200. Prospective Evaluation of the GenMark Dx ePlex® Blood Culture Identification Gram Positive Panel

Jeremy Meeder, BS[1]; Derek Moates, BS, MS[1]; Hannah Pierce, BS, MS[1]; Jamie Hutchinson, BS[1]; Cameron White, MD, MPH[1]; Pia Cumagun, MD[1]; Rachael A. Lee, MD [1]; Todd P. McCarty, MD[2]; Sixto M. Leal, Jr., MD, PhD[1]; [1]University of Alabama at Birmingham, Birmingham, Alabama; [2]University of Alabama at Birmingham; Birmingham VA Medical Center, Birmingham, Alabama

Session: P-10. Bacteremia

Background. The ePlex BCID Gram-Positive (GP) panel utilizes electrowetting technology to detect the most common causes of GP bacteremia (20 targets) and 4 antimicrobial resistance genes in positive blood culture bottles. Rapid detection of intrinsic vancomycin resistance and acquired resistance genes (*mecA, mecC, vanA, vanB*) enables early optimization of antimicrobial therapy whereas early detection of common contaminants decreases unnecessary antibiotic utilization and hospitalizations.

Methods. In this prospective study, we evaluated the performance of the BCID-GP panel compared to traditional standard of care culture and susceptibility testing with organism identification using the BioMerieux Vitek MS Matrix Assisted Laser Desorption Ionization (MALDI) Time of Flight mass spectrometry. Samples submitted for standard of care testing in Biomerieux BacT/Alert resin FA/FN blood culture bottles on the BacT/Alert VIRTUO automated blood culture system with GP bacteria on direct exam (n=100) were included.

Results. All GP bacteria were represented on the BCID-GP panel, most tests 97/100 (97%) yielded valid results, 53 common skin contaminants (50 coagulase negative staphylococci (CNS), 2 *Bacillus*, 1 *Corynebacterium*) were identified, and 7/7 coinfections with Gram negative (GN) bacteria were detected by the Pan GN target and identified by the BCID-GN panel. Discordant analyses revealed a positive percent agreement (PPA) of 96/97 (99%) with 1 false negative CNS and a negative percent agreement (NPA) of 92/97 (94.8%) with 5 false positives for either *S. epidermidis* or *Corynebacterium*. Detection of *vanA* yielded a PPA of 4/4 and NPA of 9/9. *mecA* gene detection exhibited a PPA of 14/14 and NPA of 14/14 for *S. aureus* and a PPA of 31/32 (97%) and NPA of 16/16 for coagulase negative staphylococci with 1 false negative methicillin resistant *S. epidermidis*.

Conclusion. Detection of acquired vancomycin resistance (n=4) and absence of *mecA* gene detection in *Staphylococcus* species (n=30) represent opportunities for early optimization of antimicrobial therapy in 34/100 (34%) of samples. The BCID-GP panel provides rapid accurate detection of resistant isolates and common contaminants enabling high quality data driven optimization of antimicrobial therapy.

Disclosures. **Todd P. McCarty, MD**, **Cidara** (Grant/Research Support)**GenMark** (Grant/Research Support, Other Financial or Material Support, Honoraria for Research Presentation)**T2 Biosystems** (Consultant) **Sixto M. Leal, Jr., MD, PhD**, **Abnova** (Grant/Research Support)**AltImmune** (Grant/Research Support)**Amplyx Pharmaceuticals** (Grant/Research Support)**Astellas Pharmaceuticals** (Grant/Research Support)**CNINE Dx** (Grant/Research Support)**GenMark Diagnostics** (Grant/Research Support, Other Financial or Material Support, Honoraria-Research Presentation)**IHMA** (Grant/Research Support)**IMMY Dx** (Grant/Research Support)**JMI/Sentry** (Grant/Research Support)**mFluiDx Dx** (Grant/Research Support)**SpeeDx Dx** (Grant/Research Support)**Tetraphase Pharmaceuticals** (Grant/Research Support)

201. Comparison of Bloodstream Infections Between Hospitalized Patients with and without COVID-19 Infection During the First Wave of the COVID-19 Pandemic in a Community Hospital in South Bronx: An Observational Study

Afsheen Afzal, MD[1]; Edgar Gomez, Md[1]; Victor Perez Guttierrez, MD[1]; Aye Myat Mon, MD[1]; Carolina Moreira Sarmiento, MD[1]; Amna Khalid, MD[1]; svetlana Polishchuk, MD[1]; Mohannad Al-Khateeb Al-Khateeb, MD[1]; Mubarak Yusuf, MD[1]; Boyana Yankulova, MD[1]; Yinelka Silverio De Castro, MD[1]; Anjana Pillai, MD[1]; Usha Venugopal, MD[1]; Addi Feinstein, MD[1]; Alexander LaFortune, MD[1]; Daniel Sittler, MD[1]; Karen Hennessey, MD[1]; Vidya Menon, MD[1]; [1]Lincoln Medical Center, New York, New York

Session: P-10. Bacteremia

Background. Comparative data on bloodstream infections (BSI) in hospitalized patients with and without SARS-CoV2 positive test is lacking.

