9ème journées scientifiques du CRIOGO

Nantes, 29 novembre 2019

Best of INFECTIEUX

Luc QUAESAET
Maladies Infectieuses

CENTRES DE RÉFÉRENCE
POUR LES INFECTIONS OSTÉO-ARTICULAIRES COMPLEXES
DU GRAND OUEST
CRIOGO

CHRU
BREST
CENTRE HOSPITALIER
REGIONAL UNIVERSITAIRE

PRONOSTIC

J Bone Jt Infect. 2019 Sep 17;4(4):198-202. doi: 10.7150/jbji.35428. eCollection 2019.

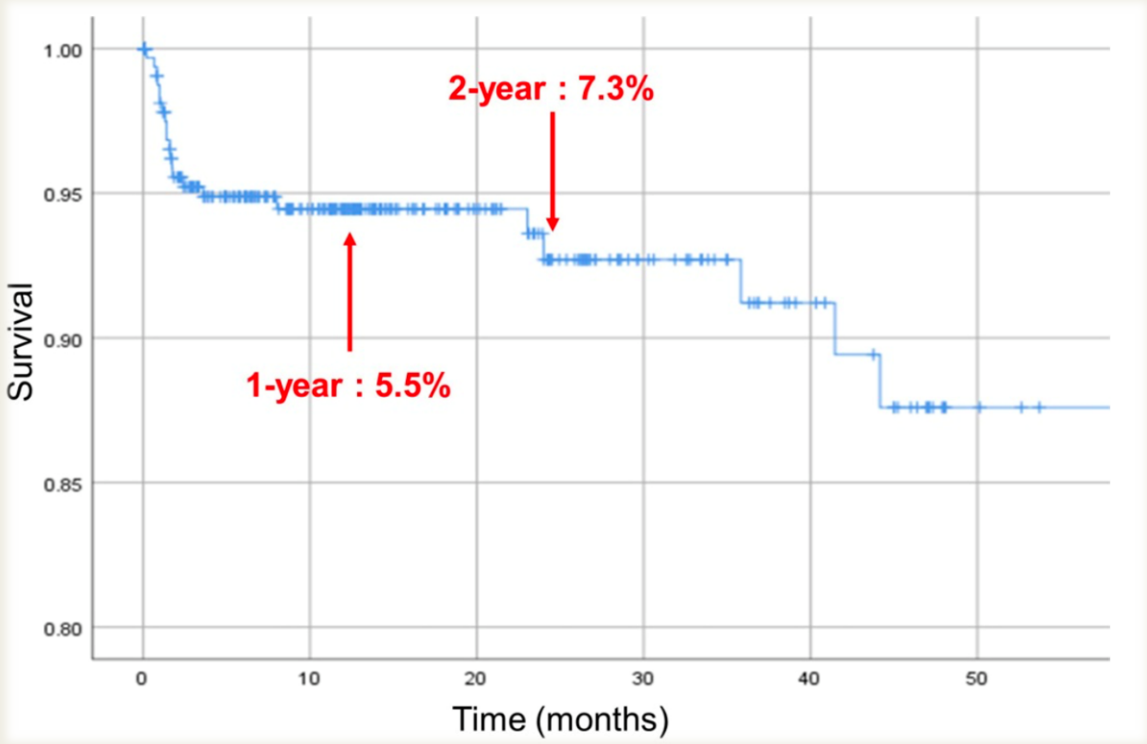
Prosthetic-joint Infections: Mortality Over The Last 10 Years.

Fischbacher A[1], Borens O[1].

Journal of Bone and Joint Infection

Etude descriptive mono centrique rétrospective
Centre Hospitalier de Lausanne, Suisse

Total patients 2006-2016	363
Hip prosthesis (%)	60
Knee prosthesis (%)	40
Age (median and range)	70 (19-96)
Male (%)	55
Female (%)	45



Facteurs de risques de décès :

- Sexe masculin : HR = 2
- Age
- Infection à entérocoque : HR = 2,27
- DAIR : HR = 2,25

Limite principale :

- ✝ = 17 à 1 an ; = 2 durant la 2nde année

EPIDÉMIOLOGIE

A population-based study on the treatment and outcome of enterococcal prosthetic joint infections. A consecutive series of 55 cases

Published: 2019.11.07

Olof Thompson[1]✉, Magnus Rasmussen[1], Anna Stefánsdóttir[2], Bertil Christensson[1], Per Åkesson[1]

