

Acute Bronchitis

Patient satisfaction is dependent on the actual encounter with the health care provider as opposed to whether or not they receive an antibiotic prescription.

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HKC Diagnostic Considerations

R/O pneumonia	R/O asthma/COPD	R/O Chronic Cough	Consider CHF	Consider Rare
<ul style="list-style-type: none"> Vital sign changes* (HR>100,RR>20,T>38) Local consolidation 	<ul style="list-style-type: none"> Reversible airway obstruction Longstanding smoking hx Chronic bronchitis/sputum 	<ul style="list-style-type: none"> (duration > 2 months) GERD Asthma Post-nasal drip ACE Inhibitor Smoking 	<ul style="list-style-type: none"> PND/orthopnea Basilar Rales + Edema 	<ul style="list-style-type: none"> TB Cancer Pertussis SARS travel history contact

*Patients without any vital sign abnormalities have a low probability of pneumonia (assuming there are no factors interfering with the presence of these abnormalities; eg antipyretic drugs, advanced age).

Metlay et al, *Ann Int Med* 2003 and *JAMA* 1997

HKC

- Two systematic reviews in adults and children suggest there is limited evidence to support the routine use of over-the-counter (OTC) cough remedies to manage acute cough. Schroeder, *BMJ* 2002 and *Arch Dis Child* 2002
- Despite this, it is reasonable to initiate therapy, specifically if symptoms are interfering with activities of daily living and sleep. **Educate** patients on the potential expectations of therapy and **monitor** for effect.

Class	Clinical Effectiveness	Concerns	Considerations
Antitussives: Dextromethorphan (15-30mg q6-8h; max: 120mg/day) Codeine (10-20mg q4-6h) Hydrocodone (5-10mg q6-8 h; max: 30mg/day)	Minimal effective doses are: <ul style="list-style-type: none"> DM > 20mg/dose Codeine > 20mg/dose Medical Letter 2001	Drowsiness, nausea, constipation DM: avoid MAOI inhibitors & 2D6 inhibitors (e.g. fluoxetine); ↑ DM levels and risk of serotonin syndrome DM < codeine < hydrocodone: Additive effects with other CNS depressants	<ul style="list-style-type: none"> The elderly may be more sensitive to CNS depressant and urinary retention effects Codeine may be preferred at bedtime if sedation + cough suppression is desirable. Avoid OTC codeine since the concentration (3.3mg/5ml) will require larger doses of 30ml (6 teaspoons) Benlylin DM = single source product: 1 tsp = 15mg DM Prescribe small (4oz) quantities for codeine (1tsp=15mg)
Expectorants: Guaifenesin (200-400mg q4h max: 2.4g/day)	Lack of data to demonstrate efficacy.	Generally well tolerated.	<ul style="list-style-type: none"> Increasing fluid intake is likely as effective Available products = Robitussin Syrup

Bronchodilators may be effective for individuals demonstrating airway obstruction (e.g. asthmatic-like symptomatology). A recent systematic review did not support routine use of bronchodilators to manage cough associated with acute bronchitis in patients without a wheeze despite early trials suggesting a potential benefit.

(Smucny JFP 2001, Hueston JFP 1991, JFP 1994)

In patients with recurrent "chest colds", a bronchodilator may be considered as it may represent undiagnosed reactive airway disease.

Treatment:

What Works

Treat the cough if bothersome to patient.

- Dextromethorphan 15-30 mg q6-8 h
- Codeine 10-20 mg q4-6 h
Use bronchodilators for symptoms of airway obstruction.
- Salbutamol 1-2 puffs q4-6 h as needed

What Doesn't Work

Antibiotics:

The very small benefit that may be seen is offset by an increase in side effects.

- A recent trial comparing **azithromycin** and **vitamin C** in acute bronchitis showed no difference in outcomes such as health related quality of life or the time to return to daily activities

Evans, *Lancet* 2002

Echinacea or Zinc

Diagnostic Considerations

- Rule out pneumonia (vital sign changes: HR>100; RR>20; T>38)
- Rule out asthma (? history of wheezing)

Systematic Reviews

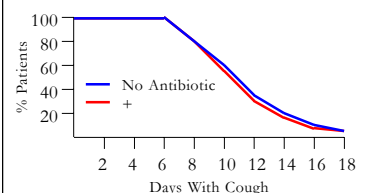
- Cochrane Review: 1/2 day less of symptoms (not statistically significant) in clinical status but offset by an increase in side effects.

Best Article

- Principles of Appropriate Antibiotic Use for the Treatment of Acute Bronchitis in Adults
Snow et al. *Ann Int Med* March 2001
- Azithromycin for acute bronchitis: A randomised, double-blind controlled trial.
Evans et al. *Lancet* 2002

Best Patient Resource

- Pamphlet from AAFP: "Acute Bronchitis" <http://familydoctor.org/handouts/677.html>
- Educational Poster: Acute Bronchitis and Antibiotics www.uchsc.edu/uh/gim/educate/chestcold.gif



Best Website

- Johns Hopkins Antibiotic Guide <http://hopkins-antibiotic.org/>

Are there any situations in which I should use antibiotics?

Antibiotics should be reserved for more complicated situations where there is a risk/suspicion of pneumonia or pertussis. Antibiotics may also be necessary in individuals experiencing **severe** exacerbations of chronic bronchitis. Current guidelines do not recommend antibiotics for acute asthma exacerbations unless bacterial infection is suspected.

What is the deal with post-viral cough?

Unfortunately, there isn't a good answer to this question. A medline search revealed "zip" when it came to effective therapy for this type of cough. Post-infectious cough may be secondary to temporary bronchial hyper-responsiveness, post-nasal drip, rhinitis, or tracheobronchitis. In other words, try a short course of a medication that you think best applies to the case (e.g. bronchodilator, anti-histamines/decongestants, inhaled corticosteroids)

When do I use inhaled or systemic corticosteroids in managing cough associated with uncomplicated, acute bronchitis?

Unfortunately, there is no evidence for or against the use of these agents in cough associated with acute bronchitis. Of note, inhaled corticosteroids are effective in the presence of asthma or eosinophilic bronchitis which typically present with chronic cough syndromes and short courses or oral corticosteroids may have a role in patients presenting with acute exacerbations of chronic bronchitis or COPD.

(Singh JM, Arch Int Med 2002)

What is the role of "natural" therapies (echinacea, zinc) in the management of acute bronchitis?

Not recommended for routine use. Recent trials have shown no or minimal benefit of echinacea or zinc compared to placebo on the severity or duration of self-reported symptoms of upper respiratory tract infection.

(Barrett, AIM 2002, Cochrane 2003)

Since patients are likely to seek out these remedies, we should educate our patients on **the lack of efficacy**, the **potential risks** (zinc-nausea, echinacea) and the **issues pertaining to content variability and reliability**.

Since acute bronchitis is commonly caused by viruses, should I be prescribing anti-virals such as oseltamivir and zanamivir for my patients?

These agents are not recommended for the treatment of acute bronchitis since

1. Patients often present after the time frame in which efficacy has been demonstrated
2. These agents are only effective against influenza and several viruses have been implicated in causing acute bronchitis (influenza, adenovirus, coronavirus, parainfluenza, RSV, rhinovirus, coxsackievirus, enterovirus)
3. There are no published studies of these agents in acute bronchitis and
4. **As with antibiotics, patients will likely improve on their own without treatment.**

Acute Bronchitis

Uncomplicated acute bronchitis is an upper respiratory condition, typically viral, that is associated primarily with a cough +/- sputum production. Patients seek medical attention when the cough is prolonged and sputum has developed. Patients often equate these symptoms with the need for antibiotics.