A 16 year old girl comes to your office complaining of 102 fever, arthralgia and myalgia. What question should you include when reviewing history?

* Was adolescent recently visiting a Caribbean, Central or South American country

* What illnesses should be included in the differential diagnosis?
  * Dengue fever
  * Chikungunya (Break bone fever)
  * Rarely fatal
  * Cause of dengue
  * Aedes mosquito
  * Cause of chikungunya
  * Aedes mosquito

*Case Study*

* Differential Diagnosis*
Chikungunya and dengue are both acute febrile illnesses characterized by fever, myalgia, and lethargy. Some patients may also have maculopapular rash, nausea, vomiting, and headache. Distinguishing features of chikungunya include potentially debilitating bilateral polyarthralgia and, in some cases, arthritis. Should include both illnesses in differential diagnosis of patients with acute febrile illness and recent travel to the tropics. Patients should also be evaluated for other serious conditions, such as malaria, leptospirosis, and other bacterial infections.

**Diagnosis**
- Treat as Dengue until ruled out
- Anti-dengue virus (DENV) IgG & IgM antibodies
- Anti-CHIKV IgM and IgG antibodies
- RT PCR first 5 days of illness
- Anti-CHIKV and anti-DENV IgM antibodies by immunoassay 3 or more days after onset
- Initial results are negative and dengue or chikungunya is still suspected
- Convalescent serum should be collected seven days or more after illness onset and retested to detect IgM antibodies

**Treatment for Chikungunya**
- Acetaminophen
- Refer to rheumatologist

**Diagnosis and Treatment**

**Chikungunya and Dengue with Rashes**

**Signs and Symptoms**
Dengue infection can cause a spectrum of illness from mild, undifferentiated fever to illness. Severe illness lasts 7 days with high fever, severe headache, retro-orbital pain, arthralgia and rash, but rarely causing death. Dengue Hemorrhagic Fever (DHF), a deadly complication, includes hemorrhagic tendencies, thrombocytopenia and plasma leakage. Dengue Shock Syndrome (DSS) includes all the above criteria plus circulatory failure, hypotension for age and low pulse pressure. DHF and DSS are potentially deadly.

- Patients with early diagnosis and appropriate therapy can recover with no sequela.
- Case management for DF is symptomatic and supportive.
- DHF requires continuous monitoring of vital signs and urine output.
- DSS is a medical emergency that requires intensive care unit hospitalization.

**Difference between Chikungunya & Dengue**

<table>
<thead>
<tr>
<th>Clinical signs</th>
<th>Chikungunya</th>
<th>Dengue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever</td>
<td>Common</td>
<td>Common</td>
</tr>
<tr>
<td>Rash</td>
<td>Day 1- Day 4</td>
<td>Day 5-Day 7</td>
</tr>
<tr>
<td>Retro-orbital pain</td>
<td>rare</td>
<td>common</td>
</tr>
<tr>
<td>Arthralgia</td>
<td>Constant</td>
<td>rare</td>
</tr>
<tr>
<td>Myalgia</td>
<td>common</td>
<td>common</td>
</tr>
<tr>
<td>Arthritis</td>
<td>Common, edematous</td>
<td>absent</td>
</tr>
<tr>
<td>Tonsillitis</td>
<td>common</td>
<td>absent</td>
</tr>
<tr>
<td>Hypotension</td>
<td>possible</td>
<td>common</td>
</tr>
<tr>
<td>Minor bleeding</td>
<td>rare</td>
<td>common</td>
</tr>
<tr>
<td>Thrombocytopenia</td>
<td>Early and mild</td>
<td>Delayed and moderate to severe</td>
</tr>
</tbody>
</table>

*D Dengue infection can cause a spectrum of illness
* From mild, undifferentiated fever to illness
* Severe 7 days' duration with high fever, severe headache, retro-orbital pain, arthralgia and rash, but rarely causing death.
* Dengue Hemorrhagic Fever (DHF), a deadly complication, includes hemorrhagic tendencies, thrombocytopenia and plasma leakage.
* Dengue Shock Syndrome (DSS) includes all the above criteria plus circulatory failure, hypotension for age and low pulse pressure.
* DHF and DSS are potentially deadly.
* Patients with early diagnosis and appropriate therapy can recover with no sequela.
* Case management for DF is symptomatic and supportive.
* DHF requires continuous monitoring of vital signs and urine output.
* DSS is a medical emergency that requires intensive care unit hospitalization.
You have an 18 year old female who just came back from vacation in Brazil. She comes to you for vomiting and lethargy. Her UHCG comes back positive. What disease should be part of your differential?

