Evaluation and Treatment of Chronic Cough

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KEYWORDS

• Cough • Chronic cough • Primary care • Cough-variant asthma • Post nasal drip • Upper airway cough syndrome • Gastroesophageal reflux

KEY POINTS

- Chronic cough is a common problem among adults that can result in a wide range of physical and psychological complications including urinary incontinence, insomnia, depression, and anxiety.
- The history should focus on the comorbid risk factors such as history of human immunodeficiency virus and cancer, as well as red-flag symptoms (eg, weight loss, hemoptysis) suggesting a serious, life-threatening cause.
- Owing to its prevalence and relatively straightforward intervention, clinicians should ask about cigarettes and angiotensin-converting enzyme inhibitors (ACE-I).
- A 2-view chest radiograph is an essential part of the evaluation.
- A chronic cough in an otherwise healthy patient with a normal chest radiograph who is not taking ACE-I is mostly likely due to upper airway cough syndrome, asthma, or gastroesophageal reflux disease, in that order.

INTRODUCTION

Cough is one of the most common symptoms for which patients seek medical care in the United States. In 2010, there were an estimated 30 million visits and $600 million spent on over-the-counter and prescription medications for cough.[1,2] As part of the body's defense mechanism against inhaled irritants and respiratory infections, cough is a natural and universal occurrence, and fortunately in most people it resolves soon after the inciting factor is gone, usually within 3 weeks (termed acute cough). However, at some point, many nonsmoking adults will experience a subacute cough lasting 4 to

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7 weeks and up to one-fourth of people will experience a chronic cough, defined as lasting more than 8 weeks.[3] Identifying a cause and managing a person with a chronic cough is challenging for clinicians, and in response in 1998 the American College of Chest Physicians (ACCP) developed evidence-based clinical practice guidelines to provide a systematic approach to diagnosing and managing chronic cough, which was subsequently updated and revised in 2006.

A FEW WORDS ON ACUTE COUGH

The most common, and most important, cause of acute cough is acute bronchitis, which is most often viral. *Mycoplasma* and *Chlamydia* pneumonia are the cause in 1% to 5% of young adults.[4,5] Many patients seek treatment for acute cough and believe they need antibiotics. Misperception of a "normal" duration of cough resulting from an upper respiratory infection (URI) may be part of the reason patients seek evaluation and ask for antibiotic treatment. In a study looking at patients' perception of how long a URI-associated cough lasts, cough was thought by subjects to last a mean of 7 to 9 days compared with the actual mean length of cough of 17.8 days in the published literature.[6] There are limited data showing any benefit of symptomatic relief for acute cough with suppressants such as dextromethorphan and codeine.[7] There is no evidence that β-agonists are helpful for cough related to acute bronchitis in the absence of asthma.[8] Most importantly, there is no evidence that antibiotics are beneficial in the treatment of acute bronchitis.[9]

Case Presentation. A 52-year-old woman presents to her primary care physician with a 3-month history of a dry cough. The cough has been worsening over the past month and is increasingly affecting her sleep. She reports feeling embarrassed by her coughing at work and social gatherings. Two days ago, she vomited following a severe bout of coughing, prompting a visit to the doctor.

IMPACT OF CHRONIC COUGH

A wide range of complications can occur from coughing, including urinary incontinence, insomnia, exhaustion, headaches, vomiting, gastroesophageal reflux, loss of appetite, subconjunctival hemorrhage, rib pain, and throat pain. Rarely, vigorous coughing can result in serious problems such as syncope, rib fracture, inguinal or abdominal wall herniation, and diaphragmatic rupture.[10] Furthermore, the emotional and psychological impact can be profound. In a study of older adults with chronic cough, almost all reported feeling anxious that "something's wrong," and one-third expressed a specific fear of cancer. Almost half were self-conscious about their coughing.[11] Several studies of quality of life (QoL) have demonstrated that patients tended to have depression, anxiety, and social isolation associated with their chronic cough.[10,12,13] In particular, women experiencing stress urinary incontinence reported worse QoL scores and were more inclined to seek medical attention for their chronic cough.[14]

Case Presentation, Continued. Her primary care physician inquires further. She is a schoolteacher and has never smoked. She has no significant health conditions and is not currently on any medications. Specifically, the patient has no prior history of human immunodeficiency virus (HIV), cancer, recent foreign travel, or environmental exposures. In addition, she has had no associated hemoptysis, fevers, weight loss, or dyspnea. Her physical examination is normal, including no abnormalities of the mouth, nose, pharynx, neck, heart, and lungs. A 2-view chest radiograph is also normal.