

PCRS-UK Protocols

Asthma assessment and review in primary care



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Introduction

Asthma is a chronic inflammatory disease of the airways, which results in widespread but variable airflow obstruction in response to a variety of stimuli.¹ Asthma is now one of the commonest long term disorders with an estimated 5.4 million sufferers in the UK, the majority of who experience regular symptoms. Improved care could avoid an estimated 75% of hospital admissions and prevent as many as 90% of the deaths from asthma.¹

Presentation

Asthma diagnosis hinges on taking a careful history and recognising a characteristic pattern of signs and symptoms in the absence of an alternative explanation for them.³

Presentation in children 0-12yrs

More than one of the following **increase the probability of asthma** - wheeze, cough, difficulty in breathing, chest tightness, particularly if these symptoms

- are frequent and recurrent
- are worse at night and in the early morning
- occur in response to, or are worse after, exercise or other triggers, such as exposure to pets, cold or damp air, or with emotions or laughter
- occur apart from colds

Other clinical features which **increase the probability of asthma** in children include:

- Personal history of atopic disorder
- Family history of atopic disorder and/or asthma
- Widespread wheeze heard on auscultation
- History of improvement in symptoms or lung function in response to adequate therapy

Clinical features which **lower the probability of asthma** in children

- Symptoms with colds only

- Isolated cough in the absence of wheeze or difficulty breathing
- History of moist cough
- Prominent dizziness, light-headedness, peripheral tingling
- Repeatedly normal physical examination of chest when symptomatic
- Normal peak expiratory flow (PEF) or spirometry when symptomatic
- No response to a trial of therapy
- Clinical features pointing to alternative diagnosis

Presentation in Adults (>12yrs)

More than one of the following **increases the probability of asthma in adults** - wheeze, cough, difficulty in breathing, chest tightness, particularly if:

- Symptoms are worse at night and in the early morning
- Symptoms are in response to exercise, allergen exposure and cold air
- Symptoms occur after taking aspirin or beta-blockers

Other clinical features which **increase the probability of asthma** in adults include:

- Personal history of atopic disorder - allergic rhinitis and asthma are two very common conditions, estimated to co-exist in up to 80% of patients with asthma.⁴
- Family history of atopic disorder and/or asthma
- Widespread wheeze heard on auscultation

Clinical features which **lower the probability of asthma in adults**:

- Prominent dizziness, light-headedness, peripheral tingling
- Chronic productive cough in the absence of wheeze or breathlessness
- Repeatedly normal physical examination of chest when symptomatic

- Voice disturbance
- Symptoms with colds only
- Cardiac disease
- Normal spirometry or PEF when symptomatic

The healthcare professional should document the basis on which asthma is suspected from the history and/or objective evidence of airflow obstruction.

- Patients with a '**high probability**' of asthma (diagnosis of asthma likely) should be offered a trial of therapy and if symptoms resolve, be considered to have asthma and treatment should continue.
- Patients with an '**intermediate probability**' (diagnosis uncertain) offer one of the following approaches, dependent on symptom frequency and severity:
 - a) 'watchful waiting' with review (in children)
 - b) an explicit trial of therapy for a pre specified period of time
 - c) further investigations such as spirometric reversibility tests >5yrs of age (>12% increase FEV₁ or PEF from baseline supports diagnosis of asthma in children or >400mls increase FEV₁ from baseline in adults), assessment of airway responsiveness, tests of eosinophilic airway inflammation and peak flow monitoring.
- Patients with a '**low probability**' (other diagnosis likely) consider referral and/or investigation and/or treatment of other condition.

Management

The goals of asthma management are defined as

- no daytime symptoms
- no night-time awakening due to asthma symptoms
- no limitations on activity including exercise
- no need for rescue medication (reliever)
- no exacerbations
- normal lung function (FEV₁ and/or PEF>80% predicted or best)

Patients should be managed according to the BTS/SIGN 2008 guidelines using the stepwise approach, reviewing patients regularly and stepping down treatment as appropriate.

After initial assessment patients should be reviewed according to the management changes made. If new therapies have been started, offer review 2-4 weeks after commencing treatment. If lifestyle changes are being made review according to goals set with the patient. Patient review should also be offered within 48 hours

after an exacerbation or hospital admission. Routine reviews should be offered annually to patients with well controlled asthma and more frequently in patients with poor control. Consider referral of patients with persistent symptoms and/or frequent exacerbations despite treatment at Step 4/5 of BTS/SIGN guidelines to a multi-disciplinary 'difficult asthma service', where available.

