

## Rhinosinusitis treatment protocol

### **Introduction:**

Rhinosinusitis is defined as symptomatic inflammation of the nasal cavity and paranasal sinuses. The term "rhinosinusitis" is preferred to "sinusitis" since inflammation of the sinuses rarely occurs without concurrent inflammation of the nasal mucosa.

The most common etiology Rhinosinusitis is a viral infection.

- Symptomatic inflammation of the nasal cavity and paranasal sinuses lasting less than four weeks.
- Most cases of acute rhinosinusitis are viral.
- Many patients with Acute rhinosinusitis have self-limited disease that resolves without antibiotic therapy.
- Patients rarely develop complications of bacterial infection beyond the nasal cavity into the central nervous system, orbit, or surrounding tissues.
- Patients treated with antibiotics may have a shorter course of illness; however, they also experience more adverse events.

**Purpose:** In 2020-2021 The specific indications were agreed by Nudging program central team to be implemented and monitored in MOH primary health care centers as a most common infection.

By using the data that was released through wasfaty system, we found that one of the most diagnosis for antibiotic used was the Rhinosinusitis. This guideline was created to evaluate and monitor the prescribing of antibiotic.

**Aim and scope:** this practice will indirectly reduce the antimicrobial resistance in the primary care patients or in the community, however the main intention is to of this guideline is to provide and evidence base, cost effective guide for managing rhinitis or rhinosinusitis.

**Targeted population:** Immunocompetent patients who are diagnosed with rhinosinusitis.

**Targeted end users:** Physicians, Pharmacists/clinical pharmacists and nurse.

**Setup:** Outpatient setting

**Methodology:** These recommendations are based on the high quality of evidence along with expert opinions maintaining the best practices guidelines and taking into consideration the local resources, cultural variation.

**Conflict of interest:** No conflict of interest.

**Funding:** No fund was provided.

**Updating:** First version of this protocol created in 2022. The protocol will be updated every 3 years or if any changes or updates released by international/national guidelines, pharmacotherapy references or MOH formulary.

### Signs and Symptoms Associated with the diagnosis of Rhinosinusitis:

Major	Minor
<ul style="list-style-type: none"> <li>- Facial pain/pressure, or fullness</li> <li>- Nasal obstruction/blockage</li> <li>- Nasal or postnasal discharge/purulence (by history or physical examination)</li> <li>- Hyposmia/anosmia</li> <li>- Fever (in acute rhinosinusitis only)</li> </ul>	<ul style="list-style-type: none"> <li>- Fever (other than acute rhinosinusitis)</li> <li>- Halitosis</li> <li>- Fatigue</li> <li>- Dental pain</li> <li>- Cough</li> <li>- Ear pain/pressure/fullness</li> </ul>

