sulfamethoxazole (TMP/SMX) the following day for pneumonia caused by TMP/SMX-susceptible *S. maltophilia*. BC finalized on day 29 to *S. maltophilia* resistant to TMP/SMX, regimen modified to ERV. Repeat BC on day 30 finalized to no growth and ERV was continued until day 42 with no recurrence of bacteremia; however, patient died on day 45. Patient 3 with renal failure and on day 11, CRO started for SBP prophylaxis. On day 13, BC was switched to cefepime (CEF) as patient was febrile and BC repeated. BC finalized to VRE *faecium* and was started on ERV on day 17 and completed a 7-day course with no recurrence of bacteremia; however, patient died on day 34. Patient 4 initially treated for bacterial superinfection with CRO and azithromycin, and subsequent line of nursing pneumonia treated with VAN and MEM (day 10-17). On day 19, patient was febrile and treated with VAN and FEP until day 27. Repeat BC on day 29 finalized to VRE species and modified to ERV on day 32. ERV continued for a 7-day course and was discharged with no repeat BC obtained to confirm clearance. Patient 5 is SS started on VAN and MEM. On day 1, BC on admission finalized to VRE *faecium* and therapy switched to ERV. Repeat BC taken on day 3 after ERV initiation were negative. Discharged to complete two-week course of ERV.

**Conclusion.** ERV may be an option for bacteremia as demonstrated by clearance in four of five cases. More studies must be conducted as these reports show variable clinical outcomes.

**Disclosures.** Joshua R. Rosenberg, MD, Allergan/Abbvie (Consultant); L.Jolla/Tetrathrape (Consultant); Melinta (Consultant); Merck (Consultant); Paratek (Consultant); Sanofi (Consultant); Shionogi (Consultant)

### 1244. In Vitro Activity of Ceftazidime-Avibactam and Comparator Agents Against MDR Enterobacteriales and *Pseudomonas aeruginosa* Collected in Latin America During the ATLAS Global Surveillance Program 2018-2019

Sibylle Lob, PhD; Meredith Hackel, PhD MPH; Gregory Stone, PhD; Daniel F. Sahm, PhD; IHMA, Inc., Schaumburg, IL; Pfizer, Inc., Groton, CT

**Session:** P-72. Resistance Mechanisms

**Background.** Ceftazidime-avibactam (CAZ-AVI) is a β-lactam/β-lactamase inhibitor combination that can inhibit class A, C, and some class D β-lactamases. Resistance caused by these β-lactamases often results in multidrug resistance (MDR). This study evaluated the *in vitro* activity of CAZ-AVI and comparators against MDR Enterobacteriales and *Pseudomonas aeruginosa* isolates collected from patients in Latin America.

**Methods.** Non-duplicate clinical isolates were collected in 2018-2019 in 10 countries in Latin America. Susceptibility testing was performed using CLSI broth microdilution and interpreted using CLSI 2021 and FDA (tigecycline) breakpoints. MDR was defined as resistant (R) to ≥5 of 7 sentinel drugs: amikacin (AMK), aztreonam (ATM), cefepime (FEP), colistin (CST), levofloxacin (LVX), meropenem (MEM), and piperacillin-tazobactam (TZP).

**Results.** The activity of CAZ-AVI and comparators against all isolates and MDR subsets is shown in the table. MDR rates for the studied species ranged from 16.3% among *E. cloacae* to 35.7% among *K. pneumoniae*. CAZ-AVI was active against 98% of all isolates and 47% of MDR isolates; no other studied drug was more active. The three most common MDR phenotypes among Enterobacteriales were R) to ATM, FEP, LVX, and TZP (n=484.84.4% of all MDR Enterobacteriales; 100% susceptible (S) to CAZ-AVI, 2) R to ATM, FEP, LVX, and TZP (n=150, 12.4% of all MDR Enterobacteriales; 99.3% S to CAZ-AVI), and 3) R to all sentinel drugs except AMK and CST (n=115, 9.9% of all MDR isolates; 78.6% S to CAZ-AVI). The most common MDR phenotypes among *P. aeruginosa* were 1) R to all sentinel drugs except CST (n=185, 19.7% of all MDR isolates; 24.7% S to CAZ-AVI), 2) R to all sentinel drugs except AMK and CST (n=42, 9.7% of all MDR isolates; 66.7% S to CAZ-AVI), and 3) R to AMK, LVX, and MEM (n=37, 8.6% of all MDR isolates; 24.3% S to CAZ-AVI).

**Conclusion.** These in vitro data suggest that CAZ-AVI can be an effective treatment option for infections caused by MDR Enterobacteriales and *P. aeruginosa* collected in Latin America.

