AP Ashland Medical Group

Overview
Definition: Community-acquired pneumonia (CAP) is complicated by lack of gold standard as clinical and radiographic findings may be discordant. This algorithm applies to children whom the clinician has diagnosed uncomplicated CAP by clinical imaging findings. Base antibiotic choice and dosing on local resistance patterns and MICS of prevalent bacterial organisms causing pneumonia. (S. pneumoniae, Group A Streptococcus, S. aureus, H. influenzae, M. pneumoniae, C. pneumoniae). This algorithm was developed through the efforts of the American Academy of Pediatrics Section on Emergency Medicine in the interest of advancing pediatric healthcare. Ultimately, the patient’s physician must determine the most appropriate care.

Scope
Emergency Department (ED) Setting
Includes
Patients 3-months to 18-years of age with community-acquired pneumonia (include patients with asthma or reactive airways disease)
Immunocompromised, tracheostomy/ventilator dependent, or children with chronic conditions such as cystic fibrosis
Suspended hospital-acquired pneumonia or aspiration pneumonia
Excludes

Assessment

<table>
<thead>
<tr>
<th>MILD</th>
<th>MODERATE</th>
<th>SEVERE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygenation</td>
<td>Oxygen saturation ≥90% on room air</td>
<td>Oxygen saturation persistently &lt;90% on room air</td>
</tr>
<tr>
<td>Work of Breathing</td>
<td>None or minimal (i.e., no grunting, flaring, retractions, apnea)</td>
<td>Increased/moderate respiratory distress (i.e., grunting, retractions, nasal flaring)</td>
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<tr>
<td>Hydration</td>
<td>Able to tolerate fluids and medication</td>
<td>Signs of dehydration; persistent vomiting; inability to take oral medications</td>
</tr>
<tr>
<td>Appearance</td>
<td>Not significantly ill or toxic appearing</td>
<td>Ill-appearing</td>
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</tbody>
</table>

Diagnoses

<table>
<thead>
<tr>
<th>MILD</th>
<th>MODERATE</th>
<th>SEVERE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labs</td>
<td>CBC and inflammatory markers NOT routinely indicated</td>
<td>CBC and inflammatory markers NOT routinely indicated</td>
</tr>
<tr>
<td>Cultures</td>
<td>Blood cultures NOT routinely indicated</td>
<td>Blood culture NOT routinely indicated unless complicated pneumonia or underimmunized child</td>
</tr>
<tr>
<td>Imaging</td>
<td>Not routinely considered; consider CXR in those with diagnostic uncertainty or concern for complications.</td>
<td>Obtain AP and lateral chest x-ray; consider bedside ultrasound as adjunct diagnostic tool if ultrasound credentialed provider is present.</td>
</tr>
</tbody>
</table>

Viral testing

Influenza infection if clinical or laboratory diagnosis per current CDC recommendations.

TREATMENT

**MILD**
- Initiate oral antibiotic therapy:
  - Amoxicillin 90 mg/kg/day divided TID (max dose 3 g/day), see footnote for children with penicillin allergy and/or underimmunized children
- Alternate dosing regimen of 90 mg/kg/day divided BID may be acceptable if lower rates of pneumococcal resistance (consider local resistance patterns and MICS)
- Duration of therapy: 7-10 days
- If suspicion of atypical pneumonia (mycoplasma), for age > 5yr add azithromycin
- Influenza treatment if clinical or laboratory diagnosis per current CDC recommendations

**MODERATE**
- Initiate parenteral antibiotic therapy: Amoxicillin 150-200 mg/kg/day divided q 6 hrs – max dose 4 g/day, see footnote for children with penicillin allergy and/or underimmunized children
- If suspicion of atypical pneumonia (mycoplasma), for age > 5yr add azithromycin
- Influenza treatment if clinical or laboratory diagnosis per current CDC recommendations

**SEVERE**
- Initiate parenteral antibiotic therapy: Ceftriaxone 100 mg/kg/day divided q 12-24 hrs OR Cefotaxime: 150 mg/kg/day divided q 8 hrs
- If Staph aureus suspected (multifocal pneumonia, necrotizing pneumonia/cavitary lesion, leukopenia):
  - Vancomycin: 40-60 mg/kg/day divided q 8-8 hrs OR Clindamycin: 40 mg/kg/day divided q 6-8 hrs
- If suspicion of atypical pneumonia (mycoplasma), for age > 5yr add azithromycin
- For patients with signs/symptoms or blood gas concerning for impending respiratory failure, provide respiratory support as needed; supplemental oxygen to maintain oxygen saturations >90%
- Maintain circulatory status/manage shock if present
- Influenza treatment if clinical or laboratory diagnosis per current CDC recommendations

**DISCHARGE CRITERIA**
- Meets criteria for mild pneumonia
- Caregiver alta frito adhere to follow up
- Able to tolerate oral medications and hydration

**Admit to appropriate level of care**

**Complicated Pneumonia – Out of scope of algorithm: Admit to hospital. Refer to USA guideline**

**CXR demonstrates moderate to large pleural effusions**

**End of Document**