reference broth microdilution methods. Percentage of isolates inhibited at ≤8 mg/L (CLSI, cefepime high dose) and ≤16 mg/L (pharmacokinetic/pharmacodynamic [PK/PD] susceptible [S] breakpoint based on extended infusion and high dosage) were evaluated.

**Results.** FEP-TAZ (99.9% inhibited at ≤16 mg/L; Table), CAZ-AVI (99.9%), and meropenem (MEM; 99.9%) were the most active agents against Enterobacteriaceae (ENT). An ESBL phenotype (CLSI criteria) was observed in 12.5%, 12.9%, and 3.6% of E. coli (EC), K. pneumoniae (KPN), and P. mirabilis (PM), respectively. FEP-TAZ and CAZ-AVI exhibited complete activity against EC, whereas C-T and piperacil- lin-tazobactam (PipTAZ) were active against 91.5% and 88.1% of ESBL-phenotype EC isolates, respectively. The most active agents against KPN were FEP-TAZ (99.6% inhibited at ≤16 mg/L), CAZ-AVI (100.0%), and amikacin (AMK; 94.9%). All PM isolates were S to FEP-TAZ (highest MIC, 0.12 mg/L), C-T, CAZ-AVI, MEM, Pip-TAZ, and AMK. FEP-TAZ was highly active against E. cloacae (n = 94; MIC, 0.05 mg/L; 98.9% inhibited at ≤16 mg/L) and Citrobacter spp. (n = 91; MIC, 0.12 mg/L; highest MIC, 0.5 mg/L). Against P. aeruginosa (PSA), FEP-TAZ inhibited 97.6% of isolates at ≤16 mg/L, with spectrum of activity similar to CAZ-AVI (96.4%), C-T (94.9%), and AMK (97.6%), and greater than MEM (85.5%) and Pip-TAZ (87.3%).

**Conclusion.** FEP-TAZ showed potent activity against ENT and PSA isolated in US hospitals in 2018, with overall spectrum (ENT + PSA) similar to CAZ-AVI and greater than C-T, Pip-TAZ, and MEM when FEP-TAZ proposed PK/PD 5 breakpoint of ≤16 mg/L was applied. FEP-TAZ may represent a valuable option for treating cUTIs caused by resistant GNR.

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1446. The Impact of Enterobacteriaceae Isolate Breakpoints on Prescriber Treatment Choices for Discordant Pattern Urinary Tract Infections

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**Session:** 157. Urinary Tract Infections

**Friday, October 4, 2019: 12:15 PM**

**Background.** Our institution revealed Enterobacteriaceae with discordant cefazolin (CEF) resistant / ampicillin-sulbactam (SAM) susceptible patterns (CRASS-P). This discordance could be from the multiple MIC cephalosporin breakpoint adjustments from CLSI. SAM has higher resistance for gram-negative bacteria compared with cephalosporin (CEF) which is confirmed by our antibiotic monitor. We sought to understand if narrow-spectrum antibiotic choices for CRASS-P urinary tract infections (UTIs) led to clinical cure (CC).

**Methods.** We conducted a retrospective review from January 2018 to February 2019 of all adult patients admitted with a diagnosis of P. mirabilis, E. coli, and Klebsiella pneumoniae isolates from urine cultures. Patients with any symptom related to a UTI, urine analysis with >10 white blood cells/high-powered field, urine culture with >10,000 colony-forming units/mL, and receipt of an antibiotic included. CC was defined as symptom resolution within 48 hours with no return to care within 28 days of the positive urinary culture. “Group A” included patients prescribed narrow-spectrum antibiotics such SAM, CEF, or an oral cephalosporin (OC) vs. broad-spectrum antibiotics such as ceftriaxone, quinolones or sulfas-medications (“Group B”).

**Results.** There were 960/1356 (70.8%) CRASS-P urinary isolates and 244 patients met inclusion criteria. Of 244 patients, 72 were in Group A and 172 were in Group B. There was no difference in the diversity of the 3 uropathogens, P = 0.34 (Table 1). Median age was 69.2 (30.3–87.5) years for Group A and Group B, respectively, P = 0.13. Females accounted for 73.6% and 77.9% in Group A and B, respectively, P = 0.23. Females accounted for 73.6% and 77.9% in Group A and B, respectively, P = 0.07. Antibiotics used in treatment are included in Table 1. UTI was associated with bacteremia for 2 patients in Group A and 4 patients in Group B (P = 0.84). Both patients in Group A reached CC and used AMC for treatment. However, 1 out of 4 patients did not achieve CC in Group B.

