



Aneurin Bevan University Health Board

Asthma in Pregnancy, Labour and Postnatal Guidelines

N.B. Staff should be discouraged from printing this document. This is to avoid the risk of out of date printed versions of the document. The Intranet should be referred to for the current version of the document.

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1 Executive Summary

This document is a procedure designed to support safe and effective practice.

1.1 Scope of Guideline

This guideline applies to all clinicians working within maternity services.

1.2 Essential Implementation Criteria

Auditable standards are stated where appropriate.

2 Aims

To provide support for clinical decision making.

3 Responsibilities

The Maternity Management team.

4 Training

Staff are expected to access appropriate training where provided. Training needs will be identified through appraisal and clinical supervision. All midwives should be aware of safety of anti-asthma medications and should be able to counsel asthmatics to continue with their treatment during pregnancy.

5 Monitoring and Effectiveness

Local service Improvement Plan will guide monitoring and effectiveness.

This policy has undergone an equality impact assessment screening process using the toolkit designed by the NHS Centre Equality & Human Rights. Details of the screening process for this policy are available from the policy owner.

6 Appendices

Appendix 1 – Guideline for treatment of Asthma in Pregnancy

Appendix 1

Guideline for Treatment of Asthma in Pregnancy

Pre- conceptual Counselling:

- Asthma control may improve, deteriorate or remain unchanged in pregnancy
- Patient education to continue medication during pregnancy as deterioration in disease control is commonly caused by reduction or complete cessation of medication
- Risk of intrauterine growth restriction, small for dates, premature birth with poor asthma control
- **Discontinue Omalizumab** prior to conception
- Education on inhaler technique and home peak-flow monitoring

Antenatal period:

- Continue drug therapy as in non-pregnant state. Patients should be explicitly reassured regarding safety of their medications including inhaled corticosteroids and the importance of continuing with therapy to control asthma at their initial clinic visit.
- Pregnant patients with asthma should be explicitly reminded of importance of good control and that if they suffer an exacerbation of their asthma that it is important that this is treated promptly. All patients should be reassured of the safety of oral corticosteroids in pregnancy and informed that oral corticosteroids should **NOT** be withheld because of pregnancy in the event of an exacerbation.
- Avoid commencing Montelukast in pregnancy but may be continued if the patient is already on it prior to pregnancy as benefits would outweigh risks
- If uncontrolled/ worsening asthma (Peak flow rate <80% of expected), refer them to the medical antenatal clinic + Nurse led asthma clinic and seek medical help
- If severe/brittle asthma refer to Obstetric Anaesthetic alert clinic and ensure patients referred to Asthma Clinic for review by Dr Whittaker in Chest Clinic
- Women should be advised to stop smoking

- It is important to consider the possibility of 'aspirin sensitivity' and severe bronchospasm in a minority of women with asthma. In those patients who have a clear history of previous asthma sensitivity even low dose exposure can be life threatening and is contraindicated. Low dose aspirin may be indicated in pregnancy as a prophylaxis for certain women high risk of conditions such as pre-eclampsia, antiphospholipid syndrome etc. **Pregnant women with asthma should be asked about a history of aspirin sensitivity before being advised to take low dose aspirin.**
- All pregnant women and particularly patients with asthma should be advised to undergo immunisation against influenza.
- Home peak flow monitoring to be encouraged
- If women with asthma admitted to maternity wards, daily peak flow monitoring should be done and referral to Respiratory team if develops worsening signs/ symptoms of asthma
- Women who have received steroid tablets at a dose exceeding prednisolone 7.5mg per day for more than two weeks prior to delivery should be aware that they will require intravenous hydrocortisone 100mg four times per day throughout labour and be encouraged to request it when presenting in labour.
- A clear plan of intrapartum and postpartum management must be documented in the notes.