Journal of Bone and Joint Infection

	All episodes, n=55
	n (%) Median (IQR)
Co-morbidities	
Ischemic heart disease	14 (26)
Diabetes mellitus	14 (26)
Malignancy (past or present)	10 (18)
Chronic renal insufficiency	9 (16)
COPD[1]	0 (0)
Cirrhosis of the liver	0 (0)
≥ 1 co-morbidity	28 (51)
≥ 2 co-morbidities	13 (24)
Species	
E. faecalis	45 (82)
E. faecium	8 (15)
E. casseliflavus	1 (2)
E. faecalis + *E. faecium*	1 (2)
Polymicrobial infections	35 (64%)
Co-infecting pathogens	
Staphylococcus aureus	14
CoNS	17
Gram negative rods	8
Other†	7
Site of implant	
Hip	35 (64)
Knee	20 (36)
Type of infection	
Early	34 (62)
Delayed	11 (20)
Heamatogenous	10 (18)
Episode-type	
New episode	48 (87)
Ongoing episode	7 (13)
Positive blood culture	6 (11)
Fever ≥ 38°C	17 (31)
Wound discharge	36 (65)
CRP[3] (mg/L)	88 (29-126)
WBC[4] x 10^9/L	10,1 (9,2-12,5)
WBC[4] > 8.8 x 10^9/L[5]	31 (56)

	All episodes, n=55	
	Median (IQR)	n (%)
Age of prosthesis at diagnosis, d[a]	28.5 (19-653)	
Age of prosthesis at first surgical procedure, d[b]	27 (19-169)	
Curative intention of treatment		
Yes		43 (78)
Initial surgical procedure		
No surgery		7 (13)
Debridement		40 (73)
2-stage exchange		4 (7)
Resection arthroplasty or amputation		4 (7)
Final surgical procedure		
No surgery		7 (13)
Debridement		36 (66)
≥ 2 debridements		4 (7)
1-stage exchange		1 (2)
2-stage exchange		5 (9)
Resection Arthroplasty or amputation		6 (11)
Intravenous antibiotic treatment, d	14 (8-21)	
Oral antibiotic treatment, d	84 (47-131)	
Total antibiotic treatment, d	95 (48-140)	
Intravenous antibiotic		
Beta-lactam		28 (51)
Glycopeptide		39 (71)
Oral antibiotic		
Beta-lactam		35 (64)
Linezolid		14 (26)
Rifampicin combination[c]		10 (18)

Etude descriptive rétrospective mono centrique
Comté de Skane, Suède
2011 - 2015

- Au total, 67% de guérison
- 83% si IOA précoce lavée
- Bénéfice de la Rifampicine?

A population-based study on the treatment and outcome of enterococcal prosthetic joint infections. A consecutive series of 55 cases

Published: 2019.11.07

Olof Thompson[1]✉, Magnus Rasmussen[1], Anna Stefánsdóttir[2], Bertil Christensson[1], Per Åkesson[1]

Journal of Bone and Joint Infection

	Failure, n=16		Cure, n=33		
Variable	n (%)	Mean (SD)	n (%)	Mean (SD)	p values
Species					
E. faecalis	10 (63)		29 (88)		.09
E. faecium	5 (31)		3 (9)		
E. casseliflavus	0 (0)		1 (3)		
E. faecalis + faecium	1 (6)		0 (0)		
Co-morbidity ≥1	9 (56)		15 (45)		.6
Co-morbidity ≥ 2	9 (56)		3 (9)		**.001**
Co-morbidity ≥3	5 (31)		0 (0)		**.002**
Age at diagnosis		83.4 (7.4)		76.3 (6.7)	**.001**
Polymicrobial infection	9 (56)		25 (76)		.2
CRP (mg/L)		127 (122.9)		78 (72.0)	.1
WBC		9.1 (3.4)		11.2 (3.1)	.06
Fever >38°	7 (44)		8 (24)		.2
Discharge	7 (44)		27 (82)		**.01**
Type of infection					
Early	5 (31)		26 (79)		.09[a]
Delayed	5 (31)		6 (18)		.2[b]
Heamatogenous	6 (38)		1 (3)		**.001**[c]

