VASP Hospital-Acquired Pneumonia (HAP) and Ventilator-Associated Pneumonia (VAP) - Inpatient Mar

Your name or organization

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Inclusion Criteria:

- HAP/VAP is pneumonia that develops after ≥ 48 hours of hospitalization or ≥ 48 hours after endotracheal intubation.

Exclusion Criteria:

- For pneumonia that develops within 48 hours of hospital admission, see community-acquired pneumonia algorithm.

Last Updated: 4/3/24

VASP approval: 4/3/24

References

Procalcitonin (PCT)

• PCT ≤0.25 ng/mL OR ≥80% decrease from peak levelin a patient who has clinically improved supports antibiotic discontinuation.
• PCT should NOT be used to decide whether to start antibiotics.
• False negatives may occur early in infections; repeat PCT in 6-12 hours if high clinical suspicion for bacterial infection.
• Decisions regarding antibiotics should NOT be based on PCT alone; results should be interpreted in the context of the clinical scenario and likelihood of a bacterial infection.
• Antibiotics should NOT beextended solely based on a PCT level.
• False positives may occur in renal insufficiency, severe trauma, cardiac arrest or circulatory shock, major surgery, burns, postpartum women, pancreatitis, and after receipt of cytokine stimulating agents.

Additional Information

• Candida isolated in respiratory cultures is unlikely to represent true infection.
• Dosing recommendations can be found on the VASP website here.

Hospital-Acquired Pneumonia(HAP) and Ventilator-Associated Pneumonia (VAP)– Inpatient Management

This guidance document is meant to provide general recommendations and does not supersede clinical decision-making.

New clinical signs/symptoms: New fever, cough, dyspnea, increased or purulent secretions, leukocytosis, increasing oxygen requirement.
AND
Radiographic evidence: New or progressive infiltrate. Consider alternative diagnoses (pulmonary edema, pulmonary embolism, pneumonitis, etc.)

Does patient meet clinical signs/symptoms AND Radiographic evidence of pneumonia?

Yes

No

Do not start antibiotics and continue to monitor

Order the following tests

Unless currently being decolonized or decolonized within the past 7 days

- Adult Blood Cultures
- Respiratory Cultures
- MRSA nasal PCR (consider decolonization status)
- SARS-CoV-2/Influenza/RSV, if suspect viral infection. (RPP may be considered for immunocompromised patients)

Start antibiotics to cover MRSA and Pseudomonas aeruginosa

Anti-MRSA

- vancomycin consult

OR

- linezolid 600 mg Q12H PO or IV (if patient not tolerating orals)

PLUS

Anti-Pseudomonal

- piperacillin/tazobactam

OR

- cefepime 2 g IV Q8H

If history of ESBL organism in the last 90 days and clinically unstable, consider:

- meropenem 1 g IV Q8H
  - *Use of meropenem is restricted to Infectious Diseases approval*
  - Infectious Diseases Consult

Aspiration pneumonia does NOT typically require anaerobic coverage.
If empyema or lung abscess is present, consider:

- piperacillin/tazobactam

OR

- metronidazole 500 mg Q12H PO or IV (if patient not tolerating orals)

Nosocomial Legionella and other atypical organisms are exceedingly rare; **routine addition for atypical coverage is not recommended**.

MRSA nasal results?

Positive

Negative

Stop anti-MRSA coverage if clinically appropriate (high negative predictive value to rule out MRSA)

Evaluate culture results daily

Based on culture data, optimize antibiotics as able. Switching to orals if hemodynamically stable…IF MRSA nor Pseudomonas is isolated, very unlikely to be causative, consider de-escalation.

If meropenem was initiated for MDRO history but no MDRO is identified, de-escalate therapy.

Evaluate clinical status daily

Signs/symptoms of HAP/VAP are non-specific and may be due to other causes, (e.g. rapid improvement after diuresis, rapid resolution of hypoxia, or rapid resolution/improvement of radiographic findings within 24 hours less likely consistent with bacterial pneumonia)

Re-evaluate the patient daily to determine if clinical data supports the diagnosis of pneumonia.

Duration of Therapy

7 days for most patients; can consider shorter or longer duration based on clinical improvement.

Procalitonin can be used to shorten duration to less than 7 days.

Longer duration may be appropriate for patients with gram-positive bacteremia, empyema, lung abscess, infected pleural effusion, necrolizing pneumonia, or sever immunocompromising conditions.

If procalcitonin was sent initially and positive, repeat procalcitonin around Day 4 or 5, if normalized, may support shorter duration