Not So Fast: Extended Oral Antibiotic Prophylaxis Does Not Reduce 90-Day Infection Rate following Primary Total Hip and Knee Arthroplasty

Jade Brielle Flynn, Sanar Yokhana, Jacob Michael Wilson, Gregory G Polkowski[1], Jacob D Schultz, Stephen Matthew Engstrom[2], John R Martin
[1]Vanderbilt Orthopaedics, [2]Vanderbilt Univ-Vanderbilt Ortho Inst

INTRODUCTION:
Periprosthetic joint infection (PJI) is a devastating complication following both total hip (THA) and knee (TKA) arthroplasty. Extended oral antibiotic prophylaxis (EOA) has been reported to reduce PJI following TJA in high-risk patients. The purpose of this study was to determine if EOA reduces PJI in an all-comer THA and TKA population.
METHODS: This is a retrospective cohort study including 4,590 patients undergoing primary THA or TKA from 2018-2022. Beginning in 2020, EOA prophylaxis was administered for 10 days following THA or TKA for all patients at our institution. Patients were separated into two cohorts (1,774 EOA, 2,816 No EOA) based on whether they received postoperative EOA. Ninety-day outcomes, with a focus on PJI, were then compared between groups. A subgroup analysis of high-risk patients also was performed.
RESULTS:
There was no difference in 90-day PJI rates between cohorts (EOA 0.96% versus no EOA 0.82%; p=0.6). Analyzed separately, there was also no difference in 90-day PJI rates following THA, (EOA 1.04% versus no EOA 1.00%; p>0.9) or TKA, (EOA 0.9% versus no EOA 0.68%; p=0.5). Similarly, our subgroup analysis of high-risk patients demonstrated no difference in postoperative PJI between EOA (n=828) and no EOA (n=1,374) (1.21% versus 1.16 %, respectively; p=0.8). Reassuringly, we also found no differences in the incidence of C. diff (0.06% vs. 0.07%; p>0.9) or in antibiotic resistance among those who developed PJI (23.5% vs. 26% (p>0.9), respectively).
DISCUSSION AND CONCLUSION:
With the numbers available for analysis, extended oral antibiotic prophylaxis was not associated with PJI risk reduction following primary TJA when universally deployed. Furthermore, among high-risk patients, there was no discernable benefit. While we did not identify increased antibiotic resistance or C. difficile colitis, we cannot recommend widespread adoption of EOA prophylaxis and clarification regarding the role of EOA, even in high-risk patients, is needed.