**Disclosures.** Sibylle Lob, PhD, IHMA (Employee)/Pfizer, Inc. (Independent Contractor); Meredith Hackel, PhD MPH, IHMA (Employee)/Pfizer, Inc. (Independent Contractor) Gregory Stone, PhD, AstraZeneca (Shareholder, Former Employee)/Pfizer, Inc. (Employee) Daniel F. Sahm, PhD, IHMA (Employee)/Pfizer, Inc. (Independent Contractor)

### 1245. In Vitro Activities of Ceftaroline and Comparator Agents Against Bacterial Pathogens Collected from Patients with Skin and Skin Structure Infections: 2012-2019

Meredith Hackel, PhD MPH; Gregory Stone, PhD; Daniel F. Sahm, PhD; IHMA, Inc., Schaumburg, Illinois; Pfizer, Inc., Groton, CT

**Session:** P-72. Resistance Mechanisms

**Background.** Ceftaroline fosamil, the prodrug of ceftaroline, is a novel siderophore cephalosporin that retains activity against MDR gram-negative bacteria. In *P. aeruginosa* (PA), FDC utilizes TonB-dependent receptors (TDRB) PirA, PirC, or PirD to enter the periplasmic space. PirA has already reported a clinical isolate that developed elevated MICs to FDC associated with mutations in genes encoding TDRBs in the absence of prior exposure to FDC. In this study, we investigated the frequency of TDRB mutations not associated with mutations in genes encoding TBDRs in the absence of prior exposure to FDC. We recently reported a clinical isolate resistant to ceftaroline with cefiderocol exposure among clinical stains of *P. aeruginosa* and *Acinetobacter baumannii*. We performed a retrospective review of all *P. aeruginosa* and *A. baumannii* clinical isolates collected from 2012 to 2019 in the 124,694 bacterial isolates that had been cultured by 493 clinical laboratories in 71 countries from patients diagnosed with SSIs. All isolates were transported to IHMA, (Schaumburg, IL, USA) where their identities were confirmed using MALDI-TOF mass spectrometry and antimicrobial susceptibility testing performed following standardized CLSI broth microdilution methodology (M07). Patient demographics were determined using 2021 CLSI MIC breakpoints. Phenotypic extended-spectrum β-lactamase (ESBL) screening and confirmatory testing were performed using the CLSI M100 method.

**Results.** The *in vitro* activity of ceftaroline is summarized in the following table. Overall, >99.9% of MSSA and 92.8% of MRSA from SSIs were susceptible to ceftaroline (MIC ≤1 µg/ml); 7.1% of MRSA isolates were ceftaroline-susceptible dose-dependent (MIC 2-4 µg/ml) with greater proportion being from Chile (53.3% of 392 isolates), S. Korea (29.3% of 321 isolates), and China (24.7% of 652 isolates). Twelve ceftaroline-resistant MRSA were observed, consisting of 11 of 109 isolates from Thailand (10.1%) and 1 of 161 from China (0.6%). All *P. aeruginosa* and 88.0% of ESBL-negative Enterobacteriales were susceptible to ceftaroline.

**Results Table**

| Organism (n) | MIC ceftaroline (µg/mL) | % S | % SDD |
|--------------|------------------------|-----|-------|
| Staphylococcus aureus, MSSA (19,473) | 0.51 | 92.8 | 7.1 |
| Staphylococcus aureus, MRSA (19,345) | 0.25 | ≥0.06 | >100 |
| Staphylococcus pyogenes (5,295) | ≤0.004 to 0.005 | 100 | 0 |
| Enterobacteriales, ESBL Screen Negative (17,933) | 0.12 | 88.0 | 11.9 |

**Conclusion.** Ceftaroline demonstrates potent in vitro activity against clinically relevant pathogens associated with SSIs.

**Disclosures.** Meredith Hackel, PhD MPH, IHMA (Employee)/Pfizer, Inc. (Independent Contractor) Gregory Stone, PhD, AstraZeneca (Shareholder, Former Employee)/Pfizer, Inc. (Employee) Daniel F. Sahm, PhD, IHMA (Employee)/Pfizer, Inc. (Independent Contractor)

### 1246. Clinical isolates of *Pseudomonas aeruginosa* Harbor Preexisting Changes in TonB-dependent Receptors Associated with Decreased Susceptibility to Cefiderocol

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**Session:** P-72. Resistance Mechanisms

**Background.** Cefiderocol (FDC) is a novel siderophore cephalosporin that retains activity against MDR gram-negative bacteria. In *P. aeruginosa* (PA), FDC utilizes TonB-dependent receptors (TDRB) PirA, PirC, or PirD to enter the periplasmic space. PirA has already reported a clinical isolate that developed elevated MICs to FDC associated with mutations in genes encoding TDRBs in the absence of prior exposure to FDC. In this study, we investigated the frequency of TDRB mutations not associated with cefiderocol exposure among clinical stains of PA recovered from 2019 to 2018 in a large hospital system in Houston, TX.

**Methods.** A total of 212 clinical isolates of PA were screened for mutations in TDRB pathways (pirA/pirRS and piaU/AVD) via whole genome sequencing. Strains with gene mutations predicted to significantly alter protein function (insertion, deletion, or frameshift) were selected for phenotypic characterization. PA PA01 and 4 clinical PA strains lacking changes in the TDRB genes were served as controls. FDC susceptibility testing was performed on Mueller-Hinton agar by Kirby-Bauer disc diffusion (DD). Diapers were measured at 18 and 48 h to assess for the emergence of colonies.