	Failure, n=16		Cure, n=33		
Variable	n (%)	Mean (SD)	n (%)	Mean (SD)	p values
Site of infection					
Hip	12 (75)		18 (55)		.2
Knee	4 (25)		15 (45)		
Initial surgical strategy					
Debridement	8 (50)		28 (85)		.6[†]
2-stage exchange	0 (0)		4 (12)		
RA or amputation	4 (25)		0 (0)		
No surgery	4 (25)		1 (3)		
Final surgical management					
Debridement	6 (38)		26 (79)		.6[†]
Exchange	0 (0)		6 (18)		
RA or amputation	6 (38)		0 (0)		
No surgery	4 (25)		1 (3)		
Antibiotic treatment duration[d]					
≤ 90 days	5 (50)		16 (50)		1.0
> 90 days	5 (50)		16 (50)		
Oral antibiotic[e]					
Beta-lactam	9 (90)		22 (67)		.5
Linezolid	1 (10)		10 (30)		.08
Rifampicin-combination[f]	0 (0)		8 (24)		**.041**
Age of prosthesis at diagnosis					
≤ 2 years	7 (44)		30 (91)		**.001**
> 2 years	9 (56)		3 (9)		

- Au total, 67% de guérison
- 83% si IOA précoce lavée
- Bénéfice de la Rifampicine?

A population-based study on the treatment and outcome of enterococcal prosthetic joint infections. A consecutive series of 55 cases

Published: 2019.11.07

Olof Thompson[1]✉, Magnus Rasmussen[1], Anna Stefánsdóttir[2], Bertil Christensson[1], Per Åkesson[1]

Journal of Bone and Joint Infection

Variable	Failure, n=16 n (%)	Mean (SD)	Cure, n=33 n (%)	Mean (SD)	p values
Species					
E. faecalis	10 (63)		29 (88)		
E. faecium	5 (31)		3 (9)		
E. casseliflavus	0 (0)		1 (3)		
E. faecalis + faecium	1 (6)		0 (0)		
Co-morbidity ≥1	9 (56)		15 (45)		
Co-morbidity ≥ 2	9 (56)		3 (9)		
Co-morbidity ≥3	5 (31)		0 (0)		
Age at diagnosis		83.4 (7.4)		76	
Polymicrobial infection	9 (56)		25 (76)		
CRP (mg/L)		127 (122.9)		78	
WBC		9.1 (3.4)		11	
Fever >38°	7 (44)		8 (24)		
Discharge	7 (44)		27 (82)		**.01**
Type of infection					
Early	5 (31)		26 (79)		.09[a]
Delayed	5 (31)		6 (18)		.2[b]
Heamatogenous	6 (38)		1 (3)		**.001**[c]

Tornero *et al.*, CMI 2014

(203 IOA à *E. faecalis*)

APPROVED

Variable	Failure, n=16 n (%)	Mean (SD)	Cure, n=33 n (%)	Mean (SD)	p values
Site of infection					
Hip	12 (75)		18 (55)		.2
Knee	4 (25)		15 (45)		
[illegible]rategy					
	8 (50)		28 (85)		.6[†]
	0 (0)		4 (12)		
[illegible]n	4 (25)		0 (0)		
	4 (25)		1 (3)		
	6 (38)		26 (79)		.6[†]
	0 (0)		6 (18)		
	6 (38)		0 (0)		
	4 (25)		1 (3)		
[illegible]	5 (50)		16 (50)		1.0
> 90 days	5 (50)		16 (50)		
Oral antibiotic[e]					
Beta-lactam	9 (90)		22 (67)		.5
Linezolid	1 (10)		10 (30)		.08
Rifampicin-combination[f]	0 (0)		8 (24)		**.041**
Age of prosthesis at diagnosis					
≤ 2 years	7 (44)		30 (91)		**.001**
> 2 years	9 (56)		3 (9)		

ANTIBIOTHÉRAPIE PROBABILISTE

J Bone Jt Infect. 2019 Mar 2;4(2):72-75. doi: 10.7150/jbji.22118. eCollection 2019.

Daptomycin versus Vancomycin as Post-Operative Empirical Antibiotic Treatment for Prosthetic Joint Infections: A Case-Control Study.

Joseph C[1], Robineau O[2,3], Titecat M[3,4], Putman S[5], Blondiaux N[6], Loiez C[4], Valette M[2], Schmit JL[1], Beltrand E[7], Dézeque H[5], Nguyen S[8], Migaud H[3,5], Senneville E[2,3,5].

