Intrawound Vancomycin Powder in Primary Total Knee Arthroplasty: Does It Reduce Infection?

Stephen A Doxey, Fernando Andres Huyke, Rafat Solaiman, Torben Harstad Urdahl, Brian Cunningham[1], Patrick Horst[2]
[1]Methodist Hospital, [2]University of Minnesota

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 knee arthroplasty (TKA).
METHODS: From October 2021-September 2022, a prospective quality control project was undertaken in which 10 high volume total knee 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 knee arthroplasty. Secondary outcomes included overall reoperation rate, wound complications, and readmission within 90-days postoperatively.
RESULTS: A total of 1,317 primary TKA patients were identified for analysis. Some 56.7% (n=747) of patients were included in the IVP group and 43.3% (n=570) patients did not receive IVP and were included in the non-IVP group. Average Age and BMI were similar between the two groups ($p>0.626$). The IVP group trended toward a higher rate of postoperative culture positive infection (1.1% vs. 0.2%, $p=0.087$). The overall reoperation rate did not differ between the IVP and non-IVP group (6.4% vs. 4.6%, respectively, $p=0.150$). The IVP group trended toward a higher reoperation rate for any wound complications compared to the non-IVP group (2.1% vs. 0.9%, $p=0.078$). There were no differences in ED visits ($p=0.204$), readmission ($p=0.120$), or mortality rates ($p=0.250$).
DISCUSSION AND CONCLUSION: The overall infection rate for this cohort was small. IVP was not associated with decreased infection, wound complication, or reoperation rates.