URTI SLS Objectives

**A-Rhinosinusitis**

**Classify Rhinosinusitits according to etiology?**

Infectious and non-infectious.

**Classify infectious Rhinosinusitits according to etiology?**

Viral & bacterial

**Classify viral Rhinosinusitits according to etiology?**

Common cold & Influenza

**How many types of viruses can cause Influenza?**

3 A, B & C.

**What is the family of Influenza viruses?**

**Orthomyxoviridae**

**What are other viruses’ families that can cause common cold?**

Rhinoviruses, Coronaviruses, and adenoviruses.

[Harrison's Principles of Internal Medicine, 19e >](http://accessmedicine.mhmedical.com/book.aspx?bookid=1130)

Chapter 223

Table 223.1

**When should you suspect & test for MERS-CoV for someone with acute Rhinosinusitits?**

a. History of exposure to a confirmed or suspected MERS CoV in the 14 days prior to onset of symptoms

b. History of contact with camels or camel products in the 14 days prior to onset of symptoms

c. Unexplained acute febrile (≥38°C) illness, AND body aches, headache, diarrhea, or nausea/vomiting, with or without respiratory symptoms, AND leucopenia (WBC).

Infection Prevention and Control Guidelines for Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Infection

<http://www.moh.gov.sa/en/CCC/StaffRegulations/Corona/Pages/StaffRegulations.aspx>

**Compare between the 3 influenza viruses types in terms of the following: causing epidemics, & antigenic stability.**

Influenza type A is antigenically highly variable and is responsible for most cases of epidemic influenza. Influenza type B may exhibit antigenic changes and sometimes causes epidemics. Influenza type C is antigenically stable and causes only mild illness in immunocompetent individuals.

[Jawetz, Melnick, & Adelberg’s Medical Microbiology, 27e >](http://accessmedicine.mhmedical.com/book.aspx?bookid=1551)

**Chapter 39: Orthomyxoviruses (Influenza Viruses)**

 **INTRODUCTION**

**How to differentiate between bacterial & viral rhinosinusitis?**

1. The following clinical presentations (any of 3) are recommended for identifying patients with acute bacterial vs viral rhinosinusitis:

i. Onset with persistent symptoms or signs compatible with acute rhinosinusitis, lasting for ≥10 days without any evidence of clinical improvement (strong, low moderate);

ii. Onset with severe symptoms or signs of high fever (≥39\_C [102\_F]) and purulent nasal discharge or facial pain lasting for at least 3–4 consecutive days at the beginning of illness

(strong, low-moderate); or

iii. Onset with worsening symptoms or signs characterized by the new onset of fever, headache, or increase in nasal discharge following a typical viral upper respiratory infection (URTI) that lasted 5–6 days and were initially improving (‘‘double sickening’’)

(strong, low-moderate).

IDSA Clinical Practice Guideline for Acute

Bacterial Rhinosinusitis in Children and Adults

**How many viral Rhinosinusitis are complicated by bacterial infection?**

From 0.5%-2%

Clinical Practice Guideline (Update): Adult Sinusitis Richard M. Rosenfeld

P s.9

**How does influenza spread?**

droplet infection, person-to-person contact, or contact with contaminated items.

Droplet infection:

People with flu can spread it to others up to about 6 feet (2m) away. Most experts think that flu viruses are spread mainly by droplets made when people with flu cough, sneeze or talk. These droplets can land in the mouths or noses of people who are nearby or possibly be inhaled into the lungs. Less often, a person might also get flu by touching a surface or object that has flu virus on it and then touching their own mouth or nose.

**How to differentiate between common cold and influenza?**

1-it can be difficult to tell the difference between them based on symptoms alone. In general, the flu is worse than the common cold.

2-Flu can have very serious associated complications:

such as pneumonia, bacterial infections, or hospitalizations.

<https://www.cdc.gov/flu/about/qa/coldflu.htm>

**What is the incubation period of influenza?**

1-7 days

**When do we call bacterial rhinosinusitis acute or chronic?**

Acute: 4 weeks ≥

Subacute:4-12 weeks

Chronic: >12 weeks

Clinical Practice Guideline (Update): Adult Sinusitis Richard M. Rosenfeld

Figure 1

**What are the diagnostic tests for influenza?**

|  |  |  |  |
| --- | --- | --- | --- |
| Test | description | Advantages |  |
| Rapid Influenza Diagnostic Tests (RIDTs)  | antigen detection tests | Quick results | -sensitivity 62.3%-specificity 98.2%-False negative results occur more commonly than false positive results.- **a negative result does NOT exclude a diagnosis of influenza**in a patient with suspected influenza.  |
| RT-PCR | More accurate but takes longer time.When influenza is suspected and antiviral treatment is indicated, antiviral treatment should begin as soon as possible and should not wait for the results of testing. |
| Viral culture |

<https://www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm>

**What is the rule of imaging in acute rhinosinusitis?**

Clinicians should not obtain radiographic imaging for patients who meet diagnostic criteria for acute rhinosinusitis (bacterial or viral), unless a complication or alternative diagnosis is suspected.

