<table>
<thead>
<tr>
<th>Program Name:</th>
<th>Lessening the Impact of Allergic Rhinitis in your Patients</th>
</tr>
</thead>
</table>
| Planning Committee: | Susan Waserman, MSc, MD, FRCPC  
Reza Alizadehfar, MD, FRCPC  
Alan Kaplan, MD, CCFP(EM), FCFP  
Jacques Bouchard, MD, CCFP  
Anthony Ciavarella, BA, MA, MD |
| Accreditation Information: | This version of the program is unaccredited and intended for informational purposes only. An accredited version is available online at [www.AdvancingIn.com](http://www.AdvancingIn.com) until February 15, 2014. |
| Sponsor: | This case study is supported by an educational grant from GlaxoSmithKline and Merck. |
Learning Objectives

At completion of the program, the participant should be able to:

- Describe the prevalence and burden of allergic rhinitis including the impact on quality of life
- Recognize the symptoms of allergic rhinitis
- Conduct a proper nasal examination
- Describe the factors involved in differential diagnosis
- Manage allergic rhinitis effectively based on disease severity, in accordance with clinical practice guidelines

Pre-course Survey

1. How would you rate your ability to diagnose allergic rhinitis based on current clinical practice guidelines? (1 not at all comfortable, 5 very comfortable)
2. How comfortable do you feel classifying a patient’s allergic rhinitis symptoms based on current clinical practice guidelines? (1= low, 5 = very high)
3. How confident do you feel in your knowledge of the comorbidity associated with allergic rhinitis? (1= low, 5 = very high)
4. How comfortable do you feel selecting the most appropriate treatment for allergic rhinitis based on current clinical practice guidelines? (1 not at all comfortable, 5 very comfortable)
5. How often do you discuss the impact of allergic rhinitis on quality of life with your patients? (1= never, 5 = all the time)
6. How would you rate your proficiency on the complete management of your patients with allergic rhinitis? (1= low, 5 = very high)
Pre-Test

1) Which of the following symptoms is consistent with allergic rhinitis
   a) Clear nasal congestion
   b) Unilateral nasal symptoms
   c) Recurrent nosebleeds
   d) Paroxysmal sneezing
   e) Nasal obstruction
   f) Red, itchy eyes
   g) Nasal pruritus
   h) all but unilateral nasal symptoms and recurrent nosebleeds
   i) all of the above

2) What percentage of patients with asthma also suffers from allergic rhinitis?
   a) the majority
   b) about half
   c) the minority

3) Can allergic rhinitis decrease work performance?
   o Yes
   o No

4) Can allergic rhinitis cause significant impairment of sleep?
   o Yes
   o No

5) What classes of therapy are used in the management of uncomplicated allergic rhinitis:
   a) Antihistamines
   b) Decongestants
   c) Antibiotics
   d) Corticosteroids
   e) Leukotriene inhibitors
   f) Ophthalmic preparations
   g) Immunotherapy
   h) All except antibiotics
   i) All except corticosteroids
   j) All of the above
Allergic Rhinitis

- is common, occurring in up to 40% of the population. [Small 2007]
- involves inflammation induced by allergen exposure. [Bousquet 2008]
- is associated with significant comorbidity, including asthma, breathing problems, sinusitis, sleep disturbance and other problems. [Small 2007] [Craig 2004]
- is often viewed as a minor nuisance, but can impair daily functioning and have a significant impact on quality of life. [Meltzer 2004]
- involves inflammation in the nose, which may signal a more widespread respiratory disease process. [Meltzer 2004]

Causes of allergic rhinitis include:

- genetic predisposition (family history of allergic rhinitis is often present)
- environment (exposure to allergens such as pet dander)
- some medications may cause symptoms that can be confused with allergic rhinitis (α- or β-blockers, ASA, NSAIDs, ACE inhibitors, oral contraceptives, etc.; also chronic use of topical nasal decongestants can cause rebound congestion, “rhinitis medicamentosa”)

Comorbidity

There are many comorbidities associated with allergic rhinitis.

