

Chronic Cough in Women

Heather Z. Sankey, MD, FACOG

Cough is a common symptom that can be a sign of a minor, self-resolving ailment or a serious disease.

Case: *A 45-year-old woman presents for an annual gynecologic exam. She has a history of hypertension that is treated with medication, hyperlipidemia, and obesity. On review of systems, you discover she has a dry cough that has been present for 2 or 3 months.*

What is the differential diagnosis for cough, and how would you approach her work-up?

The work-up and differential diagnosis of a cough is based on the chronicity of the cough. A thorough history (Table 1) will establish how long a cough has been present and will narrow the list of differential diagnoses.

The most important part of your assessment should be determining if the acute cough is life-threatening. A thorough history and physical examination can differentiate heart failure, acute asthma attack, or other serious disease from a non-life-threatening diagnosis. If chronic obstructive pulmonary disease is determined, it should be managed by an internist.

An isolated acute cough is typically caused by a virus and will resolve within 3 weeks. Many patients seek medical care for coughs lasting 7 to 10 days, but antibiotics are rarely indicated, and then only when bacterial sinusitis is suspected. Brompheniramine and sustained-release pseudo-

ephedrine provide the most effective symptom relief for an acute cough.^{1,2} Antihistamines are not generally helpful.

A subacute cough is one that lasts between 3 and 8 weeks. The differential diagnosis and work-up for subacute cough are similar to that for chronic cough, except that postinfectious etiologies need to be considered, including bronchitis and pertussis. Pertussis can cause a severe cough in adults who have not had a booster in many years, followed by a lingering cough for months.^{3,4} There are periodic outbreaks of pertussis in the United States. As a result, CDC and ACOG currently recommend a one-time booster of Tdap for all adults, especially women of childbearing age to protect their infants.

Any cough that lasts longer than 8 weeks is classified as chronic. Chronic cough may be attributable to one diagnosis, but it is not unusual to find that there may be multiple underlying conditions contributing to the symptoms.

The initial history and physical examination will provide clues as to what tests should be done and what medical therapy to use. It may be necessary to assess for multiple causes in order to completely relieve the cough symptoms.

DIAGNOSIS OF CHRONIC COUGH

The first step in evaluation of chronic cough is to perform a thorough history of present illness along with a detailed description of medications, exposure to toxins, allergens, or infectious agents, and smoking history.

If your review of systems reveals unexplained weight loss, you should suspect tuberculosis. If the patient has a smoking history, be aware of an increase for risk of neoplasm.

A well-known but often overlooked cause of chronic cough is angiotensin-converting enzyme inhibitors (ACEi). A persistent, dry cough occurs in 5% to 20% of people taking

FOCUSPOINT

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TABLE 1. Questions to Ask in Evaluation of Chronic Cough**Cough Characteristics**

- What type of cough is it (productive vs dry)?
- How often does it occur (frequency)?
- When is it worse?
- Are there any associated symptoms (wheezing, shortness of breath)?
- When did it start?
- Does anything relieve the cough?
- Are there any inciting factors (nighttime, cold exposure)?

Possible Related Symptoms

- Do you have heartburn or reflux?
- Have you gained or lost weight recently?
- Have you had any fevers or night sweats?
- Do you ever notice a postnasal drip or nasal congestion?

Aggravating Factors

- Do you smoke?
- Have you been exposed to any respiratory irritants at work or home?
- Do you have any environmental allergies?
- Do you know of any exposure to tuberculosis or pertussis?
- Have there been any major changes in your environment, diet, or lifestyle?
- What medications are you currently taking?

ACEi and is more common in women. It begins after approximately 3 weeks of treatment with ACEi and abates within days of discontinuation.⁵ Other medications can have a side effect of cough and need to be considered, including a common treatment for gastroesophageal reflux disease (GERD), omeprazole.⁶

Unless there are obvious findings on examination, such as wheezing and retractions in asthma, a chest x-ray is important in ruling out neoplasm or pneumonia. If the chest x-ray is negative, then there are 4 diagnoses that account for up to 90% of cases of chronic cough and should be considered: asthma, nonasthmatic eosinophilic bronchitis, GERD, and upper airway cough syndrome (formerly known as postnasal drip).⁷

ASTHMA

Asthma is a chronic inflammatory disease, often worsened by certain stimuli, that causes airway obstruction and is reversible with treatment.⁸ Classic asthma presents with symptoms of wheezing, shortness of

breath, chest tightness, cough with or without sputum, and breathlessness. The symptoms are usually worse at night and early in the morning. An acute episode is often in response to an environmental irritant such as smoke, exercise, or an allergen.

