PROPHYLACTIC ANTIBIOTICS PRIOR TO DENTAL PROCEDURES IN ADULTS WITH JOINT PROSTHESSES: 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 PJs are hematogenous.\(^1\)
- PJI Incidence: 1-2%.\(^2\)
- 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 PJs.
- 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\(^2\) 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.

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:


