groups, we feel that our data provide reason for added caution, especially concerning the unnecessary use of antibiotics in early childhood.

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DOI: 10.1378/chest.130.5.1624a

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Diagnosis of Obstructive Sleep Apnea

Alternatives to Polysomnography

To the Editor:

In her editorial comment (January 2006),1 Collop raised concern about a provocative study from Senn et al (January 2006).2 Patients with a history suggesting obstructive sleep apnea were treated empirically without diagnostic polysomnography. The clinical outcome was taken as indirect proof or exclusion of the diagnosis.

Most physicians treating patients with sleep apnea would agree that making a diagnosis before starting a potentially lifelong treatment is desirable. Demonstrating an elevated apnea-hypopnea index score helps patients understand their condition and allows documentation of the effect of continuous positive airway pressure on respiratory disturbance. But, do we have good evidence that polysomnography is the best or only way to decide who will profit from treatment and who will not? It has been shown3 that apnea and arousal indexes correlate only weakly with sleepiness and daytime performance. Thus, the question remains as to how much polysomnography adds to our treatment decision compared to pure clinical judgment or less expensive tools such as cardiorespiratory monitoring. Improvement of daytime symptoms is more relevant to patients than a reduction of scores on apnea-hypopnea and arousal indexes. The study by Senn et al2 was the first to compare clinical judgment to polysomnography in the prediction of daytime symptoms. In a most recent trial,4 cardiorespiratory monitoring was performed as well as polysomnography to select patients who would profit from nasal continuous positive airway pressure therapy, challenging polysomnography as the only possible way to diagnose obstructive sleep apnea.

It may be difficult to justify the significantly higher expense of polysomnography, although unexpected findings on polysomnography are certainly valuable, as advocated in Collop’s editorial comment.1 For a long time, authorities in sleep medicine have critically appraised diagnostic approaches that are simpler than polysomnography but without proving their superiority; however, further research has been strongly encouraged.5,6 Because an apparent “demand-capacity chasm” for the availability of polysomnography has been recognized by American and European experts,7 the position of polysomnography in the diagnosis of patients with high pretest probability for obstructive sleep apnea should be debated.

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The author of this letter is a former coworker of Professor K. E. Bloch, senior author of the study being discussed. The author has no significant conflicts of interest with any company whose products are discussed in this article. Reproduction of this article is prohibited without written permission from the American College of Chest Physicians (www.chestjournal.org/misc/reprints.shtml).

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DOI: 10.1378/chest.130.5.1625

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To the Editor:

I agree with many points that Dr. Thurnheer made in his letter-to-the-editor. There are undoubtedly many patients who do not require a full overnight polysomnography to diagnose their obstructive sleep apnea, and, indeed, the use of a limited channel cardiorespiratory monitor would suffice. However, such devices need to be used with a well-devised diagnostic and treatment algorithm so as to not abandon patients with a “negative study” but continued complaints with no answers or therapies, or those patients with “false-positive” results who do not respond well to therapy with continuous positive airway pressure, perhaps because they have central sleep apnea or a hypoventilation syndrome. Only until such algorithms using cardiorespiratory non-
Sputum Induction for Diagnosis of Pulmonary Tuberculosis

Ready for Prime Time?

To the Editor:

In his review of the clinical applications of induced sputum, Dr. Brightling\(^1\) states that “sputum induction provides a real alternative to bronchoscopy and BAL in the diagnosis of pulmonary tuberculosis.” However, it is the clinical utility of serial sputum induction as a primary diagnostic modality for pulmonary tuberculosis (TB) that should be emphasized.

In the diagnosis of pulmonary TB, sputum induction has been shown to have a better diagnostic yield than spontaneous sputum and gastric aspirates. Sputum induction fell into disuse, though, with the advent of fiberoptic bronchoscopy, which has become the primary method in many institutions. However, several studies\(^2,3\) have demonstrated that the diagnostic yield of one induced sputum is at least equivalent to that of one bronchoscopy with BAL, both in terms of acid-fast smear and mycobacterial culture. The diagnostic yield of induced sputa is further increased when multiple (three or more) specimens are obtained, with reported detection rates by smear of 91 to 98% and by culture of 99 to 100%,\(^4\) significantly higher than with bronchoscopy alone.\(^5\)

Induced sputum is a very well-tolerated procedure, with extremely low rates of adverse events (most commonly, headache, and bronchospasm/cough). Bronchoscopy has the inherent risks of an invasive procedure requiring a sedative. Both procedures must be performed in an airborne infection isolation room with respiratory protective equipment to minimize the risk of nosocomial transmission. Cost analysis studies\(^2,3\) also favor sputum induction over bronchoscopy.

Sputum induction can also be used effectively to diagnose other infections, such as Pneumocystis jiroveci pneumonia, and for assessment of other pulmonary conditions, including malignancy, interstitial lung diseases, and granulomatous diseases (eg, sarcoidosis). Thus, the rationale of performing bronchoscopy with BAL because of the perceived improved diagnostic yield in noninfectious pulmonary conditions may not always be valid. Rather than an “alternative” test, as described by Dr. Brightling, serial induced sputa should be considered as an inexpensive, and safe, primary diagnostic modality.

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The authors have no financial or other potential conflicts of interest.

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DOI: 10.1378/chest.130.5.1626

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Clinical Applications of Induced Sputum

To the Editor:

I would like to thank Drs. Vinh and Menzies for their comments on the recent review in CHEST (May 2006)\(^6\) of the clinical applications of induced sputum testing.

The review was focused on the added value that sputum induction provides the clinician when managing patients with airways disease; in particular, that the presence of a sputum eosinophilia is important in the diagnosis of nonasthmatic chronic cough\(^2,3\) and is beneficial in guiding corticosteroid therapy in asthma patients.\(^4\) The value of sputum induction in the setting of other respiratory diseases such as the diagnosis of pulmonary tuberculosis (TB) and lung cancer, and its potential role in interstitial lung disease were highlighted but were given less prominence in the review.

Drs. Vinh and Menzies championed the role of induced sputum in the diagnosis of pulmonary TB. I agree that, compared to bronchoscopy, repeated induced sputum testing offers many advantages in terms of safety and cost with at least comparable if not greater diagnostic yield.\(^5\) Induced sputum testing in the diagnosis of pulmonary TB carries a risk of nosocomial TB; therefore, it is important to reiterate that it needs to be performed under conditions of respiratory isolation.

Therefore, induced sputum testing has a role in the management of several respiratory conditions and should be a technique that is widely available to respiratory physicians.

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