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Background. There are few data on risk factors, chosen therapy and healthcare utilization among US children with extended spectrum β lactamase-positive urinary tract infection (ESBL UTI). We performed a multicenter case–control study on childhood ESBL UTI from November 2014 to February 2017; herein we present preliminary data from a single Los Angeles County hospital.

Methods. We defined UTI per 2011 AAP guidelines and ESBL per CLSI specifications. ESBL(−) UTI controls were matched by sex and age. Descriptive and matched univariate analyses on medical record data (up to 6 months after index culture) were performed.

Results. Among 893 urinary Enterobacteriaceae isolates, 28 were ESBL(+), of which 23 were included: 13 girls, 0–5 year olds; 4 girls, ≥6 year olds; and 6 boys, 0–5 year olds. Prior hospitalization (55 vs. 78% for cases vs. controls, respectively), prior receipt of systemic antibiotics (55 vs. 38%), index hospitalization (39 vs. 20%), mean length of stay (3.9 vs. 3.6 days), and medical comorbidity (44 vs. 56%) did not differ significantly between groups. As well, several biosocial risk factors were similar in both groups, including: race, ethnicity, non-English-speaker, access to public benefits, international travel, non-US-birth, domestic violence/child abuse/neglect, and housing insecurity. Of cases and controls receiving any therapy, 16% and 96%, respectively, got empiric antibiotics to which the isolate was susceptible ($P = 0.001$). After culture results were available, only 39% of cases and 96% of controls received effective agents ($P = 0.00002$). Forty-two percent of cases had clinical improvement (within a mean of 2–3 days), vs. 43% of controls. Total treatment duration did not differ, and no deaths were recorded. In the 6 months after index UTI, groups did not differ in number of clinical encounters, proportion with documented follow-up, repeat urine tests, receipt of additional therapy, or prophylactic antibiotics. The proportions undergoing any GU-specific imaging were similar (62 vs. 47%), but this imaging included modalities with ionizing radiation in 4 cases vs. none of the controls ($P < 0.05$).

Conclusion. Our data suggest that clinical improvement occurs with initial (and potentially ineffective) empiric regimens, regardless of ESBL phenotype. The finding of more ionizing radiation exposure warrants additional study.

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

2418. Management of Carbapenem-Resistant Enterobacteriaceae Infections in a Long-term Acute Care Hospital

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Background. Long-term acute care Hospital (LTACH) systematically selects a unique patient population with multiple risk factors for Carbapenem-resistant Enterobacteriaceae (CRE) colonization and infection leading to an increase CRE prevalence at these facilities. This selection bias creates a fertile ground to harness scientific data and test hypothesis. We performed a retrospective analysis of patients with CRE infections diagnosed and treated in one LTACH.

Methods. Baseline data, antimicrobial treatment, and outcomes were collected in patients with bacteremia, healthcare-associated pneumonia (HCAP), and complicated urinary tract infection (cUTI)/acute pyelonephritis (AP) due to CRE diagnosed between January 2017 and December 2017.

Results. 57 cases of CRE infections were identified over the study period; 12 bacteremia, 20 HCAP and 25 cUTI/AP. The proportion of patient with significant comorbidities include; 31.5% diabetes, 40.4% heart failure, 29.8% kidney disease and 10% with solid tumors. 89.5% of patients presented with sepsis and 33.3% had septic shock. Among 57 patients, majority (56) received empiric antibiotics known to have activity against Gram negative but only 38.6% had *in vitro* activity against the CRE organism recovered from cultured specimen. 85% of index CRE isolate was *Klebsiella pneumoniae*, 8.7% *Enterobacter cloacae*, 3.5% *Proteus mirabilis*, and 1.8% *Escherichia coli*. Treatment regimen varied; however, 78.9% received monotherapy. Overall outcome was poor with 28-day mortality of 17.5% across all infection sites but up to 25% in patients with bacteremia.

Conclusion. In this study, we report our clinical experience treating CRE infections in LTACH. We proved that CRE infections occurred in patients with substantial co-morbidities. Even though clinical outcome remain of great concern, 28-day mortality and rate of eradication of CRE in the study were comparatively better than other national estimates. Inappropriate empiric treatment may be one of the many factors leading to overall poor treatment outcomes.

