

Management of Asthma in Pregnancy and post-natal period

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People who need to know that this document exists	As above

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Disclaimer:

If the review date of this document has passed please ensure that the version you are using is the most up to date version either by contacting the author or CTM_Corporate_Governance@wales.nhs.uk

Guidelines Definition

Clinical guidelines are systematically developed statements that assist clinicians and patients in making decisions about appropriate treatments for specific conditions.

They allow deviation from a prescribed pathway according to the individual circumstances and where reasons can be clearly demonstrated and documented.

Minor Amendments

If a minor change is required to the document, which does not require a full review please identify the change below and update the version number.

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Table of Contents

1.	Introduction.....	4
2.	Management of Asthma in Pregnancy.....	5
	2.1. Complication risk and care level needs.....	5
	2.2. Non-pharmacological Management.....	5
	2.3. Pharmacological Management.....	6
3.	Management of Acute Asthma presentation in Hospital in Pregnancy.....	8
4.	Induction Labour and Birth.....	9
	4.1. Analgesia.....	9
	4.2. Prostaglandin use.....	9
	4.3. Long term systemic steroids.....	9
5.	Postnatal Care of Asthma and Breastfeeding.....	11
6.	Useful Information.....	12
7.	References.....	12

1. Introduction

Asthma is a chronic lung disorder that is marked by recurring episodes of airway obstruction (in the form of bronchospasm). This is manifested by laboured breathing, accompanied especially by wheezing and coughing and by a sense of constriction in the chest. Asthma is triggered by hypersensitivity to various stimuli (such as allergens or rapid change in air temperature)¹.

Asthma is the most common chronic condition in pregnancy. It affects around 10% of pregnant women. Approximately one third of women will experience a worsening of their asthma control in pregnancy; one third will find it improves; and one third will experience no change. In women with severe disease, it is more likely to deteriorate than in those with mild disease². In the last confidential enquiry³ into maternal deaths in the UK, there were 4 deaths attributed to asthma. This number remains fairly static across recent enquiries.

Pregnant women with asthma need to be closely monitored throughout pregnancy. Asthmatic exacerbations are more common between 24⁺⁰ and 36⁺⁰ weeks of pregnancy. The most common cause of exacerbations are viral respiratory infections, followed by poor adherence to inhaled corticosteroid therapy².

11-18% of pregnant women with asthma will have at least one emergency department visit during pregnancy, with 62% of these requiring hospitalisation.

Poor asthma control can have a negative impact on maternal and fetal outcomes.² There is some suggestion that there may be a link between asthma and hypertension in pregnancy and pre-eclampsia⁴. Women with asthma tend to have a higher caesarean birth rate than women without asthma. Preterm births, intrauterine growth restriction (IUGR), and low birth weight have also been associated with maternal poor asthma control. It is important to note however that in most women with well-controlled asthma there are no or minimal additional risks².

2. Management of Asthma in Pregnancy

The management and treatment of asthma are generally the same in pregnant women as in non-pregnant women and in men. The intensity of antenatal maternal and fetal surveillance should be based on the severity of asthma.²

2.1. Complication Risk and Care Level

Women with **well-controlled asthma**, who are not under the care of a hospital physician for their asthma, and who have not been admitted to hospital because of asthma in the preceding five years, are at low risk of complications and can remain under the care of the community midwife. Any worsening of their asthma symptoms should trigger a recommendation for primary care review of their asthma, and referral into the medical antenatal obstetric clinic service.

Women with **moderate to severe asthma at treatment step 3 or above** need to be managed by both a respiratory physician and obstetrician to optimise asthma control.² Women with poorly-controlled asthma, or women under the care of a hospital physician for their asthma, or women who have been admitted to hospital because of asthma in the preceding five years, should be referred to the medical antenatal obstetric clinic.

2.2. Non-pharmacological Management

The woman should be educated regarding the importance of good asthma control, including smoking cessation (as appropriate), trigger avoidance and treatment compliance.

Education on how to use their devices properly should be delivered by their General Practitioner or Respiratory Nurse specialist via their Physicians clinic.

A personal action plan should be constructed with regard to day-to-day and exacerbation management.

Liaise with the respiratory nurses if a woman's control deteriorates or a woman has severe asthma.

Consider anaesthetic review.

2.3. Pharmacological Management

Both women and their Physicians can be reluctant to use asthma medication in pregnancy. It must be emphasised that **it is safer to use asthma therapy in pregnancy, to achieve and maintain good control, than to have uncontrolled asthma.**²

The following can be used as normal during pregnancy:

- Short acting and long- acting beta₂ agonists
- Inhaled corticosteroids
- Oral theophylline.

These *do not* increase the risk of complications for mother or baby at standard/recommended doses⁹.

