108. Efficacy of Dalbavancin Compared to Standard of Care for the Treatment of Osteomyelitis: A Retrospective Study

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Session: O-23. New Developments in Antibiotic Efficacy

**Background.** Preliminary data suggest that the efficacy of dalbavancin, a long-acting lipoglycopeptide, may be similar to current standard of care (SoC) treatment options for osteomyelitis, and may be associated with fewer treatment related adverse events. This study assessed the incidence of treatment failure in patients receiving either dalbavancin or SoC for the treatment of osteomyelitis.

**Methods.** This was a multi-center, retrospective, observational cohort study of adult patients diagnosed with osteomyelitis. Patients were matched 1:2 to either dalbavancin (1500 mg infused intravenously on days 1 and 8) or SoC for osteomyelitis (oral or intravenous antibiotics) by Charlson Comorbidity Index, site of infection, and causative pathogen. The primary objective was to determine the incidence of treatment failure within a one-year follow-up period. Secondary objectives included hospital length of stay (LOS), infection related one year readmission rates, and treatment related adverse events.

**Results.** A total of 132 patients were matched to receive dalbavancin (n = 42) or SoC (n = 90). Baseline characteristics were similar between the two treatment groups. The majority of patients had lower extremity osteomyelitis (76.2% vs 73.3%) with an etiology of diabetic foot infection (45.2% vs 46.7%) in the dalbavancin and SoC groups, respectively. Treatment failure was similar between those who received dalbavancin (21.4% vs 23.3%, p = 0.808). Patients who received dalbavancin had a significantly shorter hospital LOS compared to patients who received SoC regimens (21.4% vs 23.3%, p = 0.808). Patients who received dalbavancin had a significantly lower rate of readmission at 12 months (p=0.015). Negative proximal bone margins results can guide antibiotic therapy in the treatment of diabetic foot osteomyelitis with clinical outcomes at one year.

**Conclusion.** Dalbavancin administered as a two-dose regimen is a safe and effective option for the treatment of osteomyelitis.

**Disclosures.** Dustin R. Carr, PharmD, BCPS, BCIDP, AAHIVP, Merck (Speaker’s Bureau); Thomas L. Walsh, MD, Accelerate Diagnostics (Other Financial or Material Support, speaking fees)

109. Evaluating Predictive Value of Surgical Resected Proximal Bone Margins in Diabetic Foot Osteomyelitis

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**Session:** O-23. New Developments in Antibiotic Efficacy

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Clinical demographics, antibiotic usage, microbiology and results of patients presenting for diabetic foot osteomyelitis needing surgical amputation intervention. Abbreviations: HBAIc = Hemoglobin A1c; MSSA = methicillin-susceptible Staphylococcus aureus; MRSA = methicillin-resistant Staphylococcus aureus; CRP = C-reactive protein; ESR = erythrocyte sedimentation rate

**Disclosures. All Authors:** No reported disclosures
Results. A total of 134 participants were randomized to each treatment group. Demographics and baseline characteristics were generally well balanced between treatment groups (Table 1). The median (range) age in the ITT population was 50 (18-75) years and 61% were men. The most frequent sites of infection were the appendix (C/T + MTZ, 50.0%; MEM + pbo, 49.3%) and gallbladder (C/T + MTZ, 27.6%; MEM + pbo, 29.1%). Overall, the most frequently isolated pathogens were Escherichia coli (61.4%) and Klebsiella pneumoniae (17.3%); few anaerobes were isolated (Table 1). C/T + MTZ was non-inferior to MEM + pbo for clinical cure in the CE population (C/T + MTZ, 95.2%; MEM + pbo, 93.1%; difference, 2.1% [95% CI, -4.7% to 8.8%]). Results for key secondary endpoints were comparable between treatment groups (Table 2). Rates of AEs were generally similar between treatment groups (Table 3).

Table 1. Participant Demographics and Baseline Characteristics (ITT and EMR Populations)

| Characteristic | C/T + MTZ | MEM + pbo | % Difference C/T + MTZ vs MEM + pbo |
|---------------|-----------|-----------|------------------------------------|
| Age, years    | 50 (18-75) | 50 (18-75) | 0 (95% CI)                         |
| Sex, Male     | 67 (61.2)  | 68 (61.2)  | -0.6% (95% CI)                     |
|     | 33 (29.3)  | 32 (29.3)  |                                  |
|     | 10 (8.5)   | 10 (8.5)   |                                  |
| Median [IQR]  | 50 (18-75) | 50 (18-75) |                                  |
| Sex, Male     | 67 (61.2)  | 68 (61.2)  | -0.6% (95% CI)                     |
|     | 33 (29.3)  | 32 (29.3)  |                                  |
|     | 10 (8.5)   | 10 (8.5)   |                                  |
| Median [IQR]  | 50 (18-75) | 50 (18-75) |                                  |

Conclusion. C/T + MTZ was non-inferior to MEM + pbo in the treatment of adult Chinese participants with cIAI and demonstrated a favorable safety profile.