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

2419. Standard vs. Alternative Therapy for *Stenotrophomonas maltophilia* Infections: Focus on Trimethoprim–Sulfamethoxazole, Minocycline, and Moxifloxacin Monotherapy

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Background. *Stenotrophomonas maltophilia* is a Gram-negative bacilli associated with nosocomial infections. TMP-SMX is often considered the first-line agent; however, use may be limited due to adverse effects or resistance. Both minocycline and moxifloxacin have historically been used based on *in vitro* data; however, there are limited studies assessing clinical outcomes. The purpose of this study was to compare the efficacy of TMP-SMX, minocycline, or moxifloxacin monotherapy for treatment of *S. maltophilia* infections.

Methods. This was a single-center, retrospective chart review from January 2006 to September 2017. Subjects were selected by cross-referencing pharmacy billing and culture data. Patients ≥18 years of age were included if they had isolated *S. maltophilia* in at least one culture and were treated for at least five days. Patients were excluded due to pregnancy, incarceration, cystic fibrosis, receipt of combination therapy, or having prior case of treated *S. maltophilia* infection. Complete success was defined as meeting all three of the following: (1) resolution of signs/symptoms, (2) no repeat isolation 30 days after end of therapy, and (3) no switch or addition of alternative agents that cover *S. maltophilia*. Partial success was defined as meeting at least two out of the three criteria.

Results. A total of 109 patients were included in this study. No statistically significant difference in complete clinical success achievement was identified: TMP-SMX 14/32 (43.8%) vs. minocycline 17/37 (45.9%) vs. moxifloxacin 16/40 (40%), $P = 0.8674$. There was also no significant difference when including those that achieved partial clinical success: TMP-SMX 29/32 (90.6%) vs. minocycline 35/37 (94.6%) vs. moxifloxacin 34/40 (85%), $P = 0.3724$. Moxifloxacin use was associated with a significantly longer median LOS of 41.5 days compared with 24.5 days for TMP-SMX and 10 days for minocycline ($P = 0.0340$). Resistance development within 30 days post-treatment only occurred in 4 patients who received moxifloxacin ($P = 0.0258$). There was no difference in mortality nor treatment duration.

Conclusion. Clinical success achievement was found to be similar in patients treated with TMP-SMX, minocycline, or moxifloxacin monotherapy for *S. maltophilia* infections.

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

2420. A Real-World Perspective on the Efficacy of Fosfomycin for Treatment of Multidrug-Resistant Pathogens Causing Urinary Tract Infections

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Background. Urinary tract infections (UTI) are the most common infection associated with multidrug-resistant (MDR) pathogens. With limited treatment options, there has been an increasing interest in the efficacy of fosfomycin (FOS); however, real-world clinical data are limited. Our objective was to assess the outcomes of hospitalized patients with MDR UTIs treated with FOS.

Methods. Retrospective review of patients with carbapenem-resistant (CRE) or extended spectrum β-lactamase producing (ESBL) *Enterobacteriaceae*, or vancomycin-resistant Enterococcus (VRE) UTIs who received ≥1 dose of FOS. UTI was defined as a urine culture with ≥1000 CFU/mL among patients with dysuria, increased urinary frequency, suprapubic or flank pain or tenderness, fevers, or altered mental status without an alternative etiology. We defined cure as resolution of symptoms within 7 days without reoccurrence within 30 days. Microbiological failure was defined as a positive urine culture within 14 days.

Results. 49 patients with MDR UTIs (17 ESBL, 17 VRE, 15 CRE) were included. Median age was 69 (range: 20–95), 18% were male, 14% were immunosuppressed and the median Charlson score was 4 (0–12). 33% had indwelling catheters and 10% of patients had neurogenic bladder. Increased frequency (29%) and fever (27%) were the most common symptoms. 51% of cases were healthcare associated and 64% met the CDC/NHSN definition of UTI. UTIs were complicated by pyelonephritis in 2 patients, but none had concomitant bacteremia. FOS was administered as empiric or definitive treatment in 39% and 61%, respectively. Only 12% of patients received >1 dose. Cure occurred in 88% of patients, and did not vary by infecting pathogen (Figure 1, Table 2), or the number of FOS doses received. Patients with relapsing symptoms were infected by ESBL ($n = 3$), CRE ($n = 1$), and VRE ($n = 3$); all but one received 1 dose of FOS. Microbiologic failures occurred in 18% due to ESBL ($n = 1$), CRE ($n = 4$), and VRE ($n = 4$). 4% of patients died in-hospital, but only 1 death was related to UTI. Overall, FOS was well-tolerated with vomiting recorded in one patient.

