

CME Article

Ministry of Health Clinical Practice Guidelines: Management of Rhinosinusitis and Allergic Rhinitis

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ABSTRACT

The Ministry of Health publishes national clinical practice guidelines to provide doctors and patients in Singapore with evidence-based guidance on managing important medical conditions. This article reproduces the introduction and executive summary (with recommendations from the guidelines) from the Ministry of Health clinical practice guidelines on Management of Rhinosinusitis and Allergic Rhinitis, for the information of readers of the Singapore Medical Journal. Chapters, page and figure numbers mentioned in the reproduced extract refer to the full text of the guidelines, which are available from the Ministry of Health website (<http://www.moh.gov.sg/mohcorp/publications.aspx?id=24046>). The recommendations should be used with reference to the full text of the guidelines. Following this article are multiple choice questions based on the full text of the guidelines.

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INTRODUCTION

1.1 Background information

The two most common diagnoses of rhinitis encountered in clinical practice in Singapore are infectious rhinitis, including upper respiratory tract infections and allergic rhinitis. These two conditions form the main focus of this clinical practice guideline.

Rhinitis is defined as an inflammation of the lining of the nose and is characterised by nasal symptoms, including anterior or posterior rhinorrhoea, sneezing, nasal blockage and/or itching of the nose. These symptoms occur during two or more consecutive days for more than one hour on most days.

Sinusitis and rhinitis usually coexist and are concurrent in most individuals; thus, the correct terminology for sinusitis is **rhinosinusitis**.

These clinical practice guidelines aim to help clinicians manage rhinosinusitis based on the best available evidence as well as expert opinion in areas where studies are lacking.

1.2 Development of guidelines

Clinical practice guidelines (CPG) from the World Health Organization, USA and the European Union were evaluated, and local data, when available, were included into this CPG. Recommendations are based on locally available prescriptions and procedures. This workgroup was made up of otorhinolaryngologists with a special interest in rhinology and paediatric otorhinolaryngology, paediatricians and a general practitioner.

1.3 Objectives

The main objective of these guidelines is to provide evidence-based management strategies for the diagnosis and treatment of the two most common causes of rhinosinusitis, i.e. infective rhinosinusitis and allergic rhinitis at the primary care level, and guidelines for specialist referral.

1.4 Review of guidelines

Evidence-based clinical guidelines are only as current as the evidence that supports them. Users must keep in mind that new evidence could supersede recommendations in these guidelines. The workgroup advises that these guidelines be scheduled for review five years after publication, or if new evidence appears that requires substantive changes to the recommendations.

EXECUTIVE SUMMARY OF RECOMMENDATIONS

Details of recommendations can be found in the full text of the guidelines at the pages indicated. Details of the system of levels of evidence and grades of recommendations are also in the full text of the guidelines.

MANAGEMENT OF COMMON COLD (ACUTE VIRAL RHINOSINUSITIS) AND USE OF ANTIBIOTICS IN ACUTE BACTERIAL RHINOSINUSITIS

Acute viral rhinosinusitis (common cold)

A Antibiotics are not recommended for treatment of the common cold in children or adults (pg 17).

Grade A, Level 1++

ASCENT Ear Nose Throat Specialist Group
Changi General Hospital
K O Chan ENT Sinus and Sleep Centre
KK Women's and Children's Hospital
National University Health System
National University Hospital
National University of Singapore
Singapore General Hospital
Tan Tock Seng Hospital
Yong Loo Lin School of Medicine
(Institutions listed in alphabetical order)

Ministry of Health Clinical Practice Guidelines Workgroup on Management of Rhinosinusitis and Allergic Rhinitis

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A Dextromethorphan should be considered as a treatment option for adults with cough caused by the common cold (pg 17).

Grade A, Level 1++

A Topical (intranasal) or oral nasal decongestants, used for up to three days, are recommended for adolescents and adults with the common cold (pg 17).

Grade A, Level 1+

A Topical ipratropium may be considered as a treatment option for nasal congestion in children older than six years and in adults with moderate to severe common cold (pg 18).

Grade A, Level 1+

A Codeine and other narcotics, dextromethorphan, antihistamines and combination antihistamine/decongestants are not recommended to treat cough or other cold symptoms in children (pg 18).

