

Short Course of Oral Antibiotic Treatment after Two-Stage Exchange Arthroplasty Appears to Decrease Early Reinfection

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INTRODUCTION: Recent evidence has suggested a benefit to extended postoperative prophylactic oral antibiotics after two-stage exchange arthroplasty for the treatment of periprosthetic joint infections (PJIs). We sought to determine reinfection rates with and without a short course of oral antibiotics after two-stage exchange procedures.

METHODS: A retrospective review identified patients undergoing two-stage exchange arthroplasty for PJI of the hip or knee. Patients were excluded if they failed a prior two-stage exchange, had positive cultures at reimplantation, prolonged IV antibiotics postoperatively, and/or life-long suppression. This resulted in 444 reimplantations (210 hips, 234 knees). Patients were divided into three cohorts based on duration of oral antibiotics after reimplantation: no antibiotics (102), ≤ 2 weeks (266), or >2 weeks (76). The primary endpoint was reinfection within 1 year of reimplantation.

RESULTS: Within 1 year of reimplantation, there were 34 reinfections. In the no antibiotic, ≤ 2 -week, and >2 -week cohorts the reinfection rates were 14.1%, 7.0%, and 6.4%, respectively. Multivariate Cox regression showed a reduced reinfection rate in the ≤ 2 -week cohort relative to no antibiotics (HR 0.38, $p=0.01$). While the smaller cohort with >2 weeks of antibiotics did not significantly reduce the reinfection rate (HR 0.41, $p=0.12$), when combined with the ≤ 2 -week cohort, use of oral antibiotics had an overall reduction of the reinfection rate (HR 0.39, $p=0.01$).

DISCUSSION AND CONCLUSION: These data support the hypothesis that a short course of oral antibiotics after reimplantation decreases the 1-year reinfection rate. Future randomized studies should seek to examine the efficacy of different durations of oral antibiotics to reduce reinfection.