. Where such use is unavoidable, monitor the infant's adrenal function. Short-term use of high dose steroids are normally considered compatible with breastfeeding as the overall exposure will be low.* *Maximum doses described as unlikely to cause adverse effects in infant are based on extrapolated anti-inflammatory equivalence to prednisolone, although there is no direct evidence to support this with breastfeeding.*
Immunosuppressants Thiopurines: Azathioprine (Imuran) Mercaptopurine (6-MP) (Purinethol)	Can use	CONTINUE whilst pregnant as risk of relapse more harmful to fetus. But **DON'T START** in pregnancy (risk of bone marrow suppression) *Exposure to azathioprine/mercaptopurine at any stage in pregnancy would not usually be regarded as medical grounds for additional fetal monitoring.*	LOW RISK *Azathioprine:* *The evidence available suggests that azathioprine, in normal therapeutic doses in the mother, is compatible with breastfeeding in infants who are full-term and healthy and with no compromised immune system.* *It would, however, be advisable to monitor the infant for signs of infection and immunosupression. If high dose azathioprine therapy is used, monitor infant blood counts. The frequency and duration of blood monitoring should be a clinical decision based on several factors including dose of azathioprine, frequency of breast feeding, age and health of the infant.* *Mercaptopurine: No additional info.*
Methotrexate	Avoid pregnancy for 6 months after use for men and women	**NOT SAFE**	**NOT SAFE**

Medication	Preconceptual	Pregnancy	Breastfeeding
		Exposure to high dose methotrexate in early pregnancy confers a risk of severe embryopathy in the fetus and the option of termination of pregnancy should be discussed with the patient. If women choose to continue their pregnancy, additional fetal monitoring is advised including detailed fetal anomaly scans and assessment of fetal growth. Women should be made aware of the limitations of these investigations and that impaired neurodevelopment may occur in the absence of structural anomalies.	*Patients should not breast feed whilst taking methotrexate. (SPC)*
Mycophenolate Mofetil	Avoid pregnancy for men and women for 3 months after use.	**NOT SAFE** *Mycophenolate should only be used during pregnancy if there is no effective alternative. Women exposed to mycophenolate during early pregnancy should be offered detailed anomaly scans. Patients should also be counselled about the unknown risk of adverse neurodevelopmental outcomes and the fact that these will not be detected by ultrasound examination*	**NOT SAFE** *Mycophenolate Mofetil has been shown to be excreted in the milk of lactating rats. It is not known whether this substance is excreted in human milk. Because of the potential for serious adverse reactions to Mycophenolate Mofetil in breast-fed infants, Mycophenolate Mofetil is contraindicated in nursing mothers (see section 4.3). (SPC)*
Calcineurin inhibitors: Tacrolimus	Continue	Continue Associated with low birth weight therefore growth scans required *Tacrolimus :* *Although it is not possible to state that there is no increased risk to the fetus following maternal tacrolimus use during pregnancy, the available data does not currently provide evidence that tacrolimus is a major human teratogen. Women being treated with tacrolimus who are considering pregnancy or*	**NOT SAFE** *Tacrolimus :* *Caution* *Minor and/or reversible adverse effects have been reported, or are considered possible, in*

Medication	Preconceptual	Pregnancy	Breastfeeding
Ciclosporin		*who become pregnant should discuss their options for immunosuppressive therapy during pregnancy with their specialist.* *Exposure to tacrolimus at any stage in pregnancy would not usually be regarded as medical grounds for termination of pregnancy.* *Ciclosporin :* *Although the available data are considered confounded, there is currently little evidence that use of ciclosporin during pregnancy increases the risk of congenital malformation. Increased rates of preterm delivery and intrauterine growth restriction have been identified among women receiving systemic treatment. It is, however, uncertain as to whether these findings are due to in utero ciclosporin exposure alone, fetal effects of the underlying maternal condition, or a combination of the two. The currently available data do not suggest an increased risk of spontaneous abortion, intrauterine death, neonatal complications, or offspring neurodevelopmental impairment following maternal ciclosporin use in pregnancy.* *Exposure to ciclosporin at any stage in pregnancy would not usually be regarded as medical grounds for termination of pregnancy or any additional fetal monitoring.*	*breastfed infants, but which are not considered to pose an unacceptable risk to the infant.* *Insufficient evidence of the amount of drug excreted into breast milk.* *Insufficient evidence, or experience of use in practice, to guarantee safe use with breastfeeding.* *Use of a medicine is conditional on risk-reducing actions being taken, e.g monitoring the infant, delaying breastfeeding after a maternal dose, using a lower-risk formulation etc.*
Biologics (Anti TNF):	LOW RISK	Can take in first and second trimester. AVOID 3rd trimester No live vaccines for first 6 months	LOW RISK Avoid live vaccines for 12 months including rotavirus and BCG

Medication	Preconceptual	Pregnancy	Breastfeeding
Infliximab (Remicade or biosimilarsInflectra, Flixabi, Remsima) Adalimumab (Humira)		*Infliximab :* *There is currently no compelling evidence of an increased risk for spontaneous abortion, intrauterine death or adverse neurodevelopmental outcome; however the data are too limited to state that none exists. Low birth weight and preterm birth have been associated with in utero infliximab exposure in some studies but these findings are likely to reflect confounding by indication. Maternal autoimmune/inflammatory conditions are known to increase the risk of certain adverse pregnancy outcomes including spontaneous abortion, preterm delivery and low birth weight, and studies which include disease-matched control groups suggest no increased risk with use of anti-TNFα therapies.* *There is theoretical concern that the use of immunosuppressant antibodies that actively cross the placenta during pregnancy could result in immunosuppression in the newborn and increased risk of infection. The manufacturer of infliximab advises to delay administration of live vaccines to infants for six months after the mother's last dose on a precautionary basis.* *Due to the lack of data additional fetal monitoring may be warranted on a case-by-case basis (uktis)* *Adalimumab :* *There are very limited data specific to adalimumab use during pregnancy. Studies investigating the use of anti-TNFα therapies during pregnancy show no*	*Infliximab :* *Caution* *Minor and/or reversible adverse effects have been reported, or are considered possible, in breastfed infants, but which are not considered to pose an unacceptable risk to the infant.* *Insufficient evidence of the amount of drug excreted into breast milk.* *Insufficient evidence, or experience of use in practice, to guarantee safe use with breastfeeding.* *Use of a medicine is conditional on risk-reducing actions being taken, e.g monitoring the infant, delaying breastfeeding after a maternal dose, using a lower-risk formulation etc.* *Likely to be degraded in infant's GI tract* *Limited published evidence of safety indicates negligible amounts in breast milk* *Avoid in preterm infants and neonates as large protein molecules may appear in colostrum* *Adalimumab :* *Caution* *Minor and/or reversible adverse effects have been reported, or are considered possible, in*

Medication	Preconceptual	Pregnancy	Breastfeeding
		compelling evidence of an increase in risk of overall congenital malformation rate, spontaneous abortion, intrauterine death or adverse neurodevelopmental outcome, however data are too limited to exclude an increased risk and generally do not undertake a separate analysis for individual preparations. Low birth weight and preterm birth have been associated with in utero adalimumab exposure in some studies but these findings were likely due to confounding by the underlying maternal condition. Maternal autoimmune/inflammatory conditions are known to increase the risk of certain adverse pregnancy outcomes including spontaneous abortion, preterm delivery and low birth weight, and studies which include disease-matched control groups suggest no increased risk with use of anti-TNFα therapies. *There is a theoretical concern that the use of immunosuppressant antibodies that actively cross the placenta during pregnancy could result in immunosuppression in the newborn and increased risk of infection. Limited data are available that demonstrate materno-fetal transfer in the latter months of pregnancy. The manufacturer of adalimumab advises that administration of live vaccines to infants is delayed for five months after the mother's last dose on a precautionary basis.* *Due to the lack of data available, additional fetal monitoring may be warranted on a case-by-case basis.*	*breastfed infants, but which are not considered to pose an unacceptable risk to the infant.* *Insufficient evidence of the amount of drug excreted into breast milk.* *Insufficient evidence, or experience of use in practice, to guarantee safe use with breastfeeding.* *Use of a medicine is conditional on risk-reducing actions being taken, e.g monitoring the infant, delaying breastfeeding after a maternal dose, using a lower-risk formulation etc.* *Likely to be degraded in infant's GI tract* *Long half-life increases risk of accumulation in breastfed infants* *Limited published evidence of safety indicates small amounts in breast milk* *Avoid in preterm infants and neonates as large protein molecules may appear in colostrum*

