Aspiration: Pneumonitis vs. Pneumonia

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There are several aspiration syndromes with overlapping clinical presentations, many of which do not require antibiotic therapy.

What are the different aspiration syndromes? How can I distinguish them?

<table>
<thead>
<tr>
<th>Syndrome</th>
<th>Material Aspirated</th>
<th>Pathology</th>
<th>Clinical Presentation</th>
<th>CXR Infiltrate</th>
<th>Antibiotic Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bland aspiration</td>
<td>Innocuous fluid (blood, enteral feeds) or solid material</td>
<td>Mechanical or functional airway obstruction</td>
<td>Immediate onset respiratory distress, cyanosis, or apnea. NO fever.</td>
<td>Dependent areas or presence of solid material.</td>
<td>No*</td>
</tr>
<tr>
<td>Chemical pneumonitis</td>
<td>Noxious liquid (gastric acid)</td>
<td>Airway damage and inflammation</td>
<td>Immediate onset respiratory distress, cyanosis and fever.</td>
<td>Dependent areas</td>
<td>No*</td>
</tr>
<tr>
<td>Aspiration pneumonia</td>
<td>Large inoculum of oropharyngeal or upper GI colonizing flora</td>
<td>Infection</td>
<td>Subacute onset of dyspnea, cough with purulent sputum and fever.</td>
<td>Dependent areas</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*Bland aspiration and chemical pneumonitis may predispose to a pneumonia but there is no benefit to antibiotic prophylaxis.

Consider aspiration pneumonia in a patient who has BOTH:

1. Clinical features of pneumonia
   * Fever
   * New productive cough
   * New/persistent CXR infiltrate

2. Risk factors for aspiration

Patient producing purulent sputum? Send it for bacterial culture!

Risk Factors for Aspiration:

- Dysphagia
- Structural abnormalities of pharynx, trachea, or upper GI tract
- Mechanical disruption of glottis (e.g. endotracheal tube)
- Altered mental status
- Vomiting
- Enteral feeding
I cannot clinically distinguish between aspiration pneumonitis and pneumonia. What now?

The role of anaerobic organisms is controversial. Only add coverage if there are risk factors for anaerobes including:

- Poor oral hygiene
- Severe periodontal disease
- Putrid sputum

If anaerobic pneumonia suspected, monitor for lung necrosis/abscess and empyema.

Step down to oral therapy once your patient:

- is hemodynamically stable
- is improving clinically
- can tolerate oral intake

I suspect my patient has aspiration pneumonia. What is the recommended treatment?

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Usual pathogens</th>
<th>Empiric Antibiotic Recommendations*</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community or Nursing Home Acquired</td>
<td>S. pneumoniae H. influenzae S. aureus Enterobacteriaceae</td>
<td>1. Ceftriaxone 1 g IV daily OR 2. Levofloxacin 750 mg PO daily</td>
<td>7-10 days</td>
</tr>
<tr>
<td></td>
<td>As above PLUS: Oral anaerobes Streptococcus spp. Eikenella corrodens</td>
<td>1. Amoxicillin-clavulanate 875 mg PO BID OR 2. [Ceftriaxone 1 g IV daily OR Levofloxacin 750 mg PO daily] PLUS Metronidazole 500 mg IV/PO Q12H</td>
<td>7-14 days</td>
</tr>
<tr>
<td>Hospital Acquired</td>
<td>Enterobacteriaceae P. aeruginosa S. aureus S. pneumoniae H. influenzae M. catarrhalis Oral anaerobes</td>
<td>1. Amoxicillin-clavulanate 875 mg PO BID OR 2. Ceftriaxone 1 g IV daily PLUS Metronidazole 500 mg IV/PO Q12H</td>
<td>7-14 days</td>
</tr>
<tr>
<td>Moderate to severe</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

*Note: Coverage of atypical organisms is not required.