Hospital-Acquired or Ventilator-Associated Pneumonia

Definition

Hospital-Acquired Pneumonia: Pneumonia where the onset of signs and symptoms occur 48 hours or greater after admission, excluding any infection that may have been incubating at the time of admission

Ventilator-Associated Pneumonia: Pneumonia where the onset of signs and symptoms occur 48 hours of endotracheal intubation

Common Pathogens

Streptococcus pneumoniae
Staphylocccus aureus
Haemophilus influenzae
Enteric gram-negative bacilli

Multi-Drug Resistant Organisms (MDRO) Risk Factors
Intravenous antibiotic use in previous 90 days, acute respiratory distress syndrome at time of VAP, prolonged ICU stay or mechanical ventilation

***Pseudomonas aeruginosa* Risk Factors**
Known colonization/recent infection with *P. aeruginosa*, bronchiectasis, neutropenia, or recent prolonged intravenous broad-spectrum antibiotics

Antibiotic Therapy

Before initiation of therapy, blood cultures (x2) and respiratory cultures (as available) should be obtained

	First Line Therapy	Alternative Therapy (If severe beta-lactam allergy)
No disease modifying risk factors		
Early Onset (less than 5 days)	**PO** Amoxicillin-clavulanate 875 mg q12h **IV** Ceftriaxone 1 g q24h	**PO/IV** Levofloxacin 750 mg q24h
Late Onset (5 or more days)	**IV** Ceftriaxone 1 g q24h	**PO/IV** Levofloxacin 750 mg q24h
MDRO Risk Factors		
Early Onset (less than 5 days)	**IV** Piperacillin-tazobactam 4.5 g q8h	**PO/IV** Levofloxacin 750 mg q24h
Late Onset (5 or more days)	**IV** Piperacillin-tazobactam 4.5 g q6h	**IV** Meropenem(R) 500 mg IV q6h
Pathogen-specific management		
Methicillin-resistant S. aureus (MRSA) suspected *(i.e. colonization AND one of: critically ill, necrotizing pneumonia or post-influenza)*	Add **IV** Vancomycin (see Osler dosing guide) **OR** **PO/IV** Linezolid(R) 600 mg BID	
P. aeruginosa suspected (see risk factors above)	**IV** Piperacillin-tazobactam 4.5 g q6h	

(**R**) – This antimicrobial agent is **restricted**; Refer to Osler's antimicrobial restriction policies for more information

Usual Duration of Therapy

7 days
If considering an extended duration of therapy, consult the Infectious Disease services or ASP

Clinical Considerations

- Atypical pathogens typically do not cause HAP/VAP and should not be empirically covered
- Respiratory fluoroquinolones should be avoided in patients with suspected Tuberculosis due to the potential to confound TB investigations