URI, Allergy, Asthma and GI

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Non-Specific URI

- Common cold
  - Lacks PREDOMINANT sinus, throat, or lower airway symptoms
  - Viral origin
  - Antibiotics: NO benefit
  - Purulent secretions common even *IF* viral
Rhinosinusitis

- URI + predominant nasal and sinus sx.
- Usually viral (90%)
  - May be bacterial though
- Purulent discharge common
- Bacterial sinusitis UNLIKELY if sx < 7 d.
  - Usually self-limited
Pharyngitis

- URI + predominant sore throat
- Usually also viral
- Gp A Beta Hemolytic Strep (GABHS)
  - 15% of adult pharyngitis
- Antibiotics of questionable efficacy
Acute Bronchitis

- URI + predominant COUGH
  - Often greater than 3 weeks (cough)
- May have purulent sputum
- Viral etiology in 90%
  - *Chlamydia Pneumoniae, Mycoplasma, Pertussis* are 5-10% of cases
  - Viral induced bronchial hyper-responsiveness
    - Common
    - May last 4 months
Antibiotics in Acute Bronchitis

- Most studies show minimal benefit
- Symptoms improve 50% per day
  - With or without antibiotics
Bacterial Sinusitis: Dx

Indicators of bacterial etiology (2% of all cases)

- Usually present
  - Nasal symptoms greater than 7 days
  - Purulent secretions
- More specific findings
  - Maxillary pain and tenderness
  - Upper toothache
  - Abnormal transillumination
  - $T > 38^\circ$
Bacterial Sinusitis Treatment

- Cured or improved at 14 days
  - 81% antibiotics vs. 61% placebo
- No antibiotic proven superior to amoxicillin/clavulanate
- Consider oral 2nd generation cephalosporins for areas with high prevalence of S. pneumoniae resistance

Rhinosinusitis

- No role for imaging
- Clinical diagnosis identifies bacterial etiology (50%)
- Bacterial sinusitis often self-limited
- Benefit of antibiotics is minimal
  - Consider withholding if mild
Sore Throat
Diagnostic Dilemma

Sore throat: main diagnostic issue

Viral/self-limited

Pharyngitis

GABHS
GABHS Pharyngitis Diagnosis

- Sudden onset sore throat
- T>38°, headache
- Exudate
- Anterior cervical lymphadenopathy
- Lack of cough and runny nose
- Age <15

GABHS
Testing and Treatment

- Rapid antigen testing
  - 80% sensitive / 90% specific
- Throat culture 90-95% sensitive
- Lower threshold for antibiotic treatment
  - Exposure of GABHS outbreak
  - Rheumatic fever history or valvular disease
  - Major contact with children
- BID Penicillin dosing/IM Penicillin x1

Acute Cough

- Community acquired pneumonia (CAP)
- Acute bronchitis / COPD exacerbation
- Asthma exacerbation
- Atypical presentation…others
  - Pulmonary embolus
  - Pulmonary edema
  - Pneumothorax
Acute Cough
Diagnostic Issues
CAP
Diagnosis

- Gold standard = chest x-ray
- Physical Examination
  - Heart rate >100, R.R. >24, T>38
  - Abnormal auscultation
- Withhold chest x-ray for:
  - Prominent URI s/s
  - Diffuse audible bronchospasm
**Influenza**

- **Typical presentation:**
  - Fever*
  - Cough
  - Sore throat
  - Runny or stuffy nose
  - Body aches
  - Headache
  - Chills
  - Sometimes diarrhea and vomiting

*It’s important to note that not everyone with flu will have a fever

Influenza
Controlling the Spread

- 2011-12 Northern Hemisphere Immunization: 
  A/California/7/2009 (H1N1)-like virus
  A/Perth/16/2009(H3N2)-like virus
  B/Brisbane/60/2008-like virus
    - Vaccine effective within 10-14 days
- Hand washing
- Consider isolation for the ill
- Surgical mask if ill person must travel
- Practical consideration: Dorm living/Olympics – be more aggressive with early prevention and therapeutics with the rest of the team

Weekly Influenza Surveillance Report Prepared by the Influenza Division
Influenza-Like Illness (ILI) Activity Level Indicator Determined by Data Reported to ILINet
2011-12 Influenza Season Week 47 ending Nov 25, 2011

ILI Activity Level

- High
- Moderate
- Low
- Minimal
- Insufficient Data

The map uses the proportion of outpatient visits to healthcare providers for influenza-like illness to measure the ILI activity level within a state. It does not, however, measure the extent of geographic spread of flu within a state. Therefore, outbreaks occurring in a single location could cause the state to display high activity levels.

Data collected in ILINet may disproportionately represent certain populations within a state, and therefore may not accurately depict the full picture of influenza activity for the whole state.

Data displayed in this map are based on data collected in ILINet, whereas the State and Territorial flu activity map are based on reports from state and territorial epidemiologists. The data presented in this map is preliminary and may change as more data is received.

