Methods. A retrospective multicenter study involving 10 Houston area hospitals from 2008 to 2016. Data was gathered from 120 adults with culture proven community-acquired bacterial meningitis. An adverse clinical outcome was defined as a Glasgow outcome score of 1–4.

Results. There was a total of 120 patients enrolled; of which, 55% were male. Adjunctive intravenous steroids were administered in 82 (68%) patients with bacterial meningitis. The steroid median duration was 3.8 days. The average age of patients was 55.3 years (range 20–92). There was no difference in Charlson comorbidity score, immunosuppression, presence of sinusitis or otitis, fever, meningeal signs or symptoms, abnormal neurological findings, Gram stain or severity of illness, based on Aronin score ($P > 0.05$), between patients who received steroids and those that did not. Older patients, age >65, were less likely to receive adjunctive steroids ($P = 0.028$). The most common organism isolated was *Streptococcus pneumoniae*, which occurred in 46 (38%) patients. An adverse clinical outcome was seen in 46 (38%) patients with no difference between groups ($P = 0.819$). Delayed cerebral thrombosis was seen in a total of 9 (7.5%) patients with bacterial meningitis. Of these, 1 patient (2.6%) did not receive steroids and the remaining 8 (10.9%) patients received steroids (P = 0.158). Five cases of meningitis that were complicated by DCT were caused by *Streptococcus pneumoniae*, 1 by *Listeria monocytogenes*, and 2 with *Staphylococcus aureus.*

Conclusion. Adjunctive steroids are being used in the majority of adults with bacterial meningitis but it is possibly associated with DCT, a devastating complication

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

127. Retrospective Evaluation of Infants 1–60 Days Evaluated for Meningitis Using the FilmArray Meningitis/Encephalitis (ME) Panel

Anne J. Blaschke, MD, PhD, FIDSA, FPIDS[1]; Kristen Holmberg, MS[2]; Judy Daly, PhD[3]; Amy Leber, PhD[4]; Jennifer Dien Bard, PhD[5]; Kevin Bourzac, PhD[2]; Kristen Kanack, PhD[2]; [1]Department of Pediatrics, Division of Pediatric Infectious Diseases, University of Utah School of Medicine, Salt Lake City, Utah; [2]BioFire Diagnostics, LLC, Salt Lake City, Utah; [3]Primary Children's Hospital, Salt Lake City, Utah; [4]Department of Laboratory Medicine, Nationwide Children's Hospital, Columbus, Ohio; [5]Pathology and Laboratory Medicine, Children's Hospital Los Angeles, Los Angeles, California

Session: 40. Adult Central Nervous System Infection
Thursday, October 5, 2017: 10:30 AM

Background. Bacterial meningitis is a serious infection in infants requiring emergent recognition. Viral encephalitides (excluding HSV) are usually self-limited and care is supportive. Young infants often undergo lumbar puncture to evaluate for infection, but identification of CNS pathogens can take 24–48 hours while they are hospitalized and empirically treated. Our objective was to study the potential effect of a rapid multiplex PCR for meningitis/encephalitis (ME) on the care of young infants.

Methods. A prospective clinical evaluation of the FilmArray ME Panel was conducted from 2/2014 to 9/2014 at 11 sites using residual CSF. FilmArray ME Panel results were compared with clinical reference standards but not shared with providers. In this current study, medical records for infants (1–60 days) enrolled at three sites were reviewed for potential management changes with rapid FilmArray ME Panel results.

Results. A total of 145 infants were reviewed. Median age was 25 days. Most were admitted to the hospital [132/145 (91%)], received antibiotics [123/145 (85%)], and almost half [71/145 (49%)] received acyclovir. Only one infant had a bacterial pathogen identified by PCR, and no infant had CSF positive for HSV. Of the 145 infants (25%) 36 had a viral pathogen detected; 35 (97%) by FilmArray ME Panel and 23 (64%) by conventional tests (2 by blood PCR only). Four (11%) had a concomitant bacterial infection [UTI (3); bacterial meningitis (1; diagnosed on a prior LP)]. Twenty infants (56%) had enterovirus detected and 10 (28%) were positive for human parechovirus. Four infants were positive for HHV-6. 33 infants (92%) with a virus detected from CSF were admitted to the hospital; median duration of hospital stay was 44 hours [IQR: 34–69]. Infants who were virus-positive by conventional testing (results known to the physician) had a median length of hospital stay of 44 hours [IQR: 32–48] while median length of stay was 72 hours [IQR: 41–109] for those that were virus-positive only retrospectively by FilmArray ME Panel.