Complications of ABRS include orbital, intracranial, or soft tissue involvement. Alternative diagnoses include malignancy and other noninfectious causes of facial pain.

Clinical Practice Guideline (Update): Adult Sinusitis Richard M. Rosenfeld

P s.10&s.11

**How to manage viral and bacterial rhinosinusitis symptomatically?**

Rest, fluids, and paracetamol for fever/symptom control.

Nasal saline irrigation.

Topical nasal steroids.

Treat complications, e.g. antibiotics for secondary bacterial infection; treatment of exacerbations of COPD or asthma.

Clinical Practice Guideline (Update): Adult Sinusitis Richard M. Rosenfeld

Table 3

**Besides symptomatic management, how would you initially approach a bacterial rhinosinusitis?**

either offer watchful waiting (without antibiotics) or prescribe initial antibiotic therapy for adults with uncomplicated ABRS. Watchful waiting should be offered only when there is assurance of follow-up, such that antibiotic therapy is started if the patient’s condition fails to improve by 7 days after ABRS diagnosis or if it worsens at any time.

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Table 3

**What is the preferred 1st line antibiotic for bacterial rhinosinusitis?**

amoxicillin with or without clavulanate as first-line therapy for 5 to 10 days for most adults.

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Table 3

**When we consider the treatment for acute bacterial rhinosinusitis a failure?**

If the patient worsens or fails to improve with the initial management option by 7 days after diagnosis or worsens during the initial management, the clinician should reassess the patient to confirm ABRS, exclude other causes of illness, and detect complications. If ABRS is confirmed in the patient initially managed with observation, the clinician should begin antibiotic therapy. If the patient was initially managed with an antibiotic, the clinician should change the antibiotic.

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Table 3

**Who are the candidates for antiviral therapy?**

* children aged younger than 2 years;1
* adults aged 65 years and older;
* persons with chronic pulmonary (including asthma), cardiovascular (except hypertension alone), renal, hepatic, hematological (including sickle cell disease), and metabolic disorders (including diabetes mellitus), or neurologic and neurodevelopment conditions (including disorders of the brain, spinal cord, peripheral nerve, and muscle, such as cerebral palsy, epilepsy [seizure disorders], stroke, intellectual disability [mental retardation], moderate to severe developmental delay, muscular dystrophy, or spinal cord injury);
* persons with immunosuppression, including that caused by medications or by HIV infection;
* women who are pregnant or postpartum (within 2 weeks after delivery);
* persons aged younger than 19 years who are receiving long-term aspirin therapy;
* persons who are morbidly obese (i.e., body mass index is equal to or greater than 40); and
* residents of nursing homes and other chronic care facilities.

Age, chronic diseases, immunosuppression, pregnancy

<https://www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm>

**What is the preferred antiviral agent for pregnant women?**

Oral oseltamivir is preferred for treatment of pregnant women

<https://www.cdc.gov/flu/professionals/antivirals/summary-clinicians.htm>

**How to prevent influenza?**

1-good hygiene.

2-Vaccination.

**The influenza vaccine is recommended for whom?**

recommended for all persons six months and older who do not have contraindications.

**What is the frequency of influenza vaccination?**

Yearly.

Children six months to eight years of age who have not received influenza vaccination before require two doses for the first season. They should receive their first dose as soon as vaccine becomes available, followed by a second vaccination no earlier than four weeks later.

**What does the influenza vaccine contain?**

3-4 strains. it changes from season to season, with one or more vaccine strains replaced annually to provide protection against viruses that are anticipated to circulate during the upcoming season.

**When should the influenza vaccine be offered?**

Starting from the end of October.

**Which food allergy you should ask bout before giving influenza vaccine?**

Egg

**What are the ACIP recommendations regarding persons with egg allergy and influenza vaccination?**

ACIP recommends that persons with a history of egg allergy who have experienced only hives after exposure to egg should receive any of the recommended influenza vaccines appropriate for the recipient’s age and health status. Persons who have had reactions to egg involving symptoms other than hives (e.g., angioedema, respiratory distress, lightheadedness, recurrent emesis) or who required epinephrine or another emergency medical intervention may receive the cell culture–based or recombinant influenza vaccines appropriate for the recipient’s age and health status.

