

# PROPHYLACTIC ANTIBIOTICS PRIOR TO DENTAL PROCEDURES IN ADULTS WITH JOINT PROSTHESES: A SYSTEMATIC REVIEW AND META-ANALYSIS

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## INTRODUCTION:

- ◆ Prosthetic joint infections (PJI) are one of the serious complications after total joint arthroplasty (TJA).
- ◆ 1/3 of the PJIs are hematogenous.<sup>1</sup>
- ◆ PJI Incidence: 1-2%.<sup>2</sup>
- ◆ Evidence for antibiotic prophylaxis prior to dental procedures in patients with prosthetic joints is conflicting.
- ◆ Medical and dental associations do not recommend prophylaxis based on low incidence of PJI after dental procedures rather than trials studying antibiotic prophylaxis.

## PURPOSE:

To determine whether prophylactic antibiotics before dental procedure reduces PJIs in patients with prosthetic joints.

## METHODS:

- ◆ Databases: PubMed, SCOPUS, and CINAHL.
- ◆ Comparison group: same eligibility criteria except no antibiotic prophylaxis.
- ◆ Outcomes: relative risk, hazard ratio, or odds ratio of PJIs.
- ◆ 1852 articles were screened. 105 full texts reviewed. 11 articles used in the study (see Figure 1).
- ◆ Meta-Analysis performed using STATA 12.0
- ◆ ROBINS-I and GRADE assessments were also performed.

## RESULTS:

- ◆ Only 2 of the 11 studies evaluated antibiotic prophylaxis.
- ◆ Meta-analysis: pooled OR of 0.99 (p=0.964) with Cochrane Chi<sup>2</sup> for heterogeneity of 0.07 (p=0.789) (see Figure 2)
- ◆ Funnel plot for publication bias is limited, but one study has log OR>0 and the other <0 (see Figure 3).
- ◆ The other 9 articles only evaluated incidence of bacteremia and PJIs after dental procedures. Incidence of PJIs was low.
- ◆ ROBINS-I bias assessment (not shown) of the 11 articles revealed moderate to serious bias, primarily from confounding.
- ◆ The GRADE assessment (not shown) of the studies revealed low quality of evidence given the non-randomized,

