Jefferson Regional Medical Center

Antibiotic Protocol for Empiric Therapy of Nosocomial Pneumonia:

Hospital Acquired Pneumonia (HAP), and Ventilator-Associated Pneumonia (VAP)

Note: This protocol should only be used on adult (age > 18 years) patients only.

RISK FACTORS FOR MULTIDRUG-RESISTANT PATHOGENS (MDROs)
MDR VAP
Prior IV antibiotic use within 90 days
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
MDR HAP
Prior IV antibiotic use within 90 days
MRSA HAP/VAP
Prior IV antibiotic use within 90 days
MDR Pseudomonas VAP/HAP
Prior IV antibiotic use within 90 days

EMPIRIC ANTIBIOTIC SELECTION Provide coverage for S. aureus (MSSA +/- MRSA), P. aeruginosa, and other gram negative bacilli in all empiric regimens		
PATHOGEN DIRECTED THERAPY	**ANTIBIOTIC OF CHOICE**	**NOTES**
MRSA-Directed/Gram Positive Therapy	Vancomycin **PLUS**	A loading dose may be needed. **Alternative agent**: Linezolid
Pseudomonas-Directed/Gram Negative Therapy	Piperacillin/Tazobactam (extended-infusion preferred) **OR**	Non-carbapenem antibiotic of choice according to JRMC Pseudomonas sensitivities
	Cefepime (2g q8h dosing, normal renal function) **OR**	**Indication**: If non-anaphylactic penicillin allergy. If aspiration suspected, add anaerobic coverage with metronidazole or clindamycin.
	Levofloxacin + tobramycin	**Indication**: If anaphylactic reaction to penicillin. Recommend addition of second agent if levofloxacin chosen for empiric therapy.
Third agent in high risk patients*	Tobramycin	See indications for addition of a third antibiotic below* **Alternative agent:** Levofloxacin

- **Directed treatment:** narrow to cover organism isolated
    - Pseudomonas*
        - If patient is in septic shock, high risk for MDRO, or a high mortality risk, utilize double-coverage for Pseudomonas. If not, single agent therapy is likely sufficient.
    - If MRSA nasal PCR is negative, consider discontinuing empiric MRSA coverage in patients with HAP/VAP
    - ESBL HAP/VAP
        - Carbapenem (meropenem or imipenem/cilastatin) preferred
    - Acinetobacter HAP/VAP
        - Carbapenems or ampicillin/sulbactam preferred
- **Duration of treatment:**
    - 7 days is the recommended duration for <u>most</u> patients
        - *(strong recommendation, moderate-quality evidence) – VAP*
        - *(strong recommendation, very low quality evidence) – HAP*
    - Longer treatment durations may be warranted for patients with serious underlying conditions or evidence of ongoing active infection
        - Especially in the case of MDRO, i.e. Pseudomonas
- Reference:
    - Kalil, Andre C., et al. "Management of adults with hospital-acquired and ventilator-associated pneumonia: 2016 clinical practice guidelines by the Infectious Diseases Society of America and the American Thoracic Society." Clinical Infectious Diseases 63.5 (2016): e61-e111.