Grade A, Level 1++

A First-generation antihistamines and combination antihistamine/decongestants may be considered for cough and cold symptoms in adults if the benefits outweigh the adverse effects (pg 18).

Grade A, Level 1++

A Vitamin C, zinc, and echinacea are not recommended for active treatment of common cold due to the lack of effectiveness in preventing the common cold (pg 18).

Grade A, Level 1++

Use of antibiotics in acute bacterial rhinosinusitis

Adults

A Antibiotics are not recommended for adults with non-severe acute bacterial rhinosinusitis (mild pain and temperature < 38.3 degrees centigrade) till after ten days of symptoms from onset (pg 18).

Grade A, Level 1+

D Besides severity of illness, the patient's age, general health, cardiopulmonary status and co-morbid conditions should be considered in deciding the start of antibiotic treatment in patients with acute bacterial rhinosinusitis (pg 19).

Grade D, Level 4

A The first-line empiric antibiotic for adults with acute bacterial rhinosinusitis is amoxicillin. If the patient is allergic to amoxicillin, trimethoprim-

sulfamethoxazole or macrolides may be used (pg 19).

Grade A, Level 1+

A For adults with acute bacterial rhinosinusitis, the recommended duration of appropriate oral antibiotic regime is seven days. Clinician assessment after seven days is recommended. Antibiotic regime can be extended to 14 days if the patient's symptoms fail to resolve (pg 19).

Grade A, Level 1++

B A second-line antibiotic, such as high dose amoxicillin-clavulanate, ampicillin-sulbactam or flouroquinolone, should be considered in adults with acute bacterial rhinosinusitis if there is no clinical response after at least seven days of first-line antibiotics (pg 19).

Grade B, Level 2+

Children

D Appropriate antibiotic regimes are recommended for children with the following conditions:

1. Non-severe acute bacterial rhinosinusitis: in a child with protracted symptoms with asthma, chronic bronchitis or acute otitis media.
2. Severe acute bacterial rhinosinusitis: in ambulatory patients, an oral antibiotic resistant to beta-lactamase enzymes (amoxicillin-clavulanate or a second-generation cephalosporin such as cefuroxime axetil).
3. Severe illness or toxic condition: in a child with suspected or proven suppurative complication (pg 20).

Grade D, Level 4

D Intravenous antibiotic effective against penicillin-resistant *Streptococcus pneumoniae*, beta-lactamase producing *Haemophilus influenzae* and *Moraxella catarrhalis* should be used in children with severe acute bacterial rhinosinusitis (pg 20).

Grade D, Level 4

D Amoxicillin (45 mg/kg/day, doubled if age under two years or with risk factors for resistance) is recommended for a child with non-severe acute bacterial rhinosinusitis with protracted symptoms. If the symptoms do not improve within 72 hours, an antibiotic against the resistant organism prevalent in the community should be considered. Azithromycin or clarithromycin as first-line therapy is recommended in penicillin allergy (pg 20).

Grade D, Level 4

MANAGEMENT OF INFECTIVE RHINOSINUSITIS IN ADULTS

Acute rhinosinusitis

GPP Other diagnosis should be considered in adults with acute rhinosinusitis who present with unilateral symptoms of bleeding, crusting or cacosmia (pg 22).

GPP

D Immediate referral to an ENT specialist is indicated for acute rhinosinusitis in adults who present with sinister signs indicative of complications of acute intermittent rhinosinusitis. These include:

- Peri-orbital oedema
- Displaced globe
- Double vision
- Ophthalmoplegia
- Reduced visual acuity
- Severe unilateral or bilateral frontal headache
- Frontal swelling
- Signs of meningitis or focal neurological deficits (pg 23)

Grade D, Level 4

D Plain sinus X-rays are **not** recommended for the diagnosis of acute rhinosinusitis in adults (pg 23).

Grade D, Level 4

Treatment of acute rhinosinusitis

D Alleviate symptoms of mild acute rhinosinusitis in adults with the following options:

- Decongestants
- Nasal saline spray and/or irrigation
- Antihistamines, only in patients with concomitant allergic rhinitis
- Analgesics (pg 23)

Grade D, Level 4

D Treat underlying inflammatory process of moderate to severe acute rhinosinusitis in adults with:

- Intranasal steroid
- Antibiotic, empiric: 7–14 days

Alleviate symptoms with the following options:

- Decongestants
- Nasal saline spray and/or irrigation
- Antihistamines, in patients with concomitant allergic rhinitis
- Analgesics (pg 24)

Grade D, Level 4

GPP The workgroup recommends that patients with

acute rhinosinusitis should be reviewed for **symptom resolution**. Patients whose symptoms worsen or persist despite therapy should be referred to a specialist for further evaluation and management (pg 24).

GPP

A Nasal steroid spray twice daily is recommended for adults with acute rhinosinusitis which has not resolved after five days of initial presentation (pg 26).

Grade A, Level 1+

A Oral corticosteroids are not recommended for adults with acute rhinosinusitis (pg 27).

Grade A, Level 1+

D Antihistamines are not recommended in the treatment of acute bacterial rhinosinusitis in adults (pg 27).

Grade D, Level 4

A Antihistamines may be used as an adjunct to antibiotic treatment in acute bacterial rhinosinusitis patients with concomitant allergic rhinitis (pg 27).

Grade A, Level 1+

D New generation oral antihistamines are preferred in adults with acute rhinosinusitis for their favourable efficacy/safety ratio and pharmacokinetics. Refrain from first-generation antihistamines to avoid sedation and anti-cholinergic side effects (pg 27).

Grade D, Level 4

GPP Topical decongestants may be used for adults with acute rhinosinusitis whose symptoms fail to resolve after ten days of initial presentation (pg 27).

GPP

GPP The duration of treatment with topical decongestants should be limited to less than ten days to avoid rhinitis medicamentosa (pg 28).

GPP

A Nasal hypertonic saline irrigation alone, or in conjunction with other adjunctive measures, may be used to reduce symptoms and medication use in adults with frequent acute rhinosinusitis (pg 28).

Grade A, Level 1+

D Mucolytics are not recommended to be prescribed routinely for adult patients with acute rhinosinusitis (pg 29).

Grade D, Level 4

Chronic rhinosinusitis

GPP All adults with persistent and recurrent rhinosinusitis should be referred to a specialist for nasal endoscopy to assess for differential causes (pg 30). **GPP**

GPP Other diagnosis should be considered in adults with chronic rhinosinusitis who present with unilateral symptoms of bleeding, crusting or cacosmia (pg 30). **GPP**

D Immediate referral to an ENT specialist is indicated for chronic rhinosinusitis in adults who present with sinister signs such as:

- Peri-orbital oedema
- Displaced globe
- Double vision
- Ophthalmoplegia
- Reduced visual acuity
- Severe unilateral or bilateral frontal headache
- Frontal swelling
- Signs of meningitis or focal neurological deficits. (pg 31)

Grade D, Level 4

D Sinus X-rays are **not** recommended to support the diagnosis of chronic rhinitis in adults (pg 31).

Grade D, Level 4

Treatment of chronic rhinosinusitis without nasal polyps

D For chronic rhinosinusitis without nasal polyps, alleviate symptoms with the following option:

- Nasal saline irrigation

Treat underlying inflammatory process with:

- Intranasal steroid
- Antibiotic, in patients with acute exacerbation of chronic rhinosinusitis, culture directed: 10–14 days (pg 33)

Grade D, Level 4

C Short-term oral antibiotics are recommended for acute exacerbation of chronic rhinosinusitis without nasal polyps (pg 33).

Grade C, Level 2+

A Nasal corticosteroids may be prescribed for chronic rhinosinusitis without nasal polyps (pg 33).

Grade A, Level 1+

A Nasal saline irrigation may be prescribed for chronic

rhinosinusitis without nasal polyps (pg 34).

Grade A, Level 1+

GPP Oral steroids, oral/topical decongestants, mucolytics or antihistamines are not recommended in the treatment of chronic rhinosinusitis without nasal polyps (pg 34).

GPP

Treatment of chronic rhinosinusitis with nasal polyps

D For chronic rhinosinusitis with nasal polyps, alleviate symptoms with the following options:

- Nasal saline irrigation
- Antihistamines, in patients with concomitant allergic rhinitis

Treat underlying inflammatory process with:

- Intranasal steroid (pg 35)

Grade D, Level 4

GPP Adults with chronic rhinosinusitis with nasal polyps should be reviewed for symptom control. Patients whose symptoms worsen during or persist despite therapy should be referred to a specialist for further evaluation and management (pg 35).

