

Prévention des Infections du Site Opératoire Best-off

DIU IOA

27 mai 2021

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Maladies Infectieuses et Tropicales

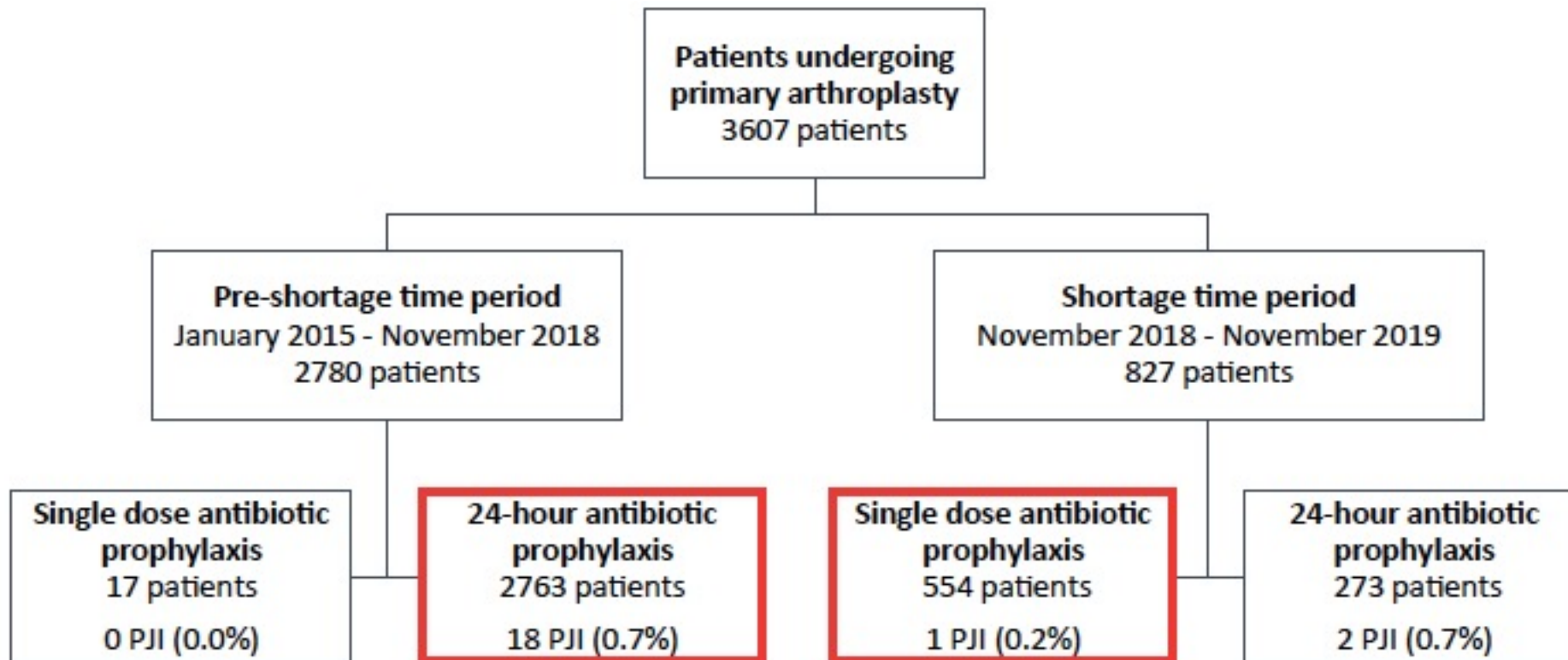
Comité de Lutte contre les Infections Nosocomiales

Hôpital Nord, Assistance Publique des Hôpitaux de Marseille

Aix Marseille Université, IRD, AP-HM, MEPHI, Marseille, France

Antibiotic prophylaxis

No significant differences in patient characteristics between single-dose and 24-hour antibiotic groups
No significant differences in rates of acute PJI (0.7% vs 0.2%; $P=.301$), superficial infection (2.4% vs 1.4%; $P=.221$), 90-day reoperation (2.1% vs 1.1%; $P=.155$), and 90-day complications (9.9% vs 7.9%; $P=.169$)



