

Intrawound Vancomycin Powder in Primary Total Hip Arthroplasty: Analysis of a Prospective Quality Control Project

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INTRODUCTION: The purpose of this retrospective analysis of a prospective quality control project was to determine whether the use of intrawound vancomycin powder (IVP) decreases the rate of prosthetic joint infection (PJI) within 90-days following primary total hip arthroplasty (THA).

METHODS: From October 2021-September 2022, a prospective quality control project was undertaken in which 10 high volume total hip replacement surgeons alternated between using IVP and not using IVP each month while keeping other perioperative protocols unchanged. A retrospective analysis of the project was performed to compare the group of patients that received IVP to the group of patients that did not. The primary outcome was culture positive infection within 90-days following primary total hip arthroplasty. Secondary outcomes included gram-positive culture, overall reoperation rate, wound complications, readmission, wound complications within 90-days postoperatively.

RESULTS: A total of 1,193 primary THA patients were identified for analysis. In total, 523 (43.8%) patients received IVP and were included in the IVP group, while 670 (56.2%) did not and were included in the non-IVP group. Age, body mass index (BMI), and sex were similar between the two groups. ($p>0.558$). The IVP group trended toward a higher rate of culture positive joint infections (1.5% vs. 0.4%, $p=0.068$) and a higher rate the of gram-positive joint cultures (1.5% vs. 0.3%, $p=0.026$) than the non-IVP group. The IVP group had a higher overall reoperation rate than the non-IVP group (6.1% vs. 2.4%, $p=0.002$). The IVP group had a higher reoperation rate for any wound complication compared to non-IVP patients (2.7% vs. 0.9%, $p=0.022$). There was no difference in presentation to the emergency department (ED) ($p=0.150$), readmission ($p=.289$), or mortality rates ($p=0.239$).

DISCUSSION AND CONCLUSION: The use of IVP in primary THA was associated with a higher rate of overall reoperation, reoperation for wound complications, and trended toward increased culture positive infection in a prospective quality control project.