Induction:

- Prostaglandin E2 (propress, prostin) used to induce labour and to ripen the cervix is safe to use.
- Prostaglandin E1 (misoprostol) used for early management of miscarriage and PPH is safe to use
- β_2 agonists via inhaled route do not impair uterine contractions or delay the onset of labour
- The use of inhaled and oral medications including steroids should be continued throughout the induction process

Intrapartum:

- ◆ Continue all usual asthma medication regularly as usual during labour
- ◆ All forms of analgesia in labour are safe including epidurals and Entonox. Care must be taken to enquire about a history of sensitivity to non-steroidal anti-inflammatory drugs as these can precipitate life-threatening bronchospasm in a small proportion of asthmatics. Choose an alternative analgesia.

Opiates can be used except in an unlikely event of an acute severe asthmatic attack and then they should be avoided
- ◆ On call Anaesthetist for Delivery Unit should be informed when brittle asthmatic woman is in labour.
- ◆ Caesarean Section should be for obstetric indications only.
- ◆ **Women receiving steroid tablets at a dose exceeding prednisolone 7.5 mg per day for more than two weeks prior to delivery should receive parenteral hydrocortisone 100 mg 6 hourly during labour.**

Postpartum:

- Syntocinon to be given for the 3rd stage
- Caution should be used when administering ergometrine +/- or carboprost. Both drugs may worsen bronchospasm, however, in cases of postpartum haemorrhage, benefits are likely to outweigh the risks
- **NEVER GIVE CARBOPROST INTRAVENOUSLY**

Breastfeeding:

- Women with asthma should be encouraged to breastfeed
- All drugs including inhaled steroids are safe to use in breastfeeding

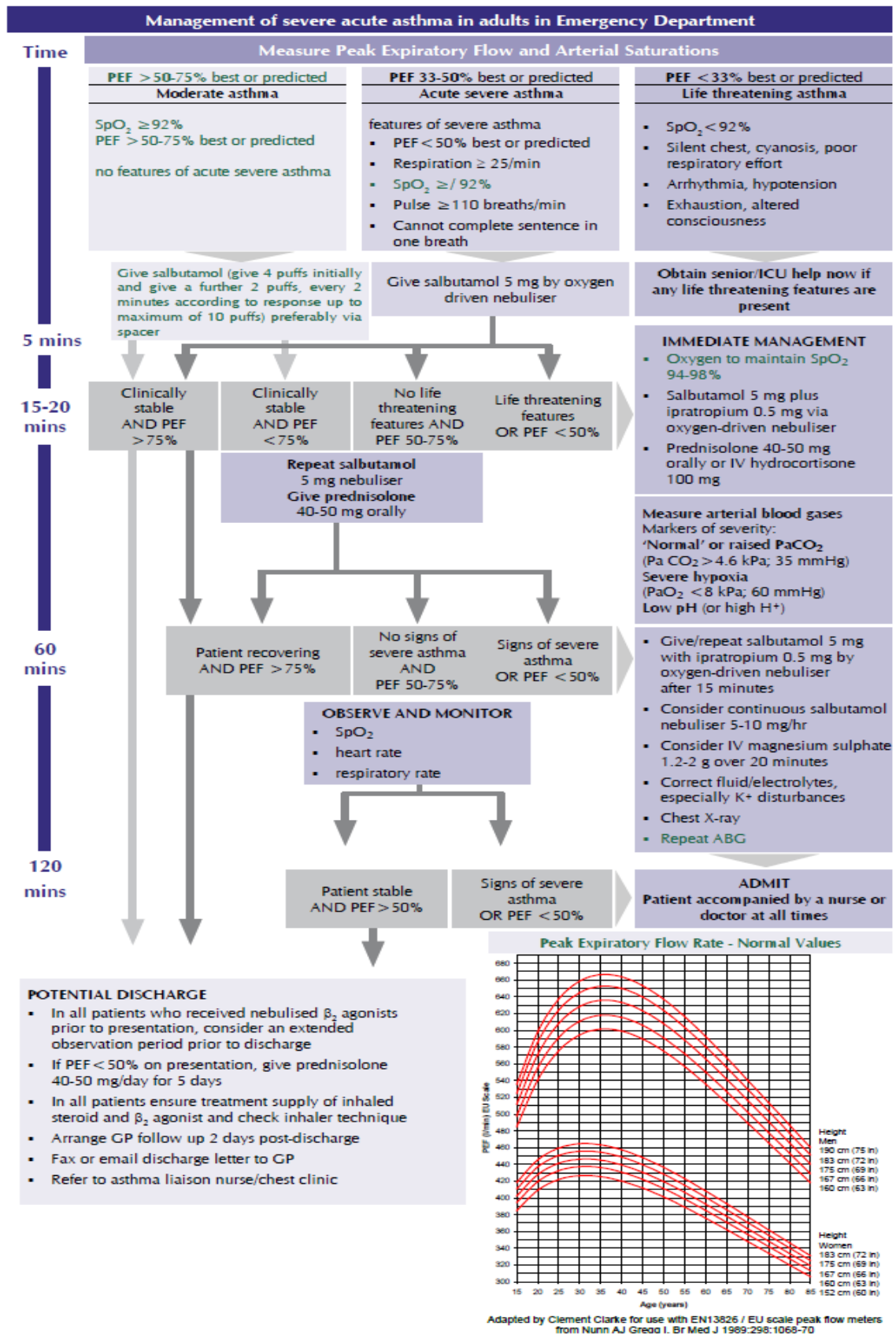
Management of an acute Asthma attack in pregnancy/labour

