confounder factors was carried out. Data were analyzed with IBM SPSS Statistics version 21. Statistical significance was defined as the value for $P < 0.05$.

Results. We identified 387 patients with an infection by *Aeromonas* spp.; the median age was 55 years and 52% were women. 94 (24.3%) patients had an autoimmune disease; 74 (19.1%) had a solid tumor (ST); 51 (13.2%) had chronic kidney disease (CKD); 43 (11.1%) had chronic liver disease (CLD); 37 (9.6%) had a hematologic malignancy (HM); 23 (5.9%) were solid-organ recipients and 20 (5.2%) HIV infected. 41.6% ($n = 161$) of the infections were healthcare related. Stools were the most frequent isolation site ($n = 299$, 77%), followed by blood cultures ($n = 29$, 7.4%) and abscess ($n = 19$, 4.9%). The most common species was *A. veronii*. Aminoglycosides, quinolones, carbapenems, and trimethoprim/sulfamethoxazole were the most active antibiotics in vitro. The variables associated with bacteremia were CLD OR 5.647; diabetes OR 2.376 and nosocomial acquisition OR 4.08. 30-day mortality was 5.7%, while global mortality was 10.3%. Mortality was associated with sex (male) OR 1.753; HM OR 2.741; ST OR 2.576; polymicrobial infection OR 2.445; ICU admission OR 5.175 and bacteremia OR 3.881.

Conclusion. Infections by *Aeromonas* spp. have increased and have a greater incidence among individuals with chronic diseases and immunosuppressive states in this setting. Mortality described in this cohort was minor than previously stated by other series.

Basal characteristics		N=387 Cases of *Aeromonas spp* infections (n, %)
Age (median)		55 (17-96)
Female		203 (52.5)
Comorbidities		
	Hematologic Malignancy	37 (9.6)
	Solid tumor	74 (19.1)
	Viral hepatitis	14 (3.6)
	Autoimmune disease	94(24.3)
	Hematopoietic stem cell transplantation	4 (1.0)
	Solid organ transplantation	23 (5.9)
	HIV infection	20(5.2)
	Diabetes mellitus	94(24.3)
	Chronic liver disease	43(11.1)
	COPD	6(1.6)
	Chronic kidney disease	51(13.2)
Immunosuppressive therapy		153 (39.5)
Polymicrobial infection		105 (27.1)
Nosocomial infection		161(41.6)
ICU		31 (8.0)
Surgery		86(22.2)
Antibiotic		146(37.7)
Quinolones		
Carbapenem		76(19.6)
Cephalosporin		59(15.2)
Piperaciline-tazobactam		21(5.4)
TMP/SMX		14(3.6)
Aminoglycoside		3(0.8)
30-day mortality		22(5.7)
Global mortality		40 (10.3)

Table 1. Demographic and clinical characteristics of patients with Aeromonas *spp* infection.

Antibiotic	No.	Susceptible n (%)	Intermediate n (%)	Resistant n (%)	MIC Susceptible	MIC Intermediate	MIC Resistant
Amikacine	98	96(97.95)	1(1.02)	1(1.02)	≤16	32	≥64
Gentamicine	74	72(97.29)	1(1.35)	1(1.35)	≤4	8	≥16
Aminoglycoside	**172**	**168(97.67)**	**2(1.16)**	**2(1.16)**			
Ciprofloxacin	363	350(96.41)	5(1.37)	8(2.20)	≤1	2	≥4
Levofloxacin	11	10(90.90)	0	1(9.09)	≤2	4	≥8
Quinolone	**374**	**360(96.25)**	**5(1.33)**	**9(2.40)**			
Piperaciline Tazobactam	71	58(81.69)	1(1.40)	12(16.90)	≤16	32-64	≥128
Ampiciline	363	4(1.10)	4(1.10)	355(97.79)			
Ampiciline Sulbactam	12	1(8.33)	1(8.33)	10(83.33)			
Amoxiciline Clavulanic acid	83	38(45.70)	37(44.57)	8(9.63)			
Cefoxitin	54	31(57.40)	4(7.40)	19(35.18)			
Beta lactam							
Cefazoline	135	46(34.07)	10(7.40)	79(58.51)			
Ceftriaxone	87	79(90.80)	2(2.29)	6(6.89)	≤8	16-32	≥64
Ceftazidime	86	80(93.02)	0	6(6.98)	≤8	16	≥32
Cefepime	44	42(95.45)	1(2.27)	1(2.27)	≤8	16	≥32
Cephalosporin	**352**	**247(70.17)**	**13(3.69)**	**92(26.13)**			
Imipenem	82	69(84.14)	8(9.75)	5(6.09)	≤4	8	≥16
Meropenem	77	74(96.10)	1(1.29)	2(2.59)	≤4	8	≥16
Ertapenem	10	9(90)	0	1(10)			
Carbapenem	**169**	**152(89.94)**	**9(5.32)**	**8(4.73)**			
TMP-SMX	363	304(83.74)	0	59(16.25%)	≤2/38	-	≥4/76
Nitrofurantoine	91	91(100)	0	0			