Journal of Bone and Joint Infection

Etude comparative rétrospective mono centrique
CRIOAC Nord-Ouest
Antibiothérapie probabiliste post-op
20 vanco *vs* 20 dapto
appariés selon âge et type de prothèse
Suivi à 1 an post-antibiotiques

	Daptomycin n=20 (%)	Vancomycin n=20 (%)	P
Outcome			
- death***	1 (5%)	0	.31
- relapsing infection	2 (10%)	2 (10%)	1
- remission	17 (85%)	18 (90%)	.63

AE episodes	Daptomycin (n=20)	Vancomycin (n=20)	P
Allergy	0	1 (5%)	.31
Thrombophlebitis at the injection site	0	2 (10%)	.15
Nausea	4 (20%)	4 (20%)	1
Diarrhoea	2 (10%)	1 (5%)	.54
Acute renal failure	0	2 (10%)	.15
Myalgia*	1 (5%)	0	.31
Total N° of episodes of adverse events	7 (35%)	10 (50%)	.92
Total N° of patients who experienced adverse events	4 (20%)	6 (30%)	.47
Total N° of patients with discontinuations for adverse events	0	5** (25%)	.02

* : mild, without elevated CPK, **: acute renal insufficiency (n=2) and thrombophlebitis (n=3)

Même efficacité, plus d'arrêt pour effets indésirables dans le bras vancomycine

Quid de Linezolide *vs* Daptomycine ?

ANTIBIOTHÉRAPIE CURATIVE

N Engl J Med. 2019 Jan 31;380(5):425-436. doi: 10.1056/NEJMoa1710926.

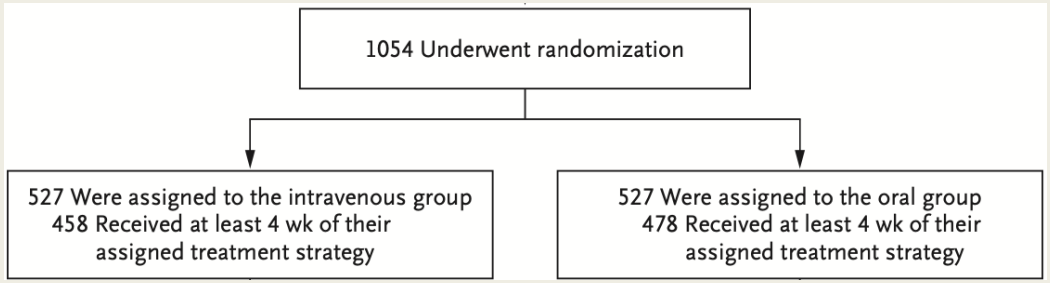
Oral versus Intravenous Antibiotics for Bone and Joint Infection.

Li HK[1], Rombach I[1], Zambellas R[1], Walker AS[1], McNally MA[1], Atkins BL[1], Lipsky BA[1], Hughes HC[1], Bose D[1], Kümin M[1], Scarborough C[1], Matthews PC[1], Brent AJ[1], Lomas J[1], Gundle R[1], Rogers M[1], Taylor A[1], Angus B[1], Byren I[1], Berendt AR[1], Warren S[1], Fitzgerald FE[1], Mack DJF[1], Hopkins S[1], Folb J[1], Reynolds HE[1], Moore E[1], Marshall J[1], Jenkins N[1], Moran CE[1], Woodhouse AF[1], Stafford S[1], Seaton RA[1], Vallance C[1], Hemsley CJ[1], Bisnauthsing K[1], Sandoe JAT[1], Aggarwal I[1], Ellis SC[1], Bunn DJ[1], Sutherland RK[1], Barlow G[1], Cooper C[1], Geue C[1], McMeekin N[1], Briggs AH[1], Sendi P[1], Khatamzas E[1], Wangrangsimakul T[1], Wong THN[1], Barrett LK[1], Alvand A[1], Old CF[1], Bostock J[1], Paul J[1], Cooke G[1], Thwaites GE[1], Bejon P[1], Scarborough M[1]; OVIVA Trial Collaborators.

Essai multicentrique ouvert randomisé de non infériorité en groupes parallèles

Objectif :
Non-infériorité d'une antibiothérapie ***per os*** *vs* **iv** dans les 6 premières semaines de traitement d'une infection ostéo-articulaire

Critère de jugement principal :
Taux d'échec à un an de la prise en charge



Groupes homogènes

N Engl J Med. 2019 Jan 31;380(5):425-436. doi: 10.1056/NEJMoa1710926.