Conclusion. The FilmArray ME Panel may play a role in the evaluation of young infants undergoing lumbar puncture to evaluate for infection. Results of rapid PCR may be used to guide management, possibly resulting in decreased LOS for infants with viruses other than HSV detected in CSF.

Disclosures. **A. J. Blaschke**, BioFire Diagnostics, LLC: Collaborator, Grant Investigator and I have intellectual property and receive royalties from BioFire Diagnostics through the University of Utah, Licensing agreement or royalty and Research support; **K. Holmberg**, BioFire Diagnostics: Employee, Salary; **J. Daly**, Biofire: Grant Investigator, Grant recipient; **A. Leber**, BioFIre Diagnostics: Research Contractor and Scientific Advisor, Research support, Speaker honorarium and Travel expenses; **J. Dien Bard**, BioFire: Consultant and Investigator, Research grant and Speaker honorarium; **K. Bourzac**, BioFire Diagnostics: Employee, Salary; **K. Kanack**, BioFire Diagnostics, LLC: Employee, Salary

128. A *S*ingle-center, Quasi-experimental Study to Evaluate the Impact of a Multiplex Polymerase Chain Reaction System Combined with Antimicrobial Stewardship Intervention on Time to Targeted Therapy in Patients with Suspected Central Nervous System Infection

Kelsey Powell, PharmD[1]; Sara Revolinski, PharmD, BCPS[2]; Allison Gibble, PharmD[1]; Anne Daniels, PharmD, BCPS, AAHIVP[1]; J. Njeri Wainaina, MD[2]; Angela Huang, PharmD, BCPS-AQ ID[2]; [1]Froedtert & the Medical College of Wisconsin, Milwaukee, Wisconsin; [2]Froedtert & The Medical College of Wisconsin, Milwaukee, Wisconsin

Session: 40. Adult Central Nervous System Infection
Thursday, October 5, 2017: 10:30 AM

Background. Empiric treatment for central nervous system (CNS) infections consists of coverage with multiple antimicrobial agents that may be continued until a pathogen can be identified. Identification may take significant time to result, leading to extended durations of multiple antimicrobial agents, delays in targeted therapy and subsequent adverse effects, such as nephrotoxicity and *Clostridium difficile* infection. A multiplex polymerase chain reaction (PCR) system that can identify 14 pathogens responsible for community-acquired CNS infections in 1 hour was recently FDA-approved for cerebrospinal fluid (CSF) analysis. The objective of this study was to determine the effect of this PCR paired with antimicrobial stewardship (AMS) team intervention on the time to targeted therapy.

Methods. During the intervention (Int) phase (January 25, 2017–April 30, 2017), all PCR results were called to the AMS team, who reviewed clinical data and provided antimicrobial recommendations per pre-determined protocol. Recommendations consisted of de-escalation or addition of therapy. The pre-intervention (PI) group consisted of patients with CSF culture obtained between January 25, 20116 and April 30, 2016.

Results. A total of 138 patients were evaluated; 46 in the Int group and 92 in the PI. Of the 46 patients in the Int group, 25 had a negative PCR result and were never initiated on antimicrobials. One patient required antimicrobial escalation. Twenty patients were started on empiric therapy and were candidates for de-escalation. In the PI group, there were no patients with CSF cultures that required therapy escalation, while 33 patients were initiated on empiric antimicrobials. Results from the subgroup of patients in whom empiric therapy was started as shown in Table 1.

Conclusion. Implementation of a multiplex PCR with AMS intervention resulted in decreased time to targeted therapy.

This project was funded through a competitive stewardship grant provided by Merck & Co.

Table 1.