Acute uncontrolled asthma can kill – but it is rarely a problem in pregnancy

Can be spontaneous but is more commonly induced by either superimposed respiratory infection or medically induced e.g. with carboprost (haemobate).

Principles:

1. Give drug therapy as in non-pregnant
2. Deliver Oxygen immediately to maintain saturation between 94-98%
3. **ALWAYS** check Peak expiratory flow (PEFR) and refer to chart to categorise.
4. Moderate, severe and life threatening asthma (see peak flow) must be treated vigorously **by the admitting team while waiting for help from the medics.** See flow charts below
5. Exclude other causes of worsening breathlessness and wheeze such as pulmonary embolism, cardiomyopathy etc.
6. Continuous foetal monitoring is recommended
7. Close liaison between respiratory physician, anaesthetist and obstetrician
8. Be aware that many young pregnant women with asthma do not appear distressed and their observations remain stable
9. Ensure all patients admitted because of asthma during pregnancy have follow up in chest clinic arranged prior to discharge from hospital.



Management of acute severe asthma in adults in hospital

Features of acute severe asthma

- Peak expiratory flow (PEF) 33-50% of best (use % predicted if recent best unknown)
- Can't complete sentences in one breath
- Respirations ≥ 25 breaths/min
- Pulse ≥ 110 beats/min

Life threatening features

- PEF $< 33\%$ of best or predicted
- SpO₂ $< 92\%$
- Silent chest, cyanosis, or feeble respiratory effort
- Arrhythmia or hypotension
- Exhaustion, altered consciousness

If a patient has any life threatening feature, measure arterial blood gases. No other investigations are needed for immediate management.

Blood gas markers of a life threatening attack:

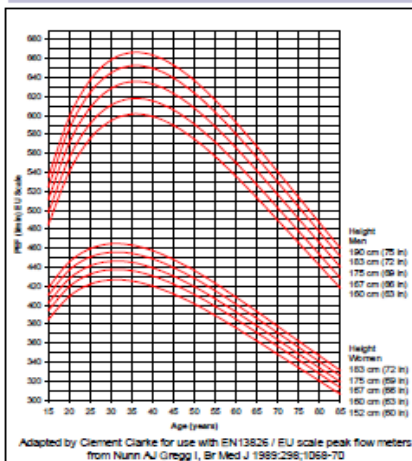
- 'Normal' (4.6-6 kPa, 35-45 mmHg) PaCO₂
- Severe hypoxia: PaO₂ < 8 kPa (60mmHg) irrespective of treatment with oxygen
- A low pH (or high H⁺)

Caution: Patients with severe or life threatening attacks may not be distressed and may not have all these abnormalities. The presence of any should alert the doctor.