Allergic Rhinitis can be Associated With: [Small 2007]

- Asthma
- Mouth breathing
- Snoring
- Sleep apnea
- Headache
- Facial pain
- Persistent cough
- Purulent nasal secretions
- Bad breath
- Frequent throat clearing
- Otitis media
- Nasal polyps
- Sinus surgery
- Atopic dermatitis

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The Link with Asthma

The Allergic Rhinitis-Asthma Link [Sims 2011]

- The majority of asthmatics have associated allergic rhinitis. [Bousquet 2001, 2003]
- About 20-30% of people with rhinitis have concomitant asthma. [Bousquet 2001, 2003]
- Studies have found treatment of allergic rhinitis in patients with concomitant asthma improves both conditions. [Price 2010]
- Untreated rhinitis is associated with poor asthma control. [Bousquet 2008]
- This association was absent when allergic rhinitis was treated with nasal corticosteroids or nasal antihistamines [Breekveldt-Postma 2008]
- Allergic rhinitis is also a risk factor for the development of asthma. A longitudinal study demonstrated patients with allergic rhinitis were at a 3.5 higher risk of developing asthma compared to controls. [Shaaban 2008]

Untreated rhinitis is associated with poor asthma control. This association was absent when allergic rhinitis was treated with nasal corticosteroids or nasal antihistamines [Bousquet 2008, Breekveldt-Postma 2008]

Round-table video questions:

1. We know very well that asthma and allergic rhinitis often coincide and current thinking evaluates these as two different manifestations of a common underlying pathophysiology. How much importance should be placed on screening for allergic rhinitis in the presence of asthma and vice versa?

2. When treating the coinciding conditions of asthma and allergic rhinitis, what is appropriate in overlap of corticosteroid-based medications? What other drug-drug-interactions should we be aware of?
Role of the Physician

- Primary care physicians play an important role in the screening and management of patients with allergic rhinitis. Many patients have long-standing allergic rhinitis and fail to bring it to the attention of their physician. [Small 2007]
- To properly evaluate patients presenting with allergic rhinitis symptoms current clinical practice guidelines advise physicians to perform an appropriate patient history and physical exam.
- The majority of patients with asthma also suffer from allergic rhinitis. [Bousquet 2001, 2003] Screening in this population can help ensure appropriate management of upper airway symptoms.

Symptoms of Allergic Rhinitis

- Allergic rhinitis commonly presents as nasal congestion or blockage.
- Symptoms are not limited to the nose. Symptoms in the ophthalmic tissue, the sinuses, ears, and the lungs are commonly involved.
- Ocular symptoms co-occur in about 72% of patients but are often overlooked by patients and clinicians. For this reason clinicians are encouraged to ask patients about any ocular symptoms such as itching, tearing or burning. [Small 2007, DOF 2008]
Practice Tip

The Mini Rhinoconjunctivitis Quality of Life Questionnaire can be useful in assessing the impact of eye and nose symptoms. [Juniper 2000]

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Diagnosis

Diagnosis includes the physical examination and history to identify allergic rhinitis symptoms, and differential diagnosis.

Tools to help with diagnosis:

1. The physical exam [Small 2007]
2. The ARIA Allergic Rhinitis Questionnaire can help determine if the symptoms are due to allergic rhinitis: [Bousquet (pocket) 2008]
3. Diagnostic tests to consider in patients presenting with allergic rhinitis symptoms [Small 2007]
4. ARIA Differential Diagnosis Symptoms for Allergic Rhinitis [Bousquet (pocket) 2008]
5. Family Physician Airways Group of Canada tool for differential diagnosis

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## Elements of a Complete Physical Exam, per Canadian Rhinitis Guidelines:  [Small 2007]

