

Background & Purpose

Joint infections are a very serious complication regarding prosthesis and implants. When exposed to a metal surface while implanted within the body, bacteria can produce what is called a biofilm. Biofilms are more concerning than that of other pockets of infection due to a multitude of circumstances surrounding the ability and availability of treatment.

Purpose:

This paper offers guidance in the prevention of biofilm infections in joint prostheses pre invasive dental procedures. Prophylaxis is often given before colonoscopies and invasive dental procedures (IDP). Thus, the justification for antibiotic prophylaxis before invasive dental procedures is required, if needed at all.

PICOT

In adults who receive joint arthroplasty, does preprocedural antibiotic prophylaxis decrease the occurrence of joint infection and biofilm when considering invasive dental procedures in comparison to no procedural antibiotic prophylaxis?

Design & Methods

Keywords: prophylaxis, prophylactic antibiotics, total joint arthroplasty, joint arthroplasty, minor procedure, Joint replacement, Invasive Dental prophylaxis, Dental procedures

Inclusion: Must have pre dental prophylactic antibiotic intervention or discuss it, must include patients that are status post joint replacement (partial, complete, etc), no history. of previous joint infection, must address joint infection prophylaxis and not the care of current joint infection

Exclusion: Previous joint infection from external cause or perioperative cause, severe periodontal disease predisposing infection to be seated and seeded elsewhere, predisposing factors such as open wounds, surgical site infection, or prior infection/abscess which can lead to joint infection

Database	Yielded	Reviewed	In in
PubMed	30	15	5
Google Scholar	1290+ 114	20	4
Elsevier	138	8	2
Ebsco Host	11	11	2
Total:	1583	54	1

Summary of Evidence Search

The Viability of Antibiotic Prophylaxis in Invasive Dental Procedures Post Joint Arthroplasty Nathan R. Janowicz, PA-S2



Synthesis of Evidence

13 total articles were used to express the results. Of those 13, 5 major research articles were chosen to represent the results.

Study Type

Systemic Review **Retrospective Cohort Study** Case Crossover analysis Meta analysis

	Results :
Author	Results
Sendi P, Et al	It is found that hematogenous less than 0.1% and other state and 0.2 percent overestimate Chlorhexidine mouth rinse sh effectiveness in decreasing b infections post arthroplasty is antibiotic prophylaxis
Sax OC, Et al	Antibiotic prophylaxis before procedure had similar odds o and additional procurement days to 1 year, as compared y
Olson LB, Et al	Out of these infections, intra- contamination is a common delayed peri joint infections, seeding is most often respon There is a risk of 0.5-1 to 2% infection post invasive denta antibiotic prophylaxis.
Springer BD, Et al	This study did not provide an evidence between invasive d prosthetic joint infection. In s demonstrated that antibiotic decrease the risk or occurren hip or knee infection
Salgado- Peralvo AO, Et al	It was shown that 63.4% to a surgeons consider the preser antibiotics (PAs) to be necess in those with hip prostheses undergo dental treatment leadental procedures. It was found the control group was found the test group which is incom a cause for seeding bacteria. AP, the levels of infection we showing that even with the u

	Number Utilized
	2
У	1
	1
	1

us seeding from IDP are itistical estimates of 0.1 e the risk. In addition, show greater piofilm and joint

in comparison to

e invasive dental of requiring revisions for any cause from 90 with the control

aoperative

cause of the early and while hematogenous nsible for late infection. risk of peri joint al procedure even with

ny proof or supporting

dental procedures and support, the study c prophylaxis did not ence of developing total

71.5% of orthopedic

cription of prophylactic sary indefinitely for life who are going to t alone that of invasive und that bacteremia in to be 2% versus 6.7% in nclusive in determining With both AP and nonere inconclusive. Thus use of prophylactic antibiotics, the occurrence of seeding still increased.

Discussion:

Prophylaxis rates of success can actually be overcome by that of chlorhexidine rinse prior to dental procedures. Despite antibiotic prophylaxis in invasive dental procedures, asymptomatic bacteremia infection is shown, while rare, to occur at the same rate of whether or not antibiotic usage is used in prophylaxis. There is an overwhelming consensus stating that antibiotic prophylaxis for invasive dental procedures with joint replacement is completely unwarranted and does not change the overall infection rate based on hematogenous bacteremia.

Limitations/Further study:

The parameters were wide in order to collect more information. the number of sources is significantly smaller than that of other systematic studies in the same field thus restricting the overall results. There is a gap in understanding what exactly must be done to prevent joint infection with asymptomatic homogeneous bacteremia.

Conclusion:

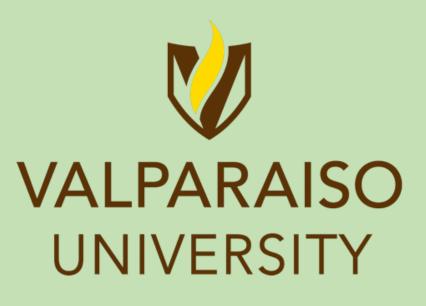
It is more viable to recommend better oral hygiene and anti-infective rinsing agents than increasing the risk of further antibiotic resistance and increasing the cost burden on patients who are to undergo invasive dental procedures. However, there are some exceptions with that being previously poor dental hygiene status and prior joint infections.

Keferences:

1. Sendi P, Uçkay I, Suvà D, Vogt M, Borens O, Clauss M. Antibiotic Prophylaxis During Dental Procedures in Patients with Prosthetic Joints. J Bone Jt Infect. 2016;1:42-49. doi:10.7150/jbji.16318 2. Sax OC, Bains SS, Chen Z, Delanois RE, Nace J. Antibiotic Prophylaxis Is Not Necessary for Invasive Dental Procedures in Existing Total Knee Arthroplasty Implants. Orthopedics. 2023;46(2):76-81. doi:10.3928/01477447-20221024-06

3. Olson LB, Turner DJ, Cox GM, Hostler CJ. Streptococcus salivarius Prosthetic Joint Infection following Dental Cleaning despite Antibiotic Prophylaxis. *Case Rep Infect* Dis. 2019;2019:8109280. doi:10.1155/2019/8109280

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Best Practice