Asthma diagnosis in four easy steps

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Clinical question
How can I improve the accuracy of my asthma diagnoses?

Recommendations

1. Use spirometry, ideally while the patient is symptomatic.
Nationwide, about 30% of patients diagnosed with asthma don't have asthma!

They may think they have asthma. They may have been diagnosed with it in the past, and even been treated with asthma medications... but either their asthma went into remission (which can happen) or they never had asthma in the first place.

2. Keep an eye out for asthma mimics.
Many conditions can cause symptoms that resemble asthma. Cough, dyspnea, and wheeze each have their own list of possible causes. Because of this, it's important to remember that asthma is a diagnosis of exclusion.

Vignettes

"Doc, I had trouble like this a few months ago. My asthma is really acting up." Ask the patient what he means by "my asthma"—what symptoms is he having?

"Well, I keep coughing. Day and night. It's really wearing me out." With the patient, consider the differential diagnoses of chronic cough, such as gastroesophageal reflux disease (GERD), post-nasal drainage, prolonged post-viral cough, or recurrent upper respiratory infections (URIs).

"Well, I have been noticing some heartburn lately. But it's not bad; I just take TUMS when I need to." Based on this information, GERD-induced cough now needs to be considered as well as asthma. A trial of omeprazole can help to distinguish between asthma and GERD. Also, if this patient has a normal spirometry while symptomatic, then asthma is much less likely to be the answer.

You are seeing a patient who needs a refill on her fluoxetine, and you notice she has been refilling her albuterol quite frequently. "Yes, I'm having more trouble with my asthma at my new job. When I go home I'm fine, but at work my asthma has been acting up." You ask the patient what she means by "my asthma."

"Well, some of the people there wear too much perfume. When they walk by my desk I need my inhaler and try to go someplace so I can breathe." You ask what symptoms she has then; again, she says she "can't breathe." You then ask where she feels it's hard to breathe at. This open-ended question is meant to elicit where in her body her dyspnea is originating.

Sometimes when you ask patients to indicate where it is hard to breathe, they say their chest, but their hand rises to their throat as they describe the sensation. Cases like this often involve vocal cord dysfunction (VCD), sometimes also called "vocal cord asthma." VCD occurs when there is paradoxical adduction of the vocal cords that results in dyspnea and throat tightness,
often associated with voice change and sometimes stridor (which is often mischaracterized as "wheeze" noted on inspiration). VCD is a well-known asthma mimic and should be considered in patients with dyspnea and throat tightness, especially when scents are a trigger. Reassure the patient that VCD—if that is in fact what she has—is not a potentially fatal condition. Once VCD is recognized for what it is and treated, patients are able to control their symptoms and often become less dependent on medications.

Another thing to consider is whether psychiatric comorbidities might be playing a role in this patient's symptoms. Studies show high levels of **comorbid anxiety and/or depression in patients who overuse albuterol**. Some patients with anxiety have concurrent VCD, while in others the anxiety itself can result in a sensation of dyspnea. Diagnosing these patients can be very challenging, as their symptoms may arise purely from psychiatric comorbidities, asthma, or VCD, or from a combination of the three. Obtaining spirometry while the patient is symptomatic can be invaluable in these situations.

Finally, consider these instances of "**exercise-induced asthma**":

An **11- or 12-year-old** reports dyspnea with exercise. Children occasionally do have asthma; however, many who experience asthma-like symptoms (in fact the majority in some studies) have perfectly healthy lungs. In this age group, children's bodies are rapidly changing at the same time that school gym classes are becoming more intense—for many children, it's the first time they have really pushed themselves aerobically.

A patient with **obesity (BMI > 30)** notes dyspnea with exertion but not with other triggers (such as URI). In the absence of other triggers, consider deconditioning—rather than asthma—as a cause of the dyspnea.

"Exercise-induced asthma" is yet another setting in which spirometry can be helpful. For patients who do have asthma, exercise-related symptoms often indicate **poor control of persistent asthma**. When asked, these patients usually note having asthma symptoms with other triggers.

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**3. Use your physical exam.**

Remember the adage, "not all that wheezes is asthma." Wheezing can originate anywhere in a patient's airway from the nares to the lung. Knowing how to **distinguish between upper and lower airway wheeze** is probably the key aspect of the physical exam for evaluating for asthma.

The wheeze of asthma (bronchospasm) is classically described as polyphonic, with musical or whistling sounds, and predominantly expiratory. By contrast, wheezes emanating from the upper airway are often readily audible without a stethoscope but sound distant on auscultation of the lower chest. Also, upper airway wheeze will sound the same in all lung fields on auscultation, whereas the wheeze of true bronchospasm will sound different in various lung fields (hence the term "polyphonic"). Finally, note that even in asthma, wheeze is not always present on exam and its absence does not necessarily mean the absence of airflow obstruction.

**4. Use spirometry, ideally while the patient is symptomatic.**

The hallmark objective finding for asthma is reversible airflow obstruction. This can only be measured via pulmonary function testing—specifically, spirometry.

While spirometry is not required to diagnose asthma, we know that 30% of patients diagnosed with asthma don't actually have it, and that there are numerous mimics. Thus, spirometry can be an invaluable aid when attempting to distinguish between asthma and other causes of cough, dyspnea, and/or wheeze. Normal spirometry results obtained while a patient is actively having trouble with cough, dyspnea, or wheeze strongly suggest that those symptoms are caused by something other than asthma.
Why did we choose this topic?

1. The HEDIS® (Healthcare Effectiveness Data and Information Set) asthma medication ratio (AMR) measure reflects individuals 5–85 years of age with persistent asthma who had a ratio of controller medications to total asthma medications of 0.50 or greater during the measurement year. Each patient with a non-compliant AMR is at significantly higher risk for emergency care and/or hospitalization—not to mention missed school and work. (Note: In 2018, the age range for the AMR measure will change to 5–65 years.)

• Asthma is often misdiagnosed. Confounders for asthma diagnosis include GERD and anxiety; tobacco use and lack of allergy testing also contribute to either misdiagnosis or poor asthma control.

Coding tips

• If the diagnosis is not clear or you suspect another condition may be causing the patient's symptoms, then code for the symptom itself (e.g., "chronic cough" or "dyspnea").

• If you are confident of an asthma diagnosis then you may code it simply as "intermittent asthma" (J45.20) or "persistent asthma" (J45.909).

• Distinguishing between mild versus moderate versus severe is fine to do but not absolutely necessary.

Resources

• See the stepwise approach to asthma care detailed in the KPWA Asthma Diagnosis & Treatment Guideline. Always re-evaluate the asthma diagnosis and adherence to therapy when considering a step up in care.

• Two recent studies for further reading:
  o Reevaluation of Diagnosis in Adults With Physician-Diagnosed Asthma confirmed what we've known for years: Asthma is often misdiagnosed and can also go into remission. [Aaron SD, Vandemheen KL, FitzGerald JM et al; Canadian Respiratory Research Network. *JAMA.* 2017 Jan 17;317(3):269-279.]