Table 2. *Antibiotic susceptibility pattern.*

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

1503. Engraftment of Investigational Microbiome Drug, SER-262, in Subjects Receiving Vancomycin Is Associated with Reduced Rates of Recurrence after Primary *Clostridium Difficile* Infection (CDI)

Christopher Ford, PhD[1]; Kevin Litcofsky, PhD[1]; Barbara McGovern, MD[1]; Darrell Pardi, MD[2]; Richard Nathan, DO[3]; Val Hansen, MD[4]; Robert Brennan, MD[5]; John Pullman, MD[6]; Patricia Bernardo, ScD[1]; Amelia Tomlinson, PhD[1]; Kevin Horgan, MD[1]; Jessica Bryant, PhD[1]; Emily Walsh, PhD[1]; Michelle Rodriguez, BS[1]; Henry Rogalin, PhD[1]; Elaine Wang, MD[1]; Matt Henn, PhD[1]; [1]Seres Therapeutics, Inc., Cambridge, Massachusetts; [2]Mayo Clinic, Rochester, Minnesota; [3]Snake River Research, Idaho Falls, Idaho; [4]Lakeview Hospital, Bountiful, Utah; [5]Infectious Disease Associates of Central Virginia, Lynchburg, Virginia; [6]Mercury Street Medical, Butte, Montana

Session: 158. Enteric and Intraobdominal Infections
Friday, October 4, 2019: 12:15 PM

Background. CDI is a 2-hit process requiring *C. difficile* spores and antibiotic-mediated dysbiosis, a low diversity state of the gut microbiome. Recurrent CDI (rCDI) is common and may be related to inadequate antibiotic concentrations (e.g., metronidazole; MET) or persistent dysbiosis (e.g., vancomycin; VAN). SER-262 is an oral investigational microbiome drug rationally designed to reduce rCDI by restoring colonization resistance.

Methods. SERES-262-001 was a Phase 1b randomized placebo (PBO)-controlled single and multidose study. Subjects with primary CDI ($n = 96$) were enrolled in 8 cohorts (SER-262: PBO, 5:1). Subjects were dosed after MET ($n = 57$) or VAN ($n = 39$) per investigator discretion. Engraftment of SER-262 strains was evaluated using strain-specific molecular probes in fecal samples; microbial diversity was measured via whole metagenomic shotgun sequencing. Endpoints included safety and rCDI rates up to 8 weeks posttreatment and strain engraftment at 1, 4, 8, 12, and 24 weeks.

Results. SER-262 safety was comparable to PBO. Although overall rCDI rates were similar in SER-262 ($n = 80$) and PBO ($n = 16$) subjects (18.8% vs. 12.5%, respectively), in a *post-hoc* analysis we observed reduced rates of rCDI in the VAN+SER-262 arm compared with MET+SER-262 (6.3 vs. 27.1%, respectively, P = 0.02, Figure 1). Overall, 8 of 12 SER-262 strains showed significant engraftment relative to PBO. However, greater SER-262 strain engraftment was observed in VAN-treated subjects compared with MET-treated subjects ($P < 0.001$, Figure 2). To better understand the impact of dysbiosis on engraftment, we evaluated baseline microbial diversity by prior antibiotic received and observed that the diversity of Bacteroidetes and Firmicute species was lower in VAN-treated subjects compared with MET-treated subjects ($P < 0.001$, Figure 3).

