

# CLINICAL GUIDELINE:

## AVOIDANCE OF ANTIBIOTICS Adults with Acute Bronchitis



Physician Clinical Integration  
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### Scope

Acute bronchitis accounts for 2.7 million outpatient visits annually [1]. Despite clear evidence and guidelines regarding the avoidance of use of antibiotics for viral illnesses, the Center for Disease Control (CDC) estimates that at least 50% of antibiotic prescriptions for acute respiratory conditions are unnecessary [3]. Clinical research indicates excessive use of antibiotics for the treatment of acute bronchitis places biologic pressure on bacteria, promoting antibiotic resistance [5].

### Guidance

The PCIN Quality Committee and its designees reviewed the available information in the medical literature and societal guidelines on the evaluation and management of acute bronchitis in the ambulatory setting, as well as information derived from their clinical practice, to devise these guidelines.

Additionally, the American College of Chest Physicians (ACCP) issued evidence-based recommendations used to support this clinical guideline.

#### Population Included

- Adults 18-64 years of age
- Diagnosis of acute bronchitis
- Outpatient, observation, and Emergency Department patients

### Recommendations

#### Diagnosis

- ✓ Based on clinical assessment:
  - Progressive cough with or without phlegm production
  - Breath sounds of wheezes or rhonchi that improve with cough
- ✓ Past medical history will be obtained to rule out chronic conditions:
  - History of asthma or chronic bronchitis
  - Cigarette smoking
  - Household pollution/allergens
  - Community exposure to potential infections
- ✓ Laboratory and/or chest x-ray is not indicated unless pneumonia symptoms are present (i.e., heartrate  $\geq 100$  beats/minute; respiratory rate  $\geq 24$  breaths/minutes; oral body temperature  $\geq 38$  degrees Celsius; and/or lung exam findings of focal consolidation, egophony, or fremitus)

#### Exclusions

- Diagnosis of chronic bronchitis
- Hospitalized patients

#### Treatment

- ✓ Routine treatment with antibiotics is not justified.
  - Provide education regarding antibiotic-resistance
- ✓ Focus on symptom relief:
  - Fever, aches, and pains: nonsteroidal anti-inflammatories and/or acetaminophen
  - Nasal congestion: nasal decongestants may be helpful
  - Cough relief: an antitussive may be offered

- ✓ Encourage prevention:
  - Regular hand washing
  - Influenza & pneumococcal vaccinations per Center for Disease Control and Prevention (CDC) recommendations
  - Smoking cessation
- ✓ Follow-up:
  - For new or worsening symptoms
  - May consider chest x-ray
  - Antibiotics are not indicated regardless of cough duration.

## Rationale

Acute bronchitis is defined as “an acute respiratory infection that is manifested predominantly by cough with or without phlegm production that lasts for up to three weeks” causing inflammation in the bronchial airways [4,7]. Acute bronchitis is most often caused by a virus such as influenza A and B, parainfluenza, coronavirus, human metapneumovirus, and respiratory syncytial virus [1,4,6]. Understanding the symptoms and clinical features of acute bronchitis is essential for proper diagnosis and treatment.

### Presentation

Typically, patients with acute bronchitis will present with a progressive cough, lasting up to three weeks [1,2,4,6]. The cough is usually worse at night or with exercise, lasting >2 weeks in 50% of patients and up to four weeks in 25% of patients [7]. The patient may also complain of sputum production, dyspnea, nasal congestion, headache, and a low-grade fever, similar to the common cold [1,2,4,6]. Sputum is often clear or yellow but may also appear purulent and is not indicative of a bacterial infection [1,2]. Greater than 95% of patients with purulent sputum do not have pneumonia [9].

### Physical Examination

Lung auscultation may reveal wheezes and rhonchi that improve with coughing in acute bronchitis [1]. The patient may have tachycardia due to fever or dehydration from a viral illness [2]. Physical exam should focus on excluding severe illness, such as pneumonia. Pneumonia should be considered if the patient presents with a fever  $\geq 38^{\circ}\text{C}$ , tachypnea ( $\geq 24$  breaths/min), tachycardia ( $\geq 100$  beats/min), or rales, egophony, or fremitus [8,9].

Physical examination should also include a medical history to exclude chronic respiratory or cardiac illness, cigarette smoking, household pollution/allergen exposure and/or community exposure [7].

### Diagnosis

Diagnosis of acute bronchitis is clinically based on patient history, lung exam and other physical findings, with the focus on excluding pneumonia [2,9,10]. According to the ACCP, evidence does not support imaging in patients with normal vital signs and normal lung examination findings [1]. The responsible organism is rarely identified in clinical practice; therefore, viral cultures, serologic assays, and sputum analyses are not indicated [4].

Laboratory testing and/or a chest x-ray are not indicated unless the clinical exam suggests the possibility of pneumonia [1,4,6,9]. Biomarkers such as the C-reactive protein level may be beneficial to rule out the possibility of pneumonia [1].

### Treatment

According to the ACCP and the CDC, routine treatment with antibiotics is not justified and not recommended [4,9,10]. Clinical evidence via the use of controlled trials support this recommendation [7,11].

Over the counter medications are often used as first-line treatment for an acute cough [1]. Options include cough suppressants (codeine, dextromethorphan); first-generation antihistamines (diphenhydramine); and decongestants (phenylephrine); however, clinical trials have produced mixed results and are not supportive of this treatment approach [10,1,6]. Originally thought to stimulate respiratory tract secretions, Guaifenesin was not recommended as the result of clinical trials demonstrated by The Cochrane Collaboration [12]. ACCP evidence-based recommendations do not include the use of beta2-agonist bronchodilators or mucokinetic agents in the treatment of cough; however, antitussive agents may be offered for short-term symptomatic relief of coughing [4].



## References

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**Approved: 9/11/2020**