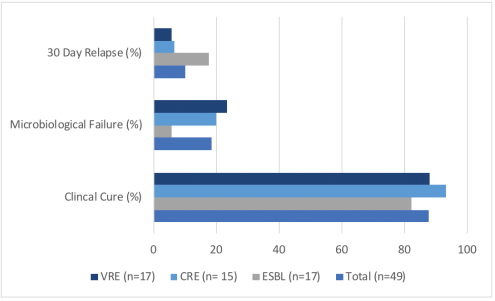
Conclusion. Across a range of MDR pathogens causing UTIs, FOS was well-tolerated and effective for hospitalized patients. FOS represents an attractive oral option to preserve alternative agents for systemic infections. Future studies are needed to evaluate the benefit of repeated dosing.

Table 2: Outcomes of patients with MDR UTI treated with Fosfomycin

Outcome	Total n=49	ESBL , n= 17	CRE, n= 15	VRE, n n=17	p=value
Clinical Cure, n (%)	43 (87.8)	14 (82.4)	14 (93.3)	15 (88.2)	0.6377
Microbiological failure n (%)	9 (18.4)	1 (5.9)	4 (26.7)	4 (23.5)	0.3411
30 Day relapse, n (%)	5 (10.2)	3 (17.6)	1 (6.7)	1 (5.9)	0.4540
Readmission due to MDR UTI n (%)	1 (2)	0 (0)	0 (0)	1 (5.9)	0.3826
In hospital mortality/discharge to hospice, n (%)	2 (4.1)	0 (0)	1 (6.7)	1 (5.9)	0.5711
Adverse reactions[1], n (%)	1 (2)	0 (0)	1 (6.7)	0 (0)	0.3114

1- Patient had emesis with one dose of fosfomycin, tolerated repeat dose
CRE= Carbapenem Resistant Enterobacteriaceae, ESBL: Extended Spectrum B-Lactamase Enterobacteriaceae, MDR: Multidrug resistant, VRE: Vancomycin Resistant Entrococcus UTI= Urinary Tract Infection

Figure 1: Outcomes of patients with MDR UTI Treated with Fosfomycin



CRE= Carbapenem Resistant Enterobacteriaceae, ESBL: Extended Spectrum B-Lactamase Enterobacteriaceae, MDR: Multidrug resistant, VRE: Vancomycin Resistant Entrococcus UTI= Urinary Tract Infection

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

2421. Tedizolid Is Well-Tolerated Among Patients Receiving Prolonged Treatment Courses

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Background. Tedizolid (TED) is a newly-approved oxazolidinone antibiotic that may be better tolerated than linezolid; however, real-world clinical data are limited, particularly among patients receiving prolonged treatment courses. Our objective was to review our clinical experience with TED and describe rates of adverse events.

Methods. Retrospective review of patients receiving >24 hours of TED between June 2015 and April 2018. Adverse events were determined according to standard definitions.

Results. 55 patients receiving 60 different TED treatment courses were included. The median duration of treatment was 7 days (range: 2–141 days); 42% and 16% of patients received courses ≥10 and ≥30 days, respectively. 44% of patients were male, the median age was 58 (20–88), and 35% were immunosuppressed, including 22% of patients who received a solid-organ transplant. Indications for TED were skin/soft-tissue infections (n = 23), bacteremia (n = 10), osteomyelitis/septic arthritis (n = 7), endocarditis/endovascular infection (n = 5), pneumonia (n = 4), M. abscessus treatment (n = 3), intra-abdominal infection (n = 2) and urinary tract infection (n = 1). 60% of patients failed alternative therapies prior to TED treatment. Specifically, 31% of patients had documented adverse events to linezolid (n = 8), daptomycin (n = 3), vancomycin (n = 3), quinupristin/dalfopristin, televancin, or tigecycline (n = 1 each). At initiation of TED, the median platelet (PLT) count (per 1000 cells/L) was 205 (range: 16–674); 20% had baseline thrombocytopenia (PLT <100). Overall, 11% of patients experienced an adverse event or intolerability leading to TED discontinuation, including 3 patients with thrombocytopenia (>50% decrease in PLT) and 1 patient each with a rash, vomiting, and confusion. 67% of patients with thrombocytopenia were previously intolerant of linezolid. No patients experienced lactic acidosis, peripheral neuropathy, or neutropenia. Notably, TED was well tolerated for treatment courses up to 141 days and among 2 patients with repeated, prolonged courses.

