

Antibiotic Prophylaxis Prior to Dental Procedures for Total Hip Arthroplasty and Total Knee Arthroplasty Patients

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INTRODUCTION: Prosthetic joint infection (PJI) is a devastating complication after total hip and total knee arthroplasty (THA/TKA). While guidelines no longer recommend routine use of prophylactic antibiotics for dental procedures, many surgeons continue to routinely prescribe antibiotics for their arthroplasty patients due to citing limited evidence. In a setting where one must consider the cost of antibiotics and risk of antibiotic resistance, there may be reason to rethink the practice of prescribing antibiotics prior to dental procedures. We sought to evaluate antibiotics prior to dental procedures, and the association between dental procedures and late presenting PJI.

METHODS: We conducted a retrospective cohort study of 10,899 patients who underwent THA/TKA between January 1, 2019 and December 31, 2020 with one of the 13 surgeons at a single institution. The primary outcome was late presenting PJI, defined as PJI diagnosis > 90 days after surgery. Patients were designated in the antibiotic group or non-antibiotic group based on their surgeon's prophylaxis protocol. Dental associated PJIs were considered if the patient had evidence of poor dentition or a dental procedure a few weeks prior to onset of PJI symptoms.

RESULTS: There were 2,872 patients in the no antibiotics group and 8,027 patients in the antibiotics group, in which they were prescribed 2000mg of Amoxicillin 30 minutes prior to dental procedures for life. We found 27 (0.3%) late presenting PJIs and 4 dental associated PJIs. In the univariate and multivariable analysis, BMI \geq 30 (OR 2.67, CI 1.1-6.4) and revision surgery (OR 8.0, CI 3.2-20.3) were the only variables that increased late presenting PJI risk. Age, gender, American Society of Anesthesiology Score, occlusive silver dressing, and prescription of antibiotics were not shown to affect risk of late presenting PJI.

DISCUSSION AND CONCLUSION: In this retrospective cohort study, we found a low rate of late presenting PJI. Routine prescriptions of antibiotics prior to dental procedures are not shown to reduce the risk of late presenting PJI. In addition, all 4 dental associated PJIs occurred in patients prescribed antibiotics. These findings demonstrate that antibiotic prophylaxis before dental procedures may not be necessary, but good oral hygiene should be emphasized.