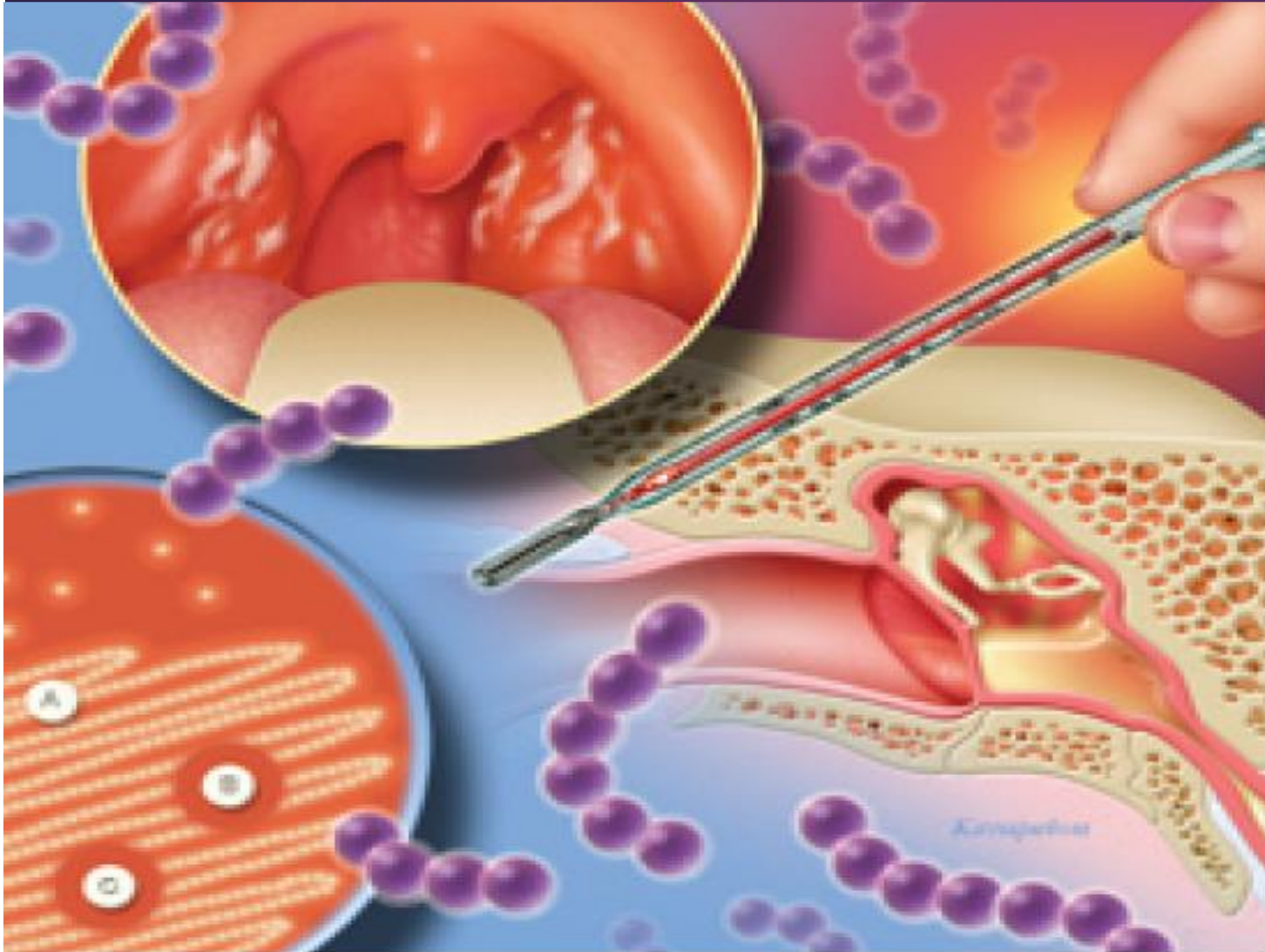


Antibiotics in Upper Respiratory Tract Infection



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Acute Upper Respiratory Tract Infections