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111. Duration of Antibiotic Therapy after Debridement and Implant Retention in Patients with Periprosthetic Joint Infections

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Session: O-23. New Developments in Antibiotic Efficacy

Background. Debridement, antibiotics, and implant retention (DAIR) is appropriate for select acute postoperative and hematogenous periprosthetic joint infections (PJIs). However, the optimal duration of antimicrobial therapy in patients treated with DAIR has not been defined. Therefore, we aimed to identify the ideal duration of parenteral and oral antibiotics after DAIR.

Methods. We performed a retrospective study of patients >18 years of age with hip or knee PJI managed with DAIR between January 1, 2008, and December 31, 2018, at Mayo Clinic. PJI was defined using criteria adapted from the International Consensus Meeting on PJI. The outcome was defined as either PJI recurrence or unplanned reoperation due to infection. Joint-stratified Cox proportional hazards regression models with time-dependent covariates were used to assess nonlinear effects of antibiotic duration. Hazard ratios were computed based on prespecified time points for comparison, whereas p-values represented the overall effect across the entire range of durations.

Results. There were 247 unique episodes of PJI in 237 patients during the study period. Parenteral antibiotics were given in 99.2% of cases (n=245). This was followed by chronic oral antibiotic suppression in 92.2% (n=226) with a median duration of 2.2 years (1.0-4.1). DAIR failed in 65 cases over a median follow-up of 4.4 years, with a 5-year cumulative incidence of 28.1%. After adjustment for risk factors, there was no significant association between duration of parenteral antibiotics and treatment failure (p=0.203), with no difference between four versus six weeks (HR 1.11; 95% CI 0.71-1.75) (Figure 1). However, both use and longer duration of oral antibiotic therapy was associated with a lower risk of failure (p=0.006). To account for the possibility that this association was driven by results during early follow-up, conditional analyses at one- and two-year follow-up were performed. Both showed a significantly lower risk for a longer duration of antibiotics (Figure 2).

Figure 1. Time-Dependent Analysis of Parenteral Antibiotic Duration

Table 3. Summary of Adverse Events (All Participants as Treated Population)

| Category | C/T + MTZ (n=134) | MEM + pbo (n=134) | % Difference C/T + MTZ vs MEM + pbo (95% CI) |
|----------|--------------------|-------------------|---------------------------------------------|
| With any adverse event | 67 (50.0%) | 48 (36.0%) | -19 (95% CI, -36 to -2)
| With bleeding-related adverse event | 16 (12.0%) | 11 (8.3%) | 2.0 (95% CI, -4.0 to 8.0)
| With serious adverse events | 5 (3.0%) | 3 (2.3%) | 0.7 (95% CI, -10.9 to 9.0)
| Dooctors | 0 (0.0%) | 0 (0.0%) | -0.0 (95% CI, -6.0 to 6.0)
| Discontinued drug due to an adverse event | 13 (9.7%) | 12 (9.0%) | 0.6 (95% CI, -4.0 to 4.0)
| Discontinued drug due to a drug-related adverse event | 2 (1.5%) | 1 (0.8%) | 0.6 (95% CI, -4.0 to 4.0)
| Discontinued drug due to a serious adverse event | 3 (2.3%) | 3 (2.3%) | 0.0 (95% CI, -6.0 to 6.0)
| Discontinued drug due to a drug-related adverse event | 0 (0.0%) | 0 (0.0%) | -0.0 (95% CI, -6.0 to 6.0)

Notes: C/T: ceftriaxone/tazobactam; MEM, meropenem; TZO, tazobactam; pbo, placebo.

*Based on the Modified & Nutrient method with protocol-defined for Events needed (4 participants in each treatment group exhibited the event).

**Determined by the investigator to be related to the drug.

Conclusion. C/T + MTZ was non-inferior to MEM + pbo in the treatment of adult Chinese participants with cIAI and demonstrated a favorable safety profile.