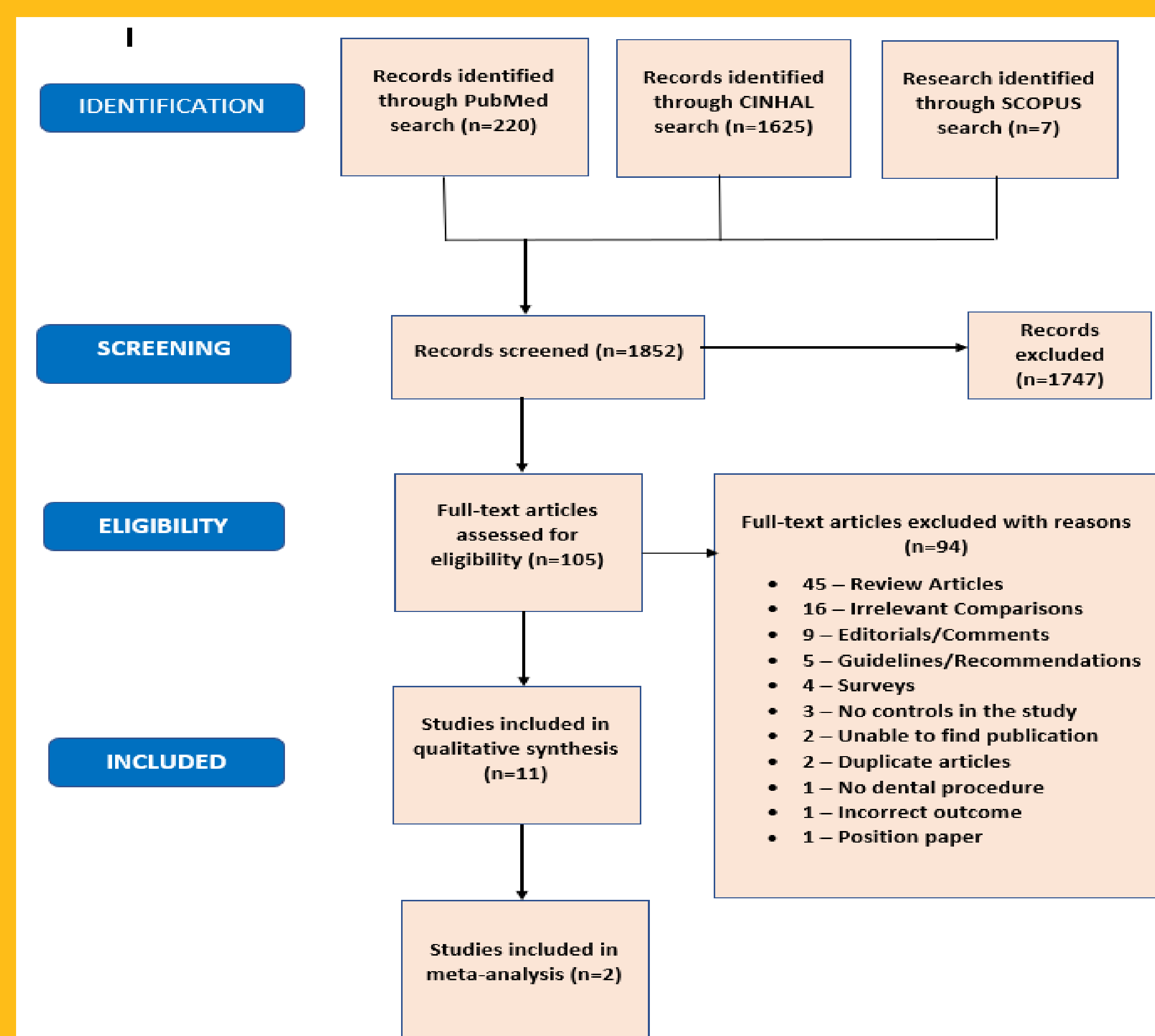


Figure 1: A PRISMA flow diagram of the literature search strategy

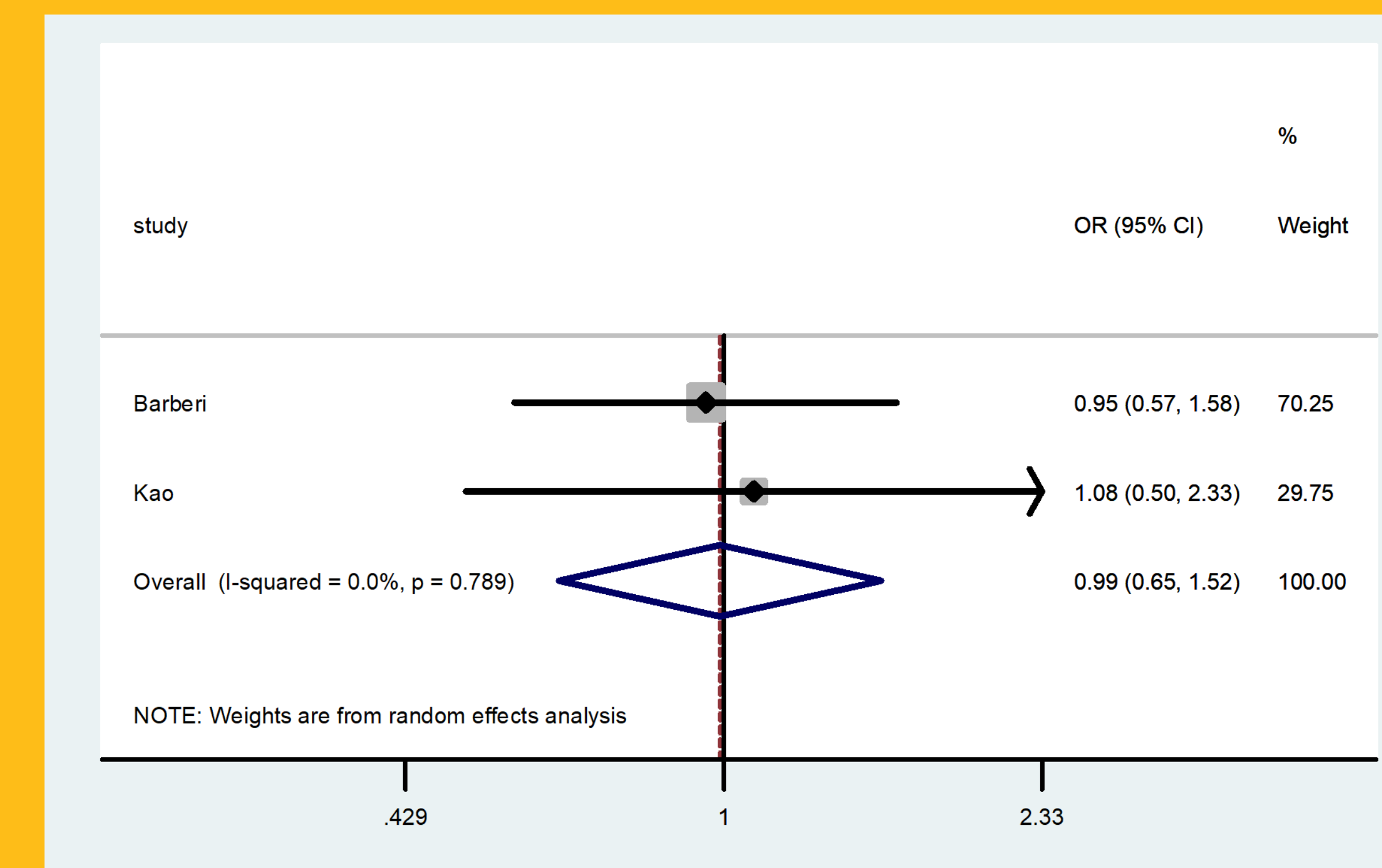


Figure 2: Meta-analysis evaluating Antibiotic prophylaxis in preventing joint infections.