**Conclusion.** The use of SAM or OC can spare the broad-spectrum antibiotics use for CRASS-P UTIs as there was no statistical difference in CC between the two groups. The use of SAM with CRASS-P bacteremia secondary to UTI is possible; however, future studies are needed.

**Table 1:** Diversity of Enterobacteriaceae for patients meeting inclusion criteria

| Microorganisms | A: CRASS-P | B: CRASS-P | P-value |
|----------------|-----------|------------|---------|
| E. coli        | 154       | 143        | 0.75    |
| P. mirabilis   | 46        | 34         | 0.59    |
| K. pneumoniae  | 51        | 42         | 0.59    |

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1448. Prostate Abscess: Clinical Features, Management, and Outcomes of a “Stealth” Infection: A Case Series

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**Session:** 157. Urinary Tract Infections

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**Background.** Prostate abscess (PA) is uncommon and the diagnosis is often delayed or missed. Traditionally, PA has resulted from acute prostatitis or ascending genitourinary (GU) infection due to gram-negative bacilli but S. aureus is an emerging cause.

**Methods.** A retrospective review of all adult patients admitted with an ICD-9 or -10 diagnosis of PA between January 2013 and July 2018 was conducted. Inclusion criteria included age ≥18 years, a compatible GU infection syndrome, and imaging consistent with PA.

**Results.** Twenty-two patients with PA were identified. The median age was 57 years. Five patients (22.7%) were immunosuppressed and 11 (50%) had diabetes. The median Charlson Comorbidity Index was 2. No patient had a prior history of PA but 3 patients had a past diagnosis of prostatitis. Only 1 patient had GI instrumentation in the preceding 6 weeks and no patient had an indwelling urethral catheter. Fever (59%), dysuria (48%), and urinary retention (32%) were the most common presenting symptoms. Only 7/18 (39%) patients had a tender prostate on examination; fluctuate

**Figure 1:** Antibiotic choices for patients who met the inclusion criteria.

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1447. Ex Vivo Human Bladder Tissue Model to Evaluate Lactobacillus-Containing Formulations as Preventive Treatment Against Common Urogenital Pathogens

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**Background.** Urinary tract infections (UTIs) are common bacterial infections in adults, and catheter-associated UTIs are the most common nosocomial infection. The rise of multidrug-resistant organisms and an increased focus on antibiotic stewardship has influenced the development of novel treatments against such infections, and there is growing interest in the use of probiotics for antimicrobial therapy. We used an ex vivo human bladder tissue (HTB) model to evaluate the antimicrobial efficacy and biocompatibility of lactobacillus-based developmental formulations (created and supplied by I CET, Inc.) for preventive treatment against common UTI pathogens.

**Methods.** To assess antimicrobial efficacy, lactobacillus-based formulations (live and attenuated) were spiked with five prevalent UTI organisms (5 × 107 CFU/mL). Ex vivo HTB explants were treated with 300 μL of spiked formulation for 6 and 24 h at 37°C, then processed and plated on selective agars. Biocompatibility studies assessed ex vivo HTB tissue viability and inflammatory response (IL-8) to lactobacillus-containing formulations with MTT assay and ELISA at 2 h post-treatment.

**Results.** At 6 h, live lactobacillus-containing formulations (29–124, 29-124C) were bacteriostatic (90.00–99.89% log CFU/mL reduction) against Escherichia coli and Klebsiella pneumoniae and bactericidal (29–90% log CFU/mL reduction) against Candida albicans, Enterococcus faecalis, and Proteus mirabilis. By 24 h, live formulations were bactericidal against all five organisms tested. Attenuated formulation 29-125 achieved bacteriostatic efficacy against E. coli, K. pneumoniae, and P. mirabilis and bactericidal efficacy against E. faecalis and E. coli at 24 h. Biocompatibility assessments following 2 h exposure to lactobacillus-based formulations revealed exposed explants were fully viable, with no significant changes in IL-8 production compared with PBS-treated controls.

**Conclusion.** This study suggests lactobacillus-based formulations are effective and safe options for UTI prevention. While this static ex vivo human bladder mucosal model does not fully replicate the dynamic and diluting conditions that occur in vivo, we anticipate that our findings will be confirmed by future in vivo studies.

**Table 1:** Percent reduction compared to untreated control growth of CFU/mL (44) HTB explants collected in 6 and 24 h after treatment with I CET formulations. *Δ* , bacteriostatic efficacy (90.0-99.89% reduction) Δ*, bactericidal efficacy (≥99.9% reduction)