However, asthma can present as a cough alone (cough-variant asthma) without other symptoms. This cough occurs most commonly at night, and studies on quality of life in patients with asthma have found that the cough is often more troublesome for patients than any other symptom.⁹ The physical findings may be absent in between episodes, so it is important to consider asthma in the differential for a chronic cough with no obvious source. The diagnosis is made through spirometry and documentation of the reversibility of the airway obstruction.^{1,10} First-line treatment for asthma is with inhaled bronchodilators and inhaled corticosteroids.¹¹

NONASTHMATIC EOSINOPHILIC BRONCHITIS

In patients who have a chronic cough without airflow obstruction or hyperresponsive-

FOCUSPOINT

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TABLE 2. Diet and Lifestyle Changes for Chronic Cough

1. Stop smoking
2. Avoid or cut back on:
 - Alcohol
 - Mints
 - Chocolate
 - Coffee
 - Caffeinated drinks
 - Citrus, including tomato
3. Minimize vigorous exercise that increases intra-abdominal pressure

ness, the diagnosis of nonasthmatic eosinophilic bronchitis should be considered. These patients will demonstrate elevated levels of eosinophils in the sputum. In this case, the first step is to remove all environmental irritants. Inhaled bronchodilators are not effective with this disorder, but inhaled corticosteroids are associated with improved symptoms.¹²

UPPER AIRWAY COUGH SYNDROME

Previously known as postnasal drip syndrome, upper airway cough syndrome (UACS) is now referred to when discussing cough due to upper airway symptoms.¹³ Patients will frequently report congestion, a “dripping sensation” at the back of the throat, a hoarse voice, or a need to clear the throat.

There are a small number of patients who do not report these kinds of symptoms but respond to antihistamine therapy. There is no pathognomonic finding on history or physical exam, but if there are findings that lead to a specific cause for the UACS-induced cough, then targeted therapy should be instituted.

Empiric therapy with a first-generation antihistamine such as diphenhydramine and a decongestant can be tried when there is either an unexplained cough or a cough with signs and symptoms suggestive of UACS. The first-generation antihistamines are preferable for the treatment of cough, because they have a centrally acting antitussive effect in addition to the effect on central and peripheral histamine receptors.

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Coding for Chronic Cough in Women

Philip N. Eskew Jr, MD

The case describes a 45-year-old woman in the office for her annual exam who complains of a dry cough.

The CPT code for this encounter is:

99396 Periodic comprehensive preventive medicine reevaluation and management of an individual including an age and gender appropriate history, examination, counseling/anticipatory guidance/risk factor reduction interventions, and the ordering of laboratory/diagnostic procedures, established patient; 40-64 years

Since the patient has a symptom that requires additional physician work, the physician should document the process involved in the work-up of this condition. This should be in a separate note detailing the additional history obtained, the additional physical examination performed, and the ordering of any tests to support the diagnosis. This additional physician work can be coded as a **99213**, in addition to the annual examination code.

Or, the physician can just code for the annual examination and order a chest x-ray and have the patient return for a follow-up

office visit. This should depend on the patient’s insurance coverage, as some payors will not pay for additional services at the time of an annual examination visit.

The ICD-9 code for symptoms mentioned in the article are:

- 786.2** Cough (also the code for chronic cough)
- 033.9** Whooping cough, unspecified organism (Pertussis)
- 491.0** Simple chronic bronchitis, Smokers’ cough
- 493.9** Asthma, unspecified
- 518.3** Pulmonary eosinophilia, Eosinophilic asthma
- 530.81** Esophageal reflux (GERD)
- 784.91** Postnasal drip (now called Upper Airway Cough Syndrome)

