

New Opportunities to Optimize Antimicrobial Treatment

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The contents of this supplement to *The American Journal of Managed Care* are derived from the proceedings of “Antibiotic Resistance in Respiratory Tract Infections: A Clinical and Managed Care Summit,” which convened to address management strategies for respiratory tract infections (RTIs) within the managed care environment. The faculty at this meeting represented such diverse specialties as pediatrics, infectious diseases, microbiology, pulmonary medicine, primary care, and managed care.

In the past 10 years, there has been a substantial increase in the number of strains of *Streptococcus pneumoniae* that are resistant to penicillin. These strains were first identified in the United States in the late 1970s and have been reported from nearly all parts of the world. Recent surveillance studies suggest that an overall rate of 24% of pneumococcal isolates in the United States exhibit penicillin resistance.¹ Other common pathogens in RTIs include *Haemophilus influenzae*, *Moraxella catarrhalis*, and oral anaerobic bacteria, all of which may be resistant to penicillin as a result of penicillinase production. Paradoxically, *Streptococcus pyogenes* has retained susceptibility to penicillin, which remains the drug of choice for infections involving this organism.

One of the major reasons for the increase in resistance is excessive and

often inappropriate use of antibiotics, particularly for RTIs.^{2,3} One study estimated that up to 70% of patients with acute bronchitis are treated with antibiotics, which have little or no justification in this setting.²

As a general rule, the following suggestions are intended to address the issue of antibiotic abuse and resistance as applied to acute RTIs:

- Antibacterial agents should not be used for the common cold.
- Antibiotics should not be used for acute bronchitis with the possible exceptions of anti-influenza agents for influenza and erythromycin for pertussis.⁴
- Only about 5% to 10% of cases of pharyngitis in adults are caused by *S pyogenes*. These cases should have bacteriologic confirmation and should be treated with penicillin, using erythromycin for penicillin-allergic patients.⁵
- Most common colds are associated with sinusitis, which is now commonly referred to as “rhinosinusitis,” recognizing the viral etiology in the great majority of cases. The major challenge to the physician is to attempt to distinguish viral and bacterial infections of the sinuses. Many authorities now recommend reserving antibiotics for severe sinusitis and for those who have persistent symptoms for at least 7 days.⁶

- Most cases of exacerbations of chronic bronchitis are caused by viral infections. According to Anthonisen et al,⁷ antibiotics are sometimes recommended for those who satisfy at least 2 of the 3 cardinal signs, including increased cough, dyspnea, and sputum production.
- Important preventive measures include smoking cessation and influenza vaccine. The pneumococcal vaccine may decrease invasive pneumococcal disease, but it does not appear to play an important role in preventing sinusitis or exacerbations of bronchitis.

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