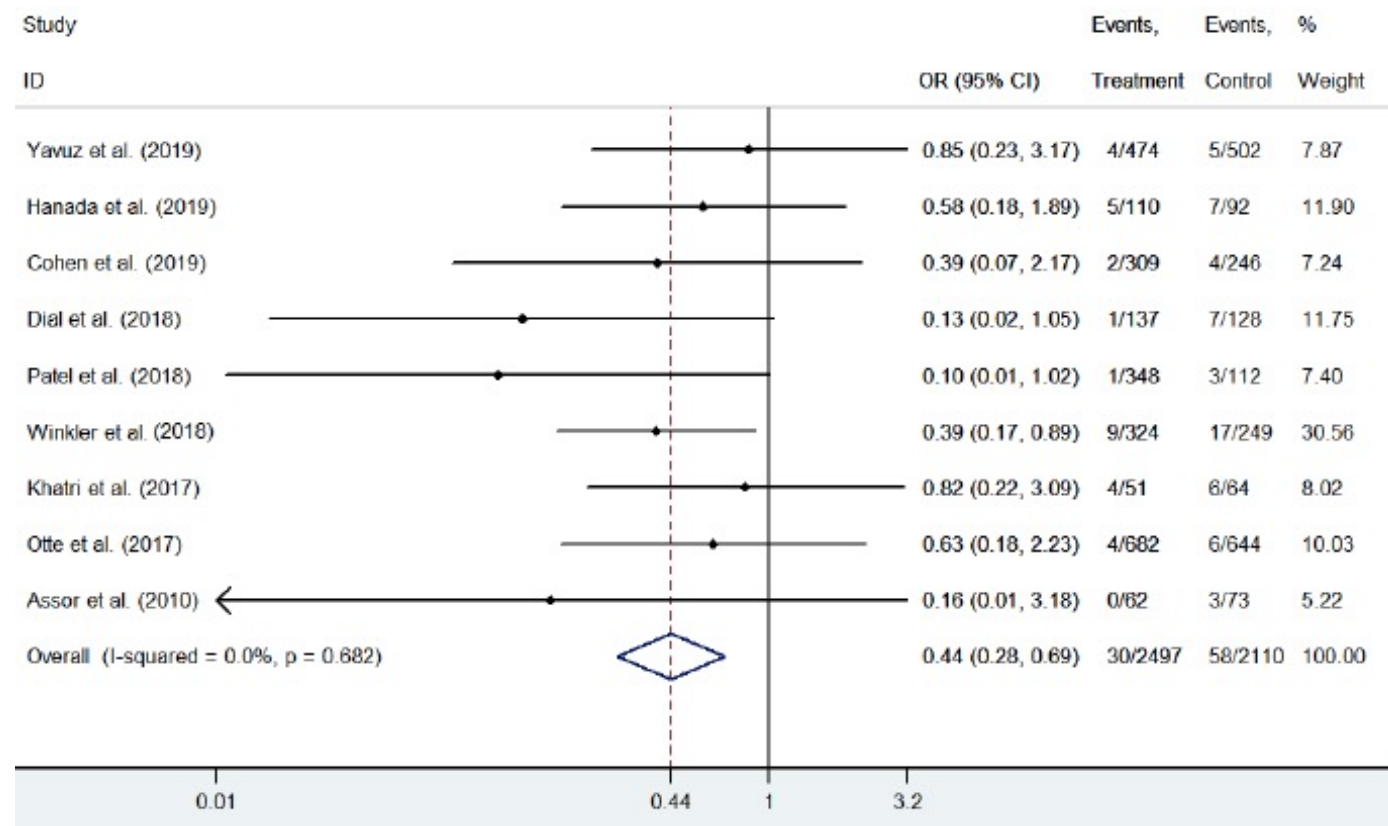
Row	Saved	Status	Study Title	Conditions	Interventions	Locations
1	<input type="checkbox"/>	Recruiting	Antibiotic Prophylaxis in Patients Undergoing Elective TKA- Multi-center Trial	<ul style="list-style-type: none"> Arthropathy of Knee Antibiotic Prophylaxis 	<ul style="list-style-type: none"> Drug: Cefazolin 	<ul style="list-style-type: none"> Hoag Orthopedics Irvine, California, United States University of California, San Francisco San Francisco, California, United States Florida Orthopaedic Institute (FORE) Temple Terrace, Florida, United States (and 16 more...)

Intra-wound vancomycin

Intrawound vancomycin in patients who underwent primary hip and knee arthroplasty

Meta-analysis; Nine retrospective studies involving 4,607 patients were included

Lower incidence of PJI (30 patients (1.20%) vs 58 control patients (2.75%); OR 0.44, 95% CI 0.28 to 0.69)



Xu H et al. *Bone Joint Res* 2020;9(11):778–788.