**What are the contraindications to the influenza vaccine?**

A previous severe allergic reaction to influenza vaccine is a contraindication to future receipt of the vaccine.

**-------------------**

**Classify noninfectious Rhinosinusitits according to etiology?**

Allergic and non-allergic (eg vasomotor)

**Define allergic rhinitis?**

AR is an inflammatory, IgE-mediated disease characterized by nasal congestion, rhinorrhea (nasal drainage), sneezing, and/or nasal itching.

Clinical Practice Guideline: Allergic Rhinitis

Michael D. Seidman

**Classify allergic rhinitis?**

seasonal (eg, pollens), perennial/

year-round (eg, dust mites), or episodic (environmental from

exposures not normally encountered in the patient’s environment,

eg, visiting a home with pets)

Clinical Practice Guideline: Allergic Rhinitis

Michael D. Seidman

**In order to assess the severity of AR, you should ask the patient about what?**

exacerbation of coexisting asthma; sleep

disturbance; impairment of daily activities, leisure, and/or

sport; and impairment of school performance or work.

Clinical Practice Guideline: Allergic Rhinitis

Michael D. Seidman

**Name some triggers of allergic rhinitis?**

* + - grasses
		- trees
		- dust mite
		- animal dander
		- occupational allergens

http://www.dynamed.com/topics/dmp~AN~T116217/Allergic-rhinitis#Causes

**What are the conditions associated with allergic rhinitis?**

Asthma, eczema, allergic conjunctivitis.

http://www.aafp.org/afp/2006/0501/p1583.html

**When should you order allergy testing?**

do not respond to empiric treatment, or when the

diagnosis is uncertain, or when knowledge of the specific causative allergen is

needed to target therapy.

Clinical Practice Guideline: Allergic Rhinitis

Michael D. Seidman

**What is the treatment for AR?**

Non-pharmacological: avoidance of known allergens or may advise environmental

controls (eg, removal of pets, the use of air filtration systems, bed covers)

pharmacological:topical steroids

oral antihistamine

intranasal antihistamine

Clinical Practice Guideline: Allergic Rhinitis

Michael D. Seidman

**What if the treatment fails or inadequate?**

Immunotherapy

Surgical inferior turbinate reduction.

Clinical Practice Guideline: Allergic Rhinitis

Michael D. Seidman

**------------------------------------------**

**Classify pharyngitis?**

[Pharyngitis [C07.550.781]](https://meshb.nlm.nih.gov/record/ui?ui=D010612)

* [Nasopharyngitis [C07.550.781.500]](https://meshb.nlm.nih.gov/record/ui?ui=D009304)
* [Retropharyngeal Abscess [C07.550.781.625]](https://meshb.nlm.nih.gov/record/ui?ui=D017703)
* [**Tonsillitis [C07.550.781.750]**](https://meshb.nlm.nih.gov/record/ui?ui=D014069)
	+ [Peritonsillar Abscess [C07.550.781.750.500]](https://meshb.nlm.nih.gov/record/ui?ui=D000039)

<https://meshb.nlm.nih.gov/record/ui?ui=D014069>

**Rank infectious etiologies of pharyngitis from most to least common.**

1-viruses (50-80%).

2-Bacteria.

3-Fungal.

<http://dfcmopen.com/wp-content/uploads/2014/11/Approach-to-The-Patient-With-Sore-Throat.pdf>

**List non-infectious etiologies of pharyngitis?**

post-nasal drainage due to allergic rhinitis, sinusitis, gastroesophageal reflux disease, acute thyroiditis, persistent cough.

<http://dfcmopen.com/wp-content/uploads/2014/11/Approach-to-The-Patient-With-Sore-Throat.pdf>

**What is the most common bacterial cause for pharyngitis?**

group A β-hemolytic streptococcus (GABHS)= Streptococcus pyogenes

<http://dfcmopen.com/wp-content/uploads/2014/11/Approach-to-The-Patient-With-Sore-Throat.pdf>

**Why GABHS is important?**

Because it causes rheumatic fever and scarlet fever.

Essentials of medical microbiology 2016 p174

**What are the complications of rheumatic fever and scarlet fever?**

Rheumatic fever:

Carditis (valve damage).

