fraction of our case population. Leukocytosis and elevated CRP tended to predict culture-positive infection, whereas ESR and fever did not. As recommended in the IDSA Vertebral Osteomyelitis guidelines, blood cultures were obtained in all cases, which yielded positive results in more than half of patients. Pathogen recovery was further improved to nearly 80% with supplemental deep tissue sampling, thus highlighting the opportunity to enhance microbiological diagnosis at our institution.

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333. Tedizolid Activity against Gram-Positive Bacterial Isolates Causing Bone and Joint Infections in the United States (2015–2019)

Cecilia G. Carvalhaes, MD, PhD[1]; Helio S. Sader, MD, PhD[2]; Jennifer M. Streit, BS[2]; Mariana Castanheira, PhD[2]; Rodrigo E. Mendes, PhD[2]; [1]JMI Laboratories, Inc., North Liberty, Iowa; [2]JMI Laboratories, North Liberty, Iowa

Session: P-10. Bone and Joint

Background: Prolonged systemic antibiotic courses are frequently used to manage difficult-to-treat bone and joint infections (BJI). Tedizolid has been considered as a therapy candidate for BJI in adults and children. This study assessed the *in vitro* activity of tedizolid and comparator agents against a contemporary collection of Gram-positive (GP) isolates causing BJI in the US.

Methods: A total of 310 *Staphylococcus aureus* (SA), 79 β-hemolytic streptococci (BHS), 52 coagulase-negative staphylococci (CoNS), and 37 *Enterococcus faecalis* isolates were included in this study. These isolates were collected from patients with BJI from 30 medical centers in the US between 2015 and 2019 as a part of the Surveillance of Tedizolid Activity and Resistance (STAR) Program. Bacterial identification was confirmed by MALDI-TOF MS. MIC results were obtained by reference CLSI broth microdilution methods and interpretations used CLSI guidelines.

Results: Tedizolid ($MIC_{50/90}$, 0.12/0.25 mg/L) inhibited all SA at the CLSI breakpoint (≤0.5 mg/L) including methicillin-resistant SA (MRSA; 35.8% of SA; $MIC_{50/90}$, 0.12/0.25 mg/L). Linezolid, vancomycin, and daptomycin had 100% susceptibility rates against SA isolates (Table). All CoNS isolates were inhibited by tedizolid at ≤0.5 mg/L. Tedizolid was active against all BHS (100% susceptible) as follows: *S. pyogenes* (n=24; $MIC_{50/90}$, 0.12/0.25 mg/L), *S. agalactiae* (n=44; $MIC_{50/90}$, 0.12/0.25 mg/L), and *S. dysgalactiae* (n= 11; $MIC_{50/90}$, 0.25/0.25 mg/L). Penicillin, linezolid, vancomycin, and daptomycin also were active against BHS (100% susceptible). Tedizolid ($MIC_{50/90}$, 0.25/0.25 mg/L; 100% susceptible) was 4- to 8-fold more potent than linezolid ($MIC_{50/90}$, 1/1 mg/L) and vancomycin ($MIC_{50/90}$, 1/2 mg/L) against *E. faecalis*. GP isolates resistant to oxazolidinone were not observed.

Conclusion: Tedizolid demonstrated potent *in vitro* activity against this collection of contemporary GP isolates causing BJI in US hospitals. Tedizolid and comparator agents showed high susceptibility rates against the most frequent organisms and organism groups, including MRSA. These findings support the clinical development of tedizolid as an additional option for treating BJI caused by GP pathogens.

Table 1

Organism (no. tested)	MIC_{50}/MIC_{90} in mg/L (% susceptible by CLSI)			
Group/phenotype	Tedizolid	Linezolid	Vancomycin	Daptomycin
MSSA (199)	0.12/0.25 (100)	1/2 (100)	0.5/1 (100)	0.25/0.5 (100)
MRSA (111)	0.12/0.25 (100)	1/1 (100)	1/1 (100)	0.25/0.5 (100)
CoNS (52)	0.12/0.12 (-)	0.5/1 (100)	1/2 (100)	0.25/0.5 (100)
BHS (79)	0.25/0.25 (100)[a]	1/2 (100)	0.5/0.5 (100)	0.12/0.25 (100)
E. faecalis (37)	0.25/0.25 (100)	1/1 (100)	1/2 (94.6)	1/1 (100)

MRSA, methicillin-resistant *S. aureus*; BHS = β-hemolytic streptococci; VGS = Viridans group streptococci "-" breakpoint not available.
[a] Tedizolid breakpoint for *S pyogenes* and *S. agalactiae* applied to the BHS group.