- ▶ Otitis Media in Children
- ▶ Acute Bacterial Rhinosinusitis
- ▶ Acute Pharyngitis
- ▶ Acute Bronchitis
- ▶ Nonspecific Upper Respiratory Tract Infection
- ▶ Influenza
- ▶ Practical Strategies for Reducing Inappropriate Antibiotic Use

AOM

ACCURATE DIAGNOSIS

- ▶ The recent, usually abrupt onset of signs and symptoms of middle ear inflammation and effusion
- ▶ The presence of middle ear effusion as indicated by bulging of the tympanic membrane, limited or absent mobility of the tympanic membrane, air fluid level behind the tympanic membrane, or otorrhea.
- ▶ The presence of signs or symptoms of middle ear inflammation as indicated by erythema of the tympanic membrane or otalgia

AOM

PAIN ASSESSMENT

- ▶ Acetaminophen and/or ibuprofen
- ▶ Topical agents such as benzocaine, home remedies such as oil, the application of heat or cold also may be helpful
- ▶ Symptomatic relief is important to maximize patient comfort and to minimize sick days

AOM

ANTIBIOTIC THERAPY VS. WATCHFUL WAITING

▶ Severe illness

- ▶ Moderate to severe otalgia or temperature greater than 39°C in the past 24 hours

▶ Nonsevere illness

- ▶ Mild otalgia and temperature less than 39°C.

▶ Watchful waiting with close follow up

- ▶ Children 6mo to 2yr of age with nonsevere symptoms and an uncertain Dx.
- ▶ Older children with nonsevere symptoms, regardless of the certainty of Dx.

▶ For all other children, antibiotics are recommended.

▶ Otitis media with effusion is defined as fluid in the middle ear space but without the symptoms of an acute infection

- ▶ Caused by a viral upper respiratory infection or may be a consequence of acute otitis media
- ▶ Antibiotic therapy is not required.

Acute Bacterial Rhinosinusitis

- ▶ A diagnosis of acute bacterial Rhinosinusitis may be made in children and adults with symptoms of a viral upper respiratory infection that:
 - ▶ Have not improved after 10 days or that worsen after five to seven days
 - ▶ Double sickening
 - ▶ Severity in onset
 - ▶ Purulent nasal discharge, high grade fever and chills
- ▶ Treatment is reserved for patients who have symptoms for more than 10 days or who experience worsening symptoms

Acute Pharyngitis

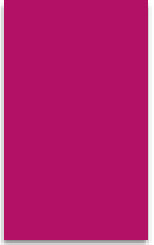
- ▶ Most patients with sore throat from an infectious cause have a virus
 - ▶ Conjunctivitis, cough, coryza, and diarrhea
- ▶ Group A beta-hemolytic streptococcus (GABHS) pharyngitis accounts for 15 to 30 percent of pharyngitis cases in children and approximately 10 percent in adults
 - ▶ Rapid antigen
 - ▶ Culture
 - ▶ Criteria

Acute Bronchitis

- ▶ Bronchitis is inflammation of the bronchial respiratory mucosa leading to a productive cough
 - ▶ More than 90 percent of cases of uncomplicated acute bronchitis have nonbacterial etiologies
 - ▶ Antibiotics usually are not indicated for nonspecific cough illness
 - ▶ If pneumonia is suspected the diagnosis should be confirmed with chest radiography before antibiotics are prescribed.
- ▶ If the cough is prolonged for more than 10 days, a bacterial etiology should be considered

Nonspecific Upper Respiratory Tract Infection

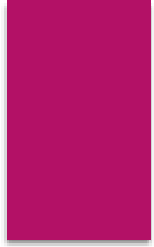
- ▶ Nonspecific upper respiratory tract infection presents with symptoms that often are referred to as the common cold
- ▶ Causative agents include numerous viruses
 - ▶ Rhinoviruses
 - ▶ Adenoviruses
 - ▶ Respiratory syncytial viruses
 - ▶ Parainfluenza viruses
 - ▶ Enteroviruses
 - ▶ Coronaviruses
- ▶ Treatment consists of adequate fluid intake, rest, humidified air, and over-the-counter analgesics and antipyretics