<table>
<thead>
<tr>
<th>Symptoms and Notes</th>
</tr>
</thead>
</table>
| **External features** | Many patients will present with symptoms and signs that are easily recognized while conducting a patient history/physical examination. These include:  
  - Persistent mouth breathing (due to chronic nose congestion)  
  - Halitosis (due to mouth breathing at night)  
  - Rubbing of the nose  
  - Frequent sniffling  
  - Throat clearing  
  - Obvious transverse nasal crease  
  - Infraorbital swelling (pooling of venous blood “allergic shiners”) |
| **Nose** | A rhinoscopic examination is **mandatory** for proper diagnosis  
  - Primary care physicians without access to a nasal endoscope should examine the tissues with an otoscope  
  - Examination tips:  
    - Unilateral or bilateral swelling of the nasal mucosa  
    - Pale and boggy, instead of red or “beefy”, appearance of nasal mucosa  
    - If there is significant swelling a topical decongestant can be applied to help shrink swollen tissues prior to the exam  
    - Mucosal surfaces should be examined for erosions or frank bleeding  
    - Septum evaluated for crusting, perforation, septal spurs or significant deviation  
    - Nasal polyps have a classic “peeled grape” appearance with a translucent body descending from a narrow stalk superiorly (the stalk cannot always be seen)  
  - **Secretion**  
    → Clinical tips: **Allergic disease**: minimal or profuse are traditionally clear and thin  
    → **Purulent discharge**: from under the middle turbinate suggests sinusitis  
    → **Foul nasal odour**: anaerobic colonization in the paranasal sinuses or a nasal foreign body especially in young children |
| **Ear** | Usually normal in AR  
  - Tympanic membrane is usually normal but may be retracted, reflecting negative pressure in the middle ear |
| **Sinus** | Apply direct pressure under the orbital ridge and over the ethmoid and |
maxillary sinuses but this does not indicate sinusitis on its own
- Tapping maxillary teeth with tongue depressor may reveal sensitivity and sinus involvement
- Transillumination of sinuses has not been shown to be reliable

<table>
<thead>
<tr>
<th>Other areas for examination</th>
<th>Posterior oropharynx for</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>o Postnasal drainage</td>
</tr>
<tr>
<td></td>
<td>o Lymphoid hyperplasia (&quot;cobblestoning&quot;)</td>
</tr>
<tr>
<td></td>
<td>o Tonsillar hypertrophy</td>
</tr>
<tr>
<td></td>
<td>Assessment for enlarged cervical, preauricular, or postauricular lymph nodes</td>
</tr>
</tbody>
</table>
### ARIA Allergic Rhinitis Questionnaire: [Bousquet (pocket) 2008]

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Do you have any of the following symptoms</td>
<td></td>
</tr>
<tr>
<td>a. Nasal symptoms on only one side of your nose</td>
<td>Yes</td>
</tr>
<tr>
<td>b. Recurrent nosebleeds</td>
<td>Yes</td>
</tr>
<tr>
<td>c. Thick, green or yellow discharge from your nose †</td>
<td>Yes</td>
</tr>
<tr>
<td>d. Dripping of thick mucus down the back of your throat and/or runny nose †</td>
<td>Yes</td>
</tr>
<tr>
<td>e. Facial pain †</td>
<td>Yes</td>
</tr>
<tr>
<td>f. Loss of smell †</td>
<td>Yes</td>
</tr>
<tr>
<td>2. Do you have any of the following symptoms for at least 1 hour on most days (or on most days during the season you have symptoms)</td>
<td></td>
</tr>
<tr>
<td>a. Watery runny nose</td>
<td>Yes</td>
</tr>
<tr>
<td>b. Sneezing, especially violent and in bouts</td>
<td>Yes</td>
</tr>
<tr>
<td>c. Nasal obstruction</td>
<td>Yes</td>
</tr>
<tr>
<td>d. Nasal itching</td>
<td>Yes</td>
</tr>
<tr>
<td>e. Red, itchy eyes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Assessing the Results:**

**Question 1:**
- These are symptoms that are NOT commonly found with allergic rhinitis. An alternative diagnosis should be investigated.
- Any of the symptoms with a cross (†) are common with sinusitis.

**Question 2:**
- Watery runny nose with ONE or MORE of the other symptoms is suggestive of allergic rhinitis
- Watery nose without other symptoms MAY be allergic rhinitis.
- If other symptoms are present, without watery runny nose, consider investigating for an alternative diagnosis.

**Practice Tip!**

**Try the SOIRE Mnemonic:**

Symptoms of allergic rhinitis include:
- Sneezing
- nasal Obstruction
- nasal pruritus (Itch)
- watery Rhinorrhea
- itchy watery Eyes

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**Diagnostic tests to Consider in Patients Presenting with Allergic Rhinitis Symptoms:** [Small 2007]

