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Session: 235. Antibiotic Stewardship: Diagnostics and Diagnostic Stewardship
Saturday, October 5, 2019: 12:15 PM

Background. Methicillin-resistant *Staphylococcus aureus* (MRSA), when implicated in respiratory tract infections, can be associated with significant morbidity and mortality. The prevalence of severe MRSA pneumonia may be as high as 10%; however, recent evidence suggests that MRSA is much less prevalent as a cause of community-acquired pneumonia (CAP) among community-dwelling patients and may be as low as 0.1%. Nonspecific features of pneumonia in non-ICU patients (viral co-infection, multi-lobar infiltrates) often lead clinicians to cautiously initiate empiric anti-MRSA therapy. Recommendations of when to safely de-escalate empiric treatment prior to known respiratory cultures are not established. To decrease anti-MRSA therapy in non-ICU pneumonia patients with a low probability of MRSA pneumonia, we employed a nasal screening paired with antimicrobial stewardship intervention.

Methods. A retrospective, single-center, pre-post interventional study was conducted at Northwestern Memorial Hospital (NMH), in Chicago, IL, to assess the duration of empiric vancomycin for suspected MRSA pneumonia in non-ICU patients before (January 2019) and after (March 2019) the implementation of a rapid MRSA nasal PCR test. During the post-implementation period, an NMH Antimicrobial Stewardship (AS) member identified and assessed the daily (M-F) use of empiric vancomycin for pneumonia in non-ICU patients. When vancomycin use criteria were not met, the AS pharmacist requested the team order a BD MRSA Nasal PCR test (NPV: 97.2%) to classify patients as either possible MRSA pneumonia or unlikely MRSA pneumonia. Results of a negative MRSA Nasal PCR with an ongoing clinical disposition not suggestive of MRSA pneumonia prompted the AS pharmacist to recommend de-escalation of vancomycin.

Results. See table.

Conclusion. The use of a rapid MRSA nasal PCR test with active antimicrobial stewardship intervention significantly reduced the duration of empiric vancomycin in hospitalized non-ICU patients with suspected MRSA pneumonia.

	Pre-intervention (January 2019)	Post-intervention (March 2019)	Difference mean days	*P*-value
N	36	34		
Duration of empiric vancomycin mean [SD], days	3.4 [3.4]	1.8 [1.0]	-1.6 (95% CI: -2.8 to -0.40)	0.0098

Disclosures. **All authors:** No reported disclosures.

2011. Reaction of Clinicians to Positive Respiratory Viral Panels in Non-critically Ill Patients Without Bacterial Infection

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Session: 235. Antibiotic Stewardship: Diagnostics and Diagnostic Stewardship
Saturday, October 5, 2019: 12:15 PM

Background. Respiratory viral panels (RVPs) can detect multiple viral pathogens and give clinicians diagnostic confidence to discontinue antibiotics. However, relatively little is known about how these tests influence antibiotic prescribing in hospital settings.

Methods. This was a 26-month retrospective chart review of patients with positive RVPs. Hospitalized adults receiving antibiotics at the time of the RVP were included. Exclusion criteria were: ICU care, solid-organ transplantation (SOT), positive RVP for influenza, positive bacterial cultures, and antibiotic administration for bacterial infection (e.g., cellulitis). A multivariate linear regression model was created to investigate associations with longer antibiotic use after a positive RVP.

Results. 1,346 patients were screened and 242 met inclusion criteria. Primary reasons for exclusion were SOT, ICU, and influenza diagnosis. Patients were a median age of 60.5 years [IQR 51,70] and 35.5% were men. The median length of stay (LOS) was 4 days [IQR 3.6]. 233 patients (6.3%) had chest radiology performed, of which 71 (30.4%) had possible pneumonia noted. 50 (20.7%) were immunocompromised (IC). 199 (82.2%) had a history of pulmonary disease, most commonly COPD. Rhinovirus was isolated in 156 patients (64.5%), followed by metapneumovirus (35, 14.9%) and RSV (32, 13.3%). Antibiotics were given for a median total of 3 days [IQR 3.6]; they were discontinued within 24 hours of the RVP result in 107 patients (44.2%).

Conclusion. In this population of patients with viral infection and no discernable bacterial infection, 44.2% of patients had antibiotics discontinued within 24 hours of RVP results. On multivariate linear regression analysis, younger age, longer LOS, and IC status were associated with longer antibiotic duration after a positive RVP. A comparison with patients with negative RVP results could reveal if the test prompted discontinuation.

Table. Factors evaluated for antibiotic duration after RVP result

		Univariate analysis		Multivariate analysis	
		Duration of antibiotics after RVP reported (days), median [IQR]	Wilcoxon Rank Sum p-value	Estimate	p-value
Gender	Male	1 [0, 3]	0.134	-0.058	0.633
	Female	1 [0, 2]			
IC	IC	1 [0, 2.5]	0.210	0.230	0.038
	Not IC	1 [0, 3]			
Any pulmonary condition	Yes	1 [0, 3]	0.221	0.254	0.209
	No	1 [0, 3]			
Asthma	Yes	1 [0, 2.25]	0.168	0.030	0.834
	No	1 [0, 3]			
COPD	Yes	1 [0, 2.25]	0.785	-0.034	0.813
	No	1 [0, 3]			
Heart failure	Yes	0 [0, 2.5]	0.096	0.197	0.175
	No	1 [0, 3]			
Positive CXR	Yes	1 [0, 3]	0.211	-0.134	0.295
	No	1 [0, 3]			
Age	NA	NA	NA	-0.017	0.038
LOS	NA	NA	NA	0.355	<0.001

Disclosures. **All authors:** No reported disclosures.

2012. Trends in Microbiological Culture Collection Across Veterans Affairs Medical Centers and Community Living Centers, 2010 to 2017

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Session: 235. Antibiotic Stewardship: Diagnostics and Diagnostic Stewardship
Saturday, October 5, 2019: 12:15 PM

Background. Microbiological cultures are critical in the diagnosis of infection, identification of pathogenic organisms, and tailoring antibiotic use. However, unnecessary collection of cultures, particularly from the urine, may lead to overuse of antibiotics. There have been no national studies to evaluate trends in the collection of cultures in acute and long-term care settings. Here we describe changes in the collection of cultures nationally across Veterans Affairs medical centers (VAMCs) and Community Living Centers (CLCs).

Methods. All positive and negative cultures collected from 2010 to 2017 among Veterans admitted to VAMCs or CLCs were included. Cultures were categorized by specimen source (urine, blood, skin and soft tissue, or lung). *Joinpoint* software was used for regression analyses of trends over time and to estimate annual average percent changes with 95% confidence intervals (CI).

Results. A total of 5,089,640 cultures from 158 VAMCS and 342,850 cultures from 146 CLCs were identified. The number of cultures collected for all culture types in VAMCs and CLCs decreased significantly. The number of cultures collected per admission decreased significantly by 5.5% annually among VAMCs (95% CI −7.0 to −4.0%) and by 8.4% annually among CLCs (95% CI −10.1 to −6.6%). The proportion of positive cultures decreased 1.6% annually among VAMCs (95% CI −2.3 to −0.9%) and remained stable among CLCs (-0.4% annually, 95% CI, −1.1 to 0.4%). The most common culture source among VAMCs was blood (36.2%), followed by urine (31.8%), and among CLCs was urine (56.9%), followed by blood (16.0%). Urine cultures decreased by 4.5% annually among VAMCs (95% CI −5.4 to −3.6%) and 7.0% annually among CLCs (95% CI −7.6 to −6.4%).

Conclusion. Our study demonstrates a significant reduction in the number of cultures collected over time. Positive cultures decreased significantly in VAMCs, possibly indicating fewer culture-positive infections.In both VAMCs and CLCs, decreases in cultures taken may represent an important reduction in the collection of unnecessary cultures nationally driven by increased awareness about over-testing and over-treatment of presumed infection, particularly urinary tract infections.

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2013. Blood Culture Contamination in the Emergency Department: A Risk Factor Analysis

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Background. Blood cultures (BCx) guide treatment for hospitalized patients, yet contaminated BCx lead to clinical uncertainty, impacting care. The Clinical and