Medication	Preconceptual	Pregnancy	Breastfeeding
Vedolizumab	Consider swapping to anti TNF as safety data available.	Not currently recommended, unless you and your IBD team have decided that the benefits of taking it strongly outweigh any risks to you and your baby. Use effective contraception while you're having treatment and keep using it for at least 5 months after your treatment has finished.	It is not yet known whether vedolizumab passes into breast milk, or what effect this could have on your baby. Speak to your IBD team for more advice.
Antibiotics: Metronidazole	Safe	Metronidazole is considered low risk during pregnancy. *Metronidazole :* *Exposure to metronidazole at any stage in pregnancy would not usually be regarded as medical grounds for termination of pregnancy or any additional fetal monitoring.* .	Can breast feed on metronidazole but avoid single high doses. *Metronidazole :* *Low-dose oral metronidazole, 200-400 mg three times daily, produces milk levels only slightly lower than corresponding levels in maternal plasma (76 to 99%). Doses up to 500 mg three times daily for a 7 to 10 day course are considered to be compatible with breastfeeding.* *Single, 2 g high-dose oral metronidazole produces significantly higher levels in milk than low-dose oral therapy. The estimated total ingestion is 25.3 mg of metronidazole by the infant after feeding for 48 hours, although this is still lower than the daily infant dose given directly. If feeding is delayed for 12 hours after each dose, total infant exposure is reduced. Daily 2 g oral doses, normally given for 3 days, are considered to be compatible with breastfeeding, and in practice, delaying breastfeeding for 12 hours is not considered necessary.*

Medication	Preconceptual	Pregnancy	Breastfeeding
			Intravenous administration produces similar maternal plasma and milk levels to equivalent oral doses, although the data are limited. Short-course IV metronidazole is considered to be compatible with breastfeeding. *Administration of metronidazole by rectal, vaginal, or topical routes produces significantly lower plasma levels, and would therefore be expected to produce correspondingly lower milk levels than after oral administration, and is considered to be compatible with breastfeeding.* *Side-effects in breastfed infants whose mothers have been treated with metronidazole are rare and unsubstantiated, and include loose stools, candidiasis and lactose intolerance. Anecdotal reports of infants rejecting milk at the start of feeds may be due to a metallic/bitter taste imparted to foremilk by a water soluble metabolite, although this again has not been substantiated.* *There are no data relating to the effects of metronidazole exposure in preterm breastfed infants. Special consideration should be given to the use of metronidazole by any route in preterm or low-birth-weight infants, or in infants with compromised renal or hepatic function*
Ciprofloxacin (These antibiotics are sometimes used to treat infections linked to		Doctors advise against using ciprofloxacin during pregnancy, particularly during the first trimester. *Ciprofloxacin :*	*Ciprofloxacin :*

Medication	Preconceptual	Pregnancy	Breastfeeding
Crohn's Disease or pouchitis following IPAA surgery.)		*Neonatal exposure to quinolones have been shown to cause arthropathy in animal studies. Due to the theoretical risk of similar effects on the developing human fetus, the use of quinolones in pregnancy is not generally recommended, except for the treatment of serious or life-threatening conditions unresponsive to other antibiotic therapies considered suitable for use in pregnancy. Where possible, the results of culture and sensitivity tests should be available before making an antibiotic treatment choice in accordance with local prescribing guidelines.* *Exposure to quinolones at any stage in pregnancy would not usually be regarded as medical grounds for termination of pregnancy or any additional fetal monitoring.*	*Quinolones are generally accepted for use during breastfeeding, with caution.* *There have been concerns about adverse effects on infants' developing joints, although this has only been reported in infants taking quinolones directly.* *The calcium in breast milk may prevent or reduce infant absorption of quinolones.* *Avoid in infants with known G6PD deficiency due to the risk of haemolysis. Use with caution in infants with epilepsy* *Monitor infant for gastro-intestinal disturbances and oral candida infection, especially if used in high doses, although these effects are unlikely to occur.* *Choice of alternatives may be directed by local antimicrobial policy.*
Co-trimozole		**Avoid Co-trimoxazole- especially first trimester**- If it is clinically essential high dose folic supplementation is required. *Trimethoprim is frequently used in combination with the sulphonamide, sulfamethoxazole. There have been concerns that use of sulphonamide-containing medicines near delivery may increase the risk of hyperbilirubinemia in the neonate, particularly in premature infants or infants with glucose-6-phosphate dehydrogenase deficiency. However, the majority of population studies do not show an increased risk of neonatal hyperbilirubinemia following in utero sulphonamide exposure, and this*	*Co-trimoxazole :* *The use of sulphonamides is decreasing due to bacterial resistance and the availability of less toxic antibacterials.* *Generally sulphonamides and trimethoprim are acceptable to use whilst breastfeeding full term and healthy infants. Monitor infant for gastro-intestinal disturbances and oral candida infection, especially if used in high doses, although these effects are unlikely to occur.* *Choice of alternatives may be directed by local antimicrobial policy.*

