## Paper #19

## Extended Oral Antibiotic Prophylaxis in High Risk Patients Substantially Reduces Primary Total Hip and Knee Arthroplasty 90-Day Infection Rate

**Notes** 

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Introduction: Total joint arthroplasty (TJA) bundled and episodic payment models shift risk and cost associated with periprosthetic joint infection (PJI) to surgeons and hospitals. This causes some to avoid treating high-risk patients, subsequently burdening academic and tertiary care centers. In addition, there is little data that supports optimizing host risk factors preoperatively will subsequently decrease PJI rates, and there is recent data supporting extended oral antibiotic prophylaxis in reimplantation TJA. The study purpose was to evaluate whether extended oral antibiotic prophylaxis can minimize PJI in high-risk primary TJA patients.

**Methods:** A retrospective cohort study of 2,260 primary hip and knee arthroplasties from 2011 through 2016 at a suburban academic hospital with modern perioperative and infection-prevention protocols. Beginning January 2015, extended oral antibiotic prophylaxis for 7 days after discharge was implemented for all patients at high risk (diabetes, obesity, autoimmune disease, end-stage kidney disease, etc) for PJI. All patients diagnosed with PJI within 90 days were identified and statistically compared between groups with p<0.05 statistically significant.

**Results:** 1350 patients (59.7%) had one or more risk factors for PJI, and 34.7% of the entire cohort was discharged on extended prophylactic antibiotics. The overall 90-day periprosthetic infection rate was 1.5%. Infection rates were 1.1% (9/831) for patients without risk factors, 3.0% (19/641) for high-risk patients without extended antibiotics, and 0.6% (5/788) for high-risk patients discharged on extended antibiotic prophylaxis (p=0.001). The only non-protocol covariate to increase infection rate was use of a peri-articular injection with liposomal bupivacaine (p=0.013).

**Conclusion:** In selected patients at high risk for infection after primary TJA, a statistically significant and clinically meaningful reduction in 90-day infection rate can be realized with extended postoperative oral antibiotic prophylaxis. Further study is warranted before widespread adoption to ensure this protocol does not promote antimicrobial resistance and supports appropriate antibiotic stewardship.

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