



Clinical Practice Guideline for Sinusitis Treatment (Rhinosinusitis)

Acute bacterial sinusitis is an infection of the paranasal sinuses with inflammation of the nose (thus the term rhinosinusitis). It most commonly develops as a complication of a viral infection of the upper respiratory tract. Symptoms may include nasal congestion, purulent nasal discharge, maxillary tooth discomfort, hyposmia or anosmia, facial pain or pressure that is made worse by bending forward, frontal headache or pain under the cheekbones, fever, and malaise and cough sometimes with a nocturnal component. Physical findings may include nasal turbinate edema, nasal crusts, nasal erythema, purulence of the nasal cavity and posterior pharynx, and failure of transillumination of the maxillary sinuses.

A particularly challenging task is to distinguish viral from bacterial sinusitis. In most patients, rhinoviral illness improves in 7 to 10 days; therefore, a diagnosis of acute bacterial sinusitis requires the persistence of symptoms for longer than 10 days or a worsening of symptoms after 7-10 days. Symptoms of viral sinusitis mimic those of bacterial sinusitis. The clinical diagnosis of acute bacterial sinusitis is made primarily on the basis of the medical history, symptoms, and physical findings. Radiography cannot be used to differentiate viral from bacterial sinusitis and is rarely necessary. Other imaging studies (i.e. CT scan and MRI) are only warranted for suspected complications.

A 7-10 day course of watchful waiting before antibiotics are prescribed would be reasonable, since symptoms in most patients resolved without the use of antibiotics and serious complications are rare. For the large number of patients with uncomplicated acute bacterial rhinosinusitis, a course of inexpensive antibiotics is probably an adequate first line treatment if antibiotics are to be given. The Clinical Practice Guidelines of the American College of Physicians which have been endorsed by the Centers for Disease Control and Prevention, the American Academy of Family Physicians, the American College of Physicians- American Society of Internal Medicine, and the Infectious Disease Society of America, conclude that most cases of acute sinusitis are caused by uncomplicated viral infections which **do not** require sinus radiography or antibiotic treatment. Instead, treatment of symptoms with analgesics, antipyretics and decongestants and saline lavage along with reassurance is recommended as the preferred initial strategy for management.

Home Self Care Measures

1. Maintain adequate hydration (drink 6-10 glasses of liquid a day to thin mucus)
2. Steamy shower or increase humidity in your home or personal steam vaporizer
3. Apply warm facial packs (warm wash cloth, hot water bottle, or gel pack for 5 to 10 minutes 3 or more times per day)
4. Analgesics (acetaminophen, ibuprofen, aspirin as needed- **DO NOT USE ASPIRIN IN CHILDREN UNDER 18 YEARS OF AGE**)

5. Saline irrigation lavage
 - Homemade (1/4 teaspoon salt dissolved in 1 cup of water; use bulb syringe or dropper purchased from drug store)
 - Saline nasal drops/spray, commercial (e.g., Ocean®, Salinex®, Nasal®)
6. Decongestants (oral)

i.e.: Pseudoephedrine hydrochloride (e.g., Sudafed® 60 mg. every 4 to 6 hours, not to exceed 4 doses per 24 hours.
7. Decongestant nasal sprays for no longer than 5 days, (e.g., oxymetazoline [Afrin®], phenylephrine hydrochloride (neo-Synephrine®)
8. Adequate rest
9. Sleep with head of bed elevated
10. Avoid cigarette smoke and extremely cool or dry air

Practitioners should assess the patient to determine if an acute sinusitis is present, educate patients about comfort and prevention measures and treat with antibiotics only where appropriate. For patients who have “severe or persistent moderate” symptoms and in whom there are specific findings of bacterial sinusitis, amoxicillin or trimethoprim-sulfamethoxazole should be prescribed as reasonable first-line therapy.

Acute sinusitis may be present when:

1. Upper respiratory symptoms have been present for at least 7 or more days, AND
2. Two or more of the following four factors are present at a point seven days or more after the onset of the illness:
 - Colored nasal drainage- Yellow and green color alone does not mean bacterial infection. The color depends upon the number of cells in the nasal secretion not the etiology.
 - Poor response to decongestant
 - Facial pain or sinus pain, particularly if aggravated by postural or valsalva maneuver
 - Headache-frontal or under cheek bones
 - A biphasic illness in which cold symptoms (sore throat, rhinorrhea, nasal congestion) which subside within 7-10 days and then recur within 1-2 weeks. In this scenario, chances of bacterial infection are high.

