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What is the best approach to the evaluation and treatment of chronic cough?

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EVIDENCE-BASED ANSWER

Potentially cough-inducing agents, such as tobacco products and angiotensin-converting enzyme (ACE) inhibitors, should be eliminated first. Evaluation and treatment for postnasal drip syndrome (PNDS), asthma, and gastroesophageal reflux disease (GERD) should remedy symptoms in the vast majority of patients (grade of recommendation: C, based on case series at referral centers).

EVIDENCE SUMMARY

By definition, chronic cough persists past 3 to 8 weeks.[1] Irwin proposed an algorithm to evaluate chronic cough in 1981[2] that has successfully diagnosed and treated chronic cough 82% to 100% of the time in referral centers.[2-6] Among patients in this setting who are not using tobacco or ACE inhibitors (assuming a normal or stable chest x-ray), most have PNDS, asthma, GERD, or a combination of these diagnoses.[2-5] The protocol evaluates for these 3 conditions. The key weakness of the protocol is that a positive diagnostic test result does not mean that treatment for that condition will relieve the cough.5 Recently, empiric treatment before diagnostic testing has been recommended for primary care.[1]

An important unanswered clinical question is whether empiric treatment trials or diagnostic testing–directed trials are the best approach.[7] Initial empiric treatment for PNDS appears reasonable, since it is the most common single cause of chronic cough,[2,4-6] and symptoms and signs and diagnostic tests for PNDS are unreliable.[3,6] One prospective study using empiric PNDS treatment as a first step decreased the number of tests required and the mean time to diagnosis compared with previously published studies.6 No studies were found evaluating empiric treatment for asthma before diagnosis. Multiple studies report a 100% negative predictive value for the methacholine challenge test,[3-5] but this carries some risk and is not universally available. Empiric treatment of GERD with omeprazole before diagnostic testing with a 24-hour pH probe was evaluated in 1 study. Cough resolved with treatment in only 6 of 17 patients with a positive 24-hour pH probe.8 In another study, 5 of 5 patients with cough due to GERD responded to an H2-blocker.[6] The negative predictive value of a 24-hour pH probe is between 90% and 100%,[3-6] but this may also be reserved for those who fail initial empiric therapy.

The best timing of the chest x-ray is also unclear. The diagnostic protocol has been historically evaluated in patients with a normal or stable chest x-ray.[2-5] One study used a protocol that delayed the chest x-ray for 2 weeks, until after empiric treatment for PNDS and evaluation for asthma. These authors eliminated half of the x-

rays and achieved results equivalent to previous studies.[6]

A recommended approach based on available literature is outlined in the . Keep in mind that all studies have been done in referral centers.

RECOMMENDATIONS FROM OTHERS

The American College of Chest Physicians recommends the following order of interventions: stop ACE inhibitors, obtain chest x-ray, avoid irritants (such as tobacco), evaluate for PNDS, evaluate for asthma, evaluate for GERD, consider special studies, and reconsider adequacy oftreatments.[9]

CORRECTION (MAY 2001)

CLINICAL COMMENTARY

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Chronic cough is an extremely common and vexing problem in primary care. The approach recommended above is helpful and sensible, and I offer a few comments. Given the 3- to 8-week minimum definition of chronic cough, many patients who present with “chronic” cough to their primary care provider will have a postviral cough that will go away on its own. This includes patients taking ACE inhibitors, and how long they are allowed to cough before you stop the ACE inhibitor is a difficult question. Also, before blaming a new “chronic” cough on tobacco use, remember that smokers get reflux, postnasal drip, and asthma at least as often as nonsmokers, not to mention lung cancer. Finally, methacholine challenge testing and pH probe testing are not readily available in my public institution, but even where they are available, I think empiric treatment is more cost-effective and more acceptable to patients.

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