### Classification of Rhinosinusitis:

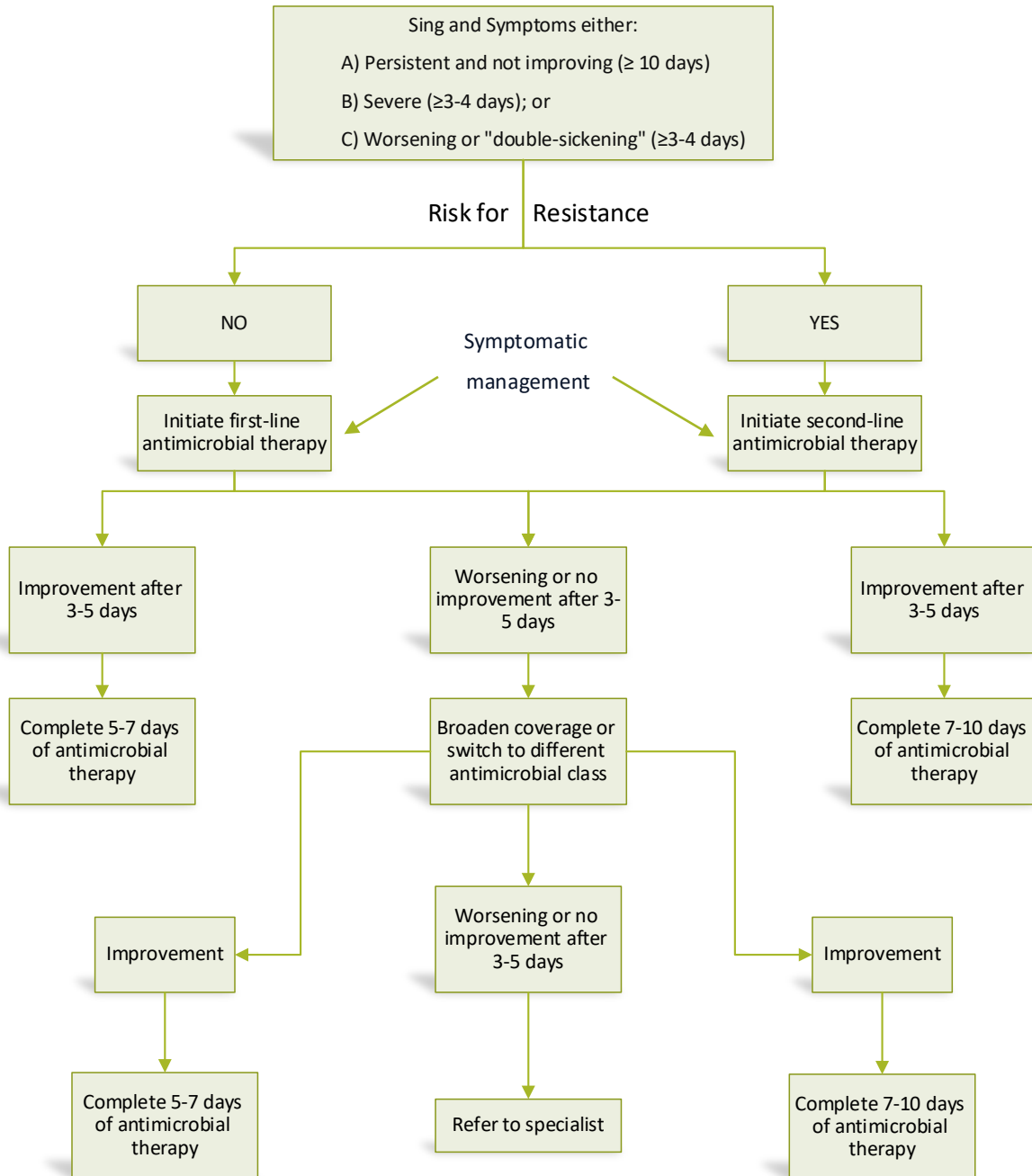
Classification	Duration	History Examination	Special Note
<b>Acute bacterial Rhinosinusitis</b>	Up to four weeks	The presence of two or more Major signs and symptoms; one Major and two or more Minor signs or symptoms; or nasal purulence on examination*	Fever or facial pain/pressure does not constitute a suggestive history in the absence of other nasal signs and symptoms. Consider acute bacterial rhinosinusitis if symptoms worsen after five days, if symptoms persist for 10 days or with symptoms out of proportion to those typically associated with viral infection.
<b>Subacute bacterial Rhinosinusitis</b>	Four to < 12 weeks		Complete resolution after effective medical therapy.
<b>Recurrent acute bacterial Rhinosinusitis</b>	Four or more episodes per year with each episode of at least seven days' duration; absence of intervening signs and symptoms		-
<b>Chronic bacterial Rhinosinusitis</b>	12 weeks or more		Facial pain/pressure does not constitute a suggestive history in the absence of other nasal signs and symptoms.
<b>Acute viral Rhinosinusitis</b>	Patients have <10 days of symptoms consistent with ARS that are not worsening		Non severe symptoms (e.g., mild pain, temperature less than 38.3°C)

### Treatment:

- Patient with uncomplicated acute bacterial rhinosinusitis should be either offered watchful waiting or prescribed antibiotic therapy.\*
- Patients undergoing watchful waiting should be prescribed antibiotics if their symptoms fail to improve after 7 days or worsen at any time.
- Antibiotic therapy is recommended for patients with rhinosinusitis symptoms that do not improve within seven days or that worsen at any time; those with moderate illness (Mild: symptoms less than 7 days and temperature  $\leq 38.3^{\circ}\text{C}$ , moderate to severe: temperature  $\geq 38.3^{\circ}\text{C}$ ; or those who are immunocompromised).
- Mild rhinosinusitis symptoms of less than seven days' duration can be managed with supportive care, including analgesics, short-term decongestants, saline nasal irrigation, and intranasal corticosteroids.
- Most patient will improve with symptomatic treatment alone.
- If patients' symptoms worsen after 48 to 72 hours of initial empiric treatment or do not improve after three to five days of treatment, initiate second line therapy.
- Amoxicillin/clavulanate (Augmentin) is preferred over amoxicillin alone for empiric therapy in children and adults.