- Oral **theophylline** is safe in pregnancy⁹ at recommended dose. It may cause irritability and apnoea in the neonate⁵. During pregnancy protein binding decreases; the free level drug will increase; and so a lower therapeutic range may be appropriate. Serum theophylline levels should be routinely monitored as pregnancy may alter the pharmacokinetics of the drug. Take levels at diagnosis of pregnancy, to inform dose adjustments and ongoing frequency of monitoring¹¹. This should be organised by the patient's respiratory physician.
- **Short-acting and long-acting beta₂ agonists** should be used as normal during pregnancy⁸.
- **Inhaled corticosteroids** have been shown to reduce exacerbations in pregnancy.
- Offer oral corticosteroids during pregnancy if needed to treat exacerbations of asthma. Advise that the benefits of treatment with oral corticosteroids outweigh the risks. Corticosteroids vary in their ability to cross the placenta but there is no convincing evidence that systemic corticosteroids increase the incidence of congenital abnormalities, such as cleft palate or lip⁸. They should still be prescribed when required, but used with caution.

- There is a paucity of data regarding **leukotriene modifiers**, such as montelukast in pregnancy; although they are not known to be harmful. NICE recommend to continue if needed to obtain asthma control.
 - Where clinically indicated, continued maternal treatment with montelukast in pregnancy is likely to outweigh any theoretical risk posed to the fetus. Montelukast therapy should not be discontinued on account of pregnancy without careful consideration of the risk to both mother and fetus of uncontrolled maternal asthma^{6,9}.(UKTIS monograph)⁶.
- NICE also states that **long-acting muscarinic receptor antagonists** are needed to obtain asthma control, they should not be stopped in pregnancy⁸.
- **Immunosuppressants** (e.g. methotrexate, ciclosporin) are contraindicated in pregnancy.
- **Biological therapies** should only be administered in a tertiary centre after evaluating benefit-to-risk ratio.

Offer influenza, pertussis and RSV **vaccine** to all pregnant women as per [Complete routine immunisation schedule - GOV.UK](#)¹².

3. Management of Acute Asthma presentation in Hospital in Pregnancy

Acute severe asthma in pregnancy is an emergency and should be treated vigorously in pregnancy.

Treatment of acute asthma is the same as in non-pregnant patients^{4,9}.

- Give **oxygen** to maintain saturations 94-98%
- **Drug therapy** should be given as for non-pregnant patients including nebulised β_2 agonists and early systemic corticosteroids, or in severe cases intravenous β_2 agonist, aminophylline or magnesium sulphate can be used.
- Women with acute severe asthma should have an individualised care plan in relation to **fetal monitoring**.
- Early referral to **critical care**⁴.

4. Induction Labour and Birth

Less than one fifth of patients experience exacerbations during labour; severe and life-threatening exacerbations are very rare². Regular asthmatic medicines should be continued in labour¹³.

4.1. Analgesia

Women with asthma may safely use the same options for pain relief during labour as women without asthma, including

- Entonox
- IV / IM opioids
- Epidural
- Combined spinal-epidural analgesia⁷.

4.2. Prostaglandin use

There is no evidence that the following worsen asthma when used as an option

- for inducing labour
 - prostaglandin E1 e.g. misoprostol, or
 - prostaglandin E2 e.g. dinoprostone⁷.
- For treating postpartum haemorrhage
 - prostaglandin E1⁷.

Do not offer carboprost (prostaglandin F2 alpha) to women with asthma because of the risk that that this drug can worsen bronchospasms^{7,10}. However during emergencies, e.g. PPH, consideration to be given to whether the benefits outweigh the risk.

4.3. Long term systemic steroids

Long term oral steroids use is classed as taking equivalent to ≥ 5 mg prednisolone daily for more than three weeks⁷.

For women taking long term oral steroids planning:

- a **vaginal birth**;
 - continue their regular oral steroids, *and*

- when they are in established first stage of labour, add IV or IM hydrocortisone and consider a minimum dose of 50 mg every 6 hours until 6 hours after the baby is born⁷.
 - a **planned or emergency caesarean birth**;
 - continue their regular oral steroids, *and*
 - give IV hydrocortisone when starting anaesthesia; the dose will depend on whether the woman has received hydrocortisone in labour, for example consider giving:
 - *50mg if she has had hydrocortisone in labour*
 - *100mg if she has not had hydrocortisone in labour*
- Give a further dose of hydrocortisone 6 hours after the baby is born (for example, 50mg IV or IM)⁷.

DO NOT offer supplemental hydrocortisone in the intrapartum period to women taking inhaled or topical steroids⁷.

5. Postnatal Care of Asthma and Breastfeeding

Use asthma medications as normal during lactation in line with manufacturers' recommendations and BNF^{4,10}.

- Encourage mothers with asthma to breastfeed.
- Ensure follow up with the woman's GP and Asthma Team on discharge.

6. Useful Information

- Medicines Information Service for CTMUHB:
 - medinfo_ctmuhb@wales.nhs.uk
 - 029 2003 2012 (for urgent queries)
- E-Lactancia Breastfeeding Checker: <http://www.e-lactancia.org/>
- BUMPS (Best use of medicines in pregnancy- Patient Information Leaflets): <https://www.medicinesinpregnancy.org/>

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