

Appendix 25 - Hospital and Ventilater Acquired Pneumonia

Ventilator Associated Pneumonia (VAP) IDSA PROTOCOL
The prescriber should identify the following risk factors:
<ul style="list-style-type: none"> • Prior intravenous antibiotic use within 90 d (means higher risk of MRSA and Pseudomonas) • Septic shock at time of VAP • ARDS preceding VAP • Five or more days of hospitalization prior to the occurrence of VAP • Acute renal replacement therapy prior to VAP onset • Specific Factors require double antipseudomonal coverage if all of the above risk factors are not found (patients in units where >10% of gram-negative isolates are resistant to an agent being considered for monotherapy, and patients in an ICU where local antimicrobial susceptibility rates are not available) • The prescriber should select from the following recommended antibiotic combinations if any factor risk factor for VAP is identified:
STEP 1: (preferred options)
<ul style="list-style-type: none"> • Gram-Positive Antibiotics with MRSA Activity (Vancomycin or linezolid) + Fluoroquinolones (Ciprofloxacin or Levofloxacin) + Antipseudomonal penicillins (Piperacillin-tazobactam)
<ul style="list-style-type: none"> • Gram-Positive Antibiotics with MRSA Activity (Vancomycin or linezolid) + Fluoroquinolones (Ciprofloxacin or Levofloxacin) + Cephalosporins (Cefepime or Ceftazidime)
<ul style="list-style-type: none"> • Gram-Positive Antibiotics with MRSA Activity (Vancomycin or linezolid) + Fluoroquinolones (Ciprofloxacin or Levofloxacin) + Carbapenems (Imipenem or Meropenem)
<ul style="list-style-type: none"> • Gram-Positive Antibiotics with MRSA Activity (Vancomycin or linezolid) + Fluoroquinolones (Ciprofloxacin or Levofloxacin) + Monobactams (Aztreonam)
STEP 2 : (less preferred options)
<ul style="list-style-type: none"> • Gram-Positive Antibiotics with MRSA Activity (Vancomycin or linezolid) + Aminoglycosides (Amikacin or Gentamicin or Tobramycin) + Antipseudomonal penicillins (Piperacillin-tazobactam)
<ul style="list-style-type: none"> • Gram-Positive Antibiotics with MRSA Activity (Vancomycin or linezolid) + Aminoglycosides (Amikacin or Gentamicin or Tobramycin) + Cephalosporins (Cefepime or Ceftazidime)
<ul style="list-style-type: none"> • Gram-Positive Antibiotics with MRSA Activity (Vancomycin or linezolid) + Aminoglycosides (Amikacin or Gentamicin or Tobramycin) + Carbapenems (Imipenem or Meropenem)
<ul style="list-style-type: none"> • Gram-Positive Antibiotics with MRSA Activity (Vancomycin or linezolid) + Aminoglycosides (Amikacin or Gentamicin or Tobramycin) + Monobactams (Aztreonam)
STEP 3 : (last option reserved for settings where there is a high prevalence of multi drug resistance and local expertise in using this medication)
Gram-Positive Antibiotics with MRSA Activity (Vancomycin or linezolid) + Polymyxins (Colistin or Polymyxin B) + Antipseudomonal penicillins (Piperacillin-tazobactam)
Gram-Positive Antibiotics with MRSA Activity (Vancomycin or linezolid) + Polymyxins (Colistin or Polymyxin B) + Cephalosporins (Cefepime or Ceftazidime)
Gram-Positive Antibiotics with MRSA Activity (Vancomycin or linezolid) + Polymyxins (Colistin or Polymyxin B) + Carbapenems (Imipenem or Meropenem)
Gram-Positive Antibiotics with MRSA Activity (Vancomycin or linezolid) + Polymyxins (Colistin or Polymyxin B) + Monobactams (Aztreonam)



For hospital acquired pneumonia (HAP) IDSA PROTOCOL:

The prescriber should identify the following risk factors:

- Risk of Mortality: need for ventilatory support due to pneumonia and septic shock
- High risk factor for MRSA: Intravenous antibiotic treatment during the prior 90days, treatment in a unit where the prevalence of MRSA among S.aureus isolates is not known or is >20%.
- Factors increasing the likelihood of gram-negative infection were 2 antipseudomonal agents are recommended: Intravenous antibiotic treatment during the prior 90days and if patient has bronchiectasis or cystic fibrosis.

The prescriber should select antibiotics from the following options after considering antibiogram results:

• For patient with no risk of mortality or MRSA or gram-negative infection risk factor:

- select one of the following (Piperacillin-tazobactam or Cefepime or Levofloxacin or Imipenem or Meropenem)

• For patient with no risk of mortality or gram-negative infection risk factor but at risk for MRSA:

- select one of the following (Piperacillin-tazobactam or Cefepime or Ceftazidime or Levofloxacin or Ciprofloxacin or Imipenem or Meropenem or Aztreonam) + Gram-Positive Antibiotics with MRSA Activity (Vancomycin or linezolid)

For patient with risk of mortality or gram-negative infection risk factor and at risk for MRSA:

- Piperacillin-tazobactam + Fluoroquinolones (Ciprofloxacin or Levofloxacin) + Gram-Positive Antibiotics with MRSA Activity (Vancomycin or linezolid).
- Piperacillin-tazobactam + Aminoglycosides (Amikacin or Gentamicin or Tobramycin) + Gram-Positive Antibiotics with MRSA Activity (Vancomycin or linezolid).
- Cephalosporins (Cefepime or Ceftazidime) + Fluoroquinolones (Ciprofloxacin or Levofloxacin) + Gram-Positive Antibiotics with MRSA Activity (Vancomycin or linezolid).
- Cephalosporins (Cefepime or Ceftazidime) + Aminoglycosides (Amikacin or Gentamicin or Tobramycin) + Gram-Positive Antibiotics with MRSA Activity (Vancomycin or linezolid).
- Carbapenems (Imipenem or Meropenem) + Fluoroquinolones (Ciprofloxacin or Levofloxacin) + Gram-Positive Antibiotics with MRSA Activity (Vancomycin or linezolid).
- Carbapenems (Imipenem or Meropenem) + Aminoglycosides (Amikacin or Gentamicin or Tobramycin) + Gram-Positive Antibiotics with MRSA Activity (Vancomycin or linezolid).
- Least preferred option: Monobactams (Aztreonam) + (Piperacillin-tazobactam or Cefepime or Levofloxacin or Imipenem or Meropenem) + Gram-Positive Antibiotics with MRSA Activity (Vancomycin or linezolid)