Conclusion. Among acutely and chronically-ill patients, TED was well-tolerated. This includes patients who received long-term treatment with TED, and those who were intolerant of alternative antibiotics.

Disclosures. **R. K. Shields**, Allergan: Grant Investigator, Research grant. Pfizer: Consultant and Scientific Advisor, Speaker honorarium. Shionogi: Scientific Advisor, Consulting fee. Roche: Grant Investigator, Research grant. Venatorx: Grant Investigator, Research grant. Medicines Company: Grant Investigator and Scientific Advisor, Consulting fee and Research grant. Accelerate Diagnostics: Scientific Advisor, Consulting fee.

2422. Efficacy of Cefoxitin for the Treatment of Urinary Tract Infection (UTI) Due to ESBL-Producing *E. coli* and *K. pneumoniae* Isolates

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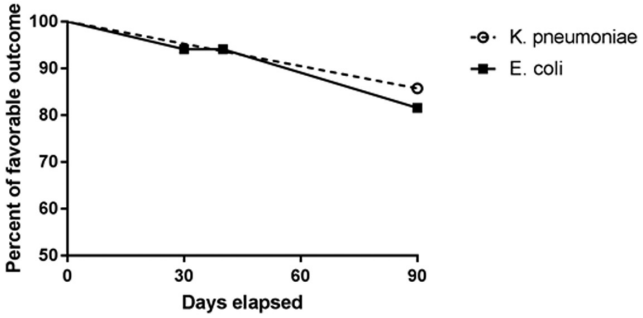
Background. Cefoxitin has a good *in vitro* activity and stability in resistance to hydrolysis by ESBLs, and is a good candidate for the treatment of urinary tract infection (UTI). However, data are scarce regarding its use in clinical practice, especially against *K. pneumoniae* deemed to be capable of the acquirement of porin-deficient mutant.

Methods. We conducted a retrospective study from September 2014 to November 2017, in a tertiary-care hospital. We gathered all prescriptions of Cefoxitin for UTI due to ESBL isolates. We compared the clinical outcomes between *E. coli* and *K. pneumoniae* ESBL-producing isolates after a 90-day follow-up. When available, we assessed whether Cefoxitin-based regimen was associated with an emergence of resistance. To our knowledge there is no clinical data supporting a real threat of development of resistance in UTI.

Results. The treatment of 31 patients with a mean age of 60 ± 18 years was analyzed. We observed a clinical cure at D90 in 81.2% (n = 13/16) of cases for ESBL *E. coli* isolates and 85.7% (12/14) for ESBL *K. pneumoniae* (P = 0.72). Overall, we noted an efficacy of FOX around 83.3% (n = 25/30).



Median dose of Cefoxitin was 4 g (2–8). Only one patient infected by an ESBL *E. coli* received an oral relay with levofloxacin for 4 additional days. No adverse events were reported. One patient who relapsed, carried a *K. pneumoniae* isolate that became intermediate to Cefoxitin in the follow-up.

Conclusion. In a period of major threat with a continuous increase of ESBL obliging to a policy of carbapenem-sparing regimens, it seems detrimental to deprive physicians of using Cefoxitin for ESBL *Enterobacteriaceae* for the treatment of UTI while our data show its efficacy.

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

2423. Effectiveness and Safety of Ceftolozane/Tazobactam (TOL/TAZ) Use for Carbapenem-Resistant Pseudomonas Infections in Children

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Background. Evidence for ceftolozane/tazobactam use in children is limited. We describe herein the outcomes of children treated with TOL/TAZ for various types of infections caused by carbapenem-resistant *Pseudomonas aeruginosa* (CR-PA).

Methods. Retrospective analysis of children who received TOL/TAZ while hospitalized from 2014 to 2017. Clinical and microbiological outcomes and safety data were analyzed.

Results. 8 children received TOL/TAZ for CR-PA infections (table): 3 cystic fibrosis (CF) exacerbations, 2 ventilator-associated pneumonia (VAP), 1 tracheitis, 1 chronic osteomyelitis (OM), 1 complicated intra-abdominal infection with urinary tract infection (cIAI/cUTI). All initial isolates were susceptible to TOL/TAZ per E-test. Creatinine clearance (CrCl) >90 mL/minute in all patients. Median total length of stay (LOS) was 73 days (d) (range 11–221) and median inpatient duration of TOL/TAZ