GPP

C Short-term oral antibiotics are recommended to improve symptoms in acute exacerbation of chronic rhinosinusitis with nasal polyps (pg 36).

Grade C, Level 2+

C Long-term, low-dose macrolide therapy may be considered for chronic rhinosinusitis patients with nasal polyps (pg 36).

Grade C, Level 2+

GPP Management by a specialist is recommended for patients with chronic rhinosinusitis with nasal polyps being prescribed long-term, low-dose macrolide therapy, in view of its side effects (pg 36).

GPP

A Nasal corticosteroid therapy may be used in adults with chronic rhinosinusitis with nasal polyps (pg 36).

Grade A, Level 1+

C Antihistamines are not recommended in chronic rhinosinusitis with nasal polyps (pg 37).

Grade C, Level 2+

MANAGEMENT OF INFECTIVE RHINOSINUSITIS IN CHILDREN

GPP Allergic rhinitis often coexists with paediatric acute and chronic rhinosinusitis. The history should evaluate for symptoms of allergic rhinitis and identify possible allergens (pg 39).

GPP

GPP Otoscopy should be performed routinely to exclude otitis media in paediatric acute and chronic rhinosinusitis (pg 40).

GPP

D Plain X-ray is **not** recommended routinely to confirm the diagnosis of rhinosinusitis in children (pg 40).

Grade D, Level 4

A Topical corticosteroids may be used in children as an adjunct to antibiotics. They can reduce the cough and nasal discharge earlier in acute bacterial rhinosinusitis (pg 43).

Grade A, Level 1+

GPP Topical decongestants should be used in children no longer than 4–5 days to avoid toxicity and rhinitis medicamentosa (pg 43).

GPP

D Saline nose drops or sprays may be considered to decrease the mucus trapping and crusting associated with acute rhinosinusitis in children (pg 43).

Grade D, Level 3

D The workgroup recommends antibiotic use only in acute exacerbation of paediatric chronic rhinosinusitis, by following the recommendations from the Consensus Meeting in Brussels, 1996:

- For chronic rhinosinusitis, especially with frequent exacerbations, two weeks of oral antibiotics is advised. The antibiotic is changed if there is no response within 5–7 days.
- Failing this, sinus secretions for culture or investigations to exclude recalcitrant causes are considered.
- If there is slow response, a second two-week course can be prescribed.
- In rare cases with clear-cut improvement but persisting symptoms, a third course can be given before surgery is considered.
- Parenteral antibiotic may be appropriate if oral antibiotics fail (pg 44).

Grade D, Level 4

C Nasal douching may be considered for paediatric chronic rhinosinusitis (pg 44).

Grade C, Level 2+

D Antral lavage, inferior meatal antrostomy (except possibly in primary ciliary dyskinesia), Caldwell-Luc operation (risks damage to un-erupted teeth) are not recommended in paediatric chronic rhinosinusitis (pg 45).

Grade D, Level 3

MANAGEMENT OF ALLERGIC RHINITIS

GPP The diagnosis of allergic rhinitis should be made based upon concordance between a typical history of allergic symptoms and diagnostic tests (pg 48).

GPP

D The workgroup recommends using the algorithm for the diagnosis and assessment of severity of allergic rhinitis proposed by ARIA 2008 (refer to Fig. 6) (pg 48).

Grade D, Level 4

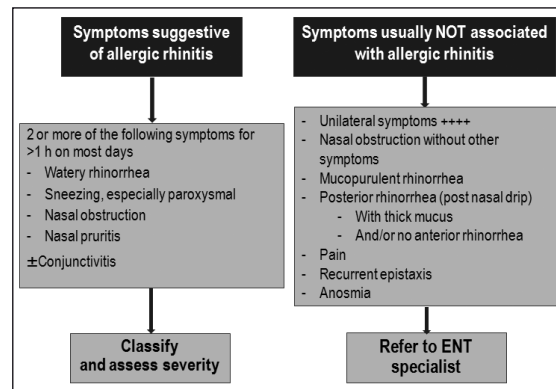


Fig. 6 Symptoms of allergic rhinitis (Adapted with permission from ARIA 2008 Update).

