Common Pediatric Infections

Erin Quinn, RN, MSN, CRNP
Clinical Specialist, Genentech
Ea.quinn66@yahoo.com
November 13, 2010
Objectives

- Identify common respiratory and skin infections
- Discuss treatment and approach by age and development
- Review some emerging trends in pediatric infections
- Become confident pediatric caregivers
Cold and Flu

“*The best defense is an educational offense*”

- Review Sx Chart
- Children get 9-12 viruses a year
- Green is good

- 8/10 ear infections will resolve w/o ANTBx
- 4/5 sore throats are viral
SX/Duration Chart

Duration of Cold Symptoms

% of Patients with Symptom

- feverishness
- sore throat
- cough
- nasal discharge

Day of Illness

Gwaltney, JAMA 1967;122:138
<table>
<thead>
<tr>
<th>Age Group</th>
<th>0-6mos</th>
<th>6mos-2yr</th>
<th>2-12yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>See infants &lt;3mos w/ temp &gt;100.3</td>
<td>Humidifier (discontinue once cold resolves)</td>
<td>May add Delsym at HS for cough</td>
</tr>
<tr>
<td>Nasal saline only</td>
<td></td>
<td>Acetaminophen for Temp&gt;102 or discomfort</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Benedryl at HS only</td>
<td></td>
</tr>
</tbody>
</table>
RSV

- Most common cause of bronchiolitis in infants
- 50% are infected by their 1st birthday
- Complications include apneic episodes, viral pneumonia, AOM, dehydration
- Most at risk are <1 yr especially those between 6 wks and 6 mos and children with cardiac or pulmonary disease
- Tx is supportive and possibly Ribavirin (controversial)
Otitis Media

- SX Include: Pain (often worse when lying down), fever, fussiness, “tugging” (unreliable sign), ear drainage, and cold sx

- Pain may be present even in the absence of ear disease

- Ear drum may perforate and, although alarming to parents, not an emergency and will typically heal in a few days
Otitis Media

- Analgesics
- AAP Guidelines

<table>
<thead>
<tr>
<th>Age</th>
<th>Certain DX</th>
<th>Uncertain DX</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 6mos</td>
<td>Antbx</td>
<td>Antbx</td>
</tr>
<tr>
<td>6-24mos</td>
<td>Antbx</td>
<td>Antbx if severe illness/ Observation option</td>
</tr>
<tr>
<td>&gt;24mos</td>
<td>Antbx if severe/ observation option</td>
<td>Observe option</td>
</tr>
</tbody>
</table>
Otitis Media
Antibiotic Choices

- Amoxicillin High Dose 80-90mg/kg/d
- Augmentin ES 80-90mg/kg/d
- If vomiting-Rocephin IM (See Harriet Lane)
- If PCN Allergy
  - Omnicef, Ceftin, or Vantin (Yuck)
  - Zithromax or Biaxin or Clindamycin
- Give full 10 day course for <6yo or w/severe sx
- >6yo can do ok w/5-7days
## Pharyngitis and GABHS

<table>
<thead>
<tr>
<th></th>
<th>Viral</th>
<th>Strep</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>Common, 80% of s/t</td>
<td>Less common</td>
</tr>
<tr>
<td>Age</td>
<td>Any</td>
<td>Rare&lt;1yr, less common&lt;2yo</td>
</tr>
<tr>
<td>HX of contact</td>
<td>Not usually present</td>
<td>Often Present</td>
</tr>
<tr>
<td>Onset</td>
<td>Gradual</td>
<td>Frequently Sudden</td>
</tr>
<tr>
<td>Fever</td>
<td>Possibly</td>
<td>Almost always present</td>
</tr>
<tr>
<td>Other</td>
<td>Cold sx present</td>
<td>HA, abdominal pain, rash, &amp; a tender neck</td>
</tr>
</tbody>
</table>
GABHS

- Dx of GABHS on clinical grounds alone is unreliable
- Antibiotic therapy should be started within 9 days from the onset of sx in order to prevent ARF (Acute rheumatic fever) and APGN (Acute post-infectious glomerulonephritis)
- ARF can occur around 18 days and APGN can occur around 10 days after untreated infection
GABHS

- Avoid treatment until you have a positive cx!
- Amoxicillin/PCN 20-50mg/kg/24 hr x 10d
- If PCN allergic use erythromycin 40-50mg/kg/d in 2-4 divided doses x 10d
- May use azythromycin 5 day regimen or clindamycin 10 day regimen
- Do not use tetracyclines or sulfonamides
- No post-treatment cx necessary
GABHS and “Carrier Status”

- Bacteriologic tx failures w or w/o clinical relapse can occur 25% of the time

- Relapse often d/t poor compliance, re-infection from a contact, or a carrier state

- Carriers are defined as “patients in whom colonization but not infection w/GABHS has occurred”

- Carriers are noncontagious
Recurrent Strep

- With clinical relapse a $2^{nd}$ course should be given (after cx)
- Repeated relapse should be treated with beta-lactamase-resistant antibiotic
- Culture contacts only if symptomatic
- Consider 14 day course of Clindamycin with last 3 days to include Rifampin 10-20mg/kg/24 hr for recurrent clinical cx and sx
Roseola

- Affects children from 3mos-4 yrs; 90% occur in the first year of life

- SX include fever for 3-7 days followed by a rapid decrease in fever and the appearance of a maculopapular rash (blanches)

- Seizures (febrile) most common complication (5-10%), encephalitis, Aseptic meningitis, and Thrombocytopenia purpura

- Child may return to “school” as soon as they are afebrile
Hand Foot Mouth (Coxsackievirus)

- Most common late summer and fall and children under 5; incubation period 3-7 days

- Sx include mild prodrome of fever and malaise for 1-2 days and vesiculoulcerative stomatitis, papules or vesicles on the hands and feet which resolves in 7 days; rarely myocarditis

- Dehydration most common complication b/c of painful lesions

- Tx includes acetominophen, cool fluids in small quantities, and “magic mouthwash”

- Return to school controversial
Fifth Disease (Parvovirus B 19)

- Seen in up to 35% of school age children
- Complications include joint pain (seen more in adults), Aplastic crisis, & HSP
- Incubation period 4-14 days with prodromal sx of st/ha, lethargy, low fever for 1-4 days
- “Slapped cheek” and macular, lacy rash to follow for 7-14 days
- Children may return to school when the rash appears
Impetigo

- Occurs in two forms: bullous (s. aureus) and non-bullous (s. aureus, group a beta-hemolytic strep)

- Most common in warm, humid locations and seasons; most common bacterial skin infection in children 2-7 yrs, rare under 2 yrs

<table>
<thead>
<tr>
<th>Bullous</th>
<th>Nonbullous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transparent bullae that rupture easily, leaving a rim surrounding an ulcer; nl surrounding skin</td>
<td>Papule or vesicle progression to a honey crusted plaque; surrounding redness; regional adenopathy</td>
</tr>
</tbody>
</table>
Impetigo

- Complications rare and untreated lesions often resolve spontaneously
- First line: cephalexin 50 mg/kg/d BID or erythromycin 50 mg/kg/d TID for 7-10 d
- Second line: clindamycin 15mg/kg/d, amox/clavulanic acid 40 mg/kg/d, or dicloxacillin 50 mg/kg/d
- Topical treatment: mupirocin 3x/d for 7d
- Handwashing paramount; cover lesions
## Fungal Infections

<table>
<thead>
<tr>
<th>Infection</th>
<th>Differential</th>
<th>Sx/Exam</th>
<th>Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tinea Capitis</td>
<td>Seborrheic der, psoriasis, alopecia areata, folliculitis, impetigo</td>
<td>Round patches of alopecia w/ erythema, kerion, pustules w/ crusting, dry scalp</td>
<td>Griseofulvin 15-20mg/kg/d for 6-12 weeks/ Selenium sulfide 2x/wk</td>
</tr>
<tr>
<td>Tinea Corporis</td>
<td>Pityriasis rosea, eczema</td>
<td>Annular, flesh colored or pink</td>
<td>Topical imidazole bid x2</td>
</tr>
<tr>
<td>Candidiasis</td>
<td>Contact, seb, atopic derm</td>
<td>Beefy red, sharp margins, skin folds</td>
<td>Topical nystatin3-4x/d xor 7-10d</td>
</tr>
<tr>
<td>Tinea Versicolor</td>
<td>Pityriasis alba, rosea, vitiligo, post inf. hypo</td>
<td>Scaling, oval macular patches</td>
<td>Selenium sulfide 2.5% x 10 min (q month repeat)</td>
</tr>
</tbody>
</table>
Emerging Infections

- “California health officials report on pertussis outbreak”

- “Pneumonia remains leading cause of child mortality worldwide” and “Pneumonia-associated complications rise in most pediatric populations, despite introduction on PCV7”

- MRSA—“USA 300 S. aureus pulsotype emerging as an important health care-associated pathogen” and “MRSA common among student athletes”

- “Meet the new respiratory viruses”
  - Human metapneumovirus (hMPV)
  - Non-SARS coronaviruses (HCoVs)
  - Human bocavirus (HBoV)
Summary

- Set yourself up for a good exam
- 85-90% of what you will see will be viral and no antibiotic is necessary
- Trust your gut and know when to look it up

THANK YOU!