Utilization of Dalbavancin for Periprosthetic Joint Infections: A Single Institution Experience in North America

Peter Paul Hsiue, Mia J Fowler[1], Shay Ivan Warren[1], Michael Henry, Andy Miller, Alberto V Carli[1]
[1]Hospital For Special Surgery

INTRODUCTION:
Periprosthetic joint infection (PJI) is a devastating complication following total joint arthroplasty. Gram-positive bacteria, which are the leading cause of PJI, are typically treated with vancomycin or daptomycin, which often require outpatient parenteral therapy. Dalbavancin, a novel lipoglycopeptide antibiotic with broad activity against Gram-positive bacteria, possesses a longer half life (~14 days), and therefore requires less frequent dosing. Very few studies have evaluated the use of dalbavancin in PJI. The purpose of this study is to describe the utilization of dalbavancin for PJI at a single institution in North America.
METHODS:
Pharmacy records were retrospectively evaluated. Intravenous dalbavancin was used in 55 cases following an orthopaedic procedure for infection, of which 18 (32.7%) were for PJI and were retained for review. Details regarding antibiotic use, including the dose, treatment length, and the use of additional antibiotics was collected. Patient demographics, surgical details, and infecting organism characteristics were recorded. Medical records were reviewed for outcomes of interest including complications related to dalbavancin use and recurrence of infection.
RESULTS:
Eighteen patients received dalbavancin to treat PJI, including 8 knees and 10 hips. The cohort had a mean age of 66 years old, was 40% female, and had a mean follow-up of 456 days (range 104-1060 days). Surgical procedures prior to dalbavancin included 5 debridement, antibiotics, and implant retention (DAIR) procedures, 4 explants with spacer placement, 3 spacer exchanges, 2 reimplantations with positive cultures, and 4 single-stage revisions. Twelve cases were attributed to a single infecting organism, 5 were polymicrobial, and 1 was culture negative. The most common indication for dalbavancin use was to avoid a PICC line (12 patients [67%]). Sixteen patients (89%) were infection free at final follow-up, with 12 (67%) on chronic oral antibiotic suppression. No severe or treatment-limiting side effects were observed.
DISCUSSION AND CONCLUSION:
In our case series of 18 patients who received dalbavancin for PJI, infection control was achieved in 89% of patients without dalbavancin allergy or significant toxicity. Given the improved convenience, safety, and efficacy of dalbavancin, future studies are warranted to prospectively compare dalbavancin to comparable antibiotics for Gram-positive PJI treatment.