

Editorials

Management of Sore Throat: Time to Update

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Sore throat is among the most common infections that we manage in primary care. Doing it right is important, which means avoiding overtesting, overtreatment, and overmedicalization of the patient with a sore throat. Medicalization in this context refers to how our decisions regarding testing and treatment can “train” our patients to believe that they *always* need these interventions, and inappropriate medicalization is an important driver of unnecessary testing and antibiotic overuse.¹

Group A beta-hemolytic streptococcus (GABHS) is detected in approximately 10% of adults and 20% to 30% of children with sore throat.² When detected, GABHS is usually pathogenic in adults, but children are often carriers; therefore, GABHS is the cause of symptoms in only two-thirds of positive test results in children.³ Although acute rheumatic fever and rheumatic heart disease were once relatively common complications and remain a problem in other parts of the world,⁴ the incidence is less than 1 per 100,000 children per year in the United States.⁵ This is also found in countries with much lower rates of testing and antibiotic use for streptococcal pharyngitis.⁶

One important change is that present-day rapid antigen tests for streptococcus are more sensitive than older tests, with current tests having an overall sensitivity of 86% and specificity of 96% in one meta-analysis.⁷ Nucleic acid amplification tests are also increasingly available at the point of care and are even more sensitive than older rapid tests. Although these nucleic acid amplification tests are expensive, their sensitivity of 93% to 99% and specificity of 99% are similar to or exceed those of a throat culture.^{8,9}

With this changing landscape, it is time to rethink recommendations from the Infectious Diseases Society of America and the American Academy of Pediatrics, which call for a backup throat culture in children with a negative result on rapid antigen testing.^{10,11} A large study found that only 2.4% of throat cultures following a negative result on rapid antigen testing in children detected GABHS pharyngitis.¹² Another study found that only 1% of children with a negative modern rapid antigen test had a positive backup throat culture.¹³ A cost-effectiveness analysis estimated that backup cultures after a negative test would detect only 11 additional cases of rheumatic heart disease in the entire United States annually, at a cost of \$8 million per additional case detected.

This analysis used 2002 costs and had lower sensitivity than has been documented with more modern rapid antigen tests (80% then vs. 86% to 97% now), so it is almost certainly even less cost-effective today.¹⁴

Because rheumatic heart disease is so rare in the United States, the primary benefit of using antibiotics is symptom reduction, with a number needed to treat of 6 for improvement by day 3, and possibly the reduction of spread to others (although most close contacts have likely already been exposed by the time the patient is evaluated).^{15,16} In 2023, an international group of experts in primary care respiratory infections published the first international guideline for the management of sore throat (<https://www.tandfonline.com/doi/epdf/10.1080/23744235.2023.2191714?needAccess=true>).³ The guideline focuses on avoiding testing and antibiotic use for patients with uncomplicated sore throat (i.e., mild to moderate sore throat accompanied by cough with no red flags), reserving evaluation, testing, and possibly antibiotic use for those at risk of complicated or severe disease.³ Using rapid antigen testing for streptococcus, followed by prescribing antibiotics, is not recommended for any children with uncomplicated sore throat in the Netherlands and Belgium, whereas other European countries recommend using a validated clinical decision rule to guide therapy, with no testing or antibiotics in patients at low risk.³

The small benefit of antibiotics must be balanced against harms, including rash, diarrhea, upset stomach, and, rarely, *Clostridioides difficile* infection and anaphylaxis. For those with an uncomplicated infection and no red flags for serious or complicated disease, shared decision-making with patients or their caregivers is appropriate. Some patients may value avoiding unnecessary antibiotics more than others, which is reasonable. The guideline by Gunnarsson and colleagues includes easy-to-use flowcharts for the initial decision on whether an office visit is needed and classification of sore throat severity during an in-person visit.³

There is good evidence that routinely testing every patient with a sore throat for GABHS, regardless of their risk, and prescribing antibiotics to anyone with a positive test result medicalizes sore throat and builds a mentality in our patients that they need to be tested and prescribed antibiotics every time they have a sore throat.¹ There is also good evidence that prescribing antibiotics shortens visit length by 1 minute and that patient satisfaction is driven not by

receipt of antibiotics but by the perception that their clinician listened, cared about them, and offered reassurance and advice.^{17,18} Therefore, our discussions with patients should focus on that most sore throats are viral and uncomplicated, that antibiotics can also be harmful, that complications are exceedingly rare in the United States, and that we have tools to provide symptomatic relief while patients heal.

Editor's Note: Dr. Ebell is deputy editor for evidence-based medicine for *AFP*.

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