



# Antibiotic Stewardship Programme in Primary Care Guidance Notes

## Acute Rhinosinusitis

1. Acute rhinosinusitis (ARS) is usually caused by viruses associated with common colds. Less than 10% of them develops secondary bacterial infections.
2. The top three bacterial pathogens for acute bacterial rhinosinusitis (ABRS) are *Streptococcus pneumoniae*, *Haemophilus influenzae* (nontypeable) and *Moraxella catarrhalis*. Less commonly encountered bacteria include *Staphylococcus aureus*, non-pneumococcal streptococci and anaerobes.
3. ABRS is diagnosed clinically on the basis of persistent symptoms or signs > 10 days **plus** at least three of the following features: (1) discoloured nasal discharge (2) severe local pain (3) Fever (> 38°C) or (4) a “double-sickening” clinical course
4. Routine treatment of mild and uncomplicated ARS cases with antibiotics is unwarranted. Antibiotics should be reserved for cases diagnosed as ABRS.
5. Useful adjunctive treatments for symptomatic relief include normal saline irrigation of the nasal cavity, paracetamol and NSAIDs.

**Table 1.** Antibiotic recommendation for treatment of Acute Bacterial Rhinosinusitis in adults

Drug (Route)	Dosage and Frequency, Adults (Usual)	Duration (Usual)	Remarks
<b>First line</b>			
<b>Amoxicillin (oral)</b>	500 or 1000 mg three times daily	5-10 days	High dose to cover <i>S. pneumoniae</i> with reduced penicillin susceptibility.*
<b>Amoxicillin-clavulanate or other BLBLs# (oral)</b>	375mg (250mg/125mg) three times daily or 1g (875mg/125mg) twice daily	5-10 days	
<b>Second line</b>			
<b>Levofloxacin<sup>†</sup> (oral)</b>	500mg once daily	5-10 days	For severe (type 1) penicillin allergy (rare). <b>Contraindicated in paediatric population.</b>
<b>Doxycycline (oral)</b>	100mg twice daily or 200mg once daily	5-10 days	For severe (type 1) penicillin allergy (rare). <b>Contraindicated in children &lt; 8 years old.</b>
<b>Azithromycin (oral)</b>	500mg once daily for 3 days or 500mg once daily for 1 day, then 250mg once daily for 4 days	3-5 days	For severe (type 1) penicillin allergy (rare). High rate of resistance in Hong Kong, follow up after initial course of antibiotic recommended.
<b>Metronidazole (oral)</b>	400mg three times daily	5-10 days -	As combination therapy with other antibiotics (except BLBLs#) if anaerobes are suspected (e.g. in odontogenic infections).

**Table 2.** Antibiotic recommendation for treatment of Acute Bacterial Rhinosinusitis in children -

Drug (Route)	Dosage and Frequency, Children (Usual)	Duration (Usual)	Remarks
<b>First line</b>			
<b>Amoxicillin (oral)</b>	45 mg/kg/day or 90 mg/kg/day (maximum: 3000 mg/day) in divided doses every 8 or 12 hours	10-14 days	High dose to cover <i>S. pneumoniae</i> with reduced penicillin susceptibility. <sup>^</sup>
<b>Amoxicillin-clavulanate or other BLBLIs# (oral)</b>	Children < 40 kg: 20mg (amoxicillin)/ 5mg (clavulanate)/kg/day to 60mg (amoxicillin) / 15mg (clavulanate)/kg/day in divided doses every 8 hours ##	10-14 days	
<b>Second line</b>			
<b>Cefpodoxime (oral)</b>	Infants ≥2 months to Children <12 years of age: Oral: 5 mg/kg/dose (maximum: 200 mg/dose) every 12 hours Children ≥12 years of age and Adolescents: refer to adult dosing	10-14 days	For non-type 1 penicillin allergy. Certain <i>S. pneumoniae</i> isolates may not be reliably covered by oral cephalosporins in the local setting.
<b>Cefuroxime (oral)</b>	Infants >3 months of age and Children: 15 mg/kg/dose (maximum : 250 mg/dose) every 12 hours	10-14 days	
<b>Clarithromycin (oral)</b>	Children 6 months to 12 years of age: 7.5 mg/kg every 12 hours (maximum: 500 mg/dose)	10-14 days	For severe (type 1) penicillin allergy (rare). High rate of resistance in Hong Kong, follow up after initial course of antibiotic recommended.
<b>Azithromycin (oral)</b>	For children <15 kg (<3 years): 10 mg/kg once daily For children ≥ 15 kg: 15-25 kg (3-7 years): 200 mg once daily; 26-35 kg (8-11 years): 300 mg once daily; 36-45 kg (12-14 years): 400 mg once daily; Over 45 kg: Dose as per adults	3-5 days	
<b>Metronidazole (oral)</b>	30 mg/kg/day in divided doses every 8 hours (maximum: 2000mg per day)	10-14 days	As combination therapy with other antibiotics (except BLBLIs#) if anaerobes are suspected (e.g. in odontogenic infections).

\* Risk factors for drug-resistant *S. pneumoniae* (DRSP) in adults are age >65 years, beta-lactam therapy within past 3 months, alcoholism, multiple medical comorbidities, exposure to a child in a daycare centre.

<sup>^</sup> Risk factors for drug-resistant *S. pneumoniae* (DRSP) in children are: Age < 2 years, beta-lactam therapy within past 3 months, daycare attendance and unimmunized with pneumococcal conjugate vaccine.

<sup>†</sup> Due to risk of serious side effects involving tendons, muscles, joints, nerves and the central nervous system, fluoroquinolones should be reserved for use in patients who have no alternative treatment options.

# Beta-lactam-beta-lactamase inhibitor combinations e.g. ampicillin-sulbactam.

## No clinical data are available on doses higher than 40 mg/10 mg/kg per day in children under 2 years.

Clinicians should tailor-make drug treatment based on clinical judgment. Definitive therapy should be based on microbiological and antibiotic sensitivity results if available.

Management of outpatients with infections should be individualised. Doctors should check, document and get outpatients well informed about antibiotic treatment

(e.g. indication, side effect, allergy, contraindication, potential drug-drug interaction, etc.). Outpatients should be reminded to take antibiotics exactly as prescribed by their family doctors.

**Disclaimer:**

This guidance notes is intended for medical professionals for reference only and is not intended to be prescriptive or a substitute for clinical judgement on management of individual patient. It is not a complete authoritative diagnostic or treatment guide. Medical professionals are recommended to obtain relevant information from other sources, and provide patient management based on clinical judgement. This guidance notes will be kept updating thereafter. Please visit the website of Centre for Health Protection, Department of Health for the latest update and other information. The Department of Health gratefully acknowledges the invaluable support and contribution of the Advisory Group on Antibiotic Stewardship in Primary Care in the development of this guidance notes.