

Antimicrobial Therapy for Acute Bacterial Rhinosinusitis (ABRS)

(NB Provincial Health Authorities Anti-Infective Stewardship Committee, November 2015)

Treatment Criteria

- **Clinical diagnosis and differentiation of acute bacterial from viral rhinosinusitis is based on the characteristic patterns of clinical presentations taking into account duration of symptoms, severity of illness, temporal progression and “double-sickening” in the clinical course**
- **The following clinical presentations (any of the 3) are recommended for identifying patients with acute bacterial vs. viral rhinosinusitis:**
 1. Onset with persistent symptoms or signs compatible with acute rhinosinusitis, lasting for greater than or equal to 10 days without any evidence of clinical improvement
 2. Onset with severe symptoms or signs of high fever (greater than or equal to 39 °C) and purulent nasal discharge or facial pain lasting for at least 3 to 4 consecutive days at the beginning of illness
 3. Onset with worsening symptoms or signs characterized by the new onset of fever, headache or increased in nasal discharge following a typical viral upper respiratory infection that lasted 5 – 6 days and were initially improving (“double sickening”)
- **Initiation of empiric antimicrobial therapy is recommended as soon as the clinical diagnosis of ABRS is established based on the above criteria; if diagnosis is uncertain due to mild symptoms then consider observing without antibiotic therapy for 3 days**

Presentation	Preferred Empiric Regimen	Alternative Empiric Regimen	Duration	Comments
Mild – Moderate Symptoms less than 10 days duration	Symptomatic therapy only Consider intranasal saline irrigation		5 – 7 days	+/- intranasal corticosteroids
Mild – Moderate Symptoms greater than 10 days OR worsening after 5 to 6 days OR Severe Symptoms for 3 to 4 consecutive days	doxycycline 100 mg po q12h	amoxicillin 1000 mg po q8h* OR amoxicillin/clavulanate 875/125 mg po q12h* OR sulfamethoxazole/trimethoprim 800/160 mg po q12h*		<ul style="list-style-type: none"> • Consider adjunctive intranasal saline irrigation • Consider adjunctive intranasal corticosteroids in patients with a history of allergic rhinitis • If a patient has been on antibiotic therapy in the past month the antimicrobial therapy chosen should be based on a different mechanism of action regardless of the clinical success
Failure of Initial Therapy (symptoms worsening after 48 – 72 hrs. or failure to improve after 3 – 5 days of initial empiric antimicrobial therapy)	amoxicillin/clavulanate 875/125 mg po q12h* + amoxicillin 1000 mg po q12h* (high-dose amoxicillin with clavulanate)	levofloxacin 500 mg po q24h* OR cefuroxime 500 mg po q12h*		<ul style="list-style-type: none"> • Consider adjunctive intranasal saline irrigation • Consider adjunctive intranasal corticosteroids in patients with a history of allergic rhinitis • Patients who fail to respond should be assessed for possible causes including infection with resistant organism, inadequate dosing and noninfectious cause • Select an agent with broader spectrum of activity and from a different antimicrobial class

Clinical Pearls

- **Compatible Signs and Symptoms:** purulent nasal discharge; nasal congestion or obstruction; facial swelling, congestion or fullness; facial pain or pressure; fever; hyposmia or anosmia; or dental pain
- Majority of cases of acute sinusitis are viral and resolve within 5 to 7 days without the need for antibiotics; only 0.5 – 2% of viral upper respiratory infections are complicated by bacterial infection
- Colour of nasal discharge or sputum is related to the presence of neutrophils, not bacteria, and should not be used to diagnose bacterial rhinosinusitis
- Macrolides are not recommended for empiric therapy due to growing resistance rates for *Streptococcus pneumoniae* and *Haemophilus influenzae* within the Province
- Respiratory fluoroquinolones (e.g. levofloxacin, moxifloxacin) should be reserved for failure of first-line options due to the potential for increasing resistance, risk of *Clostridium difficile* infection and their importance in the management of other infections
- Respiratory fluoroquinolones (e.g. levofloxacin, moxifloxacin) have not been found to be superior to β -lactams in the management of ABRS
- Antibiotics have not been shown to be beneficial in chronic rhinosinusitis without acute clinical deterioration
- Consider ID consultation for refractory nosocomial rhinosinusitis
- Decongestants (topical or oral) and/or antihistamines are not recommended as adjunctive therapy

*Dose adjustment required in renal impairment

References:

1. Chow AW, Benninger MS, Brook I *et al.* IDSA Clinical Practice Guidelines for Acute Bacterial Rhinosinusitis in Children and Adults. *Clin Infect Dis.* 2012 Apr;54(8):e72-e112
2. Blondel-Hill E. & Fryters S. (2012). *Bugs & Drugs An Antimicrobial/Infectious Diseases Reference.* Alberta Health Services.
3. Anti-infective Review Panel. *Anti-infective guidelines for community-acquired infections.* Toronto: MUMS Guideline Clearhouse; 2013.
4. Kaplan A. Canadian guidelines for acute bacterial rhinosinusitis – Clinical summary. *Can Fam Physician.* 2014 Mar;60(3):227-34.