Row	Saved	Status	Study Title	Conditions	Interventions	Locations
1	<input type="checkbox"/>	Recruiting	Intrawound Vancomycin Prophylaxis for Neural Stimulator	<ul style="list-style-type: none"> • Vancomycin • Implantable Neural Stimulator • Deep Brain Stimulation • Surgical Site Infection 	<ul style="list-style-type: none"> • Drug: Vancomycin Hydrochloride • Drug: Saline Solution 	<ul style="list-style-type: none"> • Vancouver General Hospital Vancouver, British Columbia, Canada
2	<input type="checkbox"/>	Completed	Intrawound Vancomycin Powder in Spinal Fusion Surgery	<ul style="list-style-type: none"> • Spinal Fusion Acquired 	<ul style="list-style-type: none"> • Drug: Vancomycin 	<ul style="list-style-type: none"> • Orhopedic Hospital Speising Vienna, Austria
3	<input type="checkbox"/>	Recruiting	The Effect of Intrawound Vancomycin Powder in Spine Surgery	<ul style="list-style-type: none"> • Spine Disease 	<ul style="list-style-type: none"> • Drug: Vancomycin 	<ul style="list-style-type: none"> • Windsor Regional Hospital - Ouellette Windsor, Ontario, Canada • Cairo University Hospitals Cairo, Egypt
4	<input checked="" type="checkbox"/>	Recruiting	Evaluating the Efficacy and Safety of Intra-wound Vancomycin Powder in High Risk Patients	<ul style="list-style-type: none"> • Spinal Deformity • Trauma • Spinal Tumor • Surgical Site Infection 	<ul style="list-style-type: none"> • Drug: Vancomycin powder 	<ul style="list-style-type: none"> • Queen Mary Hospital Hong Kong, Hong Kong

Penicillin Allergy Independently Associated with Increased Risk of Prosthetic Joint Infection