<table>
<thead>
<tr>
<th>Test</th>
<th>Notes</th>
</tr>
</thead>
</table>
| **Skin prick test**                 | • Diagnostic tool for identifying the potential allergic triggers of rhinitis  
• Skin tests should be done for the most prevalent allergens. In Canada, these include: pollens (specific to the area), animal dander, moulds and house dust mites  
• False-negative tests can occur in local allergic rhinitis or in patients taking medications with antihistamine activity (antihistamines, tricyclic antidepressants and other psychotropics, etc.)  
• An important consideration is that the size of the reaction to the skin test does NOT correlate with the severity of allergic rhinitis symptoms |
| **Serum specific IgE (e.g. RAST - RadioAllergoSorbentTest)** | • Reasonable alternative to skin testing, when skin testing is not available  
• May be useful for patients unable to have skin tests performed (e.g., skin issues)  
• Drugs and skin diseases do not affect this test |
| **Diagnostic imaging**              | • Performed only after a poor response to adequate treatment of rhinitis or in the evaluation of symptoms of sinusitis or anatomic abnormalities |
| **Other Tests**                     | • **Nasal allergen challenge**  
  - This is used for research purposes. It may also be used to determine if a workplace allergen is causing occupational rhinitis in rare circumstances.  
• **Acoustic rhinometry**  
  - This test is used (rarely) to determine objectively the amount of nasal obstruction  
• **Sweat chloride**  
  - This is used to diagnose cystic fibrosis. Cystic fibrosis can cause nasal polyps and chronic rhinosinusitis.  
• **Antineutrophil cytoplasmic antibody (c-ANCA)**  
  - This is used to determine if the patient has granulomatosis with polyangiitis (GPA) (Wegener’s granulomatosis) - a granulomatous vasculitis which can cause chronic rhinosinusitis with bleeding and vasculitic changes |
### ARIA Differential Diagnosis for Symptoms of Allergic Rhinitis: [Bousquet (pocket) 2008]

<table>
<thead>
<tr>
<th>Symptoms suggestive of Allergic Rhinitis</th>
<th>Symptoms usually <em>not</em> associated with allergic rhinitis</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 or more of the following symptoms for &gt; 1 hour on most days: <strong>S O I R E</strong></td>
<td>• Unilateral symptoms</td>
</tr>
<tr>
<td>• Sneezing</td>
<td>• Nasal obstruction without other symptoms (although patients may complain only of nasal obstruction)</td>
</tr>
<tr>
<td>• Nasal Obstruction</td>
<td>• Mucopurulent rhinorrhea</td>
</tr>
<tr>
<td>• Nasal Pruritus (Itch)</td>
<td>• Post nasal drip with thick mucus</td>
</tr>
<tr>
<td>• Watery Rhinorrhea</td>
<td>• Pain</td>
</tr>
<tr>
<td>• Itchy watery Eyes</td>
<td>• Recurrent epistaxis</td>
</tr>
<tr>
<td>• (+conjunctivitis)</td>
<td>• Anosmia</td>
</tr>
</tbody>
</table>

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### FAMILY PHYSICIAN AIRWAYS
**GROUP OF CANADA**

Allergic Rhinitis – Rhino Sinusitis (AR-RS) Differential Diagnosis Tool

<table>
<thead>
<tr>
<th>Symptoms suggestive of Allergic Rhinitis</th>
<th>Symptoms usually not associated with allergic rhinitis</th>
<th>Which may mean:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 or more of the following 'SOIRE' symptoms for more than 1 hour on most days: <strong>SOIRE</strong>&lt;sup&gt;1&lt;/sup&gt;</td>
<td>2 or more of the following 'PODS' symptoms; 1 of which must be <strong>Obstruction</strong> or <strong>Discharge</strong>. <strong>PODS</strong>&lt;sup&gt;2&lt;/sup&gt;</td>
<td>Rhinosinusitis</td>
</tr>
<tr>
<td><strong>S</strong> Sneezing</td>
<td><strong>P</strong> Facial <strong>Pain/pressure/fullness</strong></td>
<td>Consider RhinoSinusitis bacterial when Upper Respiratory Tract Infection (URTI&lt;sup&gt;1&lt;/sup&gt;): 1. Persists beyond 10 days. 2. Worsens after 5 to 7 days with similar symptoms.&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>O</strong> Nasal <strong>Obstruction</strong></td>
<td><strong>O</strong> Nasal <strong>Obstruction</strong></td>
<td>Bacterial etiology should be suspected if sinus symptoms persist for more than 7 days without improvement.&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>I</strong> Nasal <strong>Itch</strong> (pruritus)</td>
<td><strong>D</strong> Nasal purulence/discolored postnasal <strong>Discharge</strong></td>
<td></td>
</tr>
<tr>
<td><strong>R</strong> Nasal <strong>Rhinorrhea</strong></td>
<td><strong>S</strong> Hyposmia/anosmia (<strong>Smell</strong>)</td>
<td></td>
</tr>
<tr>
<td><strong>E</strong> Itchy watery <strong>Eyes</strong> (conjunctivitis)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The previous classification of seasonal or perennial AR is being replaced with intermittent and persistent.&lt;sup&gt;1&lt;/sup&gt; Intermittent symptoms are defined as an episode that lasts less than 6 weeks. Persistent symptoms last longer than 6 weeks and can occur at anytime of the year.</td>
<td>Unilateral symptoms</td>
<td>Cancer, tumor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Foreign Body (FB)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Polyps</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Infection, Septal deviation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Recurrent epistaxis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cancer, tumor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Foreign Body (FB)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Polyps</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Drug use</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hematologic disorder</td>
</tr>
</tbody>
</table>