	Preintervention ($n = 33$)	Intervention ($n = 21$)	*P*-value
Time to targeted therapy, hours, mean ± SD	30.8 ± 38.2	15.4 ± 13.9	0.06
Average antimicrobial days of therapy per patient-days admitted	1.64 ± 1.6	0.52 ± 0.0	< 0.05
Time to organism identification, hours, mean ± SD	119.6 ± 25.0	3.9 ± 1.3	< 0.05

Disclosures. **S. Revolinski**, Merck: Grant Investigator, Research grant; **J. N. Wainaina**, Merck: Grant Investigator, Research grant; **A. Huang**, Merck: Grant Investigator, Research grant

129. How Do Advanced Molecular Tests Compare to Routine Clinical Laboratory Evaluation of CSF in Meningoencephalitis? A Study in 10 Urban Emergency Departments Across the USA

Toby L. Merlin, MD[1]; Scott Chancey, PhD[1]; Yueli Zheng, PhD[1]; Brad Bowzard, PhD[1]; Leah Fischer, PhD[1]; Todd Parker, PhD[1]; Satish Pillai, MD, MPH[1]; David Talan, MD, FIDSA, FACEP[2]; Gregory Moran, MD, FIDSA, FACEP[3]; Anusha Krishnadasan, PhD[4]; Scott Santibanez, MD[5]; The EMERGEncy ID Net Study Group; [1]Centers for Disease Control and Prevention, Atlanta, Georgia; [2]Emergency Medicine, David Geffen School of Medicine, University of California at Los Angeles, Los Angeles, California; [3]Emergency Medicine/Infectious Diseases, Olive View-UCLA Medical Center, Sylmar, California; [4]Emergency Medicine, Olive View-UCLA Medical Center, Sylmar, California; [5]Division of Preparedness and Emerging Infections, Centers for Disease Control and Prevention, Atlanta, Georgia

Session: 40. Adult Central Nervous System Infection
Thursday, October 5, 2017: 10:30 AM

Background. The *EMERGE*ncy ID Net Study Group is investigating whether advanced molecular tests (AMT) increase the detection of causative agents in the CSF of patients presenting with meningoencephalitis (ME). We report findings from a pilot study using AMT on 18 CSF samples from 10 US Urban Emergency Departments. The purpose of the pilot was to compare the performance of these four AMT to established clinical laboratory methods.

Methods. We investigated four AMT: (1) BioFire FilmArray ME Panel targeting 14 causative agents; (2) an in-house target-directed next generation sequencing assay targeting 25 agents; (3) a microarray capable of detecting >2,500 agents; and (4) deep metagenomic next generation sequencing. For targeted sequencing, loci from 12 DNA-based and 13 RNA-based pathogens were amplified from the extracts

by multiplex PCR. All sequencing was performed on an Illumina MiSeq using 500 cycle v2 Reagent Kits. Reads from the targeted sequencing were aligned to the 25 specific reference target sequences using Bowtie2 while metagenomics reads were processed with the taxonomic sequence classifying software Kraken. For microarray analysis, Lawrence Livermore Microbial Detection Array v2 arrays were hybridized with Cy3-labeled DNA or cDNA. Scanned images of arrays were analyzed by CLiMax 3.1.

Results. Eight CSF samples had results positive for well-established causes of ME from prior testing (Table). The pilot study demonstrated none of the four AMT detected all causative agents in the eight CSF samples known to have well-established causes of ME. BioFire and targeted sequencing performed best, both detecting 6/8, metagenomics deep sequencing detected 3/8, and microarray detected 1/8.

Conclusion. Despite the sophistication of AMT, they cannot detect pathogens they do not target, that are present in small numbers, or that have been eliminated from the CSF by the immune response. Despite the theoretical potential for microarray and metagenomic sequencing to detect thousands of different agents, the agents probably must be present at high levels for detection.

	Clinical laboratory evaluation	BioFire Film Array	Targeted sequencing	Microarray	Metagenomic sequencing
Cryptococcus spp.	4	3	3	0	2
Streptococcus pneumoniae	1	1	1	1	1
Enterovirus	2	2	2		0
West Nile Virus	1	N/A[a]	0	0	0

[a]West Nile Virus is not on the BioFire Panel.

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

130. Does Detection of Respiratory Viral Infection in Upper Respiratory Tract (URT) Predict Lower Respiratory Tract (LRT) Disease in Hematopoietic Cell Transplant (HCT) Patients?