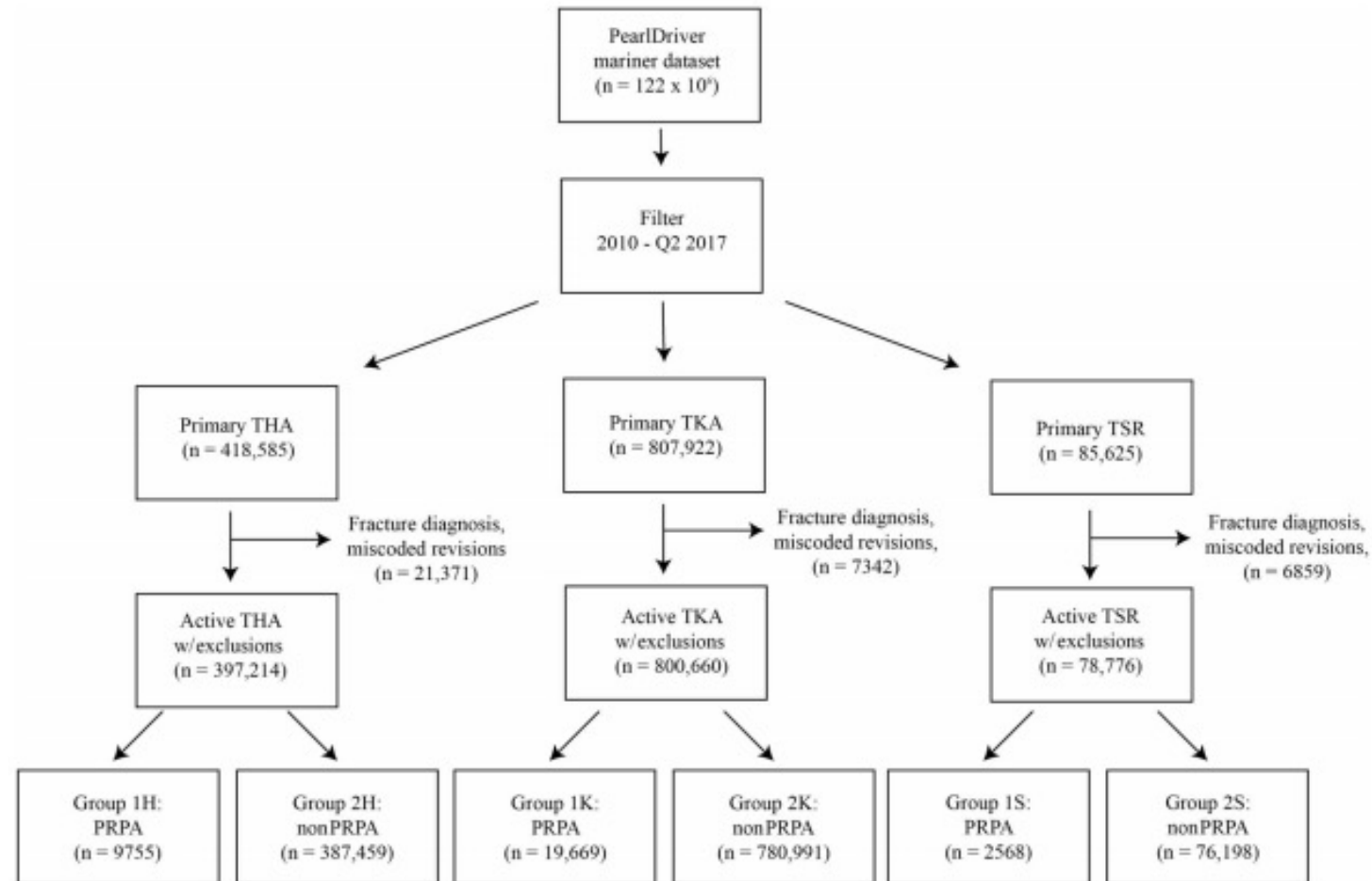


Fig. 1 This flow diagram shows the participants who were included in the study; PRPA = patient-reported penicillin allergy; TSR = total shoulder replacement.

Penicillin Allergy Independently Associated with Increased Risk of Prosthetic Joint Infection

Table 2. Association of comorbidities of prosthetic joint infection 1 year after total shoulder arthroplasty

Variable	Odds ratio	95% CI	p value
Patient-reported penicillin allergy	3.9	2.7 to 5.4	< 0.01
Comorbidities ^a			
Male	1.7	1.4 to 2.2	< 0.01
Rheumatoid arthritis	1.7	1.2 to 2.5	< 0.01
Alcohol abuse	1.6	1.0 to 2.4	< 0.01
Depression	1.6	1.2 to 2.1	< 0.01
Length of stay ^a	1.1	1.0 to 1.1	0.01
Age ^b	0.96	0.95 to 0.97	< 0.01

^aContinuous variable with OR defined per increasing day.

^bContinuous variable with OR defined per increasing year; CI = confidence interval.

Penicillin Allergy Independently Associated with Increased Risk of Prosthetic Joint Infection

Table 1. Association of comorbidities of prosthetic joint infection 1 year after TKA

Variable	Odds ratio	95% CI	p value
Patient-reported penicillin allergy	1.3	1.1 to 1.4	< 0.01
Comorbidities			
Male	1.8	1.7 to 1.9	< 0.01
Alcohol abuse	1.7	1.6 to 1.9	< 0.01
BMI ≥ 40 kg/m ^{2a}	1.6	1.5 to 1.8	< 0.01
Rheumatoid arthritis	1.4	1.3 to 1.5	< 0.01
Peripheral vascular disease	1.4	1.3 to 1.5	< 0.01
Chronic kidney disease	1.3	1.2 to 1.4	< 0.01
Anemia	1.2	1.2 to 1.3	< 0.01
Cardiac disease	1.2	1.2 to 1.3	< 0.01
Depression	1.2	1.1 to 1.3	< 0.01
Immunocompromised	1.2	1.0 to 1.4	0.03
Tobacco use	1.2	1.1 to 1.2	< 0.01
Liver disease	1.2	1.1 to 1.3	< 0.01
BMI 35 to 39.9 kg/m ^{2a}	1.2	1.0 to 1.3	< 0.01
Anxiety	1.1	1.0 to 1.2	0.01
Diabetes	1.1	1.0 to 1.1	< 0.01
Length of stay ^b	1.1	1.0 to 1.1	< 0.01
Age ^c	0.97	0.97 to 0.98	< 0.01

^aReference value of BMI < 30 kg/m².

^bContinuous variable with OR defined per increasing day.

^cContinuous variable with OR defined per increasing year; CI = confidence interval.