Allergic Rhinitis (AR) occurs in 80% of asthmatics. Asthma occurs in up to 80% of patients with AR.<br>(**AR** & **RS** may co-exist<br><br>Symptoms<sup>2</sup> from an URTI may include any of rhinorrhea, nasal obstruction, headache, cough and mild fever. The symptom set usually clears in a few days and is commonly known as a 'cold'.

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2. Desrosiers et al; Canadian clinical practice guidelines for acute and chronic rhinosinusitis, Allergy, Asthma & Clinical Immunology 2011, 7:2 doi:10.1186/1710-1492-7-2; page 14


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13
Management

Management of allergic rhinitis is based on symptom severity.

Symptom Severity Classification based on Canadian Allergic Rhinitis Guidelines [Small 2007]

<table>
<thead>
<tr>
<th>Mild</th>
<th>Moderate</th>
<th>Moderate-Severe</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Usually intermittent</td>
<td>• Usually intermittent</td>
<td>• Same symptoms as moderate except</td>
<td>• Persistent and the</td>
</tr>
<tr>
<td>• Can perform normal activities (including work and school)</td>
<td>• Interferes with normal performance of activities (work and school)</td>
<td>the symptoms are persistent (6 weeks)</td>
<td>patient is unable work or to sleep normally</td>
</tr>
<tr>
<td>• Sleep is normal</td>
<td>• Interferes with normal sleep</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Minor disruptions</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Classes of Allergic Rhinitis symptoms [Small 2007]

<table>
<thead>
<tr>
<th>Class</th>
<th>Severity/Duration*</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Mild/intermittent</td>
</tr>
</tbody>
</table>
| II    | Moderate/intermittent
|       | Moderate-severe/intermittent
|       | Severe/intermittent
|       | Mild/persistent    |
| III   | Moderate/persistent|
| IV    | Moderate-severe/persistent
|       | Severe/persistent |

*Rhinitis is characterized as intermittent when the total duration of the episode of inflammation is less than 6 weeks (usually season allergies, as opposed to those that continue year-long).

LTRAs = leukotriene receptor antagonists
* step-up if there is no response of incomplete response to treatment, regardless of class
† LTRAs may be used in class 3 or 4 but there is less supporting evidence
** Oral steroids may be considered for class II (severe intermittent), but there is little supporting evidence
Pharmacotherapy

There are several classes of therapy that are useful in treatment of allergic rhinitis (see table below for overview): [Small 2007, Brozek 2010]

- **Oral H<sub>1</sub> Antihistamines**

Oral H<sub>1</sub> antihistamines block histamine receptors and current guidelines include antihistamines as a possible treatment option for all allergy classes. Older antihistamines are sedating (Benadryl®, Chlor-triplon®, Atarax®). Newer (second generation) formulations provide generally non-sedating options (Reactine®, Claritin®, Aeries®, Allegra®).

- **Intranasal Corticosteroids**

Intranasal corticosteroids advanced the treatment of rhinitis, reducing nasal mucosal inflammation for good symptom control. However, many patients are concerned about the safety of steroids, making patient education an important aspect of this therapeutic approach, to support adherence. Compared with the antihistamines and antileukotrienes, intranasal corticosteroids are superior in reducing nasal symptom score and nasal blockage.

