



Acute Bacterial Rhinosinusitis

Principles of appropriate antibiotic use for acute rhinosinusitis apply to the diagnosis and treatment of acute maxillary and ethmoid rhinosinusitis in otherwise healthy adults.

Sinus inflammation is often viral and usually resolves without antibiotics.

Background

- Respiratory viruses typically cause inflammation of the nasal mucosa and maxillary sinuses.
- Most cases of acute rhinosinusitis are due to uncomplicated viral infections.

Diagnosis

- Most rhinovirus colds last 7 to 11 days (*J Clin Microbiol* 1997; 35:2864; *JAMA* 1967; 202:158).
- Bacterial rhinosinusitis may be present if symptoms have been present >7 days and there is localization to the maxillary sinus.

Signs/Symptoms of Acute Maxillary Sinusitis

(*BMJ* 1995;311:233)

	Maxillary Sinusitis		Odds Ratio
	Present (N=92)	Absent (N=82)	
Fever	89%	79%	2.1
Unilateral maxillary pain	51%	38%	1.9
Maxillary toothache	66%	51%	1.9
Unilateral maxillary sinus tenderness	49%	32%	2.5

- Generalized facial pain or tenderness, postnasal drainage, headache, and cough do **not** increase the predictive value of maxillary sinus symptoms.

- Patients may rarely present with severe symptoms of bacterial rhinosinusitis less than 7 days duration (acute focal sinusitis). Consider immediate referral to an otolaryngologist for evaluation and drainage.
- Sinus radiography is not recommended for routine evaluation of acute, uncomplicated bacterial rhinosinusitis.
 - Opacification and air-fluid level have sensitivity of ~ 73% and specificity of 80% (*J Clin Epidemiol* 2000;53:852).
 - Mucosal abnormalities are common in patients with viral infections (*J Allergy Clin Immunol* 1998;102:403).

Treatment

- Most patients with acute bacterial rhinosinusitis improve without antibiotic treatment.
 - About 81% of antibiotic-treated patients and 66% of controls are improved at 10-14 days (absolute benefit of 15%).
- Patients with mild symptoms should not receive antibiotics, but symptomatic treatment may be helpful.
 - Topical and oral decongestants may reduce nasal symptoms.
 - Most randomized trials of symptomatic therapies have been inconclusive.
- Patients with moderate or severe symptoms may benefit from antibiotics.
- Use a narrow spectrum agent that covers *S. pneumoniae* and *H. influenzae*.
 - Amoxicillin remains an appropriate choice for uncomplicated infections.
 - Consider second line agent if no improvement or worsening after 72 hours.

TIPS TO REDUCE ANTIBIOTIC USE

- Tell patients that antibiotic use increases the risk of an antibiotic-resistant infection.
- Identify and validate patient concerns.
- Recommend specific symptomatic therapy.
- Spend time answering questions and offer a contingency plan if symptoms worsen.
- Provide patient education materials on antibiotic resistance.
- **REMEMBER:** Effective communication is more important than an antibiotic for patient satisfaction.
- See www.cdc.gov/drugresistance/community or contact your local health department for more information and patient education materials.

Key Reference

Hickner JM et al. Principles of appropriate antibiotic use for acute rhinosinusitis in adults: Background. *Annals of Internal Medicine* 2001; 134(6):498-505.