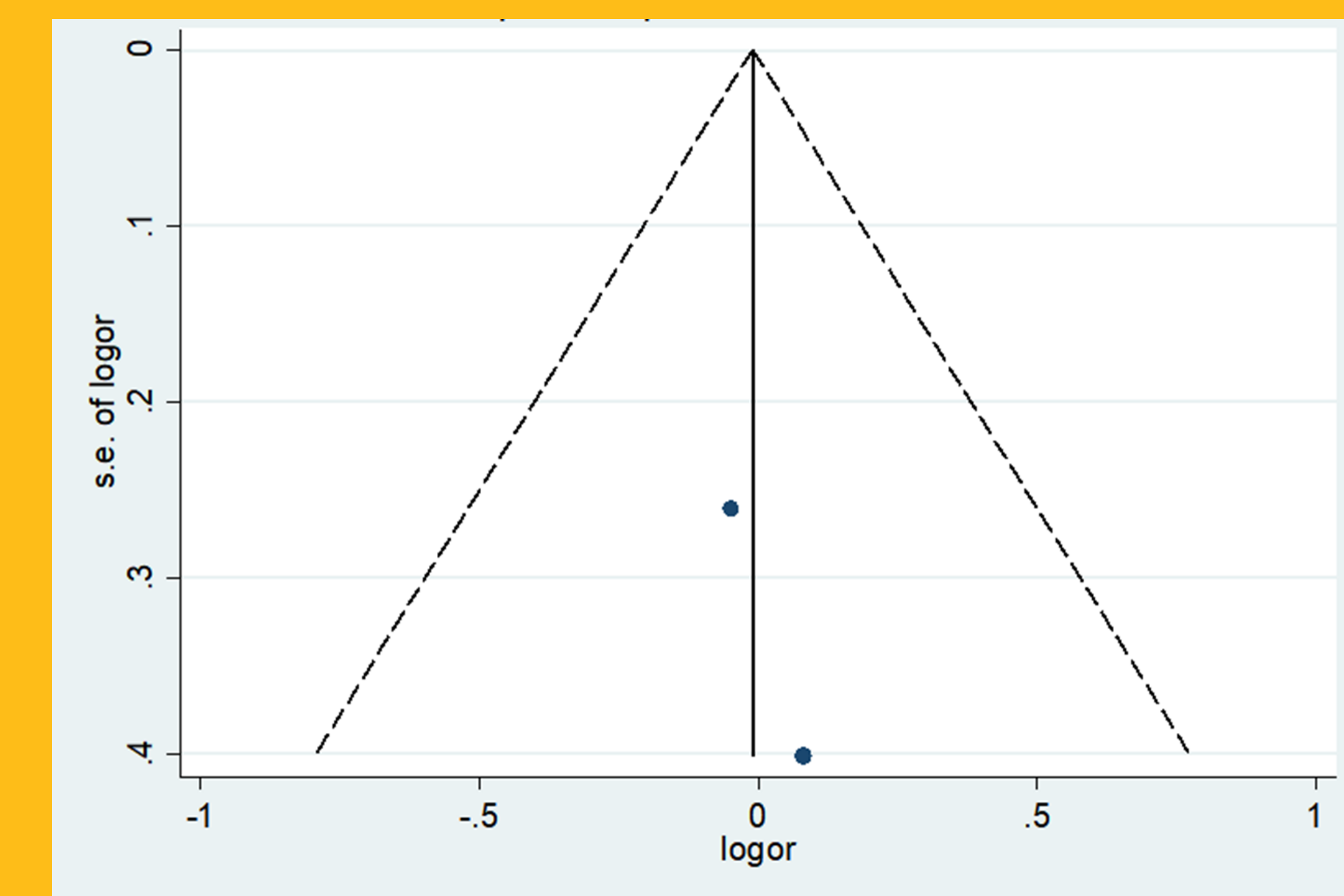


Figure 3: Assessment of Publication Bias: Funnel

## CONCLUSION:

- ◆ The current literature does not support the use of antibiotic prophylaxis prior to dental procedures in patients with prosthetic joints.
- ◆ Randomized control trials are needed to better evaluate this question.



## REFERENCES:

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