GPP Besides a nasal examination for allergic rhinitis, look out for:

- Ocular signs of irritation, e.g. allergic conjunctivitis; redness and rubbing of eyes indicative of itchiness.
- Chest examination to rule out concurrent asthma (pg 49).

GPP

D The workgroup recommends using the algorithm for the classification of allergic rhinitis proposed by ARIA 2008 (refer to Fig. 7) (pg 49).

Grade D, Level 4

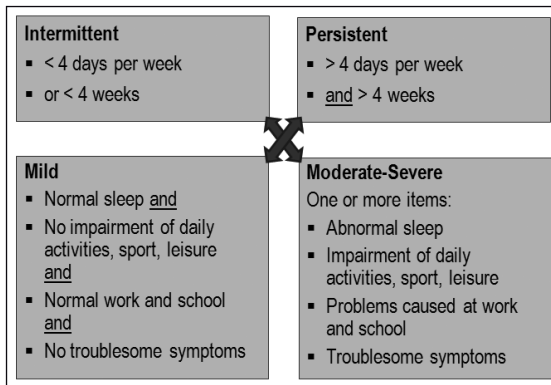


Fig. 7 Classification and severity of allergic rhinitis (Reproduced with permission from ARIA 2008 Update).

D The workgroup recommends using the algorithm for the management of allergic rhinitis proposed by ARIA 2008 (refer to Fig. 8) (pg 50).

Grade D, Level 4

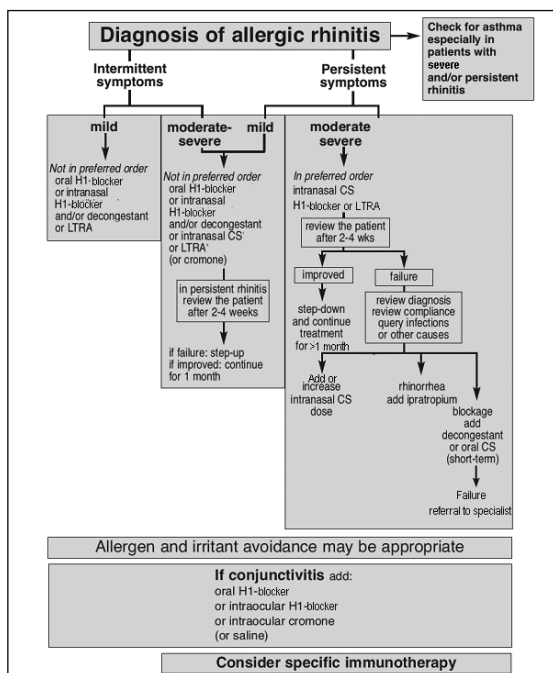


Fig. 8 Algorithm for management of allergic rhinitis (Reproduced with permission from ARIA 2008 Update).

GPP Mattress encasings or high efficiency particulate air filters for house dust mite and pet allergy in adults with rhinitis should be part of the overall management of allergic rhinitis (pg 52).

GPP

A Second-generation oral or intranasal H1-antihistamines are recommended for the treatment of allergic rhinitis and conjunctivitis in adults and children (pg 52).

Grade A, Level 1++

A Intranasal glucocorticosteroids are strongly recommended for the treatment of allergic rhinitis in adults and children (pg 52).

Grade A, Level 1++

D Intramuscular glucocorticosteroids and the long term use of oral preparations are not recommended for the treatment of allergic rhinitis due to safety concerns (pg 52).

Grade D, Level 3

A Topical H1-antihistamines are recommended for the treatment of allergic rhinitis and conjunctivitis. Their therapeutic effects are superior and faster than oral antihistamines (pg 52).

Grade A, Level 1+

A Intranasal ipratropium may be considered as a treatment option for rhinorrhoea associated with allergic rhinitis (pg 52).

Grade A, Level 1+

A Topical chromones should be considered as a treatment option for allergic rhinitis and conjunctivitis. However, they are only moderately effective (pg 53).

Grade A, Level 1+

A Montelukast may be considered as a treatment option for seasonal allergic rhinitis and asthma in patients over six years of age. It should not be used for more than four weeks since there is limited data of its efficacy in patients with persistent allergic rhinitis for more than four weeks (pg 53).

