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.

Best Practices in the Management of Patients with Acute Bronchitis/Cough

**Acute Bronchitis**

**Dr Criteria:**
- Cough dominant
- ± phlegm
- Rhonchi/radiating wheezing common

**URI or Rhinosinusitis**

**Dr Criteria:**
- Cough plus nasal, throat and/or ear symptoms
- No-dominant symptoms

**Influenza During the Season**

**Dr Criteria:**
- If cough + fever + myalgia/fatigue present, prevalence ≥ 60%

**Antibiotics Not Needed**

- In the absence of pneumonia, consider the following diagnoses for adults with acute cough illness.

**Influenza**

**Dx Criteria:**
- Fever ≥ 38°C
- Myalgia
- Fatigue
- Respiratory symptoms

**Acute Bacterial Sinusitis**

**Dr Criteria:**
- See reverse side of brochure


**Educate and Advise Patients**

Most patients want a diagnosis, not necessarily antibiotics. Explain to the patient that most bronchitis is a viral illness, and coughs are either viral or reactive airway disease. It is important to emphasize that antibiotics may have serious side effects and may create resistance to antibiotics in the patient or their family. This strategy is associated with equal or superior patient satisfaction. Set appropriate expectations for the duration of symptoms, e.g., cough may last for up to four weeks.

Glee symptomatic relief such as codeine-based cough suppressants, NSAIDS, multi-symptom OTC medications, and possibly bronchodilators if there is any bronchospasm.

Caution patients regarding symptoms (such as high fevers and shortness of breath) that indicate more severe disease.

Reserve use of antibiotics when treating acute bacterial sinusitis, acute bacterial exacerbation of chronic bronchitis, and uncomplicated urinary tract infections for patients who do not have alternative treatment options.

**Recommend Vaccination**

- Influenza vaccination for all persons >6 months of age, particularly older and younger patients and those with concomitant significant illnesses.
- Pneumococcal vaccination for those with concomitant significant illnesses and all persons >65 years old without a pneumococcal vaccine history. Refer to the CMA Foundation’s Adult Vaccine Schedule (see reverse side of brochure).
- For all others vaccinate once during the routine influenza season (e.g., fall).

In the absence of pneumonia, consider the following diagnoses for adults with acute cough illness.

**Community Acquired Pneumonia:**


**Nonspecific URI:**


**Acute Bacterial Sinusitis:**


**Pharyngitis:**


**Nonspecific Cough Illnesses/Acute Bronchitis/Pertussis:**


**Cellulitis and Abscesses:**


**Guidelines Reviewed:**

- American Academy of Allergy, Asthma & Immunology (AAAAI)
- American Academy of Family Physicians (AAFP)
- American Academy of Otolaryngology – Head and Neck Surgery
- American Academy of Pediatrics, California District
- California Pharmacists Association
- Urgent Care Association of America
- Urgent Care College of Physicians
- Infection Control Practitioners Association
- California District Medical Association
- California Medical Association
- California Medical Association Foundation
- Centers for Disease Control and Prevention (CDC)
- Infectious Diseases Society of America (IDSA)
- American Academy of Allergy, Asthma & Immunology (AAAAI)
- California Pharmacists Association
- Urgent Care Association of America
- Urgent Care College of Physicians
- Infection Control Practitioners Association
- California District Medical Association
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Illness Indications for Antibiotic Treatment in Adults

Pathogen | Empiric Therapy | Antibiotic Choice | Guidelines Reviewed
---|---|---|---
*Streptococcus pneumoniae* | Healthy with no recent antibiotic use: risk factors: macrolide*; consider doxycycline | *Macrolide* (azithromycin or clarithromycin)* | IDSA, ATS, KSI
*Macrolide* (azithromycin or clarithromycin)* or *Doxycycline* (alternative to macrolide)

With Comorbidities:
- *β-Lactam Alternatives:* (to be given with a macrolide* or doxycycline)
- *High dose amoxicillin* or *amoxicillin-clavulanate*
- *Ceftriaxone* (intramuscular, ceftriaxone)
- *Ciprofloxacin* (oral)

*Alternatives:* *Dapsipyridine*, *ertapenem*, *levofloxacin 750mg QD*.

Acute Bronchitis / Infection

Tissue Infections

Pertussis

Testing for pertussis is recommended particularly during outbreaks and according to public health recommendations, particularly those at high risk – teachers, day care and healthcare workers. Persons with exposure to infants (parents, child care workers or family members) should be vaccinated and tested if they have symptoms. Vaccination per ACG guidelines is highly encouraged to prevent outbreaks. All pregnant women should be vaccinated during every pregnancy.

Empiric Therapy:
- *Ceftriaxone* 1g or IV 24-hour dose
- *Ampicillin* 500mg bid
- *Doxycycline* (alternative to macrolide)

Antibiotic Duration:
- *Ceftriaxone* for outpatient management
- *Doxycycline* (alternative to macrolide)

Skin and Soft Tissue Infections

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

Abscesses are often secondary to *Staphylococcus aureus* – including methicillin-resistant *Staphylococcus aureus* (MRSA). The treatment is primarily drainage and this is required for larger abscesses. If surrounding cellulitis, treatment should be broadened to cover MRSA. Cultures should be obtained.

Empiric Therapy
- *Ceftriaxone* 1g or IV 24-hour dose
- *Doxycycline* (alternative to macrolide)

Antibiotic Duration:
- *Ceftriaxone* for outpatient management
- *Doxycycline* (alternative to macrolide)

Other Alternatives:
- *Ciprofloxacin* (oral)

Urinary Tract Infection

Empiric Therapy for UTI may be given when urology demonstrates pyuria (positive leukocyte esterase test or ≥10 white blood cells [WBCs] per high-power field [25 WBCs per L]) and urine culture obtained through catheterization or suprapubic aspiration. A positive culture consists of ≥100,000 colony-forming units (CFUs) per mL of a unapathogen.

In patients suspected of pyelonephritis, always confirm diagnosis with urine culture and susceptibility test before using antibiotics.

Empiric Therapy
- *Ceftriaxone* 1g or IV 24-hour dose
- *Doxycycline* (alternative to macrolide)

Antibiotic Duration:
- *Ceftriaxone* for outpatient management
- *Doxycycline* (alternative to macrolide)

Other Alternatives:
- *Ciprofloxacin* (oral)

*Macrolides and quinolones cause QT prolongation and have an increased risk of cardiac death. Reserve the use of quinolones when treating acute bacterial sinusitis, acute bacterial exacerbation of chronic bronchitis, and uncomplicated urinary tract infections for patients who do not have alternative treatment options.*

This guideline summary is intended for physicians and healthcare professionals to consider in managing the care of their patients for acute 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 health care professional. These guidelines represent best clinical practice at the time of publication, but practice standards may change as knowledge is gained.