Assessment should be undertaken by health care professional trained in asthma management^{3/5}

- Establish patient's health beliefs
- Assess asthma control – ideally using validated questionnaires such as the ACT questionnaire or Mini and Standardised versions of the Paediatric Asthma Quality of Life Questionnaires for children⁵
- In those with poor control, assess concordance, inhaler technique and enquire about new triggers e.g. rhinitis, occupation, new pet, house move, medication change
- Discontinue therapy in those patients who are not benefitting from it.
- Observe inhaler technique and provide education/change device where appropriate to ensure effective use
- Enquire about reliever/oral steroid use and check compliance by counting number of prescriptions issued)
- Check FEV₁ or peak flow rate. Compare with previous best or predicted
- Smoking status – offer cessation advice/health education
- Offer weight management advice in overweight patients.⁶
- Provide asthma action plans for those who don't have one and ensure their use is understood.⁷

Criteria for referral in children

- Diagnosis unclear or in doubt
- Symptoms present from birth or perinatal lung problem
- Excessive vomiting or possetting
- Severe upper respiratory tract infection
- Persistent wet or productive cough
- Family history of unusual chest disease
- Failure to thrive
- Nasal polyps (bilateral polyps are pathognomonic of cystic fibrosis)
- Unexpected clinical findings eg focal signs, abnormal voice or cry, dysphagia, inspiratory stridor
- Failure to respond to conventional treatment (particularly inhaled corticosteroids above 400mcgs/day or frequent use of steroid tablets)

- Parental anxiety or need for reassurance

Criteria for referral in adults

- Diagnosis unclear
- Unexpected clinical finding (crackles, clubbing, cyanosis, cardiac disease)
- Unexplained restrictive spirometry
- Suspected occupational asthma
- Persistent non-variable breathlessness
- Monophonic wheeze or stridor
- Prominent systemic features (myalgia, fever, weight loss)
- Chronic sputum production
- Chest X-ray shadowing
- Marked blood eosinophilia ($> 1 \times 10^9/l$)
- Poor response to asthma treatment e.g. persistent symptoms and/or frequent exacerbations despite treatment at Step 4/5 of BTS/SIGN guidelines
- Severe asthma exacerbation

Measurements

- Spirometry (this must be undertaken by a suitably qualified healthcare professional with expertise on spirometry interpretation)
- Peak expiratory flow (PEF)
- Calculate BMI

References

1. National Heart, Lung and Blood Institutes of Health (1992) International consensus report on diagnosis and treatment of asthma. *European Respiratory Journal* 1992;(5):601-641
2. Asthma UK. Wish you were here? (2008) Available online at http://www.asthma.org.uk/applications/site_search/search.rm?term=wish+you+were+here&searchreferer_id=531&submit.x=0&submit.y=0 Accessed 16th April 2009
3. British Thoracic Society, Scottish Intercollegiate Guidelines Network. British Guideline on the Management of Asthma. *Thorax* 63 2008; (Supplement 4): iv1-iv121. (<http://www.sign.ac.uk/pdf/sign101.pdf>)
4. General Practice Airways Group (2006) Opinions, PCRS-UK Opinion No 3. Allergic Rhinitis and Asthma

(PDF). Accessed 16th April 2009

5. Education for Health (2008) Available online http://www.educationforhealth.org.uk/pages/education_training/diploma_level/spirometry. accessed 16th April 2009.

6. Beuther DA, Sutherland ER (2007) Overweight, obesity, and incident asthma: a meta-analysis of prospective epidemiologic studies. *American Journal Respiratory Critical Care Medicine*.175:161-666

7. PCRS-UK Opinion Sheet - Personal Asthma Action Plans (2008) Available from http://www.pcrs-uk.org/opinions/asthma_action_plans_rev_aug_2008.pdf. Accessed 4 July 2009.

Useful tools and Resources

PCRS-UK Online Asthma Quick Reference Guide - An online guide to the diagnosis and management of asthma based on the BTS/SIGN asthma guidelines³ and the NICE guideline for the administration of inhaled corticosteroids

PCRS-UK Asthma Clinic Assessment and Review Checklist

PCRS-UK Opinion Sheet - Asthma Review

PCRS-UK Opinion Sheet - Inhaler devices

PCRS-UK Opinion Sheet - Asthma Action Plans

PCRS-UK Opinion Sheet - Spirometry

PCRS-UK Opinion Sheet - Occupational Lung Disease

PCRS-UK Nurse protocol - Spirometry

PCRS-UK Nurse protocol - Management of Asthma

PCRS-UK Nurse PGD - The supply/administration of

salbutamol for reversibility testing in primary care by a designated healthcare professional

Diagnostic Spirometry in Primary Care: Proposed standards for general practice compliant with American Thoracic Society and European Respiratory Society recommendations. Mark L Levy, Philip H Quanjer, Rachel Booker, Brendan G Cooper, Steve Holmes, Iain Small. *Primary Care Respiratory Journal*

2009;18(3);130-147

Information for Patients

Asthma UK

<http://www.asthma.org.uk/index.html>

Advice Line: 0800 121 62 44

http://www.asthma.org.uk/how_we_help/advice/inde x.html

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