Grade A, Level 1+

C Intranasal decongestants may be used for a short period of time in patients with severe nasal obstruction caused by allergic rhinitis (pg 53).

Grade C, Level 2+

C Oral decongestants (and their combination with oral H1-antihistamines) may be considered in the treatment of allergic rhinitis in adults, but side effects are common (pg 53).

Grade C, Level 2++

GPP Education of patient and/or patient's carer on the management of allergic rhinitis should be considered as an option to maximise compliance and optimise treatment outcomes (pg 54).

GPP

Paediatric aspects of allergic rhinitis

GPP Symptoms of sneezing, nasal itching, discharge and congestion that persist for longer than two weeks should prompt a search for a cause other than infection in children (pg 55).

GPP

GPP It is recommended to ask about family history of atopy and progression of atopy of the child (pg 55).

GPP

B Skin prick tests should be performed and interpreted reliably early in life (pg 55).

Grade B, Level 2+

GPP The principles of treatment are the same in children as in adults with allergic rhinitis, but dosages should be adapted and care should be taken to avoid the side effects involving impairment of growth and cognitive development (pg 56).

GPP

GPP Pharmacologic management for allergic rhinitis in children should be individualised and polypharmacy avoided (pg 56).

GPP

A Intranasal glucocorticosteroid with bioavailability of < 1%, such as fluticasone propionate or mometasone furoate, should be considered as a treatment option for allergic rhinitis and allergic conjunctivitis (pg 56).

Grade A, Level 1++

B Intranasal glucocorticosteroids with high bioavailability, such as betamethasone, should not be used in children with allergic rhinitis due to their effect on growth and growth velocity (pg 56).

Grade B, Level 1++

A Oral and depot glucocorticosteroid preparations should be avoided in children with allergic rhinitis due to their negative effect on short-term growth and growth velocity (pg 56).

Grade A, Level 1+

A Second-generation H₁-antihistamines, such as cetirizine, levocetirizine and loratadine, should be considered as treatment options in the treatment of allergic rhinitis in children (pg 57).

Grade A, Level 1+

GPP Nasal saline drops or spray may be considered in children with allergic rhinitis to clear the nose before eating or sleeping (pg 57).

GPP

A Sublingual immunotherapy (SLIT) should be considered in children above age five years who have poor symptomatic control of allergic rhinitis despite maximal therapy, or who cannot or will not take medication (pg 57).

Grade A, Level 1++

GPP The family and the child should be educated about the recurrent or persistent nature of the disease, allergen avoidance and avoidance of allergen triggers and respiratory tract irritants, the most important of which is tobacco smoke (pg 58).

GPP**MANAGEMENT OF RHINITIS IN PREGNANCY**

D Nasal endoscopy on a decongested nose may be considered as an option to differentiate pregnancy rhinitis from sinusitis (pg 61).

Grade D, Level 4

D Imaging studies are not recommended to make a diagnosis of rhinitis in pregnancy (pg 61).

Grade D, Level 4

D Skin prick tests are not recommended for rhinitis in pregnancy because the use of potent antigens in skin testing may be associated with systemic reactions (pg 61).

Grade D, Level 4

GPP In treating rhinitis of pregnancy, all drug therapy should ideally be avoided, especially in the first trimester. If drug therapy cannot be avoided, then treatment will depend upon the predominant symptoms, with topical agents as first line, since they have minimal systemic exposure (pg 62).

GPP

C Cromones are safe with no known teratogenic effect, but they are moderately effective. They may be given for the treatment of rhinitis in the first three months of pregnancy, 3–4 times daily (pg 62).

Grade C, Level 2+

C If cromones are ineffective and poorly tolerated,

they should be replaced with antihistamines. Chlorpheniramine and tripeleennamine are the antihistamines of choice for pregnant women with rhinitis. Cetirizine and loratadine may be considered after the first trimester (pg 62).

Grade C, Level 2+

- C** Intranasal steroids should be prescribed as an alternative to, or in combination with antihistamines for severe cases of rhinitis in pregnancy (pg 62).

Grade C, Level 2+

- C** Budesonide is the only recommended intranasal steroid for rhinitis in pregnancy (pg 62).

