Physicians: Review new community-acquired pneumonia guidelines for 2020

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New guidelines have been published regarding the diagnosis and treatment of adults with community-acquired pneumonia [by the American Thoracic Society and Infectious Diseases Society of America](https://www.atsjournals.org/doi/full/10.1164/rccm.201908-1581ST). The updated guidelines are an attempt to better identify those persons at risk for pneumonias due to multiple drug resistant bacteria such as gram-negative rods (i.e. pseudomonas) and methicillin-resistant staphylococcus aureus (MRSA).

**Guideline changes**

These guidelines state that healthcare-associated pneumonia is no longer a risk factor for multiple drug resistant bacteria.

Therefore, based on the updated guidelines, admissions from skilled nursing facilities, nursing homes, dialysis units, home health receiving wound care, etc. are not by themselves sufficient criteria to clinically support a diagnosis of gram-negative pneumonia in the absence of bacteriological confirmation of a specific organism.

This updated guideline will better identify high-risk patients for these pneumonias and therefore permit a more focused use of potent antibiotics

Under the new guidelines, increased emphasis will be placed on the review of previous encounters prior to the current admission to delineate if there has been hospitalization and parenteral antibiotic usage within the past 90 days. Additionally, previous infection with gram-negative rods or MRSA in the last year should also be scrutinized

Based on the above, criteria to clinically validate a diagnosis of gram-negative and MRSA pneumonia is outlined below.

**Gram-negative pneumonia**

Risk factors for gram-negative bacterial pneumonia must contain one of the following:

* Known pseudomonas colonization or infection in the prior 12 months
* Detection of gram-negative rods on a quality sputum gram stain
* Patient hospitalized **and** received parenteral antibiotics, whether during the hospitalization or not, within the last 90 days
* Structural lung disease such as:
	+ Bronchiectasis
	+ Cystic fibrosis
	+ Chronic lung disease
	+ Major airway obstruction (post-obstructive pneumonia)
* Immunosuppression/immunocompromised such as:
	+ HIV with reduced CD4 count
	+ Autoimmune disorders
	+ Cancer (advanced stage, visceral, hematological, or metastatic)
	+ Myeloproliferative and myelodysplastic disorders
	+ Drug induced neutropenia
	+ Immunosuppressive drugs (chronic prednisone use, chemotherapy)
	+ Solid organ or bone marrow transplant recipients on chronic immunosuppression
	+ Diabetes
	+ Chronic malnutrition

 Chronic kidney disease

* + Cirrhosis
	+ Alcoholism
	+ Asplenia
	+ Congestive heart failure

One of the previous risk factors must be present in conjunction with appropriate antibiotic coverage. This means at least one of the following antibiotics must be taken for a minimum of five days (unless cultures allow for deescalation of treatment):

* Piperacillin-tazobactam
* Cefepime
* Ceftazidime
* Aztreonam
* Imipenem/meropenem
* Aminoglycosides (i.e. Tobramycin)
* Quinolones (dependent on clinical scenario)

Note that deescalation of treatment to antibiotics known to be used for empiric coverage of gram-negative pneumonias (Augmentin, Vantin, etc.) does not preclude a diagnosis of gram-negative pneumonia unless cultures identify an alternative causative organism.

**MRSA pneumonia**

Risk factors for MRSA pneumoniamust contain one of the following:

* Known MRSA colonization
* MRSA in a respiratory culture in the prior year
* IV antibiotics and hospitalization in the prior 90 days
* Cavitary infiltrate or necrosis
* antibiotics and hospitalization in the prior 90 days
* Gross hemoptysis (not just blood-streaked)
* Concurrent influenza
* Neutropenia
* Erythematous rash
* Skin pustules
* Young previously healthy patient with severe pneumonia
* Severe pneumonia during summer months

One of the previous risk factors must be present in conjunction with appropriate antibiotic coverage. This means at least one of the following antibiotics must be taken for a minimum of five days (unless cultures allow for deescalation of treatment):

* Vancomycin
* Linezolid (zyvox)
* Telavancin (vibativ)

**References**:

* [Diagnosis and Treatment of Adults with Community Acquired Pneumonia: An Official Clinical Practice Guideline of the American Thoracic Society and Infectious Diseases Society of America.](https://www.atsjournals.org/doi/full/10.1164/rccm.201908-1581ST)
* *Harrison’s Principles of Internal Medicine, 20th Edition* by J. Larry Jameson, Anthony S. Fauci, Dennis L. Kasper, Stephen L. Hauser, Dan L. Longo, Joseph Loscalzo

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