- **Leukotriene Inhibitors**

This class of medications block the inflammatory effects of leukotrienes. They are useful to relieve the congestion associated with allergic rhinitis, alone or in conjunction with antihistamines or nasal steroids.

- **Decongestants**

Oral and topical decongestants (e.g., oxymetazoline (Dristan), phenylephrine, pseudoephedrine) produce vasoconstriction and decrease nasal mucosa edema. Due to adverse effects, current ARIA guidelines recommend a very short course (not longer than 5 days) of topically administered decongestants. Patients with allergic rhinitis are advised to not use decongestants regularly.

- **Ophthalmic Preparations**

Ophthalmic preparations are available as both H<sub>1</sub> receptor antihistamines, mast-cell stabilizers, or anti-inflammatory drugs. These medications can be considered in patients who have ophthalmic symptoms not effectively managed by antihistamines, intranasal corticosteroids or leukotriene inhibitors.

- **Immunotherapy**

Immunotherapy involves the administration of allergen by injection. This type of therapy has demonstrated efficacy for nasal symptoms in patients with allergic rhinitis, especially for pollens and house dust mites. A sublingual tablet also now exists for immunotherapy for grass pollen allergy.
Clinical Practice Tip

Steps for Intranasal Administration:

1. Blow nose slightly and shake product
2. Insert nozzle in nose and breath in lightly
3. Remove nozzle and breath out through mouth


<table>
<thead>
<tr>
<th>Class and Usual Adult dosage</th>
<th>Indications</th>
<th>Adverse effects</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First generation antihistamines</strong> (not generally recommended due to sedation)</td>
<td>• Reduction in sneezing, rhinorrhea, itching (eyes, nose, throat) • Some impact on concomitant asthma</td>
<td>Sedation is very common and/or anticholinergic adverse effects</td>
<td>Second generation antihistamines are preferred as they have equivalent efficacy and less adverse effects</td>
</tr>
<tr>
<td>Benadryl® 25-50 mg TID to QID</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chlor-Tripolon 4 mg Q4-6H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Second generation antihistamines</strong></td>
<td>• Reduction in sneezing, rhinorrhea, itching (eyes, nose, throat) • Some impact on concomitant asthma</td>
<td>Usually well tolerated with dry mouth or eyes in the minority of patients</td>
<td>The most common first-line agent for all allergic rhinitis symptom classes. Rapidly effective (&lt; 1 hour)</td>
</tr>
<tr>
<td>Reactine® 5-20 mg daily</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Allegra® 60 mg Q12H or 120 mg once daily</td>
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<td></td>
</tr>
<tr>
<td>Aerius® 5 mg daily</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claritin® 10 mg daily</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Intranasal corticosteroids</strong></td>
<td>• Reduction in mucosal swelling and secretions • Reduction in nasal symptom</td>
<td>Minor local side effects which can be minimized with appropriate administration technique (spraying away from the</td>
<td>The most effective pharmacological treatment of AR Effect observed in 12 hours but maximal effect after a few days.</td>
</tr>
<tr>
<td>Avamys® 2 sprays daily</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beconase® 2 sprays BID</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rhinocort® 2 sprays daily</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Drugs &amp; Dosage</th>
<th>Side Effects</th>
<th>Considerations</th>
</tr>
</thead>
</table>
| Flonase® 2 sprays daily Omnisar® 2 sprays daily Rhinalar® 2 sprays BID Nasonex® 2 sprays daily Nasacort® 2 sprays daily | - score, nasal obstruction  
- May reduce lower airway symptoms, decrease hospital admissions for asthma | - Very well tolerated  
- Consider for the treatment of seasonal allergic rhinitis when other medications are ineffective or poorly tolerated  
- Not as effective as intranasal corticosteroids |
| Leukotriene inhibitor  
Singulair® 5mg or 10 mg daily | - Positive impact on concomitant asthma  
- Reduction in sneezing, rhinorrhea, itchy eyes, nose and throat congestion | - Consider for the treatment of allergic rhinitis when other medications are ineffective or poorly tolerated  
- Not as effective as intranasal corticosteroids |
| Ophthalmic Preparations – antihistamines and anti-inflammatory drugs  
Livostin® 1 drop BID  
Zaditor® 1 drop B-TID  
Emadine® 1 drop BID  
Patanol® 1-2 drops BID  
Pataday® 1 drop QD  
Pred-mild 1 drop qID  
Pred-forte 1 drop qID | - Relieve allergic conjunctivitis  
- Transient ocular burning, stinging and irritation.  
- Headache | - Consider for the treatment of allergic conjunctivitis in patients who do not respond to other agents  
- Rapid onset of action (< 30 minutes)  
- Prednisolone should be used for a short period of treatment |
| Ophthalmic Preparations – mast cell stabilizers  
Alomide® 1 to 2 drops QID  
Alocril® 1 drop BID  
Opticrom® 2 drops QID | - Relieve allergic conjunctivitis  
- Transient ocular burning, stinging and irritation.  
- Headache | - Must be used regularly for several weeks before fully effective. |
Adherence [WHO 2003]

Adherence

- Patients do not accurately report adherence.
- Conservative estimates suggest almost half of medications dispensed are not taken as prescribed.
- Non-adherence increases risk of morbidity, complications, and poor quality of life.

Examples of forms of non-adherence:

- failure to fill prescription
- chronic under-use
- erratic use
- variable adherence per medication type
- premature discontinuation

Factors that Affect Adherence

- Disease severity – patients are more adherent when they grasp the significance of their condition and its impact on their life
- Regimen factors – patients are less likely to adhere to more demanding regimens, including: long duration of therapy, more frequent dosing, more complexity (multiple drugs, devices, or tasks)
- Patient beliefs:
  - understanding of illness
  - understanding of the role of medications
  - fears (regarding the condition or its treatment)
  - understanding of device or medication administration technique

Myths and misunderstandings contribute to non-adherence. For example, patients may fear medication side effects, or misunderstand its administration, or believe the drug is ineffective)

Round-table video questions:

What are some of the common problems that undermine patient adherence to an overall management program for allergic rhinitis?

What is the role of the Allergist in promoting adherence to Allergic Rhinitis medications? What role do other healthcare professionals play in addressing adherence to treatment?

Is it deliberate?

Adherence may be deliberate or non-deliberate. Adherence may be non-deliberate because of misunderstanding, forgetfulness, or lifestyle, for example. Deliberate adherence happens when patients make a reasoned choice against taking their medication as prescribed.
Case Study: Meet Triona

Triona
Triona is a 25 year old student and soccer player. She is visiting you in June about a mild ankle sprain suffered while playing soccer. In addition to the inflamed ankle, you notice Triona also seems to have a red, runny nose – although she has not mentioned it. After excluding fracture for the ankle (Ottawa ankle rules negative), you ask Triona about her nasal symptoms. She replies that her nose has been runny and she just keeps kleenex in the arm of her soccer jersey. When you ask her how long she’s had the runny nose, she replies that it first started about a month ago, around the time she started soccer practice, but that this past week it has been worse.

Smoking years: 0
Current medications: none

Allergies: skin testing positive to grass, negative to other allergens
Height: 162 cm
Weight: 56 kg
BMI: 21.3 kg/m^2
HR: 72 bpm
BP: 110/70

Case Challenge #1
You consider that Triona’s runny nose might be allergic rhinitis. Which of the following are symptoms of sinusitis but not allergic rhinitis?

a. Nasal pruritis
b. Sneezing
c. Nasal purulence/discoloured postnasal discharge
d. Nasal rhinorrhea
Case Challenge #2:

You conduct the physical exam and history, and find that Triona’s symptoms include:

Present for about 4 weeks:
- Sneezing
- Nasal itch
- Itchy, watery, red eyes

Present for about 1 week:
- Unilateral nasal obstruction, left side
- Post nasal drip with thick discoloured mucus
- Sinus pain

You diagnose allergic rhinitis with concomitant sinusitis. What class of treatment can address both these conditions?

a) oral H1 antihistamines
b) immunotherapy
c) nasal corticosteroids
d) LTRAs

Allergic Rhinitis and Sinusitis

Round-table video questions:
How frequently does allergic rhinitis co-occur with sinusitis?

- What should be included in an exam for differential diagnosis of allergic rhinitis from bacterial sinusitis?
- How does management change when these conditions co-occur?
Case Study: Meet Cameron

Cameron has made an appointment to see you because he has runny nose and itchy nose and eyes. His symptoms appear every Spring, he explains. In previous years, Cameron has not taken medication for his symptoms but he says this year his nose and eyes are especially bothersome. He is having trouble sleeping, and he’s even called in sick for one day of work. When you ask how long he has had the itchy and watery nose and eyes, he says 3 weeks.