Migratory polyarthritis

Sydenham’s chorea

Scarlet fever:

acute glomerulonephritis

Oxford handbook p276 & p655

**What are the symptoms and findings suggestive of viral etiology of pharyngitis?**

Conjunctivitis

• Coryza

• Cough

• Diarrhea

• Hoarseness

• Discrete ulcerative stomatitis

• Viral exanthema

# IDSA Guideline for Managing Group A Streptococcal Pharyngitis p.6

**What are the alarming symptoms for someone with sore throat?**

Drooling

Respiratory distress

Inability to open mouth fully (trismus)

Muffled voice

Stiff neck

Erythema of neck

The patient history, an evidence based approach to differential diagnosis 2e p.192

**What is the best way to use the clinical exam­ination to diagnose group A beta-hemolytic streptococcal (GABHS) pharyngitis?**

Modified centor criteria

Can’t be used in <3 years old

Symptoms onset <3 days

|  |  |
| --- | --- |
| Score (1 point is given for each item, unless otherwise specified)  | Fever >38Cervical adenopathy in anterior cervical chainTonsillar exudate or swellingNo cough Age (1 point for age 3-14 years,0 point for age 15-44, –1 point for age > 44 years)  |

|  |
| --- |
| Interpretation (point/ item total and % strep)  |
| Antibiotic therapy  | ≥ \_4 points (55%)  |
| Rapid test or delayed prescription  | 2 or 3 (29%)  |
| Symptomatic therapy only  | ≤ \_1 (12%)  |

https://www.mdcalc.com/centor-score-modified-mcisaac-strep-pharyngitis#next-steps

 **Diagnosis of Streptococcal Pharyngitis**

MARK H. EBELL,

**Which age group is primarily affected by GABHS pharyngitis?**

Children 5-15

# IDSA Guideline for Managing Group A Streptococcal Pharyngitis

**How to test for GABHS Pharyngitis?**

Swabbing the throat and testing for GABHS pharyngitis by rapid antigen detection test (RADT)

not indicated for children <3 years old because acute rheumatic fever is rare in

children <3 years old and the incidence of streptococcal pharyngitis

and the classic presentation of streptococcal pharyngitis are

uncommon in this age group. Selected children <3 years old

who have other risk factors, such as an older sibling with GAS

infection, may be considered for testing

# IDSA Guideline for Managing Group A Streptococcal Pharyngitis

**If Rapid antigen test (RAT) is negative, should I do a throat culture?**

A negative RADT should be accompanied by a follow-up or back-up throat culture in children and adolescents, while this is not necessary in adults under usual circumstances

# IDSA Guideline for Managing Group A Streptococcal Pharyngitis p.8

**What is the symptomatic treatment for pharyngitis?**

Paracetamol

Nsaids (beaware of gi and renal side effects, aspirin should be avoided in children)

Corticosteroids (short course for selected cases of adults with centor criteria 3-4 with bacterial pharyngitis)

# IDSA Guideline for Managing Group A Streptococcal Pharyngitis p.2

 Corticosteroids for the Treatment of Sore Throat

**What is the 1st line antibiotic for the treatment of GABHS Pharyngitis?**

**Penicillin or amoxicillin for 10 days**

# IDSA Guideline for Managing Group A Streptococcal Pharyngitis p.2

**What are the alternative antibiotics for the treatment of GABHS Pharyngitis for people allergic to penicillin?**

first generation cephalosporin (eg cephalexin) for 10 days, clindamycin

or clarithromycin for 10 days, or azithromycin for 5 days

# IDSA Guideline for Managing Group A Streptococcal Pharyngitis p.2

**What are the two main possibilities for a patient with a pharyngitis, who tests +ve for GABHS at close intervals?**

1. chronic pharyngeal GAS carrier who is experiencing repeated viral infections
2. they really have >1 episode of GABHS pharyngitis at close intervals

# IDSA Guideline for Managing Group A Streptococcal Pharyngitis p.2

Are chronic GABHS carriers at increased risk of rheumatic fever?

**no**

do chronic GABHS carriers carry an increased risk of infecting close contacts?

**no**

do chronic GABHS carriers need antibiotic therapy?

**no**

# IDSA Guideline for Managing Group A Streptococcal Pharyngitis p.3

**Do we have to test or treat contacts of GABHS Pharyngitis?**

Diagnostic testing or empiric treatment of asymptomatic

household contacts of patients with acute streptococcal

pharyngitis is not routinely recommended

# IDSA Guideline for Managing Group A Streptococcal Pharyngitis p.2

Otitis media (OM)

**Which age group commonly suffer from OM?**

Children

<http://www.aafp.org/afp/2013/1001/p435.html>

**What are the 3 most common organisms that causes OM?**

*Streptococcus pneumoniae, Haemophilus influenzae* (nontypable), and *Moraxella catarrhalis*

<http://www.aafp.org/afp/2013/1001/p435.html>

**What is required to diagnose OM?**

Either:

-moderate to severe bulging of the tympanic membrane.