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334. Treatment Duration of Antibiotics for Sacral Osteomyelitis After Skin Flap Procedure

Emily Frye, PharmD[1]; Travis W. Linneman, PharmD[2]; Ryan P. Moenster, PharmD, FIDSA[3]; [1]VA St. Louis Health Care System, St. Louis, Missouri; [2]St. Louis College of Pharmacy/VA St. Louis Health Care System, St. Louis, MO; [3]St. Louis College of Pharmacy/VA St. Louis HCS, St. Louis, MO

Session: P-10. Bone and Joint

Background: Patients with spinal cord injuries frequently develop sacral osteomyelitis. Optimal treatment often involves intravenous antibiotics and skin flap closure of the ulcer; however, best practices for the duration of antibiotic therapy pre- and post-procedure are unknown.

Methods: This was a retrospective, cohort study of spinal cord injury patients at the VA St. Louis undergoing a skin flap procedure from 1 October 2014 to 31 March 2019. Patients aged 18 to 89 years with a documented spinal cord injury and receiving treatment for sacral osteomyelitis with antibiotics and skin flap placement were considered for inclusion. The primary outcome was to determine if there was a difference in antibiotic treatment duration, both pre-procedure and post-procedure, between those that failed combination therapy and those patients for which the treatment was successful. Treatment failure was defined as documentation of no resolution of sacral osteomyelitis after treatment, re-initiation of antibiotics for sacral osteomyelitis of the same area, documented flap break-down, or an unplanned flap-related procedure within 1 year of completion of antibiotic therapy.

Results: Twelve patients were identified for inclusion. Baseline characteristics were similar between groups; 5/8 patients successfully treated received vancomycin, compared to 4/4 patients that failed therapy. Overall, 75% (8/12) had a successful treatment outcome at 12 months. In qualifying patients, average days of pre-procedure and post-procedure antibiotics were similar between patients who achieved success and those who failed (45.5 vs. 44.3 days pre-procedure, respectively (p >0.05) and 39 vs. 43 days post-procedure (p >0.05), respectively). When evaluated by weeks of therapy, no statistically significant differences were noted in treatment success rates between those treated for less than 6 weeks versus those treated for longer (66.6% [2/3] vs. 63.6% [6/9], p >0.05).

Conclusion: No difference in pre- or post-flap procedure antibiotic duration was observed in patients who failed therapy compared to those who were successfully treated.

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335. Using high temperatures to eradicate prosthetic joint associated biofilms on metal implants using alternating magnetic field: Efficacy and safety implications

Sumbul Shaikh, B.S[1]; Bibin Prasad, PhD[1]; Carolyn Sturge, Ph. D[2]; Christine A. Pybus, MS[3]; Reed Pifer, PhD[2]; Qi Wang, MS[2]; Yonathan Chatzinoff, n/a[4]; Chenchen Bing, MS[5]; Rajiv Chopra, PhD[1]; David E. Greenberg, MD[6]; [1]UT Southwestern Medical Center, Farmers Branch, Texas; [2]UTSouthwestern Medical Center, Dallas, Texas; [3]UT SOUTHWESTERN MEDICAL CENTER, DALLAS, TX; [4]Pill Tracker, Dallas, Texas; [5]University of Calgary, Calgary, Alberta, Canada; [6]University of Texas Southwestern, Dallas, TX

Session: P-10. Bone and Joint

Background: Prosthetic joint infection (PJI) is a significant complication of modern arthroplasty. Revision surgery is frequently required due to the formation pf biofilm. The presence of biofilm makes non surgical treatment difficult in part because traditional antibiotics are unable to penetrate this structure.

We have developed a noninvasive way to eradicate biofilm off the outer surface of metal implant utilizing alternating magnetic fields (AMF). AMF creates focused surface heating on metal lic implants and can be delivered in a fashion spares significant heating of surrounding tissue. The study was to determine efficacy and safety of AMF when combined with traditional antibiotics in animal models of implant infection.

Methods: *Pseudomonas aeruginosa* (PA) and *staphylococcus aureus* (SA) were grown individually on stainless steel ball that were implanted into the thigh muscle of the mice. Mice placed in a custom built solenoid coil for AMF treatments. AMD exposures generating peak temperature of 80 or 65 C on the implant were delivered once a day. Treatment groups included AMF alone, antibiotic alone, and combination therapy. Antibiotics tested included ciprofloxacin, ceftraixone and rifampin. Residual biofilm was measured by CFU counts. Histopathology was analyzed to determine area of damage in response to AMF treatment.

Results: Combination of a single AMF pulse with antibiotics lead to a greater biofilm reduction than either treatment alone. PA with AMD (80 C peak) and ciprofloxacin resulted in >2 log reduction of biofilm (p< 0.0001) compared to minimal reduction (AMF or ciprofloxacin alone) at Day 4. Similar treatment outcome was seen with SA and ceftraixone with combination treatment resulting on multi log reduction. Combined treatment effects were seen at lower temperatures (65 C). Histopathologic