Table 2. MIC changes in APEKS-NP

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Isolate	**MIC (μg/mL)**		**Fold change of MIC**	**Mutation identified the post-treatment isolates**
	Pre-treatment*	**Post-treatment**		
Cefiderocol arm				
E. aerogenes	0.06	0.5	8	
	0.06	0.5	8	
K. pneumoniae	≤0.03	0.12	≥4	
	0.06	0.25	4	
	0.25	1	4	
E. cloacae	1	4	4	ACT-17 mutation (A313P)
S. marcescens	0.06	0.25	4	
Meropenem arm				
K. pneumoniae	2	8	64	
P. aeruginosa	0.12	64	512	
	0.25	4	16	Opr-D truncation
	0.25	4	16	Opr-D truncation
C. freundii	≤0.03	0.12	4	
*Latest isolate before study drug initiation				

Conclusion. Among isolates with ≥4-fold MIC increase during CFDC treatment, actual CFDC MIC values remained relatively low for most isolates. Frequency of MIC increase in BAT or meropenem arms was similar to that of CFDC, but the magnitude was greater. Acquisition of contributory mechanism has not been identified except for the mutation in PBP 3 and some β-lactamases.

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1267. Comparative activity of omadacycline against extended-spectrum beta-lactamase positive and negative Escherichia coli and Klebsiella pneumoniae strains recovered from urine specimens

Tyler J. Stone, PharmD[1]; Abdullah Kilic, MD[1]; John Williamson, PharmD[2]; Elizabeth Palavecino, MD[2]; Elizabeth Palavecino, MD[2]; [1]Wake Forest Baptist Health, Winston-Salem, North Carolina; [2]Wake Forest Baptist Health System, Winston Salem, NC

Session: P-58. Novel Agents

Background. Omadacycline (OMC) is a novel tetracycline (TET) derivative antibiotic with activity against TET-resistant Enterobacterales. OMC is available in both oral and intravenous formulations and is has been studied as a treatment of uncomplicated urinary tract infection (UTI) and acute pyelonephritis. The purpose of this study was to evaluate OMC activity against extended-spectrum beta-lactamase (ESBL) positive and negative Enterobacterales strains recovered from urine specimens.

Methods. Urine samples from patients with suspected UTI were quantitatively plated onto blood agar and MacConkey agar plates in the microbiology lab of Wake Forest Baptist Medical Center. After overnight incubation, colonies were identified to the species level by MALDI-TOF system. Susceptibility testing was performed for isolates of *E. coli* and *K. pneumoniae*. OMC and TET susceptibility testing was performed by disk diffusion and gradient strip methodologies. Results were interpreted in accordance with the Clinical and Laboratory Standards Institute (CLSI) or Food and Drug Administration breakpoints. Isolates were tested in triplicate. ESBL screening and susceptibility testing to oral antibiotics commonly prescribed for UTI were performed by the MicroScan WalkAway System. Susceptibility rates and $MIC_{50}/_{90}$ were calculated and subsets of isolates were analyzed using descriptive statistics.

Results. A total of 204 isolates, including 102 *E. coli* and 102 *K. pneumoniae*, were tested. All but 1 isolate (99.5%) exhibited categorical agreement in results generated by the strip (Table 1) and disk (data not shown) methods and this was considered a minor error involving an intermediate result. OMC MIC_{90} for *E. coli* and *K. pneumoniae* were 6 μg/mL and >32 μg/mL, respectively. OMC displayed increased susceptibility rates compared to TET regardless of isolate species or ESBL positivity (Table 2).

Table 1. Omadacycline Minimum Inhibitory Concentrations (MICs, μg/mL)

	MIC_{50}	MIC_{90}	Min MIC	Max MIC	Modal MIC
All *E. coli* and *K. pneumoniae* (n=204)	4	16	0.25	>32	4
E. coli (n=102)	3	6	0.25	>32	4
ESBL positive (n=51)	4	12	0.25	>32	4
ESBL negative (n=51)	2	4	1	8	3
K. pneumoniae (n=102)	4	>32	1.5	>32	4
ESBL positive (n=51)	8	>32	1.5	>32	4
ESBL negative (n=51)	4	8	1.5	>32	4
All ESBLs (n=102)	4	>32	0.25	>32	4
Non-ESBLs (n=102)	3	4	1	>32	4

Table 2. Susceptibilities of Oral Antibiotics Used to Treat UTI (% S)