STUDY OF OUTPATIENT CHILDREN IN
FIVE WAVES OF COVID-19, COMPARING
CLINICAL MANIFESTATIONS, NEED FOR
HOSPITALIZATION, AND ANTIBIOTIC
PRESCRIPTION

2448 cases, Kerman, Iran

Variable		Numbers	Percent
Times of Infection	2 times	192	7.84
	3 times	35	1.43
	4 times	7	0.29
	5 times	2	0.8
Index case	Parents	716	29.25
	Other families	120	4.9
	Kinder garden	230	9.4
	Unknown	1382	56.45
Management	Outpatient	2305	94.16%
	Hospitalization	143	5.84%
Antibiotic	Azithromycin	207	47.70%
	Co-trimoxazol	26	5.99%
	Amoxicillin	126	29.03%
	Cefuroxime	75	17.28%
	Total	434	17.73%



Influenza

- ▶ Influenza is characterized by the **abrupt onset** of fever, myalgias, headache, rhinitis, severe malaise, nonproductive cough, and sore throat
- ▶ The main treatment is supportive care to relieve symptoms
- ▶ Antiviral medications

Practical Strategies for Reducing Inappropriate Antibiotic Use

- ▶ Patients often expect an antibiotic for an acute respiratory infection
- ▶ You may feel pressured to prescribe an unnecessary antibiotic
- ▶ If the diagnosis is a viral illness, the physician needs to have a **contingency plan to explain** to the patient why an antibiotic will not be prescribed
- ▶ Patients should be educated about the **difference between bacterial and viral infections** and why antibiotics will be ineffective for a viral illness
- ▶ Several studies have indicated that giving patients an **antibiotic prescription and telling them not to fill it unless their symptoms worsen** or do not improve after several days has been shown to reduce antibiotic use
- ▶ Developing an **easy-access follow-up visit** for patients who do not improve may alleviate some of the anxieties associated with not getting an antibiotic
- ▶ An educational intervention such as **instructing patients** on the appropriate indications for antibiotic use can help maintain patient satisfaction without prescribing antibiotics.