**\*Watchful waiting is appropriate in place of antibiotics for seven to 10 days after upper respiratory symptoms appear when there is assurance of follow-up. Antibiotic therapy should be considered if the patient's condition does not improve by seven to 10 days after initial presentation or if symptoms worsen at any time. Symptomatic therapies should be offered to patients who are under observation. Physicians may also provide these patients with a safety net antibiotic prescription (also called a delayed prescription), with instructions describing when to fill the prescription.**

### Algorithm for the management of acute bacterial Rhinosinusitis



**Treatment of Rhinosinusitis - Adult:**

Diagnosis	Treatment
<b>Acute Bacterial Rhinosinusitis</b>	<ul style="list-style-type: none"> <li>- Analgesics</li> <li>- Decongestant</li> <li>- Saline nasal irrigation</li> <li>- Antibiotics may be considered in patients with symptoms or signs of acute rhinosinusitis that do not improve within seven days or that worsen at any time; in those with moderate to severe pain or a temperature of 38.3°C or higher; and in those who are immunocompromised.</li> </ul>
<b>Chronic Rhinosinusitis</b>	<ul style="list-style-type: none"> <li>- Saline nasal irrigation (Daily), intranasal corticosteroids, or both</li> <li>- Short course oral antibiotics</li> </ul>
<b>Bacterial Rhinosinusitis</b>	<p><b>Adult (18 years and over):</b></p> <p><b>No penicillin allergy:</b></p> <ul style="list-style-type: none"> <li>- <b>Amoxicillin/clavulanate:</b> 500 mg/125 mg every eight hours for 5-7 days</li> </ul> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>- <b>Amoxicillin/clavulanate:</b> 875 mg/125 mg every 12 hours for 5-7 days</li> </ul> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>- <b>Amoxicillin</b> 500 mg every 8 hours for 5-7 days</li> </ul> <p><b>Patients who allergic to penicillin:</b></p> <ul style="list-style-type: none"> <li>- <b>Doxycycline</b> 100 mg orally twice per or 200 mg orally per day for 5-7 days</li> </ul> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>- <b>Cefuroxime</b> 250 mg twice per day for 5-7 days <i>with or without</i></li> <li>- <b>Clindamycin</b> 300 mg every 6 hours for 5-7 days</li> </ul> <p><b>Moderate disease, recent antibiotic use, or treatment failure:</b></p> <ul style="list-style-type: none"> <li>- <b>Levofloxacin:</b> 500 mg per day for 7-10 days</li> </ul> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>- <b>Levofloxacin:</b> 750 mg every day for 7-10 days</li> </ul> <p><b>OR</b></p> <ul style="list-style-type: none"> <li>- <b>Moxifloxacin:</b> 400 mg per day for 7-10 days</li> </ul> <p><b>No improvement:</b></p> <ul style="list-style-type: none"> <li>- Refer the patient to otolaryngology for more culture and further evaluation.</li> </ul>
<b>Viral Rhinosinusitis</b>	<ul style="list-style-type: none"> <li>- Analgesics</li> <li>- Decongestant (limited used to a maximum of two-three days only)</li> <li>- Saline nasal irrigation</li> <li>- Intranasal corticosteroids</li> <li>- No antibiotics recommended.</li> </ul>

### Treatment of Rhinosinusitis – Children:

Indication	Initial therapy	Second-line therapy*
Mild/moderate disease	<b>Amoxicillin-clavulanate</b> 45 mg/kg per day orally divided in 2 doses (maximum 1.75 g/day) for 10-14 days	<b>Amoxicillin-clavulanate</b> 90 mg/kg per day orally divided in 2 doses (maximum 4 g/day) for 10-14 days
Severe disease or risk for antibiotic resistance	<b>Amoxicillin-clavulanate</b> 90 mg/kg per day orally divided in 2 doses (maximum 4 g/day) for 10-14 days	<b>Levofloxacin**</b> 10 to 20 mg/kg per day orally divided in 1 or 2 doses (maximum 500 mg/day) for 10-14 days
Penicillin allergy	<b>Levofloxacin**</b> 10 to 20 mg/kg per day orally divided in 1 or 2 doses (maximum 500 mg/day) for 10-14 days	<b>Cefuroxime</b> 30 mg/kg/day in 2 divided doses (Maximum, 500 mg per dose) <i>with or without</i> <b>Clindamycin</b> 30-40 mg/kg/day divided three times a day for 10-14 days
Vomiting	<b>Ceftriaxone</b> 50 mg/kg per day IV or IM once (maximum 1 g/day), followed 24 hours later by appropriate oral therapy	

\* Second-line therapies are indicated for children who worsen within three days or fail to improve after three days of initial therapy and in whom no pathogen is identified. If a pathogen is identified, antimicrobial therapy should be adjusted according to susceptibilities.

\*\*Levofloxacin should be reserved for cases in which there is no other safe and effective alternative.

**Note: (Doxycycline is contraindicated in children under 12 years)**

### Urgent referral of Rhinosinusities:

Symptoms
<ul style="list-style-type: none"> <li>- Fevers &gt;39°C</li> <li>- Periorbital edema</li> <li>- Inflammation, or erythema cranial nerve palsies</li> <li>- Abnormal extraocular movements</li> <li>- Proptosis</li> <li>- Vision changes (double vision or impaired vision)</li> <li>- Severe headache</li> <li>- Altered mental status; or</li> <li>- Meningeal signs.</li> </ul>

### References:

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