

ANTIBIOTIC USE IN ACUTE RHINOSINUSITIS: A NARRATIVE REVIEW OF
CLINICAL PRACTICE GUIDELINES AND ANTIMICROBIAL STEWARDSHIP

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<https://doi.org/10.5281/zenodo.23624025>

Abstract. Background: Acute rhinosinusitis is commonly associated with viral respiratory infections. Distinguishing viral from acute bacterial rhinosinusitis (ABRS) can be difficult and may contribute to unnecessary antibiotic use and antimicrobial resistance.

Objective: To summarize current clinical guidance on diagnosing and managing adult acute rhinosinusitis, focusing on antibiotic indications and antimicrobial stewardship.

Methods: This narrative review draws on the 2025 American Academy of Otolaryngology–Head and Neck Surgery Foundation adult sinusitis guideline, official outpatient antibiotic guidance from the US Centers for Disease Control and Prevention, and selected peer-reviewed literature on acute rhinosinusitis and narrative-review methodology. The sources were summarized descriptively. This was not a systematic review; no exhaustive database search, formal risk-of-bias assessment, or meta-analysis was undertaken.

Results: Current guidance emphasizes symptom duration, severity, and progression rather than isolated symptoms when considering ABRS. For selected adults with uncomplicated ABRS, watchful waiting is an option when follow-up is reliable. If antibiotics are prescribed, the 2025 American guideline recommends amoxicillin, with or without clavulanate, as first-line treatment for most adults. Selection should account for allergy history, individual risk factors, local resistance patterns, and locally applicable guidance.

Conclusion: Accurate diagnosis, selective antibiotic prescribing, patient education, and reliable follow-up are central to antimicrobial stewardship in acute rhinosinusitis. International recommendations should be interpreted in light of local epidemiology and clinical protocols.

Keywords: acute rhinosinusitis; acute bacterial rhinosinusitis; antibiotic prescribing; antimicrobial stewardship; clinical practice guidelines; watchful waiting.

1. Introduction

Acute rhinosinusitis is an inflammatory condition involving the nasal cavity and paranasal sinuses. It commonly occurs during upper respiratory tract infections and may cause nasal obstruction, nasal discharge, facial pressure or pain, and reduced sense of smell. Most acute episodes are viral and improve without antibacterial treatment. Antibiotics are therefore not routinely indicated for uncomplicated viral disease (Centers for Disease Control and Prevention [CDC], 2024).

Distinguishing viral rhinosinusitis from acute bacterial rhinosinusitis (ABRS) is a frequent clinical challenge because symptoms overlap. The colour of nasal discharge alone is insufficient to establish a bacterial cause. Unnecessary antibiotic exposure can cause adverse drug reactions, increase healthcare costs, and contribute to antimicrobial resistance.

Contemporary guidance emphasizes the duration and trajectory of symptoms, appropriate follow-up, and judicious prescribing (Payne et al., 2025).

This narrative review summarizes key recommendations for diagnosing and managing adult acute rhinosinusitis, with particular attention to antibiotic indications and antimicrobial stewardship.

2. Materials and Methods

This article was prepared as a narrative review of clinical guidance and selected medical literature. Sources considered included the 2025 adult sinusitis clinical practice guideline and its executive summary, official CDC outpatient antibiotic guidance, and a peer-reviewed article describing quality assessment of narrative reviews. The sources were selected for relevance to diagnostic criteria, watchful waiting, antibiotic choice, and responsible prescribing.

The literature was reviewed descriptively, without quantitative synthesis. This was not a systematic review: the search was not exhaustive, no protocol was registered, and no formal risk-of-bias assessment was performed. The author should verify the final reference details and, before submission, document any additional database searches actually conducted. No patient records or original clinical datasets were used.

3. Clinical Assessment and Diagnosis

Symptoms of viral and bacterial rhinosinusitis may overlap, including congestion, nasal discharge, facial discomfort, and cough. Diagnosis should therefore consider the pattern and duration of illness rather than relying on a single symptom. In the CDC guidance, ABRS is considered when symptoms are severe, persist for more than 10 days without improvement, or worsen after an initial period of improvement (CDC, 2024). Clinicians should apply the diagnostic criteria of the guideline relevant to their setting.

Clinical assessment should also identify possible complications and alternative diagnoses.

Periorbital swelling, impaired eye movements, visual changes, severe or unusual headache, neurological symptoms, or rapidly progressive systemic illness require urgent assessment rather than routine outpatient management.

Routine imaging is generally not required for uncomplicated acute rhinosinusitis; it may be considered when complications or another diagnosis are suspected. The clinical evaluation should integrate symptom course, severity, comorbidities, medication allergies, and the feasibility of follow-up.

4. Watchful Waiting and Indications for Antibiotics

Antibiotics do not treat viral infections and are not routinely indicated for viral rhinosinusitis. For selected adults with uncomplicated ABRS, the 2025 American guideline supports watchful waiting when reliable follow-up can be ensured (Payne et al., 2025). This approach requires an explanation of the expected course, clear safety-net advice, and a plan for reassessment if symptoms worsen or fail to improve.

The decision to initiate antibiotic treatment should be individualized. Relevant considerations include symptom severity and progression, the likelihood of bacterial disease,

comorbidities, risk factors for complications, allergy history, and access to follow-up. Watchful waiting is an active management strategy, not the absence of care.

Patients should be advised to seek prompt reassessment for worsening symptoms or warning signs of complications. If the clinical course is inconsistent with uncomplicated rhinosinusitis, the diagnosis and management plan should be reconsidered.

5. Antibiotic Selection and Stewardship

When antibiotic therapy is selected for adult ABRS, the 2025 American guideline recommends amoxicillin, with or without clavulanate, as first-line treatment for most adults (Payne et al., 2025). The choice of agent, dose, and duration should follow the applicable guideline and account for allergy history, individual risk factors, recent antibiotic exposure, and local resistance patterns.

Guidelines are produced for particular healthcare settings, and recommendations may differ across countries because of differences in antimicrobial resistance, medicine availability, and clinical practice. The CDC advises against routine macrolide use for ABRS in its setting because of pneumococcal resistance (CDC, 2024). This recommendation should not be generalized without considering local epidemiology and local protocols.

Antimicrobial stewardship seeks to ensure that antibiotics are prescribed only when justified and that the selected regimen is appropriate. Practical measures include avoiding antibiotics for likely viral disease, explaining expected symptom duration, documenting the rationale for treatment, and arranging reassessment when the patient does not improve as expected. Patient education can reduce pressure for unnecessary antibiotics while supporting shared decision-making.

6. Discussion

Contemporary guidance emphasizes diagnostic accuracy and selective antibiotic use in acute rhinosinusitis. The 2025 American guideline supports watchful waiting in selected uncomplicated cases and recommends amoxicillin, with or without clavulanate, as first-line treatment for most adults when antibiotics are chosen (Payne et al., 2025). The CDC similarly emphasizes distinguishing bacterial disease from viral illness and avoiding unnecessary antibiotic treatment (CDC, 2024).

These principles balance potential benefits of treatment against adverse effects and the public-health consequences of unnecessary prescribing. However, watchful waiting depends on appropriate patient selection, clear communication, and reliable follow-up. Clinical implementation may be influenced by patient expectations, prescribing habits, access to reassessment, and the availability of locally relevant guidance.

For practice in Uzbekistan, international recommendations should be considered alongside current national or institutional protocols and local antimicrobial resistance data. Without such local evidence, it would be inappropriate to claim that a specific international regimen is optimal for every patient in the country. Future local research could evaluate prescribing practices against contemporary guidelines, provided that appropriate ethical approval and authorized access to anonymized clinical data are obtained.

This review has limitations. It is a narrative synthesis of a limited selection of sources rather than a systematic review. It does not include original patient data, pooled effect estimates, or a comprehensive comparison of international guidelines. The conclusions should therefore be interpreted as a concise overview of selected guidance rather than an exhaustive evaluation of all available evidence.

7. Conclusion

Appropriate antibiotic use in acute rhinosinusitis requires careful assessment of symptom duration, severity, and progression, together with consideration of individual patient factors.

Current American guidance supports watchful waiting for selected adults with uncomplicated ABRs and recommends amoxicillin, with or without clavulanate, as first-line therapy for most adults when antibiotics are indicated. Patient education, reliable follow-up, and use of locally applicable guidance are essential to antimicrobial stewardship.

Declarations

Funding: No external funding. The author must confirm this statement before submission.

Conflict of interest: The author should disclose any relevant conflicts or state that none exist, if accurate.

Ethics approval: Not applicable; this narrative review does not involve human participants, animals, or identifiable patient data.

Data availability: No original datasets were generated or analysed for this review.

Author contributions: The author should confirm responsibility for the conception, literature review, drafting, and approval of the final manuscript.

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