Health PEI

ANTIMICROBIAL STEWARDSHIP SUBCOMMITTEE

Adult Chemical Pneumonitis & Aspiration Pneumonia

Key Messages

- Most people with aspiration **DO NOT** develop pneumonia and can be managed with a **watch and wait approach** - If patient is stable, monitor for signs and symptoms for 48 hours; antibiotics are not required.
- Antibiotic treatment for patients who develop fever, leukocytosis, and infiltrates in the first 48 hours after an aspiration event is likely unnecessary and may only select for resistant organisms
- Piperacillin/tazobactam is NOT first line therapy for hospital acquired "aspiration" pneumonia and should be reserved for patients that are critically ill.
- Routine addition of anaerobic coverage is not recommended unless treating an empyema or lung abscess

Background

- **Aspiration/Chemical Pneumonitis** - an inflammatory response to chemical injury caused by inhalation of sterile gastric contents.
- **Aspiration Pneumonia** - an infectious process caused by the inhalation of oropharyngeal secretions that are colonized by pathogenic bacteria. Slow onset/non-acute process with persistent fever and hypoxemia.
- **Risk factors for aspiration pneumonia:** dysphagia; degenerative neurologic diseases (e.g. dementia, post-stroke, Parkinson's disease, multiple sclerosis); anatomical abnormality or mechanical interference of upper gastrointestinal tract (e.g. enteral feeding, nasogastric tube, endotracheal intubation); esophageal disorders (e.g. strictures, vomiting + small bowel obstruction, achalasia); altered level of consciousness (e.g. acute alcohol or substance abuse, seizures, CNS depressants, etc.); and cardiac arrest

Most Common Organisms

- **Aspiration/Chemical Pneumonitis –** sterile process, no organisms involved.
- **Aspiration Pneumonia** - Usual pathogens (depending on clinical scenario): *S. pneumoniae, H. influenzae, S. aureus*, Enterobacteriaceae, *Pseudomonas aeruginosa* (nosocomial), oral anaerobes, Streptococcus spp. Role of anaerobes controversial and historically has been overemphasized.

Treatment Criteria and Considerations

Aspiration/Chemical Pneumonitis

Description

- Episode of macroaspiration is often witnessed and typically occurs in patients with decreased level of consciousness
- Characterized by a sudden onset of prominent dyspnea, tachycardia, hypoxemia, low-grade fever, and crackles or diffuse wheeze
- Symptoms may range from mild to severe and can develop within 2 to 5 hours
- Pulmonary infiltrates are apparent on x-ray

Management

⇨ Prophylactic antimicrobial therapy is **NOT** indicated
⇨ Corticosteroids do not have a proven benefit
⇨ Recommend supportive care with humidified oxygen and chest physio
⇨ Reassess patient in 24-48 hours – may consider antibiotic therapy if signs and symptoms lasting greater than 48 hours (i.e. fever, cough, leukocytosis), x-ray evidence of infiltrate AND risk factors (receiving gastric acid suppression or enteral feeds, has a small bowel obstruction or gastroparesis)

Rapid clinical improvement within 24 to 48 hours typically indicates lack of pneumonia – if antimicrobial therapy was initiated then consider discontinuing

Clinical Pearls

- Employ measures to reduce future aspiration episodes (encouraging quality oral care, elevate head of bed, minimize time in supine position and reassess medications associated with CNS depression; consider swallowing assessment)

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Aspiration Pneumonia

Description

- Most are indistinguishable from CAP and HAP
- Slow onset over several days after aspiration event
- Usually a clinical diagnosis in a patient with predisposing risk factors to aspiration, compatible radiographic evidence occurring in dependent lung segment and characteristic clinical history indicative of infection (e.g. fever, cough, tachypnea, dyspnea, purulent sputum etc.)
- Right lower lobe most commonly implicated in ambulatory patients.
- Posterior upper and superior lower lobes most commonly implicated in bed bound patients

Management

Community Acquired	If meets treatment criteria, refer to empiric treatment table in Health PEI Community Acquired Pneumonia guideline
Hospital Acquired	If meets treatment criteria, refer to empiric treatment table in Health PEI Hospital Acquired Pneumonia guideline

Clinical Pearls

- Most clinically important anaerobes are adequately covered by amoxicillin-clavulanate, piperacillin-tazobactam and meropenem
- Routine addition of anaerobic coverage is not recommended unless treating an empyema or lung abscess
- Atypical coverage is not required in aspiration pneumonia
- Sputum samples are unsuitable due to inevitable contamination by normal flora.
- Do not treat Candida spp found in sputum unless systemic candidiasis suspected (e.g. neutropenic, transplant patients, etc.)
- For immunocompromised patients, recommend consulting infectious disease

These guidelines are an adaptation of New Brunswick Anti-infective Stewardship Committee **Adult Chemical Pneumonitis & Aspiration Pneumonia**

References:

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This document is designed to aid Prince Edward Island practitioners in the appropriate use of antimicrobials.
These guidelines provide general recommendations and are not a substitute for clinical judgement or consultation with Infectious Disease experts.