REFERENCES

- ▶ 1. McCaig LF, Besser RE, Hughes JM. Antimicrobial drug prescription in ambulatory care settings, United States, 1992–2000 [Published correction appears in *Emerg Infect Dis* 2003;9:609]. *Emerg Infect Dis*. 2003;9:432–7.
- ▶ 2. Steinman MA, Gonzales R, Linder JA, Landefeld CS. Changing use of antibiotics in community-based outpatient practice, 1991–1999. *Ann Intern Med*. 2003;138:525–33.
- ▶ 3. Hamm RM, Hicks RJ, Bembem DA. Antibiotics and respiratory infections: are patients more satisfied when expectations are met? *J Fam Pract*. 1996;43:56–62.
- ▶ 4. Seppala H, Klaukka T, Vuopio-Varkila J, Muotiala A, Helenius H, Lager K, et al. The effect of changes in the consumption of macrolide antibiotics on erythromycin resistance in group A streptococci in Finland. Finnish Study Group for Antimicrobial Resistance. *N Engl J Med*. 1997;337:441–6.
- ▶ 5. California Medical Association Foundation. Alliance Working for Antibiotic Resistance Education (AWARE) clinical practice guidelines. Accessed August 3, 2006, at: http://www.aware.md/clinical/clinical_guide.asp.
- ▶ 6. American Academy of Pediatrics Subcommittee on Management of Acute Otitis Media. Diagnosis and management of acute otitis media. *Pediatrics*. 2004;113:1451–65.
- ▶ 7. Anon JB, Jacobs MR, Poole MD, Ambrose PG, Benninger MS, Hadley JA, et al., for the Sinus and Allergy Health Partnership. Antimicrobial treatment guidelines for acute bacterial rhinosinusitis [Published correction appears in *Otolaryngol Head Neck Surg* 2004;130:794–6]. *Otolaryngol Head Neck Surg*. 2004;130(1 suppl):1–45.
- ▶ 8. Berg O, Carenfelt C. Analysis of symptoms and clinical signs in the maxillary sinus empyema. *Acta Otolaryngol*. 1988;105:343–9.
- ▶ 9. Bisno AL, Gerber MA, Gwaltney JM Jr, Kaplan EL, Schwartz RH, for the Infectious Diseases Society of America. Practice guidelines for the diagnosis and management of group A streptococcal pharyngitis. *Clin Infect Dis*. 2002;35:113–25.
- ▶ 10. Cooper RJ, Hoffman JR, Bartlett JG, Besser RE, Gonzales R, Hickner JM, et al., for the American Academy of Family Physicians, American College of Physicians–American Society of Internal Medicine, Centers for Disease Control and Prevention. Principles of appropriate antibiotic use for acute pharyngitis in adults: background. *Ann Intern Med*. 2001;134:509–17.
- ▶ 11. Ebell MH. Strep throat. *Am Fam Physician*. 2003;68:937–8.
- ▶ 12. Casey JR, Pichichero ME. Meta-analysis of cephalosporin versus penicillin treatment of group A streptococcal tonsillopharyngitis in children. *Pediatrics*. 2004;113:866–82.
- ▶ 13. Chodosh S. Acute bacterial exacerbations in bronchitis and asthma. *Am J Med*. 1987;82:154–63.
- ▶ 14. Gonzales R, Bartlett JG, Besser RE, Cooper RJ, Hickner JM, Hoffman JR, et al., for the American Academy of Family Physicians, American College of Physicians–American Society of Internal Medicine, Centers for Disease Control and Prevention, Infectious Diseases Society of America. Principles of appropriate antibiotic use for treatment of uncomplicated acute bronchitis: background. *Ann Intern Med*. 2001;134:521–9.
- ▶ 15. Snow V, Motur-Pilson C, Gonzales R. Principles of appropriate antibiotic use for treatment of acute bronchitis in adults. *Ann Intern Med*. 2001;134:518–20.
- ▶ 16. Evans AT, Husain S, Durairaj L, Sadowski LS, Charles-Damte M, Wang Y. Azithromycin for acute bronchitis: a randomised, double-blind, controlled trial. *Lancet*. 2002;359:1648–54.
- ▶ 17. Little P, Rumsby K, Kelly J, Watson L, Moore M, Warner G, et al. Information leaflet and antibiotic prescribing strategies for acute lower respiratory tract infection: a randomized controlled trial. *JAMA*. 2005;293:3029–35.
- ▶ 18. Smucny J, Fahey T, Becker L, Glazier R. Antibiotics for acute bronchitis. *Cochrane Database Syst Rev*. 2004;(4):CD000245.
- ▶ 19. O'Brien KL, Dowell SF, Schwartz B, Marcy SM, Phillips WR, Gerber MA. Cough illness/bronchitis—principles of judicious use of antimicrobial agents. *Pediatrics*. 1998;101:178–81.
- ▶ 20. Dowell SF, Schwartz B, Phillips WR. Appropriate use of antibiotics for URIs in children: Part II. Cough, pharyngitis and the common cold. The Pediatric URI Consensus Team. *Am Fam Physician*. 1998;58:1335–42, 1345.
- ▶ 21. Tiwari T, Murphy TV, Moran J, for the National Immunization Program, CDC. Recommended antimicrobial agents for the treatment and postexposure prophylaxis of pertussis: 2005 CDC guidelines. *MMWR Recomm Rep*. 2005;54(RR-14):1–16.
- ▶ 22. Montalto NJ, Gum KD, Ashley JV. Updated treatment for influenza A and B. *Am Fam Physician*. 2000;62:2467–76.
- ▶ 23. Centers for Disease Control and Prevention. High levels of adamantane resistance among influenza A (H3N2) viruses and interim guidelines for use of antiviral agents—United States, 2005–06 influenza season. *MMWR Morb Mortal Wkly Rep*. 2006;55:44–6.