Medication	Preconceptual	Pregnancy	Breastfeeding
		may therefore only be a concern in neonates with other risk factors such as those described above. Further research is required to delineate these risks fully.	
Antispasmodics Hyoscine butylbromide (Buscopan)		**Avoid this over-the-counter medicine during pregnancy.** *There are limited data on the use of hyoscine during pregnancy, with the available data predominantly relating to use at the time of delivery. Maternal administration of hyoscine derivatives during labour has been inconsistently associated with fetal tachycardia, and anticholinergic symptoms may occur in the neonate. The use of hyoscine during pregnancy may be justified if there is a clear clinical indication.* *Exposure to hyoscine derivatives at any stage in pregnancy would not usually be regarded as medical grounds for termination of pregnancy or any additional fetal monitoring.*	Can use if breastfeeding
Allopurinol		Allopurinol: It is normally ok to take in pregnancy if there is no safer alternative. *More research required before potential teratogenicity can be confirmed or refuted. It should only be used in first trimester if benefit clearly outweighs potential risks. Patient should be made aware of lack of data available. (SPS)*	*Sulfinpyrazone or allopurinol are probably the best options for long-term control in a breastfeeding mother. (SPS)*
Bisphosphonates	Stop 6 months prior to conception	**Advise not to use** - Theoretical risk of abnormal bone growth in fetus	*In general, bisphosphonates are considered to be compatible with breastfeeding and routine*

Medication	Preconceptual	Pregnancy	Breastfeeding
		Exposure to bisphosphonates at any stage in pregnancy would not usually be regarded as medical grounds for termination of pregnancy. Where exposure to bisphosphonates has occurred, either prior to or during pregnancy, monitoring of fetal growth, skeletal development and neonatal calcium levels may be warranted (UKTIS)	*monitoring of infant calcium levels unnecessary unless others factors are present which could affect calcium status. (SPS)*

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Appendix 2: Action Plan for Implementing Change

The following action plan will enable you to take forward the standards outlined in the East Midlands regional standards document for the management of pregnant women with IBD. It allows for adaptation through the addition of further actions as you feel appropriate for your own service.

Date of Review:	
Name of Person Completing the Review:	

East Midlands Regional Standard/s	Action Needed	Person/s Responsible	Progress
1. Healthcare professionals should be aware that IBD can influence pregnancy outcome and vice versa.			
2. Health Promotion resources should be available to women.			
3. Pharmacists and HCP who are in contact with women in pre-conception and early pregnancy should be aware of disease impact.			
4. Preconceptual care and advice should aim at disease control prior to conception.			
5. Women planning a pregnancy should receive a preconception review of medication and appropriate plans made for early post-conception period.			

6. Health professionals must be aware that IBD may first present during pregnancy.			
7. Women with IBD should receive multidisciplinary care in pregnancy, intrapartum planning and post-partum care follow-up planning. There should be good communication and access to members of the team.			
8. Women with IBD should have an early opportunity for intrapartum care planning.			
9. Women with IBD should be signposted to available information resources.			
Any other comments (e.g. challenges, best practice, support needed)			

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