Smoking years: 0
Current medications: none

Age: 32
Height: 175 cm
Weight: 81 kg
BMI: 26.4 kg/m^2
HR: 75 bpm
BP: 112/73

Case Challenge 3:

You suspect that Cameron has allergic rhinitis, and order allergy testing. Based on Cameron’s class of symptoms, what types of management options are reasonable (regardless of the order in which they would be prescribed)? (Check all that apply)

- allergen avoidance
- oral H1 antihistamines
- oral steroids
- immunotherapy
- nasal corticosteroids
- LTRAs

Lessening the Impact of Allergic Rhinitis in your Patients - www.AdvancingIn.com
Case Study: Meet Sally

Sally

Sally has made an appointment to see you because she has allergic rhinitis, but she is not getting relief with the medication you prescribed. When you ask Sally how frequently she is taking her corticosteroid nasal spray, she seems to have a good understanding of the treatment regimen. But when you ask her to show you how she administers the spray, it becomes clear that Sally has been unwittingly making several mistakes with administration.

Smoking years: 12; quit in 1982
Current medications: nasal corticosteroid spray
Allergies: grass pollen
Age: 58
Height: 162 cm
Weight: 50 kg
BMI: 19.1 kg/m²
HR: 72 bpm
BP: 110/70

You review the steps for intranasal administration with Sally:

1. Blow nose slightly and shake product
2. Insert nozzle in nose and breath in lightly
3. Remove nozzle and breath out through mouth

Case Challenge #4

What type of factor was behind Sally’s non-adherence to therapy? Was the non-adherence non-deliberate or reasoned?

a) disease severity; non-deliberate
b) disease severity; reasoned
c) patient beliefs; non-deliberate
d) patient beliefs; reasoned
e) regimen factors; non-deliberate
f) regimen factors; reasoned
Key Points

- Allergic rhinitis can have significant impacts on quality of life.
- Allergic rhinitis can have significant comorbidity, including asthma and sleep problems.
- Symptoms of allergic rhinitis include Sneezing, nasal Obstruction, nasal pruritus (Itch), watery Rhinorrhea, and itchy watery Eyes [SOIRE].
- The physical exam for allergic rhinitis should include nose, eyes, ears, and sinuses, and chest
- Patients with allergic rhinitis should be assessed for asthma,
- Management of allergic rhinitis is based on symptom severity and duration
References


Moote W. e-Therapeutics+: Respiratory Disorders: Allergic Rhinitis. Available at: https://www.e-therapeutics.ca


Lessening the Impact of Allergic Rhinitis in your Patients - www.AdvancingIn.com


Craig TJ et al; The correlation between allergic rhinitis and sleep disturbance; J Allergy Clin Immunol 2004;114:S139-45
Post test

1) Which of the following symptoms is consistent with allergic rhinitis
   a) Clear nasal congestion
   b) Unilateral nasal symptoms
   c) Recurrent nosebleeds
   d) Paroxysmal sneezing
   e) Nasal obstruction
   f) Red, itchy eyes
   g) Nasal pruritus
   h) all but unilateral nasal symptoms and recurrent nosebleeds
   i) all of the above

2) What percentage of patients with asthma also suffers from allergic rhinitis?
   d) the majority
   e) about half
   f) the minority

3) Can allergic rhinitis decrease work performance?
   o Yes
   o No

4) Can allergic rhinitis cause significant impairment of sleep?
   o Yes
   o No

5) What classes of therapy are used in the management of uncomplicated allergic rhinitis:
   a) Antihistamines
   b) Decongestants
   c) Antibiotics
   d) Corticosteroids
   e) Leukotriene inhibitors
   f) Ophthalmic preparations
   g) Immunotherapy
   h) All except antibiotics
   i) All except corticosteroids
   j) All of the above
Discussion Forum

1. Many patients do not report allergic rhinitis symptoms, and do not associate their symptoms with a medical condition. How do you screen for allergic rhinitis in your clinical practice?

2. Sometimes patients are hesitant to use intranasal corticosteroids due to fear of adverse effects. How do you address this concern?