Conflicts in the data presented by CDC and state health departments likely represent differing levels of data completeness with data reported by the state likely being the more complete.
Local Epidemiology

- European Website:

- American Website
Influenza Treatment

- Early treatment (within 2 days of symptoms)
- Treatment can reduce symptoms by 1-2 days

<table>
<thead>
<tr>
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<td>Treatment</td>
<td>10 mg (2 inhalations twice daily) for 5 days</td>
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Influenza Prophylaxis

- Monitoring for illness and early treatment is an alternative to medication
- Provide medication within 48 hours post exposure if needed due to high risk for complications from disease

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URI Summary

**Summary**

- **CAP**: Exclude CAP clinically or CXR
- **Bronchitis**: No antibiotics
- **Rhinocinutis**: Clinical dx (>7d), No imaging/testing
  - **Bacterial sinusitis**: Consider no antibiotics
- **Nonspecific URI**: No antibiotics
- **Pharyngitis**: Clinical rule +/- testing
  - **GABHS**
Allergic Reaction – Bracelet

- Anxious
- Rash/Hives
- Headache
- Wheeze (respiratory distress)
- Shock
  - Diminished blood pressure
  - High pulse
  - Seizure

PREScription
- Antihistamines (Benadryl)
- Oxygen
- Airway
- EPI 1:1,000
- Steroids
Skill Drill 13-2  Using an Auto-Injector

1. Remove the auto-injector's safety cap.
2. Place the tip of the auto-injector against the lateral thigh.
3. Help the patient push the auto-injector firmly against the thigh and hold it in place until all the medication is injected.
ASTHMA – Bronchospasm
Clinical Manifestation – Wheeze or Cough

Figure 10-1: The upper airway includes the mouth, nose, pharynx, and larynx. The lower airway includes the trachea, major bronchi, and other air passages within the lungs.
Asthma – Check Bracelet

**Figure 10-10** Asthma is an acute spasm of the bronchioles. 
A. Cross-section of a normal bronchiole. B. The bronchiole in spasm; a mucous plug has formed and partially obstructed the bronchiole.
The Problem

- Exercise Induces Asthma EIA or EIB
  - Affects 35% of winter athletes
  - Major change in the beta-agonist arena
  - Must have WADA T.U.E. approval or the Declaration of Use to treat - effective January 1, 2010
  - It is OK to use the beta-agonist as long as the levels are in the therapeutic range
  - Look up on www.usada.org for the language regarding this use
What Does “IT” Look Like?

- Cough is most common sign of Asthma
- Shortness of breath
  - “Disproportionate”
- Chest burning
- “Frequent URI’s”
- Wheeze often, but NOT always
- POST URI – “Doctor, I’m still sick”
When to Treat

- **RACE DAY**
  - Asthmatic with any cough
    - CAN use inhaler several times close together
      - May cause tremor or a jittery feeling
    - Nebulizer with beta-agonist
    - Leukotrine inhibitor (Singulair)
When to Treat (Cont’d)

- **Training Day**
  - Change day to EASY
  - **Pre-treat with beta-agonist ½ full dose**
    - 20 minutes before exercise and immediately after
  - Ensure good sleep – CODIENE for cough
  - Hydrate

- If NO better next day - REST
Treatment

- Step wise approach
- NO OVER THE COUNTER MEDS ALLOWED
- PURE EIA
  - PRE exercise meds to prevent irritation and bronchospasm
    - 20-30 minutes before
Acute Treatment

- Athletes carry medications
  - Back up with physician and coach on hill
  - Know meds prescribed and approved
  - Find out which meds taken
  - Peak flow
Treatment P2

- Core Prophylactic Treatment is Inhaled
  - CorticoSteroid *NO GOOD AT THE START

- Pre Race or Immediate Treatment
  - Beta-agonist (Albuterol)
  - Singulair (Leukotrine inhibitor) next
    - Some respond in 30 minutes. NOT RESTRICTED.
What I Told You…

- Asthma is an INFLAMMATORY problem
- Prevent problems
  - Hard to treat without restricted medications
- Albuterol (Salbutamol) for acute sx
- Mainstays of suppression are inhaled steroids or Leukotrine inhibitors
- Know peak flows and treat early
Asthma

- **Trigger:**
  - Allergy
  - Cold
  - Exertion – high velocity air
  - Fumes
  - Perfume

- **Treatment**
  - Albuterol
  - Our protocols and use
  - EPI PEN
  - First Aid
  - Follow up care
  - Oxygen
  - Steroids
Traveler’s Diarrhea