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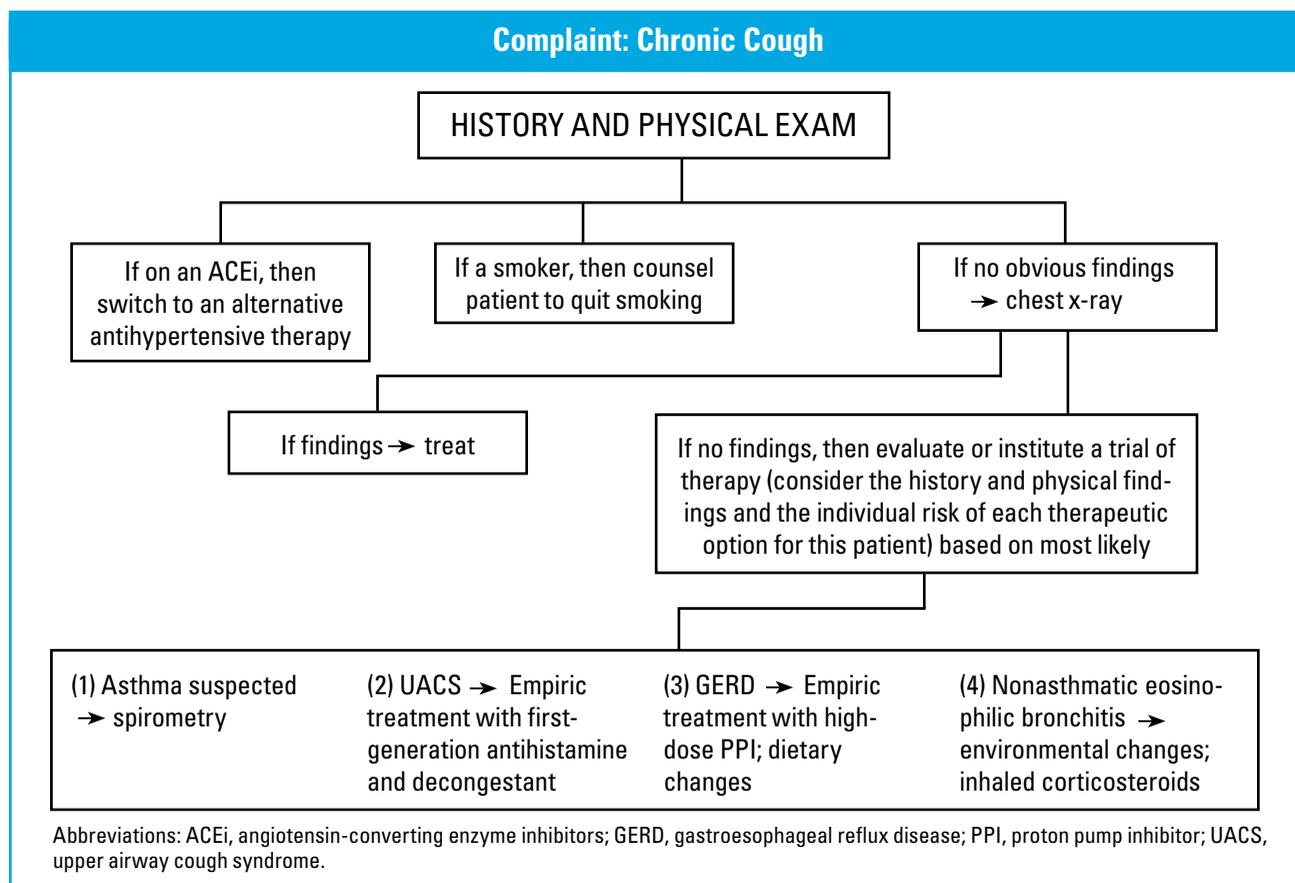


FIGURE. Algorithm for work-up of chronic cough.

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GASTROESOPHAGEAL REFLUX DISEASE

GERD is the third most common cause of chronic cough.¹⁴ Symptoms associated with gastroesophageal reflux may affect as many as 20% of Americans daily.¹⁵ Commonly, women with GERD will notice heartburn that is worse when lying down, after a full meal, and at night. Patients with these typical GERD symptoms should have a trial of a high-dose proton pump inhibitor (PPI) for 1 to 3 months.¹⁷ Endoscopy and ambulatory pH monitoring are the traditional tests used for making the diagnosis and assessing the damage from GERD, but they have not been found as helpful in patients with cough caused by reflux.⁷

In addition to medical treatment, patients should be educated about dietary and lifestyle changes (Table 2).¹⁶ If possible, they should stop intake of all foods that can worsen GERD or reflux, for at least a period during which the impact on their cough can be assessed. These foods, along with smoking, all lower the pressure in the lower esophageal sphincter and increase reflux.

Many patients who have a chronic cough due to reflux disease will respond to treatment with a PPI. There is a group who will not respond to treatment despite adequate acid suppression. These patients may be more likely to have a cough during the day and while upright. Recently it has been postulated that nonacidic reflux, known as laryngopharyngeal reflux, may be the source of cough in these patients.¹⁷

Some patients who have undergone fundoplication after failed medical treatment noted successful resolution of their cough following the surgery. Multichannel intraluminal impedance testing has recently been suggested as a way to identify patients with nonacidic reflux who may be candidates for an alternate medical treatment such as prokinetic therapy (baclofen or metoclopramide) or surgery.¹⁵

SUMMARY

Chronic cough can be aggravating for patients and difficult to diagnose. A stepwise, organized approach, such as listed in the

Figure, will result in successful resolution of the cough for most women.

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