Methods. A retrospective observational study comparing (BSI) with and without COVID-19 infection was performed was performed from Jan1- May 1, 2020. Patient demographics, clinical microbiological characteristics of infections, therapeutic interventions and outcomes was compared between the two groups.

Results. Of 155 patients with BSI, 104 were SARS-CoV2 PCR negative (N) while 51 were positive (Table 1). Majority of SARS-CoV2 positives (P) had ARDS (58.8%), required mechanical ventilation (73%), inotropic support (55%), therapeutic anticoagulation (28%), proning (35%), Rectal tube (43%), Tocilizumab (18%), and steroids (43%) (Table 2). BSI was higher in N with HIV (16.3% vs 3.9% p=0.027). Duration of antibiotic therapy (DOT) prior to BSI was significantly longer in P (15 days vs. 5 days, p < 0.0001) (table 2). In-hospital mortality was significantly higher among P with BSI (49% vs. 21% p < 0.0001). 185 BSI events were observed during the study period with 117 in N patients and 68 in P. Primary BSI was predominant (76%) in N while secondary BSI (65%) was common in P of which 50% were CLABSI. Median time from admission to positive culture was 0.86 days in N compared to 12.4 in P (p = 0.001). Majority of BSI in P were monomicrobial (88%) and hospital acquired (71%) when compared to N (p< 0.001). *Enterococcus spp* (28%), *Candida spp*(12%), MRSA (10%) and *E.coli* (10%) were predominant microbes in P compared to Streptococcus grp (16%), MSSA (14%), MRSA (13%) and *E.coli* (12%) in N (figure 1). Mortality from BSI was associated with COVID-19 infection (OR 2.403, p = 0.038), DM (OR 2.335, p = 0.032), Charlson comorbidity index >3 (OR 1.236, p = 0.004), and mechanical ventilation (OR 11.398, p < 0.001) on multivariate analysis.

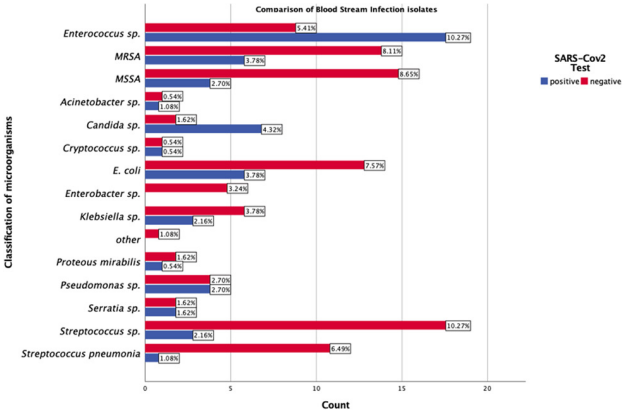
Table 1
Baseline characteristics & Demographics of COVID Negative vs. COVID Positive patients with BSIs

	Overall n=155	COVID Negative n=104	COVID Positive n=51	p-value
Baseline characteristics				
Age				0.426
Median, IQR	60 (49 – 69)	58.50 (48 – 67)	64 (54 – 71)	0.026
<40 years old	16 (10.3%)	11 (10.6%)	5 (9.8%)	
41-59 years old	59 (38.1%)	44 (42.3%)	15 (29.4%)	
>60 years old	80 (51.6%)	49 (47.1%)	31 (60.7%)	
Gender				0.135
Female, No (%)	71 (45.8%)	52 (50%)	19 (37.3%)	
Male, No (%)	84 (54.2%)	52 (50%)	32 (62.7%)	
Race				0.091
Hispanic	88 (56.8%)	53 (51%)	35 (68.6%)	
Black	38 (24.5%)	26 (25%)	12 (23.5%)	
White	3 (1.9%)	2 (1.9%)	1 (2%)	
Asian	3 (1.9%)	2 (1.9%)	1 (2%)	
Others	23 (14.8%)	21 (20.2%)	2 (3.9%)	
Body mass index				0.138
Normal	59 (38.1%)	45 (43.3%)	14 (27.5%)	
Overweight	35 (22.6%)	23 (22.1%)	12 (23.5%)	
Obese	44 (28.4%)	24 (23.1%)	20 (39.2%)	
Underweight	17 (11%)	12 (11.5%)	5 (9.8%)	
Comorbidities				
Charlson Comorbidity Score (CCS)	3 (2 – 6)	4 (2 – 6)	3 (2 – 5)	0.095
Hypertension	93 (60%)	58 (55.8%)	35 (68.6%)	0.125
Diabetes Mellitus	71 (45.8%)	44 (42.3%)	27 (52.9%)	0.212
Asthma/Chronic obstructive pulmonary disease	33 (21.3%)	24 (23.1%)	9 (17.6%)	0.438
SLE/RA	6 (3.9%)	6 (5.8%)	0	0.080
CKD/ESRD	22 (14.2%)	16 (15.4%)	6 (11.8%)	0.544
Cirrhosis	6 (3.9%)	6 (5.8%)	0	0.080
Dementia	7 (4.5%)	5 (4.8%)	2 (3.9%)	0.803
Previous history of cancer	15 (9.7%)	14 (13.5%)	1 (2%)	0.023
HIV	19 (12.3%)	17 (16.3%)	2 (3.9%)	0.027
Smoking	48 (31%)	41 (39.4%)	7 (13.7%)	0.001

Table 2. Treatment/Interventions in COVID Negative vs. COVID positive patients with BSIs

	Overall n=155	COVID Negative n=104	COVID Positive n=51	p-value
Length of Stay (days)	14 (5 – 29)	9 (4 – 21.75)	20 (10 – 36)	0.001
Days to Positive Culture from Admission	1.4 (0.6 – 12.4)	0.86 (0.53 – 2.89)	12.4 (1.30 – 21.75)	0.001
ARDS on admission	42 (27.1%)	12 (11.5%)	30 (58.8%)	0.000
Mechanical Ventilation during hospitalization	71 (45.8%)	34 (32.7%)	37 (72.5%)	0.000
Days of Mechanical Ventilation	0 (0 – 12)	0 (0 -3)	14 (0 – 30)	0.000
Pressor Use during hospitalization	59 (38.1%)	31 (29.8%)	28 (54.9%)	0.003
Days of Pressors	6 (3 – 13)	4 (1 – 8)	9.5 (5 – 16.75)	0.002
Anticoagulation (therapeutic)	27 (17.4%)	13 (12.5%)	14 (27.5%)	0.021
Proning	21 (13.5%)	3 (2.9%)	18 (35.3%)	0.000
Rectal Tube	33 (21.3%)	11 (10.6%)	22 (43.1%)	0.000
Tocilizumab	9 (5.8%)	0	9 (17.6%)	0.000
Steroids	39 (25.2%)	17 (16.3%)	22 (43.1%)	0.000
Days of Steroids	0 (0 – 1)	0	15 (5 – 26)	0.001
Days of Antibiotics	5 (4 – 16)	5 (4 – 20)	15 (5 – 26)	0.000
Death	47 (30.3%)	22 (21.2%)	25 (49%)	0.000

Comparison of Microorganisms isolated in the BSI



X-axis represents the number of BSI events whereas the number at the end of each bar represents the percentage

Table 3. Characteristics of BSI in Covid Negative vs. COVID Positive patients				
	Overall	COVID Negative	COVID Positive	p-value
	n=185	n=117	n=68	
Primary	113 (61.1%)	89 (76.1%)	24(35.3%)	0.000
Secondary				
UTI	7 (3.8%)	5 (4.3%)	2 (2.9%)	
Skin	2 (1.1%)	2 (1.7%)	0	
Pneumonia	9 (4.9%)	3 (2.6%)	6 (8.8%)	
GU	3 (1.6%)	2 (1.7%)	1 (1.5%)	
Endocarditis	3 (1.6%)	3 (2.6%)	0	
CSF	2 (1.1%)	1 (0.9%)	1 (1.5%)	
CLABSI	46 (24.9%)	12 (10.3%)	34 (50 %)	0.000
Monomicrobial BSI	170 (91.9%)	110 (94%)	60 (88.2%)	0.165
Polymicrobial BSI	15 (8.1%)	7 (6%)	8 (11.8%)	0.165
Community Acquired BSI	106 (57.3%)	86 (73.5%)	20 (29.4%)	0.000
Hospital Acquired BSI	79 (42.7%)	31 (26.5%)	48 (70.6%)	0.000

Conclusion. Increased events of hospital acquired, secondary BSI (CLABSI) due to E*nterococcus* was observed in adult P compared to N. These patients were critically ill, developed BSI in the second week of hospitalization, had longer DOT prior to positive cultures and worse outcomes. Breakdown of infection control measures and inappropriate antimicrobial use during the surge could be contributory.

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

202. The Impact and Safety of Discontinuing Routine Surveillance Blood Culture Monitoring in Allogeneic Hematopoietic Cell Transplant Recipients

Will Garner, MD[1]; Louise-Marie Oleksiuk, PharmD[1]; Elisa Malek, n/a[2]; Kristen Reinecke, n/a[2]; Kathleen Dorritie, MD[3]; Annie Im, MD[4]; Sawa Ito, MD, PhD[4]; Scott Rothenberger, PhD[5]; Mounzer Agha, MD[3]; Ghady Haidar, MD[1]; [1]University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania; [2]Hillman Cancer Center, Pittsburgh, Pennsylvania; [3]University of Pittsburgh Medical Center, University of Pittsburgh, Hillman Cancer Center, Pittsburgh, Pennsylvania; [4]University of Pittsburgh Medical Center, Hillman Cancer Center, Pittsburgh, Pennsylvania; [5]University of Pittsburgh, Pittsburgh, Pennsylvania

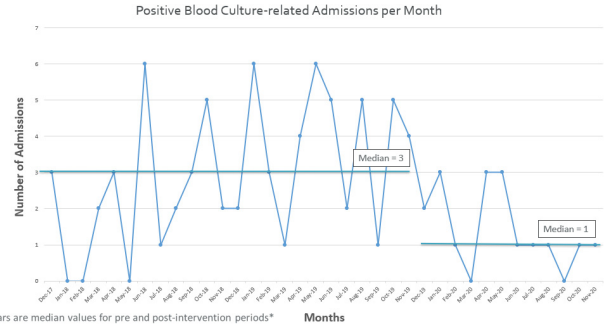
Session: P-10. Bacteremia

Background. Bloodstream infections (BSI) cause significant morbidity and mortality after hematopoietic cell transplant recipients (HCT). Surveillance blood cultures (SBC) are commonly used to decrease the risk of developing BSI but prior data suggest limited clinical utility. At our center, SBC monitoring was discontinued on 12/1/2019. This is a single center study evaluating the impact and safety of discontinuing routine SBC monitoring.

Methods. Retrospective review of allogeneic hematopoietic cell transplant recipients (HCTR) seen before (12/1/2017 – 11/30/2019) and after (12/1/2019 - 12/1/2020) discontinuation of SBC. We evaluated utility of SBC and the impact of discontinuation of SBC on admissions, mortality, and other variables.

Results. One hundred thirty-six and 133 HCTR were followed before and after discontinuation of SBC, respectively. Median (range) ages were 58 (22-73) and 56 (19-73); 60 (44%) and 59 (44%) were female, respectively. The most common cancer was acute myelogenous leukemia (71 (52%) and 61 (46%)); 87 (64%) and 77 (58%) had graft-versus-host disease respectively. Pre-intervention, 1946 SBCs were drawn; 81/1946 (4.2%) were positive. Post-intervention, 29 SBC were drawn; 1/29 (3.4%) were positive. Of the 82 positive SBCs, 63 (77%) were skin flora, and 9 (11%) were gram negative rods. No cultures grew *Staphylococcus aureus* or fungi. Fifty-one (63%) of the positive SBC resulted in an admission; median (range) length of stay (LOS) was 3 days (1-11). Following discontinuation of SBC, median monthly blood culture-related admissions decreased from 3 (0-6) to 1 (0-3) shown in Figure 1. In the pre-intervention period, there were 2 BSI-related deaths, and 0 following cessation of SBCs.

Figure 1. Monthly Hospital Admissions for Positive Outpatient Blood Cultures



Conclusion. SBCs were infrequently positive and often resulted in unnecessary antibiotic use, admission, and clinical interventions. After SBC monitoring was discontinued, there was a decrease in hospital admissions and health care utilization for positive blood cultures drawn in the outpatient setting. This intervention did not negatively impact clinical outcomes, including BSI-related mortality. Discontinuation of SBC appears to be safe and results in a reduction in healthcare utilization. Centers performing SBC should consider eliminating this practice.

Disclosures. **Ghady Haidar, MD**, **Karuys** (Grant/Research Support)

203. *Gardnerella vaginalis* Bacteremia in Male Patients: A Case Series and Review of the Literature

Christine Akamine, MD[1]; Shahriar Tavakoli-Tabasi, MD[1]; Andrew Chou, MD[1]; Daniel M. Musher, MD[1]; [1]Baylor College of Medicine, Houston, Texas

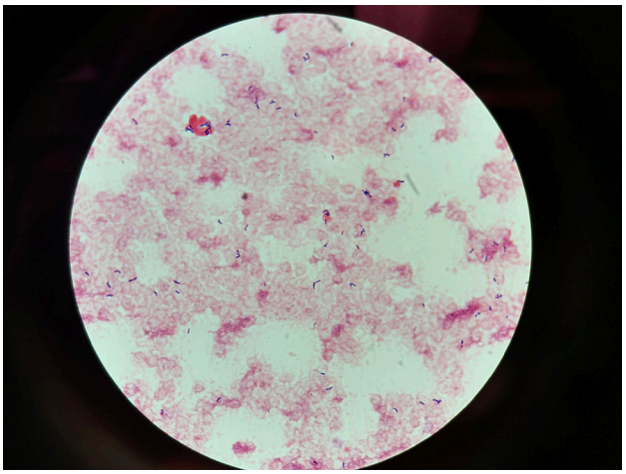
Session: P-10. Bacteremia

Background. **Introduction:** *Gardnerella vaginalis* is a colonizer of the female genitourinary tract and can cause serious morbidity as a pathogen. It is an uncommon cause of infection in men and bacteremia with this organism is rare. We describe two cases of *G. vaginalis* bacteremia in male patients. A literature search was performed for cases of *G. vaginalis* bacteremia in men. A total of 13 patients were identified and discussed.

Methods. **Case 1:** A 52-year-old man with diabetes and prior nephrolithiasis presented for dysuria, hematuria, and left sided flank pain. He was febrile and tachycardic with mild left costovertebral angle tenderness, leukocytosis and acute kidney injury. Urinalysis revealed pyuria. Computed tomography of the abdomen and pelvis showed pyelonephritis and a small calculus of the proximal left ureter. He was treated with ceftriaxone and then piperacillin-tazobactam. Aerobic culture of the urine yielded < 10,000 cfu/mL of mixed gram-positive flora. Blood cultures yielded *G. vaginalis* after 48 hours. He was treated with ciprofloxacin 500 mg orally twice daily for 7 total days and clinically recovered. **Case 2:** A 61-year-old man with alcohol use disorder and gout, presented with altered mental status. He had leukocytosis and acute kidney injury and was treated with vancomycin and cefepime with clinical improvement. Admission blood cultures demonstrated *G. vaginalis* in the anaerobic bottle of 1 of 2 cultures, reported 96 hours after collection. Urine culture was negative. The patient was treated with amoxicillin-clavulanate on discharge to complete a 14-day course with clinical resolution.

Results. see above

Gram stain of *G. vaginalis* on blood culture



Conclusion. **Discussion:** *G. vaginalis* is a facultative anaerobic gram-positive pleomorphic rod, which can be gram variable due to poor staining of the thin peptidoglycan cell wall. Isolation and identification are often delayed. Bacteremia in men is rare but nearly all have originated in the genitourinary tract. The most severe cases of *G. vaginalis* bacteremia implicate endocarditis, urethral stricture and an empyema as the sources. Collection of blood cultures and speciation are often delayed, ranging from 48 hours to 7 days. Selection and duration of treatment have ranged widely in previously reported cases, likely due to the lack of guidance regarding effective treatment.

Disclosures. **Andrew Chou, MD**, **bluebird bio** (Shareholder)

204. Clinical Outcomes with Ceftaroline Monotherapy versus Daptomycin-Ceftaroline Combination Therapy in the Treatment of Methicillin-Resistant *Staphylococcus aureus* Bacteremia

Gabriela Andonie, PharmD, AAHIVP[1]; Elizabeth O. Hand, PharmD, BCPS, BCIDP[2]; Kelly R. Reveles, PharmD, PhD[3]; Kristi A. Traugott, PharmD, BCPS, BCIDP[2]; [1]University Health, Marrero, Louisiana; [2]University Health System, San Antonio, TX; [3]University of Texas at Austin, San Antonio, TX

Session: P-10. Bacteremia

Background. Methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia is associated with poor outcomes and increased mortality. Daptomycin (DAP) and ceftaroline (CPT) in combination has been explored as a potential treatment option and showed improved outcomes compared to vancomycin/standard therapy. CPT