Meghana Vivek, MD[1]; Hu Xie, MS[2]; Steven A Pergam, MD, MPH, FIDSA[3]; Marco Mielcarek, MD[2]; Joshua Hill, MD[4]; Jane Kuypers, PhD[5]; Keith Jerome, MD, PhD[6]; Ajit Limaye, MD, FIDSA[7]; Wendy Leisenring, ScD[2]; Michael Boeckh, MD, FIDSA[1]; Alpana Waghmare, MD[8]; [1]Fred Hutchinson Cancer Research Center, Seattle, Washington; [2]Clinical Research Division, Fred Hutchinson Cancer Research Center, Seattle, Washington; [3]Vaccine and Infectious Disease Division, Fred Hutchinson Cancer Research Center, Seattle, Washington; [4]Division of Allergy and Infectious Diseases, University of Washington, Seattle, Washington; [5]Laboratory Medicine, University of Washington, Seattle, Washington; [6]Department of Laboratory Medicine, University of Washington, Seattle, Washington; [7]Medicine, University of Washington, Seattle, Washington; [8]University of Washington, Seattle, Washington

Session: 41. Infections in Transplantation
Thursday, October 5, 2017: 10:30 AM

Background. HCT recipients are frequently infected with respiratory viruses (RVs) in the URT; however, diagnostic evaluation of the LRT by bronchoalveolar lavage (BAL) is less common. We sought to determine whether the detection of RVs in the URT is predictive of LRT detection and to identify factors that predict discordance between upper and lower RV detection.

Methods. HCT recipients with respiratory symptoms and LRT RV testing via multiplex PCR in BAL from July 2009 to October 2016 were included in the study. RV PCR results, including cycle threshold (CT) values, were compared with URT samples obtained within ±3 days. Logistic regression models were used to analyze risk factors for RV discordance between paired samples.

Results. Among 1,000 HCT recipients with BAL RV testing, 250 had URT testing within 3 days. In total, 75(30%) sample pairs were concordant for the same RV in both the URT and BAL (P/P); 132 (53%) were negative from both sites. Among 43 discordant pairs, 25 (10%) were only positive by URT but negative by BAL (P/N) and 18 (7%) were positive by BAL but negative by URT (N/P). In pairs with positive RV results in the URT or BAL, discordance was common for HMPV (44%), HRV (33%), and PIV-3 (28%); RSV was almost always concordant (92%) (Figure 1). In a multivariable model, the risk of discordance (P/N or N/P) was increased in the presence of a solitary nodule on radiography (OR 6.8; 95% CI 1.2–38.3) and with lymphocyte count >500/mm^3 (OR 3.1; 95% CI 1.08–9.0). Among P/P pairs, the median difference between CT values between URT and BAL samples was 0 (range −12 to +13), with 33 and 29% of subjects having lower and higher CT values (>4, ~1 $\log_{10}$) in the BAL, respectively (Figure 2).

Conclusion. In symptomatic HCT recipients with RV PCR testing performed concurrently in the upper and lower tract, discordant results are relatively common, especially for HRV, HMPV, and PIV-3. The presence of a solitary nodule on imaging and the absence of lymphopenia are associated with discordant results, with BAL results more likely being negative in these situations. More than half of the P/P pairs had a >4 difference in CT values between URT and LRT samples. Taken together, these data suggest that RV testing in BAL can provide useful diagnostic information that may guide management in HCT recipients.

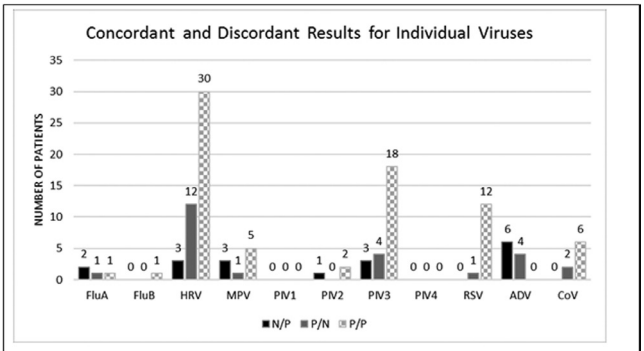

Figure 1. Results of nasal swab/BAL sample testing for RVs represented along X axis. Y axis represents number of patients. 132 pairs of samples were negative in both URT and LRT and are not represented here.