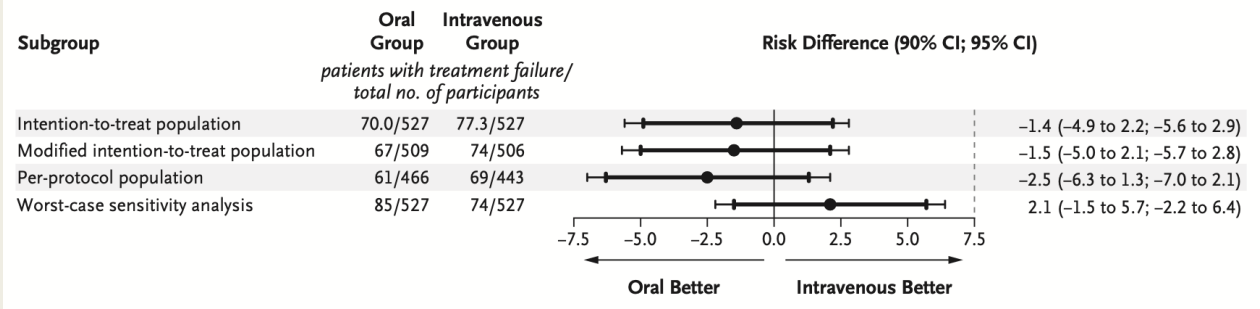
Oral versus Intravenous Antibiotics for Bone and Joint Infection.

Li HK[1], Rombach I[1], Zambellas R[1], Walker AS[1], McNally MA[1], Atkins BL[1], Lipsky BA[1], Hughes HC[1], Bose D[1], Kümin M[1], Scarborough C[1], Matthews PC[1], Brent AJ[1], Lomas J[1], Gundle R[1], Rogers M[1], Taylor A[1], Angus B[1], Byren I[1], Berendt AR[1], Warren S[1], Fitzgerald FE[1], Mack DJF[1], Hopkins S[1], Folb J[1], Reynolds HE[1], Moore E[1], Marshall J[1], Jenkins N[1], Moran CE[1], Woodhouse AF[1], Stafford S[1], Seaton RA[1], Vallance C[1], Hemsley CJ[1], Bisnauthsing K[1], Sandoe JAT[1], Aggarwal I[1], Ellis SC[1], Bunn DJ[1], Sutherland RK[1], Barlow G[1], Cooper C[1], Geue C[1], McMeekin N[1], Briggs AH[1], Sendi P[1], Khatamzas E[1], Wangrangsimakul T[1], Wong THN[1], Barrett LK[1], Alvand A[1], Old CF[1], Bostock J[1], Paul J[1], Cooke G[1], Thwaites GE[1], Bejon P[1], Scarborough M[1]; OVIVA Trial Collaborators.

Essai multicentrique ouvert randomisé de non infériorité en groupes parallèles

Objectif :

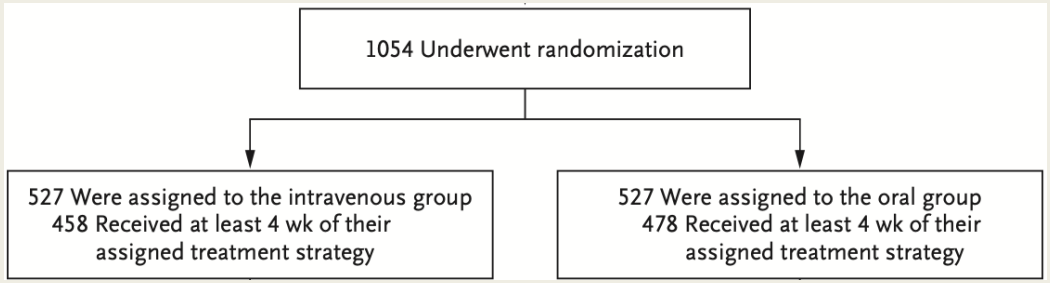
Non-infériorité d'une antibiothérapie ***per os*** *vs* **iv** dans les 6 premières semaines de traitement d'une infection ostéo-articulaire



Subgroup	Oral Group (patients with treatment failure/ total no. of participants)	Intravenous Group	Risk Difference (90% CI; 95% CI)
Intention-to-treat population	70.0/527	77.3/527	−1.4 (−4.9 to 2.2; −5.6 to 2.9)
Modified intention-to-treat population	67/509	74/506	−1.5 (−5.0 to 2.1; −5.7 to 2.8)
Per-protocol population	61/466	69/443	−2.5 (−6.3 to 1.3; −7.0 to 2.1)
Worst-case sensitivity analysis	85/527	74/527	2.1 (−1.5 to 5.7; −2.2 to 6.4)

Critère de jugement principal :

Taux d'échec à un an de la prise en charge



Groupes homogènes

- Plus d'arrêts précoces dans le bras iv (18,9% *vs* 12,8%)
  EI liés aux cathéters
- Durée d'hospitalisation supérieur dans le bras iv (14j *vs* 11j)
- Pas de différence EI, colite à *C. difficile*

