# **ABRS**:

## **Complaisantly Common**



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## Marianne's Sinus Problem



- Marianne, 33, complains of a two week history of nasal congestion, right-sided facial and maxillary tooth pain and rhinorrhea.
- She says it started as a cold and just never got better.
- · She has never had a similar episode.
- An examination reveals purulent nasal discharge and congested nasal mucosa.

How would you treat Marianne?Go to page 85 to find out.

hinosinusitis is one of the most commonly encountered conditions by primary care provicians. It is also one of the least understood and can (URTI) and only 0.5% of adult URTIs and 5% of therefore be a diagnostic and therapeutic challenge. Acute bacterial rhinosinusitis (ABRS) affects approximately 15% of North Americans annually and is the fifth leading diagnosis for which antibiotics are prescribed. In the US, approximately 5% of all pediatric and 21% of all adult prescriptions are for the treatment of ABRS.1 Purthermore, \$3.5 billion is spent each year on the diagnosis and management of ABRS, and it is a leading cause of missed work days in North America.

## Table 1

#### Symptoms of ABRS

Purulent nasal discharge Nasal congestion Facial pain/ pressure (especially unilateral) Maxillary tooth pain Postnasal drip Anosmia/ hyposmia Ear fullness/ pressure Fever Cough Fatigue

## When is Rhinosinusitis?

Rhinosinusitis is an inflammatory condition involving the mucous membranes of the nasal cavity and paranasal sinuses Aprioximately 90% of cases are caused by a viral upper-respiratory tract infection pediatric 'SRTIs are complicated by the development of ABRS.<sup>2</sup> Other potential sources of sinonasal inflammation include:

Although rare, complications of ABRS can cause serious morbidity and can be potentially fatal. These complications include:

#### Table 2

## Medical therapy commonly used for the treatment of ABRS

Antibiotics

Intranasal steroids Decongestants (topical and systemic) Intranasal saline Antihistamines Anticholinergics

#### Table 3

## Recommendations for empiric therapy of ABRS<sup>4</sup>

Initial therapy amoxicillin	500 mg TID
Second-line therapy	
amoxicillin-clavulanate	500 mg TID
clarithromycin	500mg BID
cefuroxime	500mg BID
cefprozil	500 mg BID
gatifloxacin	400 mg OD
moxifloxacin	400 mg OD

ABRS: Acute bacterial rhinosinusitis TID: Three times daily BID: Twice daily OD: Once daily



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#### How is ABRS Diagnosed

The diagnosis of ABRS can be difficult due to the wide range of non-specific signs and symptoms that characterize the infection. Furthermore, the sinuses are inaccessible, making physical examination limited and difficult. Diagnosis of ABRS relies heavily on history and clinical presentation. Physical examination, laboratory tests and radiologic investigations can be helpful when correlated with the clinical presentation.

Since most cases of ABRS begin with a viral URTI, which is expected to last seven to 10 days, the diagnosis is generally made only if symptoms persist longer than 10 days, or if symptoms worsen after initial improvement.<sup>3</sup> If signs and symptoms persist after three months, a diagnosis of chronic rhinosinusitis may be made. Symptoms of ABRS are outlined in Table 1.

The best predictors of ABRS include:

- the presence of purulent secretions,
- maxillary tooth pain and
- poor response to decongestants.

Laboratory investigations are of limited use and usually not necessary. Plain sinus X-rays are only helpful if there is unilateral sinus opacification, or if air-fluid levels are present. Unfortunately, CT scans and MRIs are too sensitive to be of diagnostic value and their use is generally limited to cases of recurrent ABRS, complications of ABRS, chronic sinusitis, or the investigation of suspected neoplasms.

### How is ABRS treated?

The management of ABRS includes both medical and surgical treatments. Surgical intervention may be required in recurrent ABRS or in complications of ABRS. There is a wide variety of medical treatment available (Table 2). Recent guidelines have been published in Canada and in the US for the antimicrobial treatment of ABRS (Table 3).<sup>4</sup> Since the predominant bacterium involved in ABRS are *Streptococcus pneumoniae*, *Hemophilus influenzae*, and *Moraxella catarrhalis*, the choice of antibiotic should cover all these organisms.<sup>5</sup>

The duration of initial therapy should be 10 days. When the patient has received antibiotics in the past three months, has an allergy to b-lactam antibiotics, underlying chronic illness, or when symptoms have been present longer than four weeks, therapy should include a second-line antibiotic. Furthermore, it has been recommended that patients should be reassessed within 72 to 96 hours after initiation of antibiotic therapy. If there is no response, then the diagnosis should be reconsidered or the antibiotic changed.

There has been recent evidence to suggest that topical nasal steroids can help hasten the resolution of ABRS and prevent recurrent episodes of ABRS. Other medical preparations such as topical and systemic decongestants have not been shown to provide any statistic difference in shortening the duration of symptoms. However, they may provide limited symptomatic relief.

When there is a history of recurrent ABRS, complications of ABRS, when the diagnosis is uncertain or in cases of chronic sinusitis, a referral to an otolaryngologist should be considered.

## **Treating Marianne**

- You start Marianne on amoxicillin and a topical nasal steroid for sinusitis.
- After three days of treatment but with no improvement, you switch her to clarithromycin.
- You see Marianne again after another three days and she feels as if she's improving.
- Mary has complete resolution of her symptoms after finishing her 10 day course of clarithromycin.



- Diagnosis of acute bacterial rhinosinusitis (ABRS) can be difficult.
- Most cases are preceded by a viral upperrespiratory tract infection.
- Plain sinus X-rays are helpful if there is unilateral involvement or if air-fluid levels are present.
- Choose an appropriate antibiotic based on patient factors.
- Refer patient to an otolaryngologists when appropriate.

References

- Anon JB, Jacobs MR, Poole MD, et al: Antimicrobial treatment guidelines for acute bacterial rhinosinusitis. Otolaryngol Head Neck Surg 2004;130(1 Suppl):1-45.
- Gwaltney JM Jr, Weisinger BA, Patrie JT: Acute communityacquired bacterial sinusitis: The value of antimicrobial treatment and the natural history. Clin Infect Dis 2004; 38 (2):227-33
- Snow V, Mottur-Pilson C, Hickner JM: Principles of appropriate antibiotic use for acute sinusitis in adults. Ann Intern Med 2001; 134(6):495-7
- Desrosiers M, Frenkiel S, Hamid QA, et al: Acute bacterial sinusitis in adults: Management in the primary care setting. J Otolaryngol 2002; 31(Suppl 2):2S2-14.
- Meltzer EO, Hamilos DL, Hadley JA, et al: Rhinosinusitis: establishing definitions for clinical research and patient care. Otolaryngol Head Neck Surg 2004;131(Suppl 6):S1-62.