- Incidence is high - seen in 30% to 60% of travelers to areas of highest risk.
- Causes - frequency of pathogens varies.
  - Enterotoxigenic E. coli – 50%
  - Shigella – up to 15% of the cases
  - Salmonella – up to 15% of the non-typhoid strains
  - Other bacteria: Campylobacter, Aeromonas, Vibrio, etc.
  - Viruses are less than 10%: rotavirus, Norwalk agent, enteroviruses, etc...
    - Often seen in visitors to the US.
  - Parasites are uncommon
    - REMEMBER GIARDIA in USA Rocky Mtns.
  - Non-infectious causes may exist
Clinical Manifestations

- Onset usually during the week of arrival
- Usually a secretory watery diarrhea, common abdominal cramps, nausea, and malaise
- Temperature more than 38 degrees centigrade in 10% to 20%.
- Bloody stools in less than 10%, which is common with Shigella, E.coli 0:157
- Duration usually 2 to 4 days
Treatment

- Fluid replacement/Oral rehydration
- Suggest balanced salt solutions such as $\frac{1}{2}$ strength Gatorade
- Antimotility agents: (avoid in dysentery; may prolong the illness)
  - Loperamide: 4mg STAT, then 2mg after each loose stool; max, 16 mg/day

Treatment (cont’d)

- Pepto-Bismol is somewhat effective
- Antibiotics are effective, and shorten the duration of the illness 1 to 2 days (if a bacterial cause)

Treatment (cont’d)

- **Azithromycin**: 500mg QD x 3 days
- **Rifaximin**: 200mg TID x 3 days or 400 mg BID x 3 days
- **Fluoroquinolones**
  - Ciprofloxacin: 500mg BID x 1-3 days
  - Levofloxacin 500mg QD x 1-3 days
    - Resistance being seen
    - Black Box Warning – tendon rupture

Treatment – BEST OPTION

- The very best regimens
  - Hydration
  - Rest (if possible)
  - Watchful waiting

Often the diarrhea will resolve in 24 hours
Food Poisoning

- Primary cause is staph aureus
  - Symptom onset in <6 hours
  - Violent vomiting/diarrhea, fevers chills
  - Once toxin out of body – feel better in 24 hours
  - Treatment unnecessary – hydration is key
Prevention
Food and Drink Guidelines

- Handwashing after bathroom and before meals
  - Consider personal alcohol gel (Purell) for each athlete to use throughout the day
- Be aware of source and preparation of food
- Avoid potent reduction of gastric acids
- Use H2-blocker, instead of proton pump inhibitor
- Pepto-Bismol: 2 (262 mg tab) 4 x day with food for duration of exposure
- Antibiotics, the same drugs as for treatment, but decrease to daily dosing.

The NIH Consensus Panel for antibiotics on international travel

- Advised against routine antibiotic prophylaxis, but for early presumptive antibiotic therapy
- Consider antibiotic prophylaxis for short essential trips
- The best regimen for most areas is now considered Azithromycin: 500mg QD x 3 days (due to increases in fluroquinolone-resistant campylobacter)

Constipation

- Metamucil
- All-Bran cereal
- Prunes
- Syrup fruit drinks such as pear and apple juice
- FiberCon (with Psyllium) capsules
- Milk of Magnesia
- Fleet Enema
- Mineral oil
Nausea or Motion Sickness

- Gut rest
- Acupressure wrist band (motion sickness)
- Small sips, such as tea or cola syrup (after shaking off the carbonation)
- Suppositories: many
- Compazine (beware of allergies),
- Topical creams
- Compounded with Anti-Emetics
- Antihistamine tablets to be used early,
Ulcer, Gastritis or Gastroesophageal Reflux

- **Avoid** chocolate, cola, caffeine, smoking or secondary smoke, high calcium, stress, alcohol, and fats.

- **Medications**
  - H2 Blockers: Ranitidine, Fomotidine
  - Antacids without calcium (May worsen)
  - Proton Pump Inhibitors
    - Prilosec (nonprescription in the U.S.).
Reminder

- All physicians have their favorite choices of home remedies and scientific remedies, but are reminded to beware of herbs and supplements, which might be inadvertently on the banned list, and not known by our athletes (who treat them casually when they are in an unregulated environment).
Summary

- Be a “Good Observer”
- Good History and Good Judgment (Family, Bystanders)
- Bracelet – Diabetes, Allergy, Seizure (Many Things Look alike – Diabetes, Alcohol, Head Injury)
- Altitude – Oxygen and Transport
- Hyperventilation – Reassure / Low Flow Oxygen
- Cardiac – Flat or Elevated Head, Aspirin (Allergy?)
- Asthma – Oxygen, Bronchodilator, Head Elevated
- Seizure – More Oxygen, Nothing in Mouth, Protect Pt.
- Shock – Oxygen, Head Down
- Diabetes – Glucose
- Allergy – Oxygen, Benadryl, EPI
- Avalanche – Protect Neck due to fracture
- Question Allergies Before Providing Drugs
- Document Treatment and Meds Given
- Reassess
- Aware of Surroundings Before Transport