-new onset of otorrhea not caused by otitis externa.

-mild bulging of the tympanic membrane associated with recent onset of ear pain (less than 48 hours) or erythema.

<http://www.aafp.org/afp/2013/1001/p435.html>

**What are the risk factors for OM?**

Pediatrics:

Age (younger)

No breastfeeding

Pacifier use

Gastroesophageal reflux

attending group day care

All age grous:

Allergies

Craniofacial abnormalities

Exposure to environmental smoke or other respiratory irritants

Family history of recurrent acute otitis media

Immunodeficiency

Upper respiratory tract infections

<http://www.aafp.org/afp/2013/1001/p435.html>

**What is the definition of OM with effusion (OME)?**

OME is defined as middle ear effusion in the absence of acute symptoms.

<http://www.aafp.org/afp/2013/1001/p435.html>

**Which instruments can help diagnose OM & OME?**

Otoscopy

Pneumatic otoscopy

Tympanometry

<http://www.aafp.org/afp/2013/1001/p435.html>

**What is the symptomatic treatment for OM?**

Paracetamol or ibuprofen

<http://www.aafp.org/afp/2013/1001/p435.html>

**When it is a must to treat with antibiotics for OM?**

-otorhea

- severe signs or symptoms (moderate or severe otalgia, otalgia for at least 48 hours, or temperature of 102.2°F [39°C] or higher)

-Bilateral OM in 6-24 months old.

<http://www.aafp.org/afp/2013/1001/p435.html>

**When you have a choice whether to start antibiotic therapy or observation?**

Unilateral without severe signs and symptoms

<http://www.aafp.org/afp/2013/1001/p435.html>

**If observation was chosen, what are the mechanisms that must be in place to ensure appropriate treatment if symptoms persist for more than 48 to 72 hours?**

Strategies include a scheduled follow-up visit or providing patients with a backup antibiotic prescription to be filled only if symptoms persist

<http://www.aafp.org/afp/2013/1001/p435.html>

**What is the antibiotic of choice for OM?**

Amoxicillin

<http://www.aafp.org/afp/2013/1001/p435.html>

**What if the patient was allergic to penicillin?**

2nd generation cephalosporins (eg cefuroxime)

<http://www.aafp.org/afp/2013/1001/p435.html>

**What if symptoms persist 48-72 hours after initiating therapy?**

|  |
| --- |
| Repeat ear examination for signs of otitis media |
| If otitis media is present, initiate or change antibiotic therapy |
| If symptoms persist despite appropriate antibiotic therapy, consider amoxicillin+clavulanate, if penicillin allergic consider intramuscular ceftriaxone (Rocephin), clindamycin, or tympanocentesis |

<http://www.aafp.org/afp/2013/1001/p435.html>

**What is a common side effect to antibiotic treatment of OM?**

Diarrhea

You can suggest probiotics, or yogurt containing active culture.

<http://www.aafp.org/afp/2013/1001/p435.html>

**When tympanostomy can be considered for recurrent OM?**

three or more episodes in six months, or four episodes within 12 months with at least one episode during the preceding six months

<http://www.aafp.org/afp/2013/1001/p435.html>

**What are the strategies for preventing recurrent OM?**

|  |
| --- |
| Check for undiagnosed allergies leading to chronic rhinorrhea |
| Eliminate bottle propping and pacifiers[34](http://www.aafp.org/afp/2013/1001/p435.html#afp20131001p435-b34) |
| Eliminate exposure to passive smoke[35](http://www.aafp.org/afp/2013/1001/p435.html#afp20131001p435-b35) |
| Routinely immunize with the pneumococcal conjugate and influenza vaccines[36](http://www.aafp.org/afp/2013/1001/p435.html#afp20131001p435-b36) |
| Use xylitol gum in appropriate children (two pieces, five times a day after meals and chewed for at least five minutes)[37](http://www.aafp.org/afp/2013/1001/p435.html#afp20131001p435-b37) |

<http://www.aafp.org/afp/2013/1001/p435.html>

**Name an important complication of OM?**

Mastoiditis

Manifested by pain and swelling behind the ear

**mastoiditis appears to be most common serious complication of AOM in children**

http://www.dynamed.com/topics/dmp~AN~T116345/Acute-otitis-media-AOM#Complications-and-Prognosis