*Zika infection

Case Study

*Zika Virus

May have no symptoms at all
Symptoms are mild and last less than a week
Fever, rash, joint pain, and red eyes
Caused by Aedes mosquito bite
Perinatal, in utero, and possible sexual and transfusion transmissions have been reported
Symptoms may last from few days to a week
Zika virus RNA has been identified in asymptomatic blood donors during an ongoing outbreak

*Signs and Symptoms - Zika
During pregnancy is a cause of microcephaly and other severe fetal brain defects.

- Fetuses and infants of women infected with Zika virus during pregnancy.
- Evaluate for possible congenital infection and neurologic abnormalities.
- Treatment is supportive.
- May disrupt fetal oxygen supply caused by damage to placenta.
- High degree of inflammation in the placenta and lining of the uterus.
- Can harm the fetal immune system and increase a newborn’s susceptibility to additional infections.

**Signs & Symptoms Zika**

- A 5 month old infant comes to your office with a runny nose, temp 99°F, decreased appetite, taking breast milk fairly well. Coughing which is worse at night. Vomits after coughing, and has no diarrhea. Symptoms developed yesterday.
- What is differential diagnosis?
  - Viral URI, influenza
- What is the diagnosis?
  - Influenza

**Case Study**

- Why?
  - Low grade fever
  - Looks uncomfortable but no distress
  - Mild cough
- Treatment
  - Saline nose spray followed by nasal aspirator
  - Elevate head of bed (pillow under mattress)
  - Humidification optional - no support in literature
  - Reassurance
**Viral URI (cold)**
- Incubation 3-4 days
- Usually afebrile
- Nasal congestion
- Cough
- Looks uncomfortable
- Fuss
- Begins to look better in 3 days
- Resolves in 7-10 days
- Most common cause: rhinoviruses
- Occasionally progresses

**Influenza**
- Incubation 3-4 days
- Fever 101°F or higher
- Nasal congestion
- Cough which progresses
- Possible respiratory distress
- Lethargic
- Looks sick and may become worse as days progress
- May progress to pneumonia
- Cause: influenza viruses—usually change yearly
- Otitis media is common

**Common Cold vs. Influenza**

- Antibiotics are NOT EFFECTIVE and do not prevent complications
- Antibiotic resistance has developed due to inappropriate use
- Normal saline nose drops or spray followed by nasal aspirator
- Especially before eating and before sleeping
- Evidence that humidifiers do not work
- Vaporizers are burn hazards
- Fluids
- Elevate head of bed

**Treatment Viral URI (Common Cold)**
- Honey for coughs in children over 12 months of age
- OTC products for colds are NOT recommended for children
- Examples: cough suppressants, antihistamines, decongestants
- NO OPIOID containing medications for cough and cold treatment under any circumstances!!
- Reassurance

**Treatment Viral URI (Influenza)**

- Reassurance
Influenza
- No laboratory testing
- Viral cultures from throat swabs
- Diagnosis based on symptoms
- Most test only for A strain

**Diagnosis of Influenza vs. URI**

- Antipyretics for fever >101°
- Fluids
- Normal saline nose drops or spray followed by nasal aspirator
- Especially before eating and before sleeping
- Evidence that humidifiers do not work
- MUST be cleaned daily to prevent mold
- Vaporizers are burn hazards
- Fluids
- Elevate head of bed
- Antiviral treatment with oseltamivir should be started as soon as possible for high risk individuals based on age and condition
  - Oseltamivir can be used for children <1 year of age

**Treatment for Influenza**

A 6 month old infant comes to your office with a cough, nasal congestion, not nursing well for the past 4 days. The mom tells you the infant is becoming progressively worse. The infant is lethargic and irritable. The infant looks sick and you look at the chest and you notice some substernal retractions. You listen to the lungs and you hear some rales.

**What is your differential diagnosis?**

- RSV pneumonia, influenza
- Diagnosis
- RSV pneumonia

**Case Study**
One of the most common causes of URI in childhood.
- Most infants are infected in the first year of life.
- 20-30% develop lower respiratory tract disease with first infection.
- Most previously healthy infants do not require hospitalization.
- Most who are hospitalized improve with supportive care and are discharged in <5 days.
- Incubation is 2-8 days.

**Respiratory Syncytial Virus (RSV) Bronchiolitis**

**Diagnosis**
- Immunofluorescent enzyme or immunoassay for detection of viral antigen in nasopharyngeal specimens.

**Treatment**
- Supportive: fluids and careful clinical assessment of respiratory status i.e., oxygen sat.
- Supplemental oxygen PRN, suctioning, intubation, mechanical ventilation.
- Virus is shed for 6 weeks following infection.
- Cannot be removed from hand with soap and water.
- Must use alcohol-based hand cleaners.

**Case Study**
- A two-month-old comes to your office with a history of a mild cold for the past 3 days which now seems to be getting worse according to the mom. The mom describes the cough as 'just awful.' The mom tells you the baby seems to be fighting to breathe, gags and gasps during the coughing spells. The infant is afebrile.
- What is your differential diagnosis?
  - RSV, influenza, pertussis.
  - Diagnosis: Pertussis.
Acute bacterial disease characterized by:
* fever, cough, coryza
* Complications
  * Otitis media, pneumonia, laryngotracheobronchitis (croup), diarrhea, encephalitis and death
  * One of most highly communicable of all infectious diseases
  * Incubation period 8-12 days with range of 7-18 days

Complications
* Otitis media, pneumonia, laryngotracheobronchitis (croup), diarrhea, encephalitis and death

One of most highly communicable of all infectious diseases
Incubation period 8-12 days with range of 7-18 days

<table>
<thead>
<tr>
<th>Symptoms in Infants</th>
<th>Symptoms in Older Children and Adults</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspiratory whoop</td>
<td>Paroxysmal cough</td>
</tr>
<tr>
<td>Short catarhal state</td>
<td>Child looks and feels well between episodes of coughing</td>
</tr>
<tr>
<td>Gaging, gasping, possible apnea</td>
<td>Disease can be mild and unrecognized</td>
</tr>
<tr>
<td>Sudden onset death can occur</td>
<td>Vomiting after coughing is pathognomonic</td>
</tr>
<tr>
<td>Prolonged convalescence</td>
<td></td>
</tr>
</tbody>
</table>

Catarrhal stage
* Mild URI symptoms

Paroxysmal stage
* Cough-Inspiratory whoop often followed by vomiting
* Absent or minimal fever

Convalescent stage
* Symptoms wane over weeks to months
* Classic pertussis is 6-10 weeks
Cause: Bordetella pertussis
Incubation: 7-10 days with range of 5-21 days
Diagnosis:
- Nasopharyngeal swab considered 'gold standard'
- PCR (polymerase chain reaction) increasingly used
  - More sensitive but not more specific
Treatment:
- Macrolides first drug of choice
- Azithromycin or clarithromycin are appropriate first line choices as well
- If antibiotic therapy starts within catarrhal state, cough will diminish
- Once cough begins antibiotics will only stop transmission of disease but will not affect cough

A 4 year old child comes to your office with a generalized, pruritic, vesicular rash with hundreds of lesions on the body. The mom tells you the rash started 3 days ago with a few vesicles on the chest and back ('dew drop on a leaf' lesions). The child has a temp. of 100

What is the first question you are going to ask this mom?
- Exposure to any other sick children
- Vaccinated for chickenpox

And what is your diagnosis?
Varicella (chickenpox)
*Generalized, pruritic vesicular rash consisting of 25-500 lesions in varying stages of development and resolution
*Mild fever
*Complication include bacterial superinfection of skin lesions, pneumonia, CNS involvement, thrombocytopenia
*More severe in adolescents and adults
*Breakthrough cases usually mild and can occur in immunized children
*Infectious until all lesions have crusted over
*Incubation 14-16 days with range 10-21 days

*Varicella

*Diagnosis
*Serology and PCR most common
*Usually diagnosed by symptoms
*Treatment
*Antiviral therapy usually only used on immunocompromised
*Very short window of opportunity to affect outcome of infection
*Treatment
*Symptomatic i.e. oatmeal baths, calamine lotion
*Keep fingernails short to prevent infection from scratching
*Prevention
*VAR immunization

*Varicella

*Varicella
A 20 month old comes into your office looking very sick and has a fever of 102°. His conjunctiva are erythematous, but there is no discharge. His mouth is also erythematous and there is a strawberry tongue. He has a generalized rash with induration of the hands and feet and erythema of palms and soles with unilateral cervical lymphadenitis.

What diagnosis should you be thinking of?
* Kawasaki disease

Febrile, exanthematous, multisystem vasculitis
* 20% of untreated children develop coronary artery abnormalities
* Occurs in children younger than 12 years of age
* Peak age in US is 18-24 months
* Diagnosis-Child should have fever for at least 4 days and at least 4 of 5 features mentioned in case study
* Etiology is unknown but clinical features suggest infectious process
* More common in males than females
* Treatment - High dose IVIG
A 6 year old child comes into your office and looks sick. The mom says the child has had a fever. The child has had a cough, runny nose, and red teary eyes for the past 2 days. The family just returned from visiting relatives in Ireland.

What questions do you ask?
- Any contact with sick individuals
- Received MMR vaccine
- What is your differential diagnosis?
- Measles, Rocky Mountain Spotted fever
- What is your diagnosis?
- Measles

Case Study

Measles

Measles
Characterized by cough, coryza, conjunctivitis
Secondary infections common
* Otitis media, pneumonia, meningitis
Treatment mostly supportive
2005 Cochrane review of Vitamin A for treating measles in children found an association between using doses of vitamin A on 2 consecutive days with reduced risk of measles mortality in children younger than 2 years of age
Prevention MMR immunization
Travel to western Europe is indication for MMR vaccine as long as child is at least 6 months of age

Measles Treatment & Prevention

A 7 year old comes to your office with a rash that is generalized and looks like “slapped cheeks” on the face. The mom tells you the child had one day of fever malaise headache and some muscle aches a week ago that resolved spontaneously after 24 hours.

What is your diagnosis?
Fifth disease
Why
Slapped cheeks are hallmark
Clinical presentation

Case Study

Fifth Disease

1/25/2018
Characterized by distinctive rash
- May be preceded by mild systemic symptoms including fever
- Facial rash can be intensely red with “slapped cheek” appearance accompanied by circumoral pallor
- Systemic maculopapular lace-like often pruritic rash
- Rash can also appear on trunk moving peripherally to arms, buttocks, and thighs
- Rash can fluctuate with changes in temperature and exposure to sunlight for weeks to months
- Can also cause polyarthritis

Parvovirus B19 during pregnancy can cause
- Fetal hydrops, intrauterine growth retardation, isolated pleural or pericardial effusions and death
- Not proven cause of congenital anomalies
- Greatest risk appears to occur during first half of pregnancy
- Problem is exposure occurs before diagnosis is made
- Incubation period 4-14 days-can be as long as 21 days

If patient is immunocompromised patient do PCR
- Only reliable test
- More often diagnosis is made on symptoms
- Disease is usually self-limiting except in immunocompromised or in exposure in pregnant women
- Pregnant women should have relatively low risk of infection explained to them and option of serologic testing offered
- Children may attend school because they are no longer communicable once rash appears
- Treatment is supportive
An 18 month old child comes to your office with runny nose, sores in the mouth, and a few vesicles on the hands. The mom tells you the child will not eat or drink. She keeps trying to give the child orange juice and the child is refusing it.

What are your differential diagnoses?
- Coxsackie virus, herpes virus

What is your diagnosis?
- Coxsackie virus

Why?
- Presence of vesicles on hands and mouth
*Symptoms
Herpangina, stomatisits, pneumonia, pleuropdynia
Skin - hand foot & mouth lesions
Can develop aseptic meningitis encephalitis and motor paralysis
Neonates especially at risk of severe disease including sepsis, meningoencephalitis, myocarditis, hepatitis, & coagulopathy
Incubation 3-6 days
Diagnosis is usually by symptoms unless has severe disease

*Coxsakie Virus

*Treatment
No specific treatment
Treatment is symptomatic
Magic Formula for oral lesions
30 ml viscous zylocaine
30 ml benedryl liquid
30 ml of cherry flavor or mint flavor Maalox
This is Rx and pharmacist will mix for you
Use to paint on mouth lesions in younger children especially before eating
Swish and spit for older children

*A mom brings a 3 year old into your office with a generalized erythematous maculopapular rash, some shoty cervical nodes and a low grade fever. The rash started on the face. Despite the rash the child does not look very sick. You ask if the parent if traveled outside the country and the mom tell you that the family just came back from the Dominican Republic.

What question do you ask?
Received MMR vaccine
What are your differential diagnoses?
Scarlet fever, rubella, roseola
Diagnosis?
Rubella
Why?
No vaccine, clinical symptoms

*Case Study

Diagnosis?
Rubella
Why?
No vaccine, clinical symptoms
Conjunctivitis and palatal enanthem have been noted.
Transient polyarthritis and poly arthritis are common in adolescents and adults especially females.
Encephalitis and thrombocytopenia are complications.
Treatment is supportive.
Incubation 16-18 days with range 16-18 days.

Most common anomalies:
- Ophthalmologic: Most common cataracts, pigmentary retinopathy, microphthamos, and congenital glaucoma.
- Cardiac: Patent ductus arteriosis.
- Peripheral pulmonary artery stenosis.
- Auditory: Sensorineural hearing impairment.
- Neurologic: Behavioral disorders, meningencephalitis, mental retardation.
- Neonatal manifestations: Growth retardation, interstitial pneumonitis, radiolucent bone disease, hepatosplenomegaly, thrombocytopenia & dermal erythropoiesis ('blueberry muffin' baby).
* Treatment is supportive
* Prevention is immunization

* Treatment & Prevention of Rubella

* A 10 year old boy who attended camp comes to your office with a left swollen parotid gland and a fever for the past 2 days.
* What question do you ask?
  * Received MMR
* What is your differential diagnosis?
  * Cervical lymphadenitis, mumps

* Case Study

* Mumps
Systemic disease characterized by swelling of one or more salivary glands, most commonly the parotid glands.

Orchitis is most common complication after puberty.

Sterility rarely occurs.

Infection among adults is more severe.

Death while rare occurs more commonly among adults.

Diagnosis
  * Detection of mumps specific antigen
  * Treatment is supportive
  * Prevention is immunization

Mumps

And 11 month old infant comes to your office and looks well except for a generalized fine rash. The mom tells you the baby had a 100.4 fever 3 days ago and was eating and drinking normally. The baby did not even look sick according to the mom. This morning the baby woke up with the rash.

What is your differential diagnosis?

Measles, rubella, roseola

Why
  * Baby never appeared sick. Rash appearing on 3rd day is pathognomonic.

Case Study

One of several viral exanthem

Normally seen in children less than 2 years of age.

Well looking infant with low grade fever (100–101)

Acts normally.

Fever resolves and rash appears 3-5 days later.

Innocuous - frightens many parents.

No treatment - reassure parents.

Roseola
A 15 month old is brought to your office and the mom tells you the child has had a cold for a week. Last night the child was awake all night crying and pulling on the left ear.

What is your differential diagnosis?

URI, otitis media

Diagnosis

OM (based on immovable TM with pneumatic otoscopy)

Case Study
Indurated injected tympanic membrane not movable with pneumatic otoscopy

* AN INJECTED TM OR EAR CANAL IS NOT OM!!!

* Amoxicillin is first line drug
* Refer to practice guideline for specific information regarding which children to treat
A 12 year old comes to your office with a history of a sore throat 2 weeks ago and now has a generalized rash.

*What is your differential diagnosis?
- Measles, scarlet fever

*Diagnosis
- Scarlet fever

*Why
- Sandpaper type rash, not septic looking, has been immunized

**Case Study**

### Acute Pharyngitis

- Inflammation of tonsils, uvula, soft palate, & posterior oropharynx
  - Common in ages >2yrs
  - Uncommon in infants & children <2yrs
- Viral infections more common during the winter when respiratory viruses circulating
  - Children 2-5 pharyngitis common from respiratory viruses
  - Older children – GABHS or Epstein-Barr virus infections (mono)
**Pharyngitis**

- **Viral pharyngitis Sx:**
  - Fever, rhinorrhea, cough & mild pharyngitis
  - Fatigue, anorexia & abdominal pain may occur

- **Bacterial pharyngitis Sx:**
  - Acute onset
  - Fever, headache, sore throat, and abdominal pain
  - Rhinorrhea and cough uncommon

- Examine oral mucosa, tongue, lesions in mouth, tonsillar size, color, symmetry & exudate

- **Enterovirus (herpangina):**
  - Small ulcers on erythematous base on tonsils, soft palate & uvula

---

**Viral**

---

**Bacterial**

---
Penicillin V is drug of choice, ampicillin or amoxicillin are equally effective.

 Prompt treatment shortens clinical course and prevents rheumatic fever even when given 9 days after onset of illness.

 If rheumatic fever develops skin will slough off including hands and feet

 Advise parent!! Can be frightening

 Penicillin V is drug of choice, ampicillin or amoxicillin are equally effective.

 Prompt treatment shortens clinical course and prevents rheumatic fever even when given 9 days after onset of illness.

 If rheumatic fever develops skin will slough off including hands and feet.

 Advise parent!! Can be frightening.

 A summary of antibiotic regimens for GAS Pharyngitis.

<table>
<thead>
<tr>
<th>Antibiotic</th>
<th>Dosage</th>
<th>FDA</th>
<th>Frequency of Administration</th>
<th>Duration of Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penicillin V*</td>
<td>Children: 250 mg PO; Adolescents and adults: 500 mg PO; Twice daily</td>
<td>10 days</td>
<td>3 times daily</td>
<td>10 days</td>
</tr>
<tr>
<td>Amoxicillin*</td>
<td>50 mg/kg (max 1,000 mg) PO; Twice daily</td>
<td>10 days</td>
<td>Twice daily</td>
<td>10 days</td>
</tr>
<tr>
<td>Benzyloxy Penicillin-G*</td>
<td>227 mg, 500,000 Units IM; 257 mg, 500,000 Units IM; Once daily</td>
<td>10 days</td>
<td>Once</td>
<td>10 days</td>
</tr>
<tr>
<td>Erythromycin*</td>
<td>25 mg/kg (max 500 mg) PO; Twice daily</td>
<td>10 days</td>
<td>Twice daily</td>
<td>10 days</td>
</tr>
<tr>
<td>Clindamycin*</td>
<td>50 mg/kg (max 1,000 mg) PO; Twice daily</td>
<td>10 days</td>
<td>Twice daily</td>
<td>10 days</td>
</tr>
<tr>
<td>Gentamicin*</td>
<td>7 mg/kg (max 300 mg) PO; Twice daily</td>
<td>10 days</td>
<td>Twice daily</td>
<td>10 days</td>
</tr>
<tr>
<td>Azithromycin*</td>
<td>12 mg/kg (max 500 mg) PO</td>
<td>10 days</td>
<td>Twice daily</td>
<td>10 days</td>
</tr>
<tr>
<td>Clarithromycin*</td>
<td>7.5 mg/kg (max 350 mg) PO</td>
<td>Twice daily</td>
<td>Twice daily</td>
<td>10 days</td>
</tr>
</tbody>
</table>

*Dosage is based on body weight. The maximum dose of all antibiotics should not exceed 1,000 mg/day.

**Recommended by the American Academy of Pediatrics (AAP) and the American Heart Association (AHA).

***Some antibiotics may require special handling, such as refrigeration.

****Some antibiotics may not be available in all strength levels.

*****Consult with your healthcare provider for specific recommendations.

******Antibiotic therapy should be continued for a minimum of 10 days unless specified otherwise.

*******In patients with known allergies to penicillin, alternative antibiotics should be considered.

********Antibiotics may be prescribed as a single dose for patients with uncomplicated streptococcal pharyngitis.

*********In patients with complicated streptococcal pharyngitis, antibiotics should be continued for at least 10 days.

**********Penicillin V is contraindicated in patients with a history of anaphylaxis or angioedema due to penicillin.

***********Consult with your healthcare provider for specific recommendations.
Most common group A streptococcal infection is acute pharyngotonsillitis

* Purulent complications - OM, sinusitis, peritonsillar and retropharyngeal abscesses and suppurative cervical adenitis
* Usually develop in untreated patients
* Treatment is to reduce acute morbidity and decrease nonsuppurative sequelae
* Rheumatic fever and acute glomerulonephritis
* Lab confirmation of strep is indicated before starting antibiotics for pharyngitis!!!
* Scarlet fever - rash feels like fine sandpaper

Strep Pharyngitis & Scarlet Fever

Scarlet Fever

1. A 15-year-old male patient reports a three-day history of sore throat, fever, and malaise. Physical examination reveals pharyngitis, anterior cervical adenopathy, and an oral temperature of 101.6°F (38.7°C). Which diagnostic test does a primary care nurse practitioner order next?
   a. Antistreptolysin O titer
   b. Cytomegalovirus titer
   c. Monospot and complete blood count
   d. Rapid streptococcal antigen test
For the majority, splenomegaly resolved in 4 to 6 weeks. The long incubation period and variable nature of the disease can make the task of identifying onset of illness a challenge. The acute phase of IM can resolve as quickly as 7 days, but usually takes between 2 and 3 weeks from the onset of symptoms.

Return to Play After Infectious Mononucleosis - NCBI
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC400473/
Meningitis causes RAPID degeneration!

**Clinical manifestations**
- Abrupt onset, fever, chills malaise, myalgia, limb pain, prostration and rash
- Rash
- Maculopapular petechial rash
- Medical Emergency!!
- Diagnosis CSF cultures
- Treatment - empiric therapy with cefotaximine or ceftriaxone

Meningococcal Meningitis

3 year old child comes to your office with nausea and vomiting and looks dehydrated. The family tells you they traveled to Pakistan 6 weeks ago. The child was well until 4 days ago when he developed nausea and vomiting and is unable to tolerate oral fluids.

*What is your differential diagnosis?*
- Viral gastroenteritis, bacterial gastroenteritis, TB meningitis
- Why?
- Septic looking child, history of travel to Pakistan

Case Study
*PPD positive
*Nuchal rigidity
*Child does not recognize parents
*Medical emergency
*Always keep TB in mind especially when child has traveled to endemic areas

*TB meningitis

*Infants 3 months of age and younger who develop fever must be considered for sepsis
*If fully immunized observation without antimicrobial is appropriate if no focus of infection is found
*Must have plans for appropriate follow up
*Parents must be reliable to observe infant’s condition

*Febrile Infants

*Presentation
*Skin infection without underlying drainage, penetrating trauma, eschar, or abscess
*Most likely caused by streptococci; Staphylococcus aureus
*Often community-acquired MRSA, is the most likely pathogen when these factors are present
*Violaceous color and bullae suggest more serious or systemic infection with organisms such as Vibrio vulnificus or Streptococcus pneumoniae

*Community Acquired MRSA
*The following findings suggest severe infection:
  * Malaise, chills, fever, and toxicity
  * Lymphangitic spread (red lines streaking away from the area of infection)
  * Circumferential cellulitis
  * Pain disproportionate to examination findings

*Indications for emergent surgical evaluation are as follows:
  * Violaceous bullae
  * Cutaneous hemorrhage
  * Skin sloughing
  * Skin anesthesia
  * Rapid progression
  * Gas in the tissue

*Generally, no workup is required in uncomplicated cases of cellulitis that meet the following criteria:
  * Limited area of involvement
  * Minimal pain
  * No systemic signs of illness (e.g., fever, altered mental status, tachypnea, tachycardia, hypotension)
  * No risk factors for serious illness (e.g., extremes of age, general debility, immunocompromise)
Treatment
All but the smallest of abscesses require drainage for resolution, regardless of the pathogen.

- Drainage only, without antibiotics, may suffice if the abscess is relatively isolated, with little surrounding tissue involvement.
- Oral TMP/SMZ, oral Clindamycin
- Oral Doxycycline if > 7 years old

References:


