GPIAG

opinion

GPIAG Opinion Nº 15

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Diagnosis of Asthma

Diagnosis is fundamental in the management of patients with asthma, where appropriate treatment is important. The GPIAG has developed this short summary intended to assist clinicians in making a diagnosis of asthma in primary care. It is helpful to record in the medical notes, the criteria used to reach a diagnosis. This information could facilitate clinical problem solving as well as form the basis for a disease register, research or audit projects.

The diagnosis of asthma is considered if there is[1]:-

- A typical history

and/or

- A 20% variability in lung function

AND

- A response to asthma treatment

Respiratory symptoms

- Cough
- Wheeze
- Shortness of breath
- Chest tightness
- Exercise induced symptoms

Features of a t**ypical history** of asthma: In asthma the symptoms are intermittent or continuous, and they tend to occur after exposure to various trigger factors. Wheeze is considered by many to be the cardinal symptom of asthma; however wheeze is often poorly described by:

- The presence of a personal history of allergy, eczema or rhinitis
- A family history of atopy (eczema/rhinitis/asthma), especially maternal asthma
- Nature frequency and pattern of symptoms (including triggers)
- Exposure to cigarette smoke (active or passive) patients and a careful history is essential.[2]

Supporting features which assist in diagnosing asthma

Objective lung function tests are the gold standard for diagnosis of asthma, though this is not always possible in young children (under 7 years) and the elderly.

A 20% variation (change) in peak flow or FEV_1 as measured by:

- The presence of a personal history of allergy, eczema or rhinitis
- A family history of atopy (eczema/rhinitis/asthma), especially maternal asthma
- Nature frequency and pattern of symptoms (including triggers)
- Exposure to cigarette smoke (active or passive) Diurnal variation (diary card) over one or two weeks
- An improvement in peak flow after inhaled salbutamol or terbutaline either when the patient is seen or by PEF diary card, perhaps after being prescribed a trial of oral or inhaled topical steroids.
- A reduction in peak flow after a trigger (including exercise).

A normal peak flow at a consultation does not exclude the diagnosis of asthma. Asthma is a dynamic condition and readings need to be taken over time in order to check for variability.

On Peak expiratory flow measurement:

- Individual meters vary by up to 20%; therefore use the same meter in each patient
- Readings before and after treatment with a ß2-agonist bronchodilator
- Readings on waking and in the late afternoon (the highest readings are obtained in the afternoon)
- The best of three readings should be recorded

Sometimes patients present with atypical symptoms of asthma, including:

- General ill health
- Sleep disturbance
- Poor performance at school/work
- Recurrent vomiting (especially in younger children. The vomiting nearly always follows a bout of coughing and frequently contains mucous).
- Chest pain (sometimes so severe it may mimic a myocardial infarction).

Physical examination.

Physical examination between exacerbations is often normal. Forced expiration while auscultating the chest sometimes helps to elicit wheezing. Severity of attacks may be assessed using the respiratory and pulse rates, pulse oximetry, peak expiratory flow, speech difficulty, use of accessory muscles and cyanosis.

Peak flow at the initial consultation should be compared to expected levels using standard charts. Once the diagnosis has been established, it is customary to compare readings with previous 'best ever' readings, with the same meter.

Differentation of asthma from COPD

It is important to diagnose asthma accurately. In the smoker over the age of 40 the commonest diagnostic error is to differentiate it from COPD, the management of which is quite different.

Consider COPD if:

- Patient >40 years at onset of symptoms
- Current smoker or ex-smoker
- Symptoms are persistent and slowly progressive
- There is a limited response to asthma treatment

Notes:

1 For further information on diagnosis and management of COPD see our GPIAG COPD booklet available from http://www.gpiag.org/education/resources/copd_guidelinebooklet_final.pdf and our range of opinion sheets available at http://www.gpiag.org/pubs/opinionsheets.php

2 The BTS COPD consortium have published a booklet Spirometry in Practice which is available free to Primary Care clinicians in the UK from copd@imc-group.co.uk.or Fax+44 (0)1252 845700

Diagnosis of asthma in under 6s:[3;4]

In a child under 6 years, the provisional diagnosis is based on history alone; examination findings may yield useful information. Clinicians may be able to categorise the child into one of three groups according to these main symptom patterns.

1. Wheeze/ cough in association with viral infections and no symptoms in between viral illness. These children with viral induced wheeze (VAW) often have a history of maternal smoking in pregnancy and passive smoking in infancy. Other factors include prematurity and respiratory distress at birth. This group is less likely to have steroid responsive asthma, but bronchdilators may be useful for symptom control[3].
2. Patients with marked intermittent symptoms who also experience symptom exacerbation with viral infection are more likely to have asthma and may benefit from treatment with inhaled steroids
3. Children with continuous symptoms may have severe asthma, but should be referred to a respiratory paediatrician in order to exclude other conditions.

Supporting features of a diagnosis of asthma include a personal history of eczema or allergy and family history of asthma. A 6-8 week trial of treatment with an inhaled steroids may be necessary to assist in making the diagnosis. A response to treatment does not confirm a diagnosis of asthma, however if symptoms recur after treatment is withdrawn, the diagnosis is likely to be asthma.

Children with failure-to-thrive should be referred. Wheeze under the age of one year is particularly difficult to diagnose and referral to a specialist should always be considered.

Indication for referral of patients with respiratory symptoms:

- The diagnosis is in doubt
- The treatment given is unsuccessful
- There is patient, parent or clinician concern
- Occupational asthma is suspected

Reference List

1. Levy ML, Hilton SR. Asthma in Practice, 4th Ed. London: Royal College of General Practitioners, 1999.
2. Cane RS, Ranganathan SC, McKenzie SA. What do parents of wheezy children understand by "wheeze"? *Archives of Disease in Childhood* 2000;**82**:327-32.
3. Bush, A. Diagnosis of asthma in children under 5. *Asthma in General Practice* **8(1)**, 4-6. 2000.
4. Cochran, D. Diagnosing and treating chesty infants. *British Medical Journal 1998;***316**, 1546-47

Making an objective diagnosis is a crucial first step in the management of asthma. Preferably a patient should not be on long term treatment for asthma without a documented process of diagnosis. This should include:

- an appropriate history
- supported by objective demonstration of 20% peak flow variability
- and a response to treatment.

We have designed a label as follows, intended for use in patient records to facilitate these three diagnostic steps

Asthma diagnosis (three ticks confirms a diagnosis of asthma)		
Yes ☐	**A typical history**	Variable symptoms of wheeze, cough, shortness of breath, chest tightness PMH or FH of atopy
and/or Yes ☐	**20% variability in lung function**	Peak flow diary showing: 20% diurnal variation 20% reduction after trigger 20% response to treatment
AND Yes ☐	**Response to asthma treatment**	Symptomatic response to ß-2-agonist, oral/inhaled steroid
Asthma diagnosed / not diagnosed / suspected		

A template for producing Avery L7173 labels can be downloaded from http://www.gpiag.org

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