	OMC	TET	AMC	CIP	NIF	SXT
E. coli (n=93)	87.3	47.3	73.1	45.2	92.5	49.5
ESBL positive (n=49)	74.5	26.5	63.3	10.2	91.8	26.5
ESBL negative (n=44)	100	70.5	84.1	84.1	93.2	75.0
K. pneumoniae (n=88)	61.8	58.0	65.9	55.7	55.7	45.5
ESBL positive (n=43)	41.2	25.6	37.2	18.6	51.2	11.6
ESBL negative (n=45)	82.3	88.9	93.3	91.1	60.0	77.8

Conclusion: OMC exhibits promising antimicrobial activity against TET-resistant and ESBL-positive *E. coli* and *K. pneumoniae*. OMC displays superior activity to ESBL positive *E. coli* when compared to ESBL positive *K. pneumoniae*. These data support the development of OMC as a much needed option in the treatment of UTI caused by resistant Enterobacterales.

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1268. Dalbavancin for the Treatment of Infections due to Staphylococcus aureus

Amber C. Streifel, PharmD, BCPS[1]; Ellie Sukerman, MD[1]; Monica Sikka, MD[1]; Jina Makadia, MD[2]; James Lewis, PharmD[2]; Strnad Luke, MD[3]; [1]Oregon Health & Science University, Portland, Oregon; [2]Oregon Health and Science University, Portland, Oregon; [3]Oregon Health and Science University and Portland State University School of Public Health, Portland, Oregon

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Background. Dalbavancin is a lipoglycopeptide antibiotic active against gram-positive organisms. Its extended half-life allows for weekly dosing that can last 4 to 6 weeks with 2 doses. Although approved for treating skin and soft tissue infections, use for more complicated infections is appealing, particularly when daily intravenous antibiotics are impractical. S aureus is the most common cause of complex infections for which dalbavancin is considered at our institution, so we sought to better understand its use.

Methods. We conducted a retrospective study to describe dalbavancin use at our institution for infections caused by Staphylococcus aureus. We identified all patients ≥18 years who received ≥1 dose of dalbavancin. Infectious disease faculty reviewed charts for clinical characteristics and outcomes of the infections.

Results. Fifty-two patients with S. aureus infections (60% MRSA) were treated with at least a partial course of dalbavancin. Twenty-seven (52%) had a history of IV drug use (IDU) and the most common infections were bone and joint infection in 51% and bacteremia in 40% (Table 1). The most common dosing regimen was 1500 mg x 1 in 55% or 1500 mg weekly x 2 in 25% (Table 2). The most common reasons for use of dalbavancin were history of IDU in 48% and lack of a safe home environment in 21%. Suppressive oral antibiotics for the primary infection were prescribed to 3 patients after completing dalbavancin (2 received for other indications). Clinical outcomes include 15% of patients lost to follow-up, readmission due to infection recurrence or dalbavancin adverse effects in 12%, and overall infection recurrence or relapse by day 90 in 31% (Table 3). There were no severe dalbavancin-related adverse drug events.

Table 1. Patient and Disease Characteristics

Table 1. Patient and Disease Characteristics

	n (%)
Demographics	
Age	Mean 45.5 years (STD 13.5)
Gender (Female)	15 (29%)
History of renal dysfunction	7 (13%)
History of hepatic dysfunction	14 (30%)
History of IVDU	27 (52%)
Indication	
Bone and joint infection (non-vertebral)	15 (29)
Vertebral osteomyelitis	11 (22)
Bacteremia	21 (40)
Skin and soft tissue infection	10(19)
Endocarditis	4 (8)
Vascular graft infection	2 (4)
Superinfected hepatic mass	1 (2)
Tenosynovitis	1 (2)
Endophthalmitis	1 (2)
Organism	
MRSA	31 (60)
MSSA	21 (40)
Diagnostic Imaging Performed in Workup	
TTE	29 (56)
TTE resulted as no vegetation or unexplained regurgitation	19 (66)
TEE	2 (4)
Spinal Imaging (CT scan or MRI)	17 (33)
Vascular imaging (venous duplex ultrasound)	13 (25)
Other cross-sectional imaging	18 (35)
Any additional imaging to assess for metastatic infection	5 (10)

Footnote: MRSA = methicillin resistant *S aureus* / MSSA = methicillin susceptible *S aureus* / IVDU = intravenous drug use / TTE = transthoracic echocardiography / TEE = transesophageal echocardiography / CT = computed tomography / MRI = magnetic resonance imaging; Indication: Multiple indications existed for some patients, so total % of study population > 100