Conditions Requiring Action Before Seven Days

1. Fever >102 degrees F and a documented history of sinusitis in addition to the above symptoms are supportive of a sinusitis diagnosis.
2. Upper teeth pain (not of dental origin) with any of the above findings is a more specific indication of sinusitis.
3. Severe symptoms should be considered for treatment before 7 days.
4. Known anatomical blockage (e.g., chronic nasal polyps, severely deviated septum, recurrent sinusitis) may need immediate treatment.

PLAIN SINUS X-RAYS AND OTHER IMAGING ARE NOT NECESSARY IN MAKING THE DIAGNOSIS OF ACUTE SINUSITIS.

Recommended Treatment

Antibiotics: Amoxicillin 500 mg tab three times per day x 10-14 days, or 875 mg tab two times per day x 10-14 days

For those allergic to amoxicillin: Trimethoprim-sulfamethoxazole (TMP/SMX): one double strength tab BID 10-14 days. It should primarily be considered for patients who are allergic to amoxicillin unless there are specific clinical circumstances in which its use is warranted.

For patients allergic to both amoxicillin and TMP/SMX, macrolides or ketolides (i.e. Ketek 5 days) can be prescribed. It is important to instruct the patient to complete the course of antibiotics. The patient should be instructed to call back if symptoms worsen, or if symptoms have not resolved within one week.

Nasal steroid spray

Intranasal sprays may be appropriate for selected cases of recurrent sinusitis especially in the presence of an allergy or inflammation

Partial responses/Treatment failures

If the patient has a partial response to antibiotic treatment (patient is symptomatically improved but not back to normal at the end of the first course of antibiotics) may consider:

- An additional 10 to 14 days of amoxicillin 500mg TID or 875 mg BID
- TMP/SMX: one double strength tab BID x 14 days
- Reinforce the comfort and prevention measures listed under home self care measures listed above

If the patient has little or no symptomatic improvement after finishing a 14 day course of first line antibiotic therapy (amoxicillin or TMP/SMX) an antibiotic that covers resistant bacteria should be prescribed.

- a. Amoxicillin/Clavulanate (Augmentin) 875 mg BID x 14 days
- b. Cephalosporin 3rd generation ie. Cefuroxime, **Cefpodoxime, Cefprozil, or Cefdinir.

For patients allergic to both amoxicillin and TMP/SMX macrolides or ketolides can be prescribed.

- a. Clarithromycin (Biaxin®) 500mg BIDx 14 days
- b. Azithromycin (Zithromax®) 500 mg every day x 3 days
- c. Ketek 800 mg (2-400mg tabs) x 5 days

OR quinolones

- a. Levofloxacin (Levaquin®) 500 mg every day x 14 days
- b. Moxifloxacin (Avelox®) 400 mg every day x 14 days

** Cefpodoxime is currently not on the MAHP formulary. Practitioners should review the formulary before prescribing Cefpodoxime.

Failure or No Response in 3 to 4 Weeks

In patients who have not responded to three weeks of continuous antibiotic therapy practitioners should consider referral to ENT or Allergy for further workup.

Referral to Allergy

- a. Recurrent episodes, may be allergic greater than 30% of the cases
- b. Polyps
- c. Treatment failures
- d. Seasonal pattern to the occurrence of sinus symptoms

Referral to ENT

- a. Need for microbiology diagnosis
- b. Complications such osteomyelitis, periorbital infections or facial cellulites
- c. Polyps
- d. Treatment failures

The use of CT should be reserved for patients who present with dramatic symptoms of severe unilateral maxillary pain, facial swelling, and fever or for patients who have not responded to antibiotic therapy.

Radiology studies should only be ordered by specialists in ENT or Allergy.

References

“The Diagnosis and Management of Sinusitis: A Practice Parameter Update.” *The Journal of Allergy and Clinical Immunology*, November 7, 2005, pgs. 1-32.

“Rhinosinusitis: Establishing Definitions for Clinical Research and Patient Care.” *Supplement to the Journal of Allergy and Clinical Immunology*, Volume 114, Number 6, December, 2004, pgs. S155-S212.

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