



Paper #29

Chronic Suppression with Oral Antibiotics Increases Infection-Free Survivorship in Periprosthetic Joint Infections

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Introduction: There is no consensus regarding indications for chronic suppression with oral antibiotics for hip and knee periprosthetic joint infections (PJI). The purpose of this study was to evaluate patients who underwent incision and débridement with polyethylene exchange (I&D) or two-stage revisions and (1) compare infection-free survivorship for patients with and without subsequent chronic oral antibiotic treatment and (2) analyze infection-free survivorship stratified by type of surgery and infecting organism.

Methods: A retrospective cohort of consecutive cases performed between 1996 and 2000 of I&D and two-stage revisions that met criteria for hip and knee PJI were reviewed. Of these, n=92 patients were treated with chronic oral antibiotic suppression (minimum 6 months). A control cohort (ratio 1:3) who did not receive chronic oral antibiotics was matched based on age, gender, BMI, number of previous surgeries, hip versus knee procedures, I&D versus two-stage procedures, presence/absence of *Staphylococcus aureus*, and CCI, to manage inherent selection bias.

Results: Ninety-two cases were compared to 276 controls. Follow-up was 5.8 years for cases (range, 1.4-14) and 3.5 years for controls (range, 0.1-15.3). Mean duration of chronic antibiotics was 5.3 years (range, 0.5-13.8). Five-year infection-free survivorship was 61% (95% CI 51.9%-70.1%) for cases and 38% (95% CI 32.7%-44.5%) for controls (hazards ratio 0.63, p=0.008). Stratification analysis showed higher 5-year survival in cases that underwent I&D (56.3%) compared to controls that underwent I&D (25%, p< 0.0001), and higher survival in cases with *S. aureus* infection (48.6%) compared to controls with *S. aureus* infection (32.4%, p=0.047). Within the 92 cases, 32 (34.7%) failed antibiotic treatment. Knee infection (p=0.012), as opposed to hip, and higher number of previous revisions (p=0.02) were associated with treatment failure.

Conclusion: Chronic antibiotics significantly increased infection-free survival following surgical treatment for PJI. Patients undergoing I&D and patients with *S. aureus* infection were the groups that had greatest benefit.