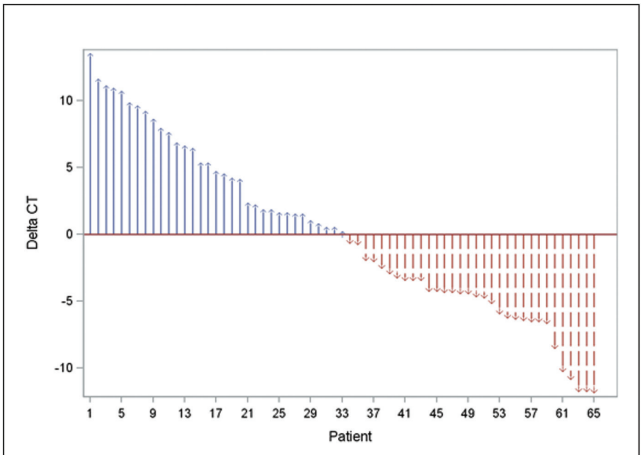

Figure 2. Plot of Delta CT values (LRT RV CT minus URT RV CT) for the 66 sample pairs that were concordant positive for a particular virus. Delta CT values above 0 indicate a higher CT (and hence a lower viral load) of the RV from the LRT while those below 0 indicate a lower CT (and hence a higher viral load) of the RV from the LRT.

Disclosure. **S. A. Pergam**, MERCK: Consultant and Investigator, Consulting fee.

131. A Multicenter Study on Clinical Outcomes of Infections within 200 Days of Liver Transplantation among Recipients Age 65 Years and Older

Maricar Malinis, MD, FACP[1]; Tue Ngo, MD[2]; Julia Garcia-Diaz, MD, FIDSA[3]; Sarah Taimur, MD[4]; Nicolas Mueller, MD[5]; Albert Eid, MD[6]; Pascalis Vergidis, MD, MSc[7]; Kenneth Pursell, MD, FIDSA[8]; Archana Bhaskaran, MD[9]; Ricardo La Hoz, MD, FACP, FAST[10]; Andres Bran, MD[11]; Dong Lee, MD[12]; Stephanie Pouch, MD, MS[13]; Robin Avery, MD, FIDSA[14]; John W. Baddley, MD[15,16]; [1]Section of Infectious Diseases, Yale University School of Medicine, New Haven, Connecticut; [2]Medical University of South Carolina, Charleston, South Carolina; [3]Infectious Diseases, Ochsner Clinic Foundation, New Orleans, Louisiana; [4]Icahn School of Medicine at Mount Sinai, New York, New York; [5]University Hospital Zurich, Zurich, Switzerland; [6]Infectious Diseases, University of Kansas Medical Center, Kansas City, Kansas; [7]University Hospital of South Manchester, University of Manchester, Manchester, UK; [8]Infectious Diseases and Global Health, The University of Chicago Medicine, Chicago, Illinois; [9]University of Minnesota, Minneapolis, Minnesota; [10]Infectious Disease, University of Texas Southwestern Medical Center, Dallas, Texas; [11]Infectious Diseases, University of Texas Southwestern Medical Center, Dallas, Texas; [12]Infectious Diseases & HIV Medicine, Drexel University College of Medicine, Philadelphia, Pennsylvania; [13]Department of Medicine, Division of Infectious Diseases, The Ohio State University Wexner Medical Center, Columbus, Ohio; [14]Johns Hopkins University, Baltimore, Maryland; [15]University of Alabama at Birmingham, Birmingham, Alabama; [16]American Society of Transplantation Infectious Diseases Community of Practice

Session: 41. Infections in Transplantation
Thursday, October 5, 2017: 10:30 AM

Background. Liver transplantation is increasingly performed in patients aged ≥65 years. Per the United Network for Organ Sharing data, infections are the leading primary and contributory cause of death in older liver transplant (LT) recipients. This study aims to describe the epidemiology and outcomes of infections within the first 200 days of LT in older adults.

Methods. We performed a retrospective, observational multi-center study of patients aged ≥65 years who underwent primary LT from January 1, 2010 to June 30,