Penicillin Allergy Independently Associated with Increased Risk of Prosthetic Joint Infection

Table 3. Association of comorbidities with periprosthetic joint infection 1 year after THA

Variable	Odds ratio	95% CI	p value
Patient-reported penicillin allergy	1.1	0.9 to 1.3	0.36
Comorbidities			
BMI ≥ 40 kg/m ^{2a}	2.9	2.5 to 3.3	< 0.01
BMI 35 to 39.9 kg/m ^{2a}	1.8	1.6 to 2.2	< 0.01
Alcohol abuse	1.6	1.4 to 1.9	< 0.01
Rheumatoid arthritis	1.6	1.4 to 1.8	< 0.01
Depression	1.4	1.3 to 1.5	< 0.01
BMI 30 to 34.9 kg/m ^{2a}	1.4	1.2 to 1.6	< 0.01
Tobacco use	1.3	1.2 to 1.4	< 0.01
Cardiac disease	1.3	1.2 to 1.4	< 0.01
Diabetes	1.2	1.1 to 1.3	< 0.01
Liver disease	1.2	1.1 to 1.3	< 0.01
Anxiety	1.2	1.1 to 1.3	< 0.01
Anemia	1.2	1.1 to 1.3	< 0.01
Chronic kidney disease	1.1	1.0 to 1.3	< 0.01
Peripheral vascular disease	1.1	1.0 to 1.3	0.03
Man	1.1	1.0 to 1.2	< 0.01
Length of stay ^b	1.03	1.02 to 1.04	< 0.01
Age ^c	0.98	0.98 to 0.99	< 0.01

^aReference value of BMI < 30 kg/m².

^bContinuous variable with OR defined per increasing day.

^cContinuous variable with OR defined per increasing year; CI = confidence interval

Preoperative allergy testing for patients reporting penicillin and cephalosporin allergies

Background: Routine preoperative allergy testing in patients reporting penicillin and cephalosporin allergies increases the number able to receive cefazolin, which should reduce the risk of infection after total knee and hip arthroplasty (TKA/THA), but it remains unclear whether this practice is cost-effective. Using a break-even analysis, we calculated the cost-effectiveness of routine preoperative allergy testing for infection prevention in total joint arthroplasty patients reporting penicillin and cephalosporin allergies.

Methods: The cost of a penicillin allergy evaluation, the cost of revision arthroplasty for prosthetic joint infection (PJI), and baseline rates of PJI in patients receiving a noncefazolin antibiotic in the perioperative period were derived from existing literature. A break-even economic model using these variables was constructed to calculate the absolute risk reduction (ARR) in infection rate needed for preoperative allergy testing to be cost-effective. The number needed to treat (NNT) was calculated from the ARR.

Results: Preoperative allergy testing before TKA and THA in patients reporting penicillin and cephalosporin allergies was cost-effective if the initial infection rate decreased by an ARR of 0.810% (NNT = 123) and 0.655% (NNT = 153) for TKA and THA, respectively. Cost-effectiveness was maintained with varying allergy consultation costs, infection rates, and costs associated with PJI treatment.

Conclusion: Routine preoperative allergy testing and clearance are cost-effective infection prevention strategies among patients reporting penicillin and cephalosporin allergies in the setting of elective joint arthroplasty. Widespread adoption of this practice may considerably reduce the economic and societal burden associated with prosthetic infections.

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■ TRAUMA

A randomized clinical trial of low dose single antibiotic-loaded cement versus high dose dual antibiotic-loaded cement in patients receiving a hip hemiarthroplasty after fracture: A protocol for the WHiTE 8 COPAL study



Number of patients to recruit : 4,920

BJR



■ SYSTEMATIC REVIEW

Should concurrent viral (including COVID-19) or bacterial infections be treated before performing surgery for hip fracture?

A SYSTEMATIC REVIEW

Patients with hip fracture and with a viral infection in the upper respiratory tract or without major clinical symptoms should be operated on as soon as possible (LE: I-III)
There is no evidence that patients with coronavirus disease 2019 (COVID-19) should be treated differently

In relation to pneumonia, its prevention is a major issue; Antibiotics should be administered if surgery is delayed by > 72 hours or if bacterial infection is present in the lower respiratory tract (LE: III-V)

In patients with hip fracture and urinary tract infection (UTI), delaying surgery may provoke further complications (LE: I) ; However, diabetic or immunocompromised patients may benefit from immediate antibiotic treatment.

Take-Home Messages

- Antibioprophylaxie => Dose unique < 30 min pré-op non inférieur à poursuite 24h post-op (à valider)
- Vancomycine locale lors de pose de PTH / PTG => réduction risque ISO (à valider)
- Allergie Péni => FdR indépendant ISO (PTG, PTE)
Prise en charge pré-op coût efficace
- Gestion des infections péri-opératoire essentielle => pas systématiquement associé risque ISO

MERCI POUR VOTRE ATTENTION

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