Grade C, Level 2+

- C** Topical decongestants like oxymetazoline may be considered as second-line therapy for short-term relief and when no other safer alternatives are available for the treatment of rhinitis in pregnancy (pg 63).

Grade C, Level 2+

- C** Oral decongestants are not recommended for rhinitis in pregnancy (pg 63).

Grade C, Level 2+

- C** Leukotriene modifiers are not recommended for

allergic rhinitis in pregnancy (pg 63).

Grade C, Level 2+

- A** Amoxicillin is the drug of choice for pregnant patients with rhinitis who are not allergic to penicillin (pg 63).

Grade A, Level 1+

- D** Amoxicillin-clavulanate or cephalosporin may be given to pregnant women with rhinitis not responding to amoxicillin (pg 63).

Grade D, Level 3

- C** Metronidazole should be used in rhinitis in pregnancy caused by anaerobic pathogens (pg 63).

Grade C, Level 2+

- D** Immunotherapy is not recommended for rhinitis in pregnancy. However, it may be continued if the maintenance phase has been reached (pg 63).

Grade D, Level 4

ACKNOWLEDGEMENT

The workgroup would like to acknowledge Dr Rosslyn Anicete, Research Co-ordinator from the Department of Otolaryngology (Paediatric Otolaryngology), KK Women's and Children's Hospital, for her contribution to the development of the guidelines.

SINGAPORE MEDICAL COUNCIL CATEGORY 3B CME PROGRAMME *
Multiple Choice Questions (Code SMJ 201003B)

These questions are based on the full text of the guidelines which may be found at <http://www.moh.gov.sg/mohcorp/publications.aspx?id=24046>

	True	False
Question 1. The following suggest a diagnosis of acute bacterial rhinosinusitis instead of a common cold:		
(a) More severe symptoms than usual.	<input type="checkbox"/>	<input type="checkbox"/>
(b) Cold symptoms lasting more than ten days.	<input type="checkbox"/>	<input type="checkbox"/>
(c) Low grade fever.	<input type="checkbox"/>	<input type="checkbox"/>
(d) Symptoms worsen after several days of improvement.	<input type="checkbox"/>	<input type="checkbox"/>
Question 2. Which of the following statements regarding paediatric rhinosinusitis is false?		
(a) Eye swelling from orbital infection can occur without pain in the eye or history of rhinosinusitis.	<input type="checkbox"/>	<input type="checkbox"/>
(b) Plain X-ray is sensitive in the diagnosis of acute rhinosinusitis.	<input type="checkbox"/>	<input type="checkbox"/>
(c) Recalcitrant cases of rhinosinusitis require an exclusion of laryngopharyngeal reflux.	<input type="checkbox"/>	<input type="checkbox"/>
(d) Frequent exacerbations of chronic rhinosinusitis may benefit from two weeks of oral antibiotics.	<input type="checkbox"/>	<input type="checkbox"/>
Question 3. In patients with persistent allergic rhinitis:		
(a) The most common aeroallergen locally is house dust mites.	<input type="checkbox"/>	<input type="checkbox"/>
(b) Evaluation for asthma should be performed.	<input type="checkbox"/>	<input type="checkbox"/>
(c) Measurement of total IgE is useful in the diagnosis.	<input type="checkbox"/>	<input type="checkbox"/>
(d) Long-term use of oral glucocorticosteroids is not recommended due to safety concerns.	<input type="checkbox"/>	<input type="checkbox"/>
Question 4. With regard to antibiotics and acute rhinosinusitis:		
(a) In general, adults suffer 6–8 colds per year.	<input type="checkbox"/>	<input type="checkbox"/>
(b) Antibiotics need not be started in patients with acute rhinosinusitis until after ten days from the onset of symptoms unless symptoms are severe.	<input type="checkbox"/>	<input type="checkbox"/>
(c) Greenish nasal discharge suggestive of bacterial sinusitis always requires antibiotic treatment.	<input type="checkbox"/>	<input type="checkbox"/>
(d) The recommended duration of use of antibiotics is 14 days.	<input type="checkbox"/>	<input type="checkbox"/>
Question 5. In the diagnosis of acute infective rhinosinusitis in adults:		
(a) Fever is a diagnostic criteria.	<input type="checkbox"/>	<input type="checkbox"/>
(b) Radiological imaging is not needed to make the diagnosis.	<input type="checkbox"/>	<input type="checkbox"/>
(c) Eye swelling requires immediate specialist referral.	<input type="checkbox"/>	<input type="checkbox"/>
(d) Symptoms should resolve within five days.	<input type="checkbox"/>	<input type="checkbox"/>
Question 6. For the treatment of acute bacterial rhinosinusitis:		
(a) Antihistamines are indicated in all patients.	<input type="checkbox"/>	<input type="checkbox"/>
(b) Fluoroquinolones should not be used as first-line antibiotics.	<input type="checkbox"/>	<input type="checkbox"/>
(c) Nasal corticosteroid spray has not been shown to reduce symptoms.	<input type="checkbox"/>	<input type="checkbox"/>
(d) Oral steroids should be used for all patients.	<input type="checkbox"/>	<input type="checkbox"/>

