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Clinical experience with telavancin for the treatment of patients with bone and joint infections: preliminary results from the telavancin observational use registry (TOUR™)

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Background: Telavancin (TLV) is a lipoglycopeptide antibacterial active against a wide range of Gram-positive pathogens, including methicillin-sensitive and -resistant *Staphylococcus aureus* (MSSA and MRSA). Bone and joint infections represent a complex set of diseases requiring prolonged antimicrobial therapy and are commonly caused by Gram-positive pathogens, including *S. aureus*. Although TLV has not been approved for use in bone and joint infections, there is a need for newer treatment options for these difficult infections.

Methods: The Telavancin Observational Use Registry (TOUR™) is an ongoing multicentre, study designed to characterise infection types, pathogens, and outcomes of patients treated with TLV in clinical practice through medical chart review. Thirty-seven US sites reported data from 593 patients between January 1, 2015 and September 30, 2016. Patient demographics, antibiotic treatments, pathogens, dosage, duration of therapy, clinical outcome, and adverse events (AEs) were analysed in the subset with bone and joint infections. Clinical success was defined by investigator assessment of information in the medical chart.

Results: There were 174 patients treated for bone and joint infections including osteomyelitis, prosthetic joint infections, septic arthritis, and other similar types of infections. The median age was 58

years (range 18−92), 119 (69.0%) were male, 151 (87.0%) were white, and the median body mass index was 29.1 kg/m^2 (range 18.1−61.5 kg/m^2). Of 132 patients (75.9%) in whom an organism was identified, the most common pathogens were MRSA (n = 70, 40.2%), MSSA (n = 24, 13.8%), and coagulase-negative staphylococcus (n = 11, 6.3%). The median TLV dose was 750 mg/day at a median of 9.2 mg/kg, and treatment duration was a median of 26 days (range 1−409 days). Outpatient treatment was reported for 94 patients (54.0%). Overall, 119 (68.4%) patients had a positive clinical response (cured or improved to step-down oral therapy), 18 (10.3%) failed treatment, and 37 (21.3%) were not evaluable (non-evaluable, indeterminate, missing data, or undocumented). AEs were reported by 33 patients, 7 reported a serious AE, 22 discontinued TLV due to an AE, and 4 patients died.

Conclusions: Analysis of data from TOUR™ revealed that once-daily TLV produced a positive clinical response in more than two-thirds of patients with difficult bone and joint infections and was generally well tolerated. TLV may represent an alternative treatment for Gram-positive bone and joint infections.