

# Assessing Total Knee Arthroplasty Patient

## Reported Outcomes: Intraosseous Vancomycin Versus Intravenous Antibiotic Injection

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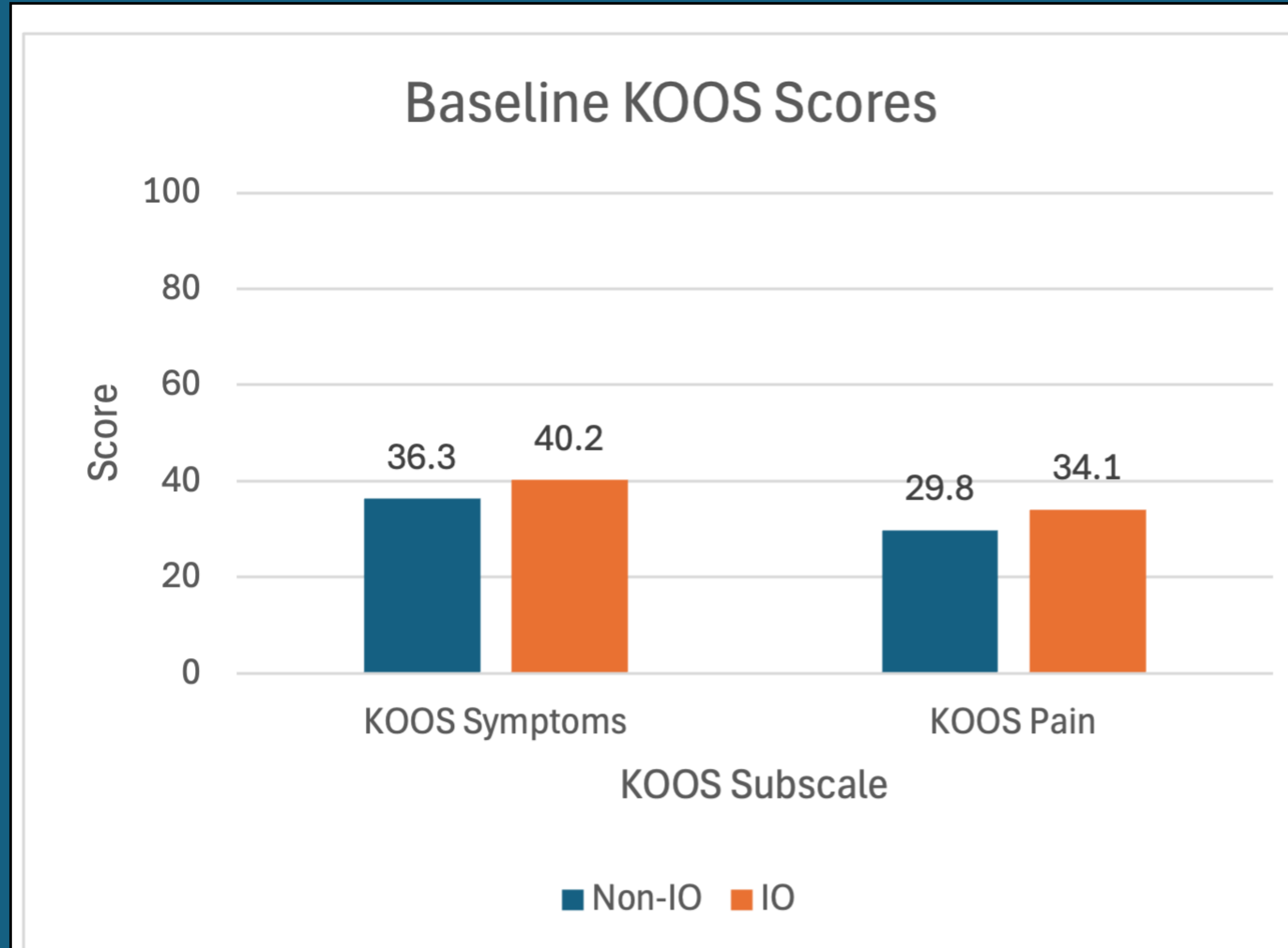
### Introduction

- Prevention of total knee arthroplasty (TKA) periprosthetic joint infection (PJI) requires perioperative precautions, especially for high-risk patients<sup>1</sup>
- Perioperative intravenous (IV) vancomycin is commonly used for PJI prophylaxis, but is associated with hypersensitivity reactions and may not achieve adequate tissue concentrations<sup>2-4</sup>
- Intraosseous (IO) vancomycin injection has been studied as an alternative, showing lower infection rates and higher local tissue concentrations<sup>5-10</sup>
- In addition, improvements or no significant negative changes in patient reported outcomes (PROs) following IO vancomycin administration would further support its utility
- The primary objective of this study is to analyze the correlation between the method of antibiotic delivery (IO vancomycin vs. IV cefazolin) and short-term PROs in high-risk TKA patients**
- We hypothesize that there will be no significant differences in KOOS scores in TKA patients who received IO vancomycin vs. IV cefazolin

