Background. There is limited data to guide the use of oral (PO) antibiotics for the treatment of Gram-negative (GN) bloodstream infection (BSI). The objective of this study was to describe the characteristics and outcomes at a large academic medical center.

Methods. Retrospective observational cohort of adult patients (age ≥18 years) with at least one blood culture positive for aerobic Gram-negative organism(s) treated with antibiotic therapy (IV or oral [PO]) at University of Medical Center from November 2015 to May 2017. Oral antibiotics were described based on bioavailability. The primary outcome of interest was 30-day infection-related readmission. Secondary objectives included evaluation of patient characteristics associated with PO antibiotic use.

Results. During the defined study period 310 patients met inclusion; 113 (36.5%) were switched to PO antibiotic therapy for the treatment of GN BSI within a median of 5 (IQR 3–11) days. Oral antibiotics were initiated at discharge for 50 (44%) of patients switched. Patients switched to PO were less likely to have has a stay in the ICU (24.8% vs. 47.7%, $P < 0.0001$) and were less likely to have an ID consult (57.5% vs. 71.1%, $P = 0.034$). There was no difference in median Charlson Comorbidity Score (2, IQR 0–4). The most common sources of infection among those switched to PO agents were urinary (50, 44.2%) and intra-abdominal (25, 22.1%). The majority of patients were placed on a PO agent with high bioavailability (61, 54%), which included levofloxacin and moxifloxacin. There was a slightly higher proportion of use of high (vs. low) bioavailable antibiotics in patients with ID consult compared with those without (59% vs. 41%, $P = 0.053$). PO antibiotics were more frequently prescribed for patients discharged home (78, 69%) compared with patients discharged to Rehab/Short-term facility (28, 24.8%). Thirty-day hospital readmission was more common among the patients treated with PO antibiotics (18.6 vs. 8.1%, $P = 0.006$); however, ID-related readmission was rare (0.9% vs. 1%, $P = 0.91$).

Conclusion. Urinary and intra-abdominal sources and home discharge were common among those with PO antibiotic use. ID-related outcomes were similar among those treated with IV vs. PO agents. More research is necessary to determine optimal time to PO antibiotic switch.

Disclosures. **K. Claeys**, Nabriva: Scientific Advisor, Consulting fee. Melinta: Scientific Advisor, Consulting fee. **E. Heil**, ALK-Abelló: Grant Investigator, Research grant.

1051. Increased Mortality in Bacteremia by *Enterobacter* Species With Discordant Imipenem and Ertapenem Susceptibilities

Andrew Chou, MD[1,2]; Vittoria Rossi, MS[3]; Richard Sucgang, PhD[4]; Richard Hamill, MD, FIDSA[5]; Lynn Zechiedrich, PhD[6] and Barbara W. Trautner, MD, PhD, FIDSA[7,8,9]; [1]Medical Care Line, Infectious Disease Section, Michael E. DeBakey VA Medical Center, Houston, Texas, [2]Department of Medicine Section of Infectious Diseases, Department of Microbiology and Molecular Virology, Baylor College of Medicine, Houston, Texas, [3]School of Medicine, Baylor College of Medicine, Houston, Texas, [4]Verna and Marrs Mclean Department of Biochemistry and Molecular Biology, Baylor College of Medicine, Houston, Texas, [5]Internal Medicine – Infectious Diseases, Baylor College of Medicine & Michael E. DeBakey VA Medical Center, Houston, Texas, [6]Department of Molecular Virology and Microbiology, Verna and Marrs Mclean Department of Biochemistry and Molecular Biology, Department of Pharmacology, Baylor College of Medicine, Houston, Texas, [7]Department of Veterans Affairs, Health Services Research & Development Center of Excellence, Michael E. DeBakey VA Medical Center, Houston, Texas, [8]Department of Surgery, Baylor College of Medicine, Houston, Texas, [9]Department of Molecular Virology and Microbiology, Baylor College of Medicine, Houston, Texas

Session: 131. Bacteremia and Endocarditis
Friday, October 5, 2018: 12:30 PM

Background. Carbapenem-resistant *Enterobacteriaceae* (CRE) that are resistant only to one carbapenem have been reported, but the frequency of discordance between ertapenem and imipenem/meropenem is not known for *Enterobacter* species. We investigated the occurrence of discordant carbapenem susceptibilities in *Enterobacter* species bacteremia and the potential association with increased mortality.

Methods. We examined all cases of *Enterobacter* species bacteremia from January 2012 to December 2016 at the Michael E. DeBakey VA Medical Center in Houston, Texas, USA. Clinical and microbiological data were independently extracted by two investigators. Antibiotic susceptibility testing results were interpreted according to current CLSI breakpoints.

Results. We found 14/67 (20.9%) isolates had discordance between ertapenem and imipenem susceptibilities. Eight isolates were ertapenem susceptible/imipenem nonsusceptible and six isolates were ertapenem nonsusceptible/imipenem susceptible (table). Bacteremia cleared in 94.5% (52/55) of all patients who had follow-up cultures, including infection by all (13/13) isolates with discordant carbapenem susceptibilities tested. Thirty-day mortality was statistically higher in infection by isolates with discordant carbapenem susceptibilities than by isolates that were susceptible to all tested carbapenems (10% vs. 36%; $P = 0.03$, Fisher's exact test). In-hospital mortality was also higher in the discordant cohort as well (12% vs. 36%; $P = 0.04$, Fisher's exact test). Acute severity of illness at bacteremia onset did not differ between the groups (median Pitt bacteremia score 2 vs. 3; $P = 0.11$, Wilcoxon rank-sum test).

Conclusion. Bacteremia by *Enterobacter* species with discordant ertapenem and imipenem/meropenem susceptibilities is a relevant clinical issue, occurring in 20.9% of *Enterobacter* species bacteremias at our institution, and the discordance is associated with increased mortality. Whether such species can be safely treated with one carbapenem but not another is worth further investigation.

Ertapenem MIC (μg/mL)	Imipenem MIC (μg/mL)	Number of Isolates
≤0.5 (S)	2 (I)	8
1 (I)	≤1 (S)	2
2 (R)	≤1(S)	2
2 (R)	0.5 (S)	1
4 (R)	≤1(S)	1

MIC: minimum inhibitory concentration; S: susceptible; I: intermediate; R: resistant;

Disclosures. **B. W. Trautner**, Paratek: Consultant, Consulting fee. Zambon: Consultant, Consulting fee and Research grant.

1052. Do Healthcare Providers De-Escalate β-Lactam (BL) Antibiotic Therapy Based on Results of Antibiotic Susceptibility Testing (AST)? Analysis of Bloodstream Infections (BSI) Caused by *Escherichia coli* and *Klebsiella pneumoniae* From the Veterans Health Administration (VHA)

Roberto Viau, MD[1]; Brigid Wilson, PhD[1]; Scott R. Evans, PhD[2]; Federico Perez, MD, MS[3]; Vance G. Fowler Jr., MD[4]; Henry F. Chambers, MD[5]; Barry N. Kreiswirth, PhD[6]; Robin Patel, MD, FIDSA, D(ABMM)[7]; Ritu Banerjee, MD, PhD[8]; Robert A. Bonomo, MD[1] and ARLG[1]Louis Stokes Cleveland Department of Veterans Affairs Medical Center, Cleveland, Ohio, [2]Harvard School of Public Health, Boston, Massachusetts, [3]Louis Stokes Cleveland VA Medical Center, Cleveland, Ohio, [4]Duke University Medical Center, Durham, North Carolina, [5]Clinical Research Services, University of California San Francisco, Clinical and Translational Sciences Institute, San Francisco, California, [6]Public Health Research Institute, Rutgers New Jersey Medical School, Newark, New Jersey, [7]Divisions of Clinical Microbiology and Infectious Diseases, Mayo Clinic, Rochester, Minnesota, [8]Division of Pediatric Infectious Diseases, Vanderbilt University, Nashville, Tennessee

Session: 131. Bacteremia and Endocarditis
Friday, October 5, 2018: 12:30 PM

Background. Achieving appropriate therapy for BSI caused by Gram-negative rods (GNR) is challenging. The availability of AST results allows de-escalation from broad- to narrow-spectrum agents. De-escalation is a goal of antimicrobial stewardship (AS). Through the analysis of inpatient BL antibiotic regimens in a nationwide cohort of patients with *Escherichia coli* and *Klebsiella pneumoniae* BSI, we compared the relative spectrum of empiric and definitive treatments to AST results and identified opportunities for de-escalation.

Methods. Using a cohort of patients hospitalized within VHA, we identified patients with a blood culture positive for *E. coli* or *K. pneumoniae* between 2006 and 2015. We analyzed the subset of patients receiving inpatient BLs before and after Gram stain (GS) and AST results. BLs were grouped into five tiers of increasing spectrum, both with and without a requirement for anaerobic activity (Figure 1). Tiers of BLs across the treatment periods were summarized and compared with the lowest-spectrum tier with an active agent. Rates of inactive, optimal, and overly broad BL therapy were summarized by organism and treatment period.

Results. Of 36,531 BSI identified, we analyzed a subset of 10,825 (7,100 *E. coli*, 3,725 *K. pneumoniae*) that met our inclusion criteria (Figure 2). The use of inactive BL agents decreased across time, falling from 11% in early empiric to 4.5% in definitive treatments. The proportion of patients receiving the narrowest available effective BL therapy ("optimal" therapy) increased from 5% to 8% after GS results and to 14% after AST results (Figure 3). De-escalation to optimal therapy after AST results was observed in only 7% of opportunities. If anaerobic activity was required, a smaller proportion of cases would be considered overtreated in the empiric periods (45–46%), but de-escalation after AST results was observed in only 10% of these cases.

Conclusion. Changes in BL agents across treatment periods reflect an escalation to active treatment, but the absence of de-escalation after AST results was available. This was true both with and without considering a need for anaerobic activity. Expansion of this analysis to include additional classes such as fluoroquinolones may reveal opportunities for AS and de-escalation to optimal therapy in the treatment of *E. coli* and *K. pneumoniae* BSI.