

Pearl of Knowledge

Evidence-based Summary Documents



Acute Bronchitis

Summary Recommendation

Antibiotics are NOT indicated in acute bronchitis unless in specific circumstances where pertussis is suspected or in patients with significant medical co-morbidities.

Introduction

Acute bronchitis is one of the most common conditions encountered in clinical practice and is also one of the commonest causes of antibiotic misuse. Both the Centers for disease control and the American College of Physicians have stated unequivocally that the only indication for antibacterial agents in uncomplicated acute bronchitis is pertussis. Although the usage of antibiotics had decreased in recent years the prescriptions are now slanted towards broader spectrum antibiotics increasing risk for emergence of resistant strains.

Microbiology

Viruses are overwhelmingly the main causative agents for acute bronchitis. Influenza A and B, parainfluenza, coronavirus, rhinovirus, and respiratory syncytial virus are the predominant viruses implicated. Apart from pertussis bacterial etiologies are rare unless there are airway violations such as tracheostomy or endotracheal intubation or those patients with structural lung disease or immune suppression.

Natural History

In the first few days the symptoms are similar to any upper airway infection but with acute bronchitis the cough typically persists for 10-20 days and occasionally for more than 4 weeks. 50% of patient will report purulent looking sputum. Fever is relatively uncommon and when present may suggest either pneumonia or influenza. Reactive airways and wheezing is not uncommon. In the vast majority of patients symptoms resolve without antibiotic therapy.

Bronchitis is often “under coded” when a diagnosis code is selected. If cough is the predominant feature of an upper respiratory infection, it usually should be coded “Bronchitis” rather than simply “URI or Upper Respiratory Infection.” This is more accurate, and it will make it easier to compare HealthPartners experience to national data.

Diagnostic testing

In the presence of typical symptoms and the absence of abnormal pulmonary findings further testing is usually not indicated. Wheezing alone does not require tests. Specifically sputum gram stain and culture rarely leads to specific diagnosis. Spirometry and chest x rays are also not indicated for initial workup.

Rapid tests can be used to diagnose influenza. PCR testing for pertussis is diagnostic if the typical symptoms are present especially in the presence of a known epidemic.

Treatment

Antibiotics are generally not recommended for acute bronchitis . Exceptions include extremes of age, patients with COPD, immune deficiencies, cystic fibrosis, pneumoconiosis or other structural lung disease. A Cochrane review of nine randomized controlled trials showed a significant but minor reduction in duration of cough (0.6 days) and decrease in duration of symptoms by one day. There was a non significant reduction in the number of days feeling ill and a non significant increase in adverse effects attributed to antibiotics. As mentioned both the CDC and the ACP guidelines state that antibiotics are not indicated except in cases of pertussis.

The guidelines from the national institute for health and clinical excellence in the UK advise not treating acute bronchitis with antibiotics with the following exceptions:

1. Preexisting comorbidity (heart, lung, renal, liver or neuromuscular disease or immunosuppression),
2. Patients over the age of 65 with acute cough and two or more of the following or patients over 80 with one or more of the following: admission to the hospital within the prior year, Diabetes, CHF or current use of steroids.

Antimicrobial therapy is indicated to limit transmission of pertussis. A Macrolide would be the first line treatment. Antibiotic therapy should be initiated within the first week where possible but there is no evidence that cough will be less severe or the course less protracted with treatment.

Treatment with oseltamivir or zanamivir decreases duration of symptoms for acute bronchitis due to influenza by only one day and results in a slightly earlier return to work (0.5 days.)

Symptomatic treatment with beta agonists for the cough may be beneficial in patients with airflow limitation. A recent Cochrane review however did not support this recommendation. In practice a short course of inhaled or oral steroids may be tried for troublesome cough. There are no compelling data from clinical trials supporting the use of antitussives or mucolytics in acute bronchitis. There are small studies to show benefit treating cough associated with allergic rhinitis with antihistaminics. A decongestant or antihistaminic could be used for cough associated with post nasal drip in the setting of acute bronchitis. Non specific antitussives like codeine are also prescribed for significant cough in acute bronchitis with very little evidence to support this.

References:

1. Gonzales R, Bartlett JG, Besser RE et al. Principles of appropriate antibiotic use for treatment of uncomplicated acute bronchitis: background. *Ann Intern Med* 2001;134:521-529
2. Braman SS. Chronic cough due to acute bronchitis: ACCP evidence-based clinical practice guidelines. *Chest* 2006;129:Suppl:95s-103s
3. Bent S, Saint S, Vittinghoff E, Grady D. Antibiotics in acute bronchitis: a meta-analysis. *Am J Med* 1999;107:62-67
4. Wenzel P, Fowler AA. Acute Bronchitis. *NEJM* 2006;355:2125-2130

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