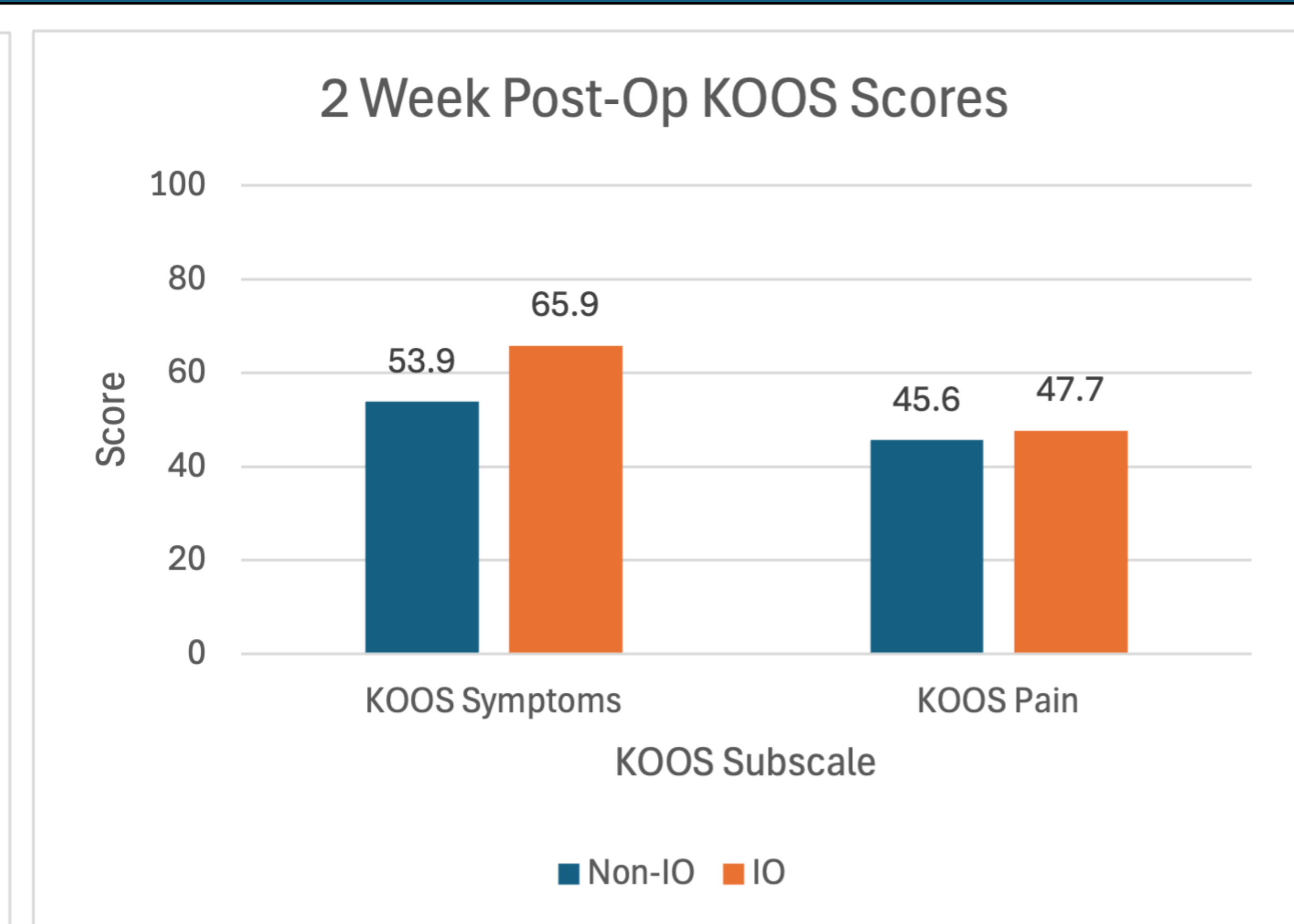
### Methods

- This retrospective case-control study included 28 high-risk patients who underwent unilateral primary TKA between 2022 and 2024
- High-risk was defined as having one or more of the following risk factors: current smoker, HbA1c  $\geq 7$ , and/or BMI  $\geq 40$  kg/m<sup>2</sup>
- 11 IO Vancomycin patients were matched to 11 non-IO Vancomycin patients
- Pre- and post-operative (within 2 weeks) KOOS scores were compared**

### Results



**Figure 1:** KOOS subscale scores for both groups at baseline (pre-TKA)



**Figure 2:** KOOS subscale scores for both groups at two weeks post-TKA

- Baseline KOOS subscales did not differ significantly between groups (IO vs. non-IO): Symptoms scores were 40.2 for IO and 36.3 for non-IO ( $p=0.633$ ), and Pain scores were 34.1 for IO and 29.8 for non-IO ( $p=0.604$ ).
- Two-week KOOS scores were collected for 12 out of the 22 patients and showed no significant differences between groups: Symptoms scores were 65.9 for IO and 53.9 for non-IO ( $p=0.183$ ), and Pain scores were 47.7 for IO and 45.6 for non-IO ( $p=0.893$ )

### Conclusion

- This study reported **no statistically significant differences in PROs between high-risk TKA patients receiving IO vancomycin compared to those receiving IV antibiotics.**
  - However, there appears to be a **trend suggesting that patients receiving IO vancomycin may report better PROs.**
- Further investigation is necessary to understand the factors behind this trend and to enhance antibiotic administration strategies for high-risk TKA populations.

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