Near fatal asthma

- Raised PaCO₂
- Requiring mechanical ventilation with raised inflation pressures

Peak Expiratory Flow Rate - Normal Values



IMMEDIATE TREATMENT

- Oxygen to maintain SpO₂ 94-98%
- Salbutamol 5 mg or terbutaline 10 mg via an oxygen-driven nebuliser
- Ipratropium bromide 0.5 mg via an oxygen-driven nebuliser
- Prednisolone tablets 40-50 mg or IV hydrocortisone 100 mg
- No sedatives of any kind
- Chest X ray if pneumothorax or consolidation are suspected or patient requires mechanical ventilation

IF LIFE THREATENING FEATURES ARE PRESENT:

- Discuss with senior clinician and ICU team
- Consider IV magnesium sulphate 1.2-2 g infusion over 20 minutes (unless already given)
- Give nebulised β_2 agonist more frequently e.g. salbutamol 5 mg up to every 15-30 minutes or 10 mg per hour via continuous nebulisation (requires special nebuliser)

SUBSEQUENT MANAGEMENT

IF PATIENT IS IMPROVING continue:

- Oxygen to maintain SpO₂ 94-98%
- Prednisolone 40-50mg daily or IV hydrocortisone 100 mg 6 hourly
- Nebulised β_2 agonist and ipratropium 4-6 hourly

IF PATIENT NOT IMPROVING AFTER 15-30 MINUTES:

- Continue oxygen and steroids
- Use continuous nebulisation of salbutamol at 5-10 mg/hour if an appropriate nebuliser is available. Otherwise give nebulised salbutamol 5 mg every 15-30 minutes
- Continue ipratropium 0.5 mg 4-6 hourly until patient is improving

IF PATIENT IS STILL NOT IMPROVING:

- Discuss patient with senior clinician and ICU team
- Consider IV magnesium sulphate 1.2-2 g over 20 minutes (unless already given)
- Senior clinician may consider use of IV β_2 agonist or IV aminophylline or progression to mechanical ventilation

MONITORING

- Repeat measurement of PEF 15-30 minutes after starting treatment
- Oximetry: maintain SpO₂ $> 94-98\%$
- Repeat blood gas measurements within 1 hour of starting treatment if:
 - initial PaO₂ < 8 kPa (60 mmHg) unless subsequent SpO₂ $> 92\%$
 - PaCO₂ normal or raised
 - patient deteriorates
- Chart PEF before and after giving β_2 agonists and at least 4 times daily throughout hospital stay

Transfer to ICU accompanied by a doctor prepared to intubate if:

- Deteriorating PEF, worsening or persisting hypoxia, or hypercapnia
- Exhaustion, altered consciousness
- Poor respiratory effort or respiratory arrest

DISCHARGE

When discharged from hospital, patients should have:

- Been on discharge medication for 12-24 hours and have had inhaler technique checked and recorded
- PEF $> 75\%$ of best or predicted and PEF diurnal variability $< 25\%$ unless discharge is agreed with respiratory physician
- Treatment with oral and inhaled steroids in addition to bronchodilators
- Own PEF meter and written asthma action plan
- GP follow up arranged within 2 working days
- Follow up appointment in respiratory clinic within 4 weeks

Patients with severe asthma (indicated by need for admission) and adverse behavioural or psychosocial features are at risk of further severe or fatal attacks

- Determine reason(s) for exacerbation and admission
- Send details of admission, discharge and potential best PEF to GP

References:

1. British Thoracic Society Guideline for Management of Asthma, 2012
2. Handbook of Obstetric medicine, Catherine Nelson-Piercy