Question 7. Drugs recommended for use in rhinitis in pregnancy include:

- | | | |
|----------------------------|--------------------------|--------------------------|
| (a) Budesonide. | <input type="checkbox"/> | <input type="checkbox"/> |
| (b) Oral decongestants. | <input type="checkbox"/> | <input type="checkbox"/> |
| (c) Leukotriene modifiers. | <input type="checkbox"/> | <input type="checkbox"/> |
| (d) Cefuroxime. | <input type="checkbox"/> | <input type="checkbox"/> |

Question 8. Recommended treatment for chronic sinusitis with nasal polyps in adults include:

- | | | |
|-----------------------------------|--------------------------|--------------------------|
| (a) Antibiotics. | <input type="checkbox"/> | <input type="checkbox"/> |
| (b) Nasal corticosteroid therapy. | <input type="checkbox"/> | <input type="checkbox"/> |
| (c) Oral steroids. | <input type="checkbox"/> | <input type="checkbox"/> |
| (d) Mucolytics. | <input type="checkbox"/> | <input type="checkbox"/> |

Question 9. Which of the following symptoms, together with persistent nasal congestion or discoloured nasal discharge lasting for more than three months, suggest the diagnosis of chronic sinusitis in adults?

- | | | |
|---------------------|--------------------------|--------------------------|
| (a) Visual changes. | <input type="checkbox"/> | <input type="checkbox"/> |
| (b) Epistaxis. | <input type="checkbox"/> | <input type="checkbox"/> |
| (c) Loss of smell. | <input type="checkbox"/> | <input type="checkbox"/> |
| (d) Headache. | <input type="checkbox"/> | <input type="checkbox"/> |

Question 10. Regarding paediatric allergic rhinitis:

- | | | |
|---|--------------------------|--------------------------|
| (a) In pre-school children, allergic rhinitis occurs at the same time as asthma. | <input type="checkbox"/> | <input type="checkbox"/> |
| (b) Allergic rhinitis often comes to light when preschoolers are being treated for co-morbidities, e.g. chronic otitis media with effusion. | <input type="checkbox"/> | <input type="checkbox"/> |
| (c) The aim of treatment in paediatric allergic rhinitis is to cure the disease. | <input type="checkbox"/> | <input type="checkbox"/> |
| (d) All intranasal steroid sprays are safe for use in children. | <input type="checkbox"/> | <input type="checkbox"/> |

Doctor's particulars:

Name in full: _____

MCR number: _____ Specialty: _____

Email address: _____

SUBMISSION INSTRUCTIONS:

(1) Log on at the SMJ website: <http://www.sma.org.sg/cme/smj> and select the appropriate set of questions. (2) Select your answers and provide your name, email address and MCR number. Click on "Submit answers" to submit.

RESULTS:

(1) Answers will be published in the SMJ May 2010 issue. (2) Category 3B CME points: pending SMC approval. The MCR numbers of successful candidates will be posted online at www.sma.org.sg/cme/smj upon SMC approval of CME points. (3) All online submissions will receive an automatic email acknowledgement. (4) Passing mark is 60%. No mark will be deducted for incorrect answers. (5) The SMJ editorial office will submit the list of successful candidates to the Singapore Medical Council.

Deadline for submission: (March 2010 SMJ 3B CME programme): 12 noon, 31 May 2010.