Conclusion. In this first phase 1b study of a fermented microbiome drug in subjects with primary CDI, SER-262 was safe and well-tolerated. The higher efficacy rates of SER-262 in reducing rCDI among VAN-treated subjects may be due to low baseline microbial diversity, which creates an ecologic niche for greater engraftment of dose species. Treatment of *C. difficile* with VAN, followed by restoration of colonization resistance with SER-262, is a promising 2-pronged therapeutic paradigm to reduce rCDI.

Figure 1. CDI Recurrence rates by treatment and qualifying antibiotic episode

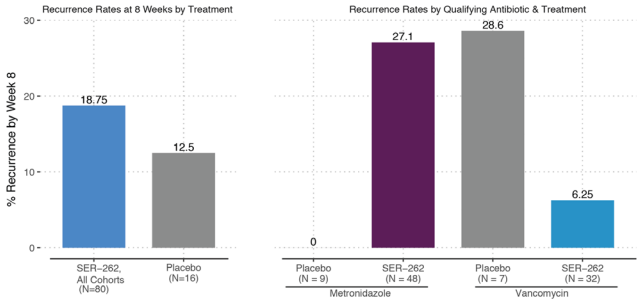


Figure 2. SER-262 Engraftment (Defined as Total Signal Detected across strains) by Qualifying Antibiotic

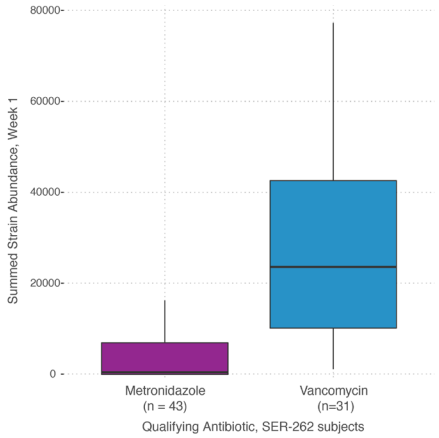
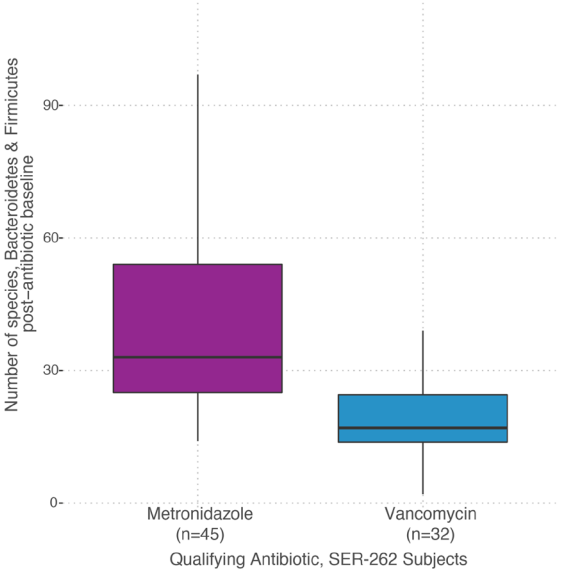


Figure 3. Baseline Diversity (defined as the number of Firmicutes & Bacteroidetes species) by qualifying antibiotic.



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

1504. Epidemiology and Etiology of Pyogenic Liver Abscess in the Calgary Health Zone: A Population-Based Study

Jennifer A. Losie, MD; John Lam, MD, FRCPC; Dan Gregson, MD; Michael Parkins, MSc, MD, FRCPC; University of Calgary, Calgary, AB, Canada

Session: 158. Enteric and Intraabdominal Infections
Friday, October 4, 2019: 12:15 PM

Background. Pyogenic liver abscess (PLA) is a significant cause of morbidity and mortality. Epidemiological data regarding risk factors and outcome determinants are often ascertained from referral population bases. We utilized a population-based study design to better understand PLA.

