

ACUTE COMMUNITY-ACQUIRED BACTERIAL SINUSITIS: TO TREAT OR NOT TO TREAT

Background

Sinusitis is the fifth most common diagnosis in primary care that results in antibiotic prescribing. It is believed that a large portion of this antibiotic utilization is likely inappropriate considering that less than 2% of cases in adults are complicated by secondary bacterial infections. Uncomplicated viral sinusitis generally resolves without treatment within 7-10 days and most (75%) of acute bacterial sinusitis (ABS) cases also resolve spontaneously within one month.

General Guidelines

- ❖ Most cases of acute sinusitis resolve without antibiotics
- ❖ Empiric antimicrobial therapy should provide coverage for *Streptococcus pneumoniae*, *Haemophilus influenzae*, and *Moraxella catarrhalis* (children only)
- ❖ It is important to select narrow-spectrum antibiotics based on local sensitivity patterns to optimize patient outcomes while minimizing the selection of drug-resistant organisms
- ❖ Most guidelines recommend initiation of narrow spectrum antibiotics such as amoxicillin, doxycycline, or sulfamethoxazole-trimethoprim as first line therapy in adults
- ❖ Amoxicillin at usual dose 45mg/kg/day or high-dose 90mg/kg/day in two divided doses is recommended as first-line therapy in children
- ❖ Antimicrobial therapy should usually be continued for a minimum of 10 days

ANTIBIOTIC TREATMENT OF ABS IN ADULTS		
DRUG	DOSE	COST*
First-Line Treatments		
Sulfamethoxazole-trimethoprim DS (Bactrim DS®, Septra DS®)†	800/160 mg BID x 10 days	\$6
Doxycycline (Vibramycin®)†	100 mg BID x 10 days	\$9
Amoxicillin (Amoxil®)†	875 mg BID x 10 days	\$17
Second-Line Treatments		
Azithromycin (Zithromax®, Z-pak®)†	500 mg x 1 day, 250 mg QD x 4 days	\$34
Telithromycin (Ketek®)	400 mg 2 caps QD x 5days	\$55
Amoxicillin-clavulanate XR (Augmentin XR®)	1000/62.5mg 2 tabs BID x 10 days	\$56
Clarithromycin (Biaxin®)†	500mg BID x 10 days	\$78
Gatifloxacin (Tequin®)	400 mg QD x 10 days	\$87
Cefdinir (Omnicef®)	300mg BID x 10 days	\$94
Moxifloxacin (Avelox®)	400 mg QD x 10 days	\$100
Levofloxacin (Levaquin®)	500 mg QD x 10 days	\$108

*Cost based on prices obtained from www.drugstore.com in 3/2006

† Generic available (estimated cost of generic drug included if applicable)

For more detailed description of acute bacterial sinusitis treatment, please refer to page 2

Treatment of ABS in Children

1. Use of antimicrobial agents is recommended in children with acute sinusitis who also meet the defining clinical presentations of persistent (nasal or postnasal discharge and/or cough lasting ≥ 10 -14 days) or severe disease (temperature of at least 102° F and purulent nasal discharge present concurrently for at least 3-4 days)
2. Amoxicillin is a first-line therapy in children with ABS mild to moderate in degree of severity, who do not attend day care and have not recently (< 90 days) been treated with an antibiotic
3. Patients allergic to PCN should receive cefdinir (Omnicef®), cefuroxime (Ceftin®), or cefpodoxime (Vantin®)
4. Clarithromycin (Biaxin®) or azithromycin (Zithromax®) may be used in children with serious allergic reactions
5. Alternative therapy in PCN-allergic patients with known infection with penicillin-resistant *S. pneumoniae* is clindamycin (Cleocin®)
6. Children who do not improve on the usual dose of amoxicillin, have recently been treated with an antibiotic, have moderate to severe symptoms or attend day care should be started on high dose amoxicillin-clavulanate. Alternative therapies include: cefdinir (Omnicef®), cefuroxime (Ceftin®), or cefpodoxime (Vantin®)
7. Patients who do not improve with 2nd course of oral antibiotics or who are acutely ill have two options
 - Option 1: Consult an otolaryngologist for maxillary sinus aspiration to obtain a sample for culture and sensitivity
 - Option 2: Intravenous cefotaxime (Claforan®) or ceftriaxone (Rocephin®)

Treatment of ABS in Adults

1. The current consensus is to withhold antimicrobial therapy for 7-10 days in patients with mild to moderate symptoms
2. Patients with high fever, acute facial pain, swelling or erythema should be treated for ABS whether or not the symptoms have been present for ≥ 7 days
3. Patients with diplopia, blindness, change in mental status or periorbital edema should immediately be seen by specialist
4. Consider treatment with antibiotics in patients with severe or persistent moderate symptoms without improvement after 7-10 days and at least one of the following:
 - Purulent nasal discharge
 - Postnasal drip
 - Cough
 - Maxillary pain or facial pressure
5. Other first-line antibiotic options besides amoxicillin, doxycycline (Vibramycin®) and sulfamethoxazole-trimethoprim (Bactrim® DS) include cefuroxime (Ceftin®), cefpodoxime (Vantin®), and cefdinir (Omnicef®)
6. Treat patients with PCN allergy with trimethoprim-sulfamethoxazole (Bactrim®), doxycycline (Vibramycin®), macrolides (Zithromax®, Biaxin®) or telithromycin (Ketek®) as first-line and with fluoroquinolones (e.g. Levaquin®, Tequin®, Avelox®) as second line
7. Patients who fail to respond to the initial course of antimicrobial therapy have three options:
 - Longer course of treatment with an antibiotic with a broader spectrum of activity
 - Management with amoxicillin-clavulanate (Augmentin®), ceftriaxone (Rocephin®), macrolides (Zithromax®, Biaxin®), telithromycin (Ketek®), and in severe cases fluoroquinolones (e.g. Levaquin®, Tequin®, Avelox®)
 - Referral to an otolaryngologist for a sinus aspirate culture after a CT scan, followed by another course of antibiotics

References

Available on the Idaho Medicaid website at <http://idahodur.isu.edu>