NB : bonne observance au traitement po (seulement 3,8% de prises manquées)

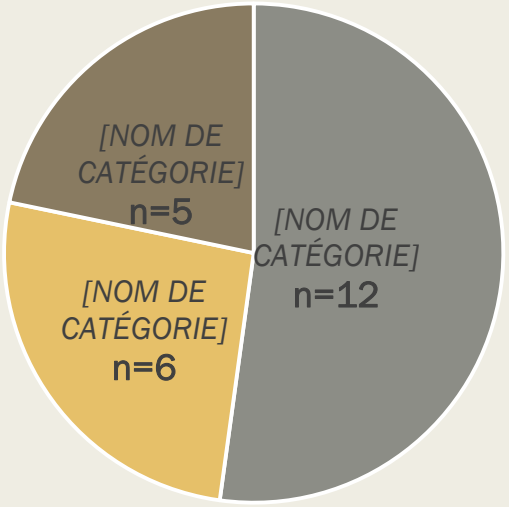
Med Mal Infect. 2019 Oct;49(7):540-544. doi: 10.1016/j.medmal.2019.06.008. Epub 2019 Jul 3.

Moxifloxacin-rifampicin combination for the treatment of non-staphylococcal Gram-positive orthopedic implant-related infections.

Fily F[1], Jolivet-Gougeon A[2], Polard E[3], Gicquel T[4], Dupont M[5], Verdier MC[3], Arvieux C[6].

Médecine et maladies infectieuses
Revue de la Société de pathologie infectieuse de langue française

Etude Renno-Malouine
Rétrospectif, descriptif
IOA sur matériel
23 patients



Surveillance

- ECG (QTc)
- Bilan hépatique

- Succès à 1 an = 81,8%
- Pas d'effets indésirables graves
- **CMI Moxifloxacine 1,5 à 11,7 fois plus basses que Levofloxacine**

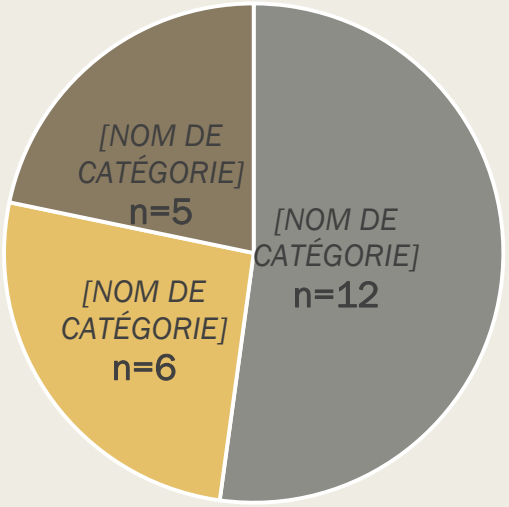
Med Mal Infect. 2019 Oct;49(7):540-544. doi: 10.1016/j.medmal.2019.06.008. Epub 2019 Jul 3.

Moxifloxacin-rifampicin combination for the treatment of non-staphylococcal Gram-positive orthopedic implant-related infections.

Fily F[1], Jolivet-Gougeon A[2], Polard E[3], Gicquel T[4], Dupont M[5], Verdier MC[3], Arvieux C[6].

Médecine et maladies infectieuses
Revue de la Société de pathologie infectieuse de langue française

Etude Renno-Malouine
Rétrospectif, descriptif
IOA sur matériel
23 patients



Surveillance

- ECG (QTc)
- Bilan hépatique

- Succès à 1 an = 81,8%
- Pas d'effets indésirables graves
- **CMI Moxifloxacine 1,5 à 11,7 fois plus basses que Levofloxacine**

INFORMATIONS SÉCURITÉ PATIENTS

INFORMATION TRANSMISE SOUS L'AUTORITE DE L'ANSM

Lettre aux professionnels de santé

Octobre 2018

Fluoroquinolones par voie systémique ou inhalée : risque de survenue d'anévrisme et de dissection aortique

INFORMATIONS SÉCURITÉ PATIENTS

INFORMATION TRANSMISE SOUS L'AUTORITE DE L'ANSM

Lettre aux professionnels de santé

Avril 2019

Antibiotiques de la famille des quinolones et fluoroquinolones administrés par voie systémique ou inhalée : risque d'effets indésirables invalidants, durables et potentiellement irréversibles et restrictions d'utilisation.

J Antimicrob Chemother. 2019 Dec 1;74(12):3588-3595. doi: 10.1093/jac/dkz374.

Proactive therapeutic drug monitoring (TDM) may be helpful in managing long-term treatment with linezolid safely: findings from a monocentric, prospective, open-label, interventional study.

Cojutti PG[1,2], Merelli M[3], Bassetti M[1,3], Pea F[1,2].

Journal of Antimicrobial Chemotherapy

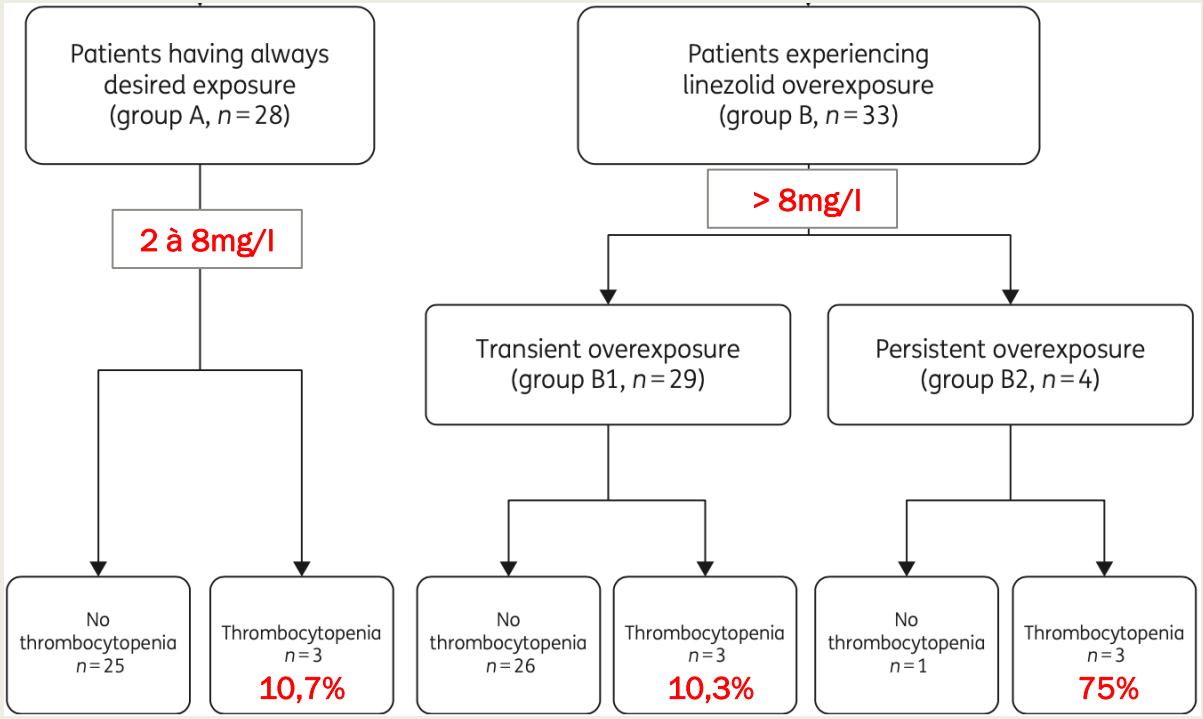
Etude ouverte, prospective, mono centrique, interventionnelle

Objectif :

Le dosage plasmatique du Linezolide permet-il de prévenir une thrombopénie induite ?

n=61 dont 52,5% IOA

Durée médiane entre 19 et 54 j



Thrombopénie résolutive si C_{lin} < 8mg/l

Table 3. Univariate and multivariate regression analysis of variables associated with the occurrence of thrombocytopenia (*n*=61 patients)

	Univariate analysis		Multivariate analysis	
Variable	unstandardized β coefficient (95% CI)	*P*	unstandardized β coefficient (95% CI)[a]	*P*
Age	0.002 (−0.003 to 0.007)	0.459		
Gender	0.006 (−0.214 to 0.226)	0.956		
Weight	0.003 (−0.003 to 0.009)	0.374		
Mean CL_{CR}	0.000 (−0.002 to 0.002)	0.923		
Baseline platelet count	**−0.001 (−0.002 to 0.000)**	**0.001**	**−0.001 (−0.002 to 0.000)**	**0.007**
Length of therapy	−0.001 (−0.003 to 0.001)	0.418		
Median linezolid C_{min}	**0.048 (0.020 to 0.076)**	**0.001**	**0.038 (0.005 to 0.070)**	**0.023**
Duration of overexposure	0.012 (0.000 to 0.023)	0.042	0.002 (−0.011 to 0.014)	0.797

J Antimicrob Chemother. 2019 Jul 1;74(7):1928-1933. doi: 10.1093/jac/dkz120.

Tedizolid in vitro activity against Gram-positive clinical isolates causing bone and joint infections in hospitals in the USA and Europe (2014-17).

Carvalhaes CG[1], Sader HS[1], Flamm RK[1], Mendes RE[1].

Journal of Antimicrobial Chemotherapy

797 souches testées selon CLSI et EUCAST	LINEZOLIDE		TEDIZOLIDE	
	CMI_{90}	EUCAST	CMI_{90}	EUCAST
SASM (333)	1	100% S	0,25	100% S
SARM (140)	1	100% S	0,25	100% S
CoNS méthi-S (37)	1	100% S	0,12	100% S
CoNS méthi-R (71)	0,5	98,6% S	0,12	98,6% S
E. faecalis (53)	2	100% S	0,25	-
SBH (115)	1	100% S	0,25	100% S
S. viridans (24)	1	-	0,25	-

CMI Tedizolide 4 à 8 fois inférieures à CMI Linezolide

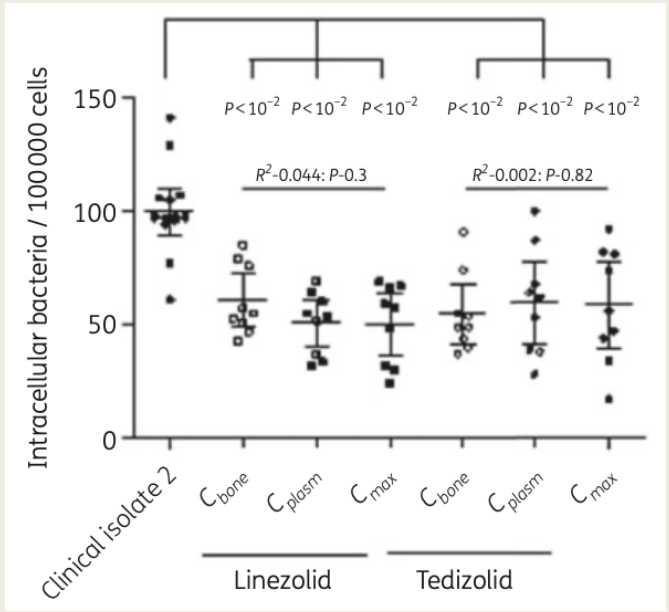
J Antimicrob Chemother. 2019 Mar 1;74(3):625-632. doi: 10.1093/jac/dky473.

Evaluation of the ability of linezolid and tedizolid to eradicate intraosteoblastic and biofilm-embedded Staphylococcus aureus in the bone and joint infection setting.

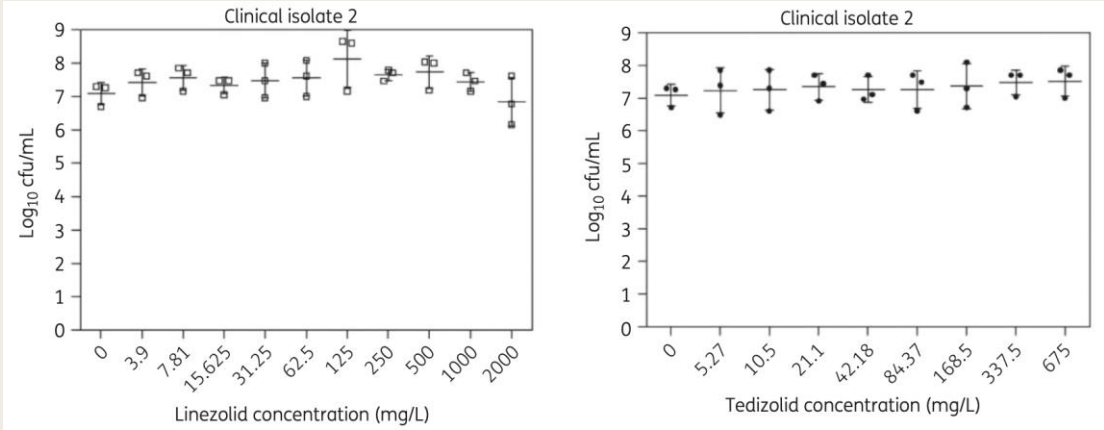
Abad L[1,2,3,4], Tafani V[1], Tasse J[1], Josse J[1], Chidiac C[1,2,3,5], Lustig S[2,3,6], Ferry T[1,2,3,5], Diot A[1], Laurent F[1,2,3,4], Valour F[1,2,3,5].

Journal of Antimicrobial Chemotherapy