Methods. Calgary Health Zone (CHZ) residents ≥18 years of age (population ~1.3 million) who were hospitalized with PLA in 2017 were included. Charts were manually reviewed to determine demographics and clinical outcomes. Univariate and multivariate logistic regression were used to assess for factors associated with 30-day mortality using STATA 15.1 (College Stn., TX).

Results. Forty-four patients with PLA were identified (39% female, median age 61 [IQR 56–68] years) corresponding to an incidence rate of 3.7 cases per 100,000 population. Prevalent co-morbidities with PLA included; hemodialysis dependence (4.5%), cancer (25%), diabetes (23%), and cirrhosis (6.8%), each of which was significantly more common ($P < 0.05$) than in the general population; 85.3X, 11.2X, 3.6X, 29.9X, respectively. Rates of other comorbidities including ischemic heart disease, COPD, and rheumatoid arthritis did not differ from general populations ($P > 0.05$). The etiology of PLA was established in 72% of cases, of which biliary was most common (48%). Most (91%) cases had at least one organism identified via blood or liver aspirate culture. The most common organisms were *Streptococcus anginosus* group (12), *Klebsiella pneumoniae* (11), *Klebsiella oxytoca* (6), *Escherichia coli* (4), and obligate anaerobes (3). Blood cultures were positive in 25/44 (56%) cases. Thirty-day mortality from admission was 11% and had multiple risk factors (Table-1).

Conclusion. PLA in the CHZ is common and associated with high mortality. Understanding factors influencing PLA occurrence and outcome can assist in correctly identifying and optimally treating patients.

Table-1: Risk factors associated with 30-day mortality in patients with PLA.

Factors associated with 30-day mortality	Univariate (% with versus without, Relative risk, p-value)	Multivariate (p-value)
Bacteremia	20% vs 0%, NA, p=0.05	0.27
Polymicrobial bacteremia	56% vs 0%, NA, p<0.001	NA
Biliary source	19% vs 0%, NA, p=0.05	0.23
Altered immunity	40% vs 3%, 13.6, p<0.01	0.02

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

1505. Shorter-Course Antibiotic Treatment for Pediatric Ventilator-Associated Tracheitis Is Safe and Effective

Mirela Grabic, BA,CCRP[1]; Jason G. Lake, MD, MPH[2]; Jelena Debelnogich[3]; Christina Krucylak[4]; Jason Newland, MD, MEd, FPIDS[5]; [1]Washington University School of Medicine-Saint Louis, Saint Louis, Missouri; [2]Washington University Medical School-Saint Louis, Saint Louis, Missouri; [3]Kent University, Kent, Ohio; [4]Washington University, Saint Louis, Missouri; [5]Washington University School of Medicine, St. Louis, Missouri

Session: 159. Pediatric Bacterial Diseases: Diagnosis and Management
Friday, October 4, 2019: 12:15 PM

Background. Ventilator-associated tracheitis (VAT) is a common infection in children cared for in pediatric intensive care units (PICU). Short-course antibiotic treatment (5 days) has been shown to be effective. In October 2016, we implemented a PICU VAT guideline for short-course therapy. We assessed the impact of this intervention.

Methods. We conducted a retrospective cohort study of PICU patients diagnosed with VAT from October 2016 to June 2018. The antimicrobial stewardship program (ASP) identified potential patients through daily chart review. Only those patients with a clinician diagnosis and who were receiving antibiotics for VAT, either enterally or parenterally, were included. Frequencies and proportions were calculated. Chi-square or Fisher exact tests were used to compare proportions.

