Evidence-Based Management of Acute Respiratory Tract Infections

Repeated studies and meta-analyses have demonstrated no significant benefit from antibiotics in otherwise healthy persons. Antibiotic administration is associated with allergic reactions, C. difficile infection and future antibiotic resistance in the treated patient and the community.

For more information or additional materials, visit www.aware.md.
Illness | Indications for Antibiotic Treatment | Pathogen | Antimicrobial Therapy | Antibiotic | Guidelines Reviewed
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**Acute Bacterial Sinusitis**
*When NOT to Treat with an Antibiotic:* Nearly all cases of acute sinusitis resolve without antibiotics. Antibiotic use should be reserved for moderate symptoms that are not improving after 10 days, or that are worsening after 5-7 days, or persistent severe symptoms.

*When to Treat with an Antibiotic:* Diagnosis of acute bacterial sinusitis may be made in adults with symptoms of acute rhinosinusitis (nasal obstruction or purulent discharge, facial fullness or pain, fever, or odynophagia) who have any of the three following clinical presentations:

1. **Symptoms lasting > 10 days without clinical improvement.**
2. **Severe illness with high fever (>39°C [102.2°F]) and purulent nasal discharge or facial pain for >3 consecutive days at the beginning of illness.**
3. **Worsening symptoms or signs (new onset fever, headache or increase in nasal discharge) following typical URI that lasted 5-6 days and were initially improving.**

**Pharyngitis**
*When NOT to Treat with an Antibiotic:*

1. **Cough Illness / Abscesses**
2. **Community Outpatient Nonspecific URI**
3. **Pertussis**

*When to Treat with an Antibiotic:*

1. **Most pharyngitis cases are viral in origin. The presence of the following is uncommon with Group A Strept, and point away from using antibiotics:** conjunctivitis, cough, rhinorrhea, clacuses, and absence of fever.
2. **Physical findings include:** Fever, tonsillopharyngeal erythema and exudates, palatal petechiae, tender and enlarged anterior cervical lymph nodes, and absence of cough. Confirm diagnosis with throat culture or rapid antigen detection before using antibiotics.

**Nonspecific Cough Illness / Acute Bronchitis**
*When NOT to Treat with an Antibiotic:* 30% of cases are nonbacterial. Literature fails to support use of antibiotics in adults without history of chronic bronchitis or other comorbid conditions.

*When to Treat with an Antibiotic:* Antibiotics are not indicated in patients with uncomplicated acute bacterial bronchitis. Sputum characteristics not helpful in determining need for antibiotics. Treatment is reserved for patients with acute bacterial exacerbation of chronic bronchitis and COPD, usually smokers. In patients with severe symptoms, rule out other more serious conditions, e.g., pneumonia. Testing is recommended either prior to or in conjuction with treatment for pertussis. Testing for pertussis is recommended particularly during outbreaks and according to public health recommendations (see below).

**Pertussis**
*Testing for pertussis is recommended particularly during outbreaks and according to public health recommendations, particularly those of high risk – teachers, day care and healthcare workers. Patients exposed to infants (parents, child caregivers or family members) should be vaccinated and tested if they have symptoms. Vaccination before ACP recommendations is highly encouraged to prevent outbreaks. All pregnant women should be vaccinated during every pregnancy.*

**Nonspecific URI**
*When NOT to Treat with an Antibiotic:* Antibiotics are not indicated; however, non-specific URI is a major cause of acute respiratory illnesses presenting to primary care practitioners. Patients often present expecting some treatment. Attempt to discourage antibiotic use and explain appropriate non-pharmacologic treatment.

**Outpatient Community Acquired Pneumonia**
*When NOT to Treat with an Antibiotic as an Outpatient:* Consider initial admission if PFI score > 90, CURB-65 > 2, or serum lactate or albumin and troponin abnormality and critical judgment so indicates.

*When to Treat with an Antibiotic as an Outpatient:* Perform CRP to confirm the diagnosis of pneumonia. Evaluate for outpatient management. Consider pre-existing conditions, calculate Pneumonia Severity Index (PSI) ≤ 90 for outpatient management) or CURB-65 (0 or 1 for outpatient management). Visit www.idociety.org for more information. Sputum gram stain and culture are recommended if acute alcohol abuse, severe obstructive/structural lung disease, or pleural effusion. Pneumococcal vaccination should be done following current ACP recommendations which have been recently updated. Selective use of PCV 13 (conjugated pneumococcal vaccine) is now recommended in some situations for adults in conjunction with regular pneumococcal vaccine (PPSV23).

**Cellulitis and Abscesses**
*Cellulitis is almost always secondary to streptococcal species. Treatment can be directed narrowly.*

*Abscesses are often secondary to Staph – including MRSA. The treatment is primary drainage and this is required for larger abscesses. If surrounding cellulitis, treatment should be broadened to cover MRSA. Cultures should be obtained.*

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**Mainly viral pathogens**

- Streptococcus pneumoniae
- Haemophilus influenzae
- Moraxella catarrhalis

**Not indicated**

1. **Antibiotic Duration:** 5 to 7 days
2. **Failure to respond after 72 hours of antibiotics:** Re-evaluate patient and switch to alternate antibiotic.

**Antibiotic Duration:** 10 days

1. **Streptococcus pyogenes**
2. **Uncomplicated:** Not indicated
3. **Chlamydia pneumoniae / Mycoplasma pneumoniae**
4. **Uncomplicated:** Not indicated
5. **Chlamydia pneumoniae / Mycoplasma pneumoniae**
6. **Uncomplicated:** Not indicated
7. **Chlamydia pneumoniae / Mycoplasma pneumoniae**
8. **Uncomplicated:** Not indicated

**Antibiotic Duration:** 5 to 7 days

1. **Streptococcus pneumoniae** (for β-lactam allergy or symptoms that strongly suggest bacterial etiology)
2. **Clindamycin**
3. **Clindamycin**
4. **Clindamycin**
5. **Amoxicillin, clarithromycin**
6. ***Macrolides and quinolones cause QT prolongation and have an increased risk of cardiac death.* This guideline summary is intended for physicians and healthcare professionals to consider in managing the care of their patients for acute respiratory tract infections. While the summary describes recommended courses of intervention, it is not intended as a substitute for the advice of a physician or other knowledgeable healthcare professional. These guidelines represent best clinical practice at the time of publication, but practice standards may change as more knowledge is gained.