Methods. From April 14, 2016 to March 13, 2017, blood cultures from unique patients in the emergency department or medical intensive care units at Barnes-Jewish Hospital signaling positive and Gram-stain positive for GNB or yeast were eligible for inclusion. Standard-of-care (SOC) diagnostics were conducted in parallel with AXDX, though AXDX could be delayed up to 8 hours depending on research technician availability. Differences in time to ID and AST between SOC and AXDX were determined. Clinical outcomes included appropriateness of initial empiric antimicrobial therapy, potential for early antimicrobial de-escalation with AXDX, and mortality.

Results. Of 341 screened blood cultures, 123 met inclusion criteria; 101 had organisms that were on-panel for AXDX, 88 GNB and 13 *C. glabrata* or *C. albicans*. For GNB, mean time from blood culture positivity to ID and AST using SOC was 19.8 and 53.5 hours, respectively, and 1.4 and 6.7 hours using AXDX (from time AXDX started). For *Candida* spp., mean time to ID was 33.1 hours for SOC, 1.4 hours for AXDX. Antimicrobial de-escalation was possible based on AXDX testing in 52.9% of patients with GNB infections. A total of 27 (27.3%) patients received IIAT. In-hospital mortality was higher (48.1%) in the IIAT group than in those receiving appropriate initial antibiotics (12.5%), $P < 0.001$. AXDX could have improved antimicrobial therapy in 89.8% of GNB and 92.3% of *Candida* spp. cases.

Conclusion. The Accelerate Pheno™ system is a novel fast diagnostic that significantly reduces the time to ID and AST for GNB and ID of *Candida* spp. bloodstream infections, with the potential to impact clinical outcomes. Prospective clinical trials are needed to evaluate the impact of this new system on clinical outcomes and antimicrobial stewardship.

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2120. Validation of an Antimicrobial Stewardship Driven Verigene® Blood-Culture Gram-Negative Treatment Algorithm to Improve Appropriateness of Antibiotics

Kathryn Schlaffer, MD[1]; Emily Heil, PharmD, BCPS[2]; Surbhi Leekha, MBBS, MPH[3]; J. Kristie Johnson, PhD[4] and Kimberly Claeys, PharmD[5]; [1]Internal Medicine, University of Maryland Medical Center, Baltimore, MD, [2]Pharmacy Practice and Science, University of Maryland School of Pharmacy, Baltimore, MD, [3]Epidemiology and Public Health, University of Maryland School of Medicine, Baltimore, Maryland, [4]University of Maryland School of Medicine, Baltimore, Maryland, [5]BCPS, University of Maryland School of Pharmacy, Baltimore, Maryland

Session: 240. Stewardship: Impact of Diagnostics
Saturday, October 7, 2017: 12:30 PM

Background. Gram-negative bacteremia (GNB) is associated with significant morbidity and mortality, emphasizing the need for timely, effective antimicrobial therapy. In comparison to conventional diagnostic methods, Verigene® Blood-Culture Gram-Negative (VBC-GN) is a microarray rapid diagnostic test that identifies eight target GN organisms and six genetic resistance determinants. This study examined the potential clinical impact of VBC-GN coupled with a proposed antimicrobial stewardship (AMS)-derived treatment algorithm to guide timely, appropriate antimicrobial therapy in GNB.

Methods. Retrospective, single-center, study of adult patients (≥ 18 years) with GNB at University of Maryland Medical Center (UMMC) from September 2015 – May 2016. Patient clinical characteristics, co-morbidities, and antimicrobials administered were collected. Appropriateness of antimicrobial therapy was by in vitro susceptibility. Appropriateness of actual empiric antimicrobials received as standard care were compared with theoretical antimicrobials as guided by the UMMC AMS treatment algorithm. Two investigators (KCC and ELH) independently evaluated appropriateness of empiric and algorithm antimicrobial recommendations.

Results. 188 patients (median age 57.0 (IQR 46.5 – 65.0) years) with GNB were included and 143 (76.1%) were positive for target GN organisms. Eight (4.3%) cases were GN polymicrobial, 8 (4.3%) were CTX-M positive. E. coli was the most common target GN organism (30.3%), and genitourinary was the most common source (29.3%). There was a good level of agreement between reviewers regarding appropriateness of empiric therapy (Kappa = 0.735) and algorithm recommendations (Kappa = 0.855). Overall, the proposed algorithm would have resulted in 88.4% of cases receiving appropriate antimicrobial therapy vs 78.1% actual empiric antimicrobials (P = 0.014). The AMS treatment algorithm would have resulted in 14.4% appropriate de-escalation, 4.8% inappropriate de-escalation, 5.3% appropriate escalation, and 16.0% unnecessary escalation.

Conclusion. Proposed antibiotics by AMS-derived treatment algorithm applied in conjunction with rapid diagnostic testing would result in a significantly higher proportion of patients receiving appropriate antimicrobial therapy vs. standard care.

Disclosures. **J. K. Johnson**, Nanosphere: Grant Investigator, Grant recipient

2121. Rapid Identification of Gram-Negative Bacteremia and Impact on Anti-Pseudomonal Antibiotic Consumption in Combination with Antibiotic Stewardship at a Community-Based Hospital System

Maggie Box, PharmD, BCPS, AQ-ID[1]; Jennifer Lee, PharmD[2]; Kristine Ortwine, MS, MPH[3]; Caitlin Richardson, PharmD, BCPS[4]; Eva Sullivan, PharmD[2]; Samantha Wong, PharmD[1] and Scripps Antimicrobial Stewardship Program; [1]Scripps Memorial Hospital La Jolla, La Jolla, California, [2]Scripps Mercy Hospital, San Diego, California, [3]Scripps Healthcare, San Diego, California, [4]Scripps Memorial Hospital Encinitas, Encinitas, California

Session: 240. Stewardship: Impact of Diagnostics
Saturday, October 7, 2017: 12:30 PM

Background. Rapid diagnostics for blood cultures have shown to decrease unnecessary antibiotics; however, this has mostly been studied in gram-positive organisms. The Verigene Gram-Negative Blood Culture Test (BC-GN) identifies eight bacteria at species/genus level and six resistance genes, detected 2 hours from a positive blood culture. By identifying the gram-negative (GN) pathogen earlier compared with traditional methodology, there is the potential to decrease broad spectrum antibiotic utilization. The purpose of this study was to determine the impact of Verigene BC-GN with antibiotic stewardship on anti-pseudomonal (AP) antibiotic consumption in GN bacteremia among pathogens when AP therapy is not needed. Based on local susceptibility data, this included *Escherichia coli, Klebsiella pneumoniae, Klebsiella oxytoca,* and *Proteus* spp.

Methods. This multi-center, pre-post quasi-experimental study was conducted at the five hospitals that compose Scripps Healthcare. Verigene BC-GN results were communicated to pharmacists in real-time, who then notified physicians for antibiotic evaluation. Education was provided to pharmacists and physicians regarding implementation, and antibiotic selection recommendations were chosen based on site specific antibiogram data. A retrospective chart review was performed one year prior and five months post-implementation of Verigene BC-GN. Patients > 18 years old with bacteremia caused by *E. coli, K. pneumoniae, K. oxytoca,* or *Proteus* spp. within 48 hours of admission were included. The primary endpoint was AP vs. non-AP antibiotic days of therapy per day admitted (DOT/DA), within the first five days of admission. Secondary endpoints included hospital and ICU length of stay (LOS) and mortality.

Results. AP antibiotic consumption significantly decreased after implementation of Verigene BC-GN (0.45 vs. 0.32 DOT/DA, $P < 0.001$) while non-AP antibiotic consumption significantly increased (0.61 vs. 0.75 DOT/DA, $P < 0.0001$). Overall LOS was 7.0 vs. 6.2 days ($P = 0.12$) and in-house mortality was 7.0% and 4.3% ($P = 0.18$) pre and post-implementation, respectively.

Conclusion. Verigene BC-GN, with antibiotic stewardship, successfully demonstrated a shift in antibiotic utilization away from broad-spectrum AP antibiotics, in infections where *Pseudomonas* coverage is not necessary.

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

2122. Rapid Multiplex Gastrointestinal Pathogen Panel Testing Improves Antibiotic Stewardship in Patients with Suspected Infectious Diarrhea Compared with Conventional Methods

Norman Beatty, MD[1]; David Nix, PharmD[2]; Jessica August, MD[1]; Roberto Swazo, MD[1]; Kyle Mckeown, MPH[3]; Mohannad Alshibani, PharmD[2,4]; Wanda Petty, BS[5]; Kathryn Matthias, PharmD[2] and Mayar Al Mohajer, MD, MBA, CAQ, FACP[6]; [1]Internal Medicine, University of Arizona College of Medicine at South Campus, Tucson, Arizona, [2]Department of Pharmacy Practice and Science, University of Arizona College of Pharmacy, Tucson, Arizona, [3]University of Arizona College of Medicine, Tucson, Arizona, [4]College of Pharmacy, King Abdulaziz University, Jeddah, Saudi Arabia, [5]Department of Pathology, Banner University Medical Center, Tucson, Arizona, [6]Department of Medicine, Division of Infectious Diseases, Baylor College of Medicine, Houston, Texas

Session: 240. Stewardship: Impact of Diagnostics
Saturday, October 7, 2017: 12:30 PM

Background. The BioFire FilmArray™ Gastrointestinal (GI) Panel is a 1 hour multiplex real-time PCR test that can detect the presence of 22 GI pathogens (viral, bacterial, and parasitic) known to cause infectious diarrhea. Our tertiary-care academic medical center implemented the GI Panel for all cases of suspected infectious diarrhea replacing the previous conventional testing once utilized to detect GI pathogens.

Methods. The aim of this IRB approved, retrospective investigation was to determine the utility of the GI panel testing vs. the conventional testing to guide patient management. Cases were randomly selected, stratified by age group and result (specific pathogens or negative result) in the pre-implementation period ($n = 119$ of 1550 samples) from May 2014 through April 2015 and in the post-implementation period ($n = 333$ of 1117 samples) from May 2015 through April 2016.

Results. The rate of a positive test for any stool pathogen per patient was 34.2% ($n = 342$ of 999) for the GI panel and 11.6% ($n = 162$ of 1391) for conventional testing, $P = <0.0001$. Median time to test result from collection was 3.3 hours for the GI panel vs 45.4 hours for culture ($P < 0.0001$). Among patients started on antibiotics prior to result, discontinuation rate was 33% ($n = 30/90$) after GI panel results vs 5.4% ($n = 2/37$) after stool culture results, $P = 0.0014$. Antibiotics were initiated or adjusted after the result in 28.5% of patients (95/333) in the GI panel cohort compared with 60.5% (72/119) in the culture cohort; however, this was influenced by the method for selecting cases and the higher yield of viral pathogens in the GI Panel cohort. Mean time to antibiotic adjustment was 2.1 hours with the GI panel vs 22.0 hours in the culture cohort ($P = 0.0155$). Appropriateness of antibiotic use, adjudicated after the test result became available was significantly higher in the GI panel group (91%), compared with the culture group (81%), $P < 0.0039$.

Conclusion. After implementation of a rapid multiplex GI pathogen panel to evaluate stool samples from patients with suspected infectious diarrhea, our institution saw benefits in antibiotic stewardship, including: higher diagnostic yield, faster results, higher rates of antibiotic discontinuation, shorter time to antibiotic adjustment and a lower rate of inappropriate antibiotic treatment.

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

2123. Implementation of Matrix-Assisted Laser Desorption/Ionization Time-of-Flight (MALDI-TOF) and Antimicrobial Stewardship Intervention at an Academic Medical Center

Sarah Elhalis, PharmD[1]; John Macko, PharmD, MBA[1]; Heather Byrd, MLS (ASCP) CM[2]; Joan Duggan, MD, FIDSA, FACP[3]; Claudiu Georgescu, MD[3] and Kelli Cole,