Results. ASP identified 251 potential patients, 105 (42%) of whom met inclusion criteria. The median age was 7 years (range: 0–21). Twenty-eight (27%) were tracheostomy dependent. The most commonly prescribed antibiotics were cefepime (43%), ceftriaxone (17%), and vancomycin (14%). Median antibiotic duration was 13 days (range: 1–29); 57 (52%) received > 5 days and 48 (44%) received 5 days. Only 3 (6%) patients who received 5 days of antibiotics required retreatment within 10 days of their initial course vs. 11 (19%) who received > 5 days (P = 0.09). A diagnosis of ventilator-associated pneumonia (VAP) within 10 days of completing VAT treatment was made in 2 (4%) patients who received 5 days vs. 3 (5%) of patients who received > 5 days ($P = 1.0$). *C. difficile* infection within 90 days occurred in 2 (4%) patients who received > 5 days vs. 1 (2%) who received 5 days (P = 1.0).

Conclusion. Short-course antibiotic therapy for VAT was not associated with retreatment for VAT or subsequent diagnosis of VAP. Development of *C. difficile* was similar between groups. Adherence to the guideline was approximately 50%, perhaps due to physician perception of disease severity. Additional work is needed to refine the diagnosis of VAT and assess the interaction between illness severity and treatment duration.

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

1506. Outcomes of Standardized Neonatal Cephalexin Dosing

Melena J. Robertson, DO[1]; Van Tran, PharmD, BCPPS[1]; Andrew M. Nuibe, MD, MSCI[2]; [1]Inova Children's Hospital, Fairfax, Virginia; [2]Pediatric Specialists of Virginia, Fairfax, Virginia

Session: 159. Pediatric Bacterial Diseases: Diagnosis and Management
Friday, October 4, 2019: 12:15 PM

Background. The optimal dosing of cephalexin in infants ≤90 days old is not well known. Our Antimicrobial Stewardship Program (ASP) standardized cephalexin dosing for inpatients ≥30 days old using available literature and released an antimicrobial dosing guideline in September 2016. Recommended antimicrobial dosing for inpatients <30 days old followed in November 2017. We reviewed the indications, cephalexin dosing, and clinical outcomes of patients before and after the release of our ASP's cephalexin dosing guidelines.

Methods. Webi Universe was queried for cephalexin orders for inpatients ≤ 90 days old at the Inova Children's Hospital from January 2016 to November 2018. Manual chart review extracted clinical points of interest and ensured that inclusion criteria were met. For patients <30 days old, the pre-intervention period was January 2016 to October 2017 and the post-intervention period was November 2017 to October 2018. For patients ≥30 days old the pre-intervention period was January 2016 to August 2016 and the post-intervention period was September 2016 to October 2018. Aggregate data from the two pre-intervention and two post-intervention periods were pooled, respectively.

Results. 41 patients were identified: 25 in the pre-intervention period and 16 in the post-intervention period. The median age of patients in the pre-intervention period was 16 days compared with 31 days in the post-intervention period ($P = 0.02$). No patients had acute kidney injury requiring cephalexin renal dosing. Skin and soft-tissue infections (18) and urinary tract infections (10) were the most common infections in both periods. 24% of patients received the recommended cephalexin dose in the pre-intervention period compared with 63% in the post-intervention period ($P = 0.02$). Logistic regression controlling for pathogens and area of care showed that patient age predicted the use of recommended cephalexin dosing (OR 1.1, 95% CI: 1.01–1.21). There were no deaths or recrudescent infections.

Conclusion. Our ASP's interventions improved adherence to standardized cephalexin dosing in inpatients ≤90 days old without any adverse clinical outcomes. Patients ≥30 days old were more likely to receive recommended cephalexin dosing. Opportunities remain to best define the optimal dose of cephalexin in infants ≤90 days old.

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

1507. Pharmacodynamic Target Attainment of Daptomycin Against *Staphylococcus aureus* for Treatment of Pediatric Osteomyelitis

Grant Stimes, PharmD, MPA, BCPS[1]; Jennifer E. Girotto, PharmD, BCPPS, BCIDP[2]; Joshua D. Courter, PharmD[3]; [1]Cincinnati Children's Hospital Medical Center, Hartford, Connecticut; [2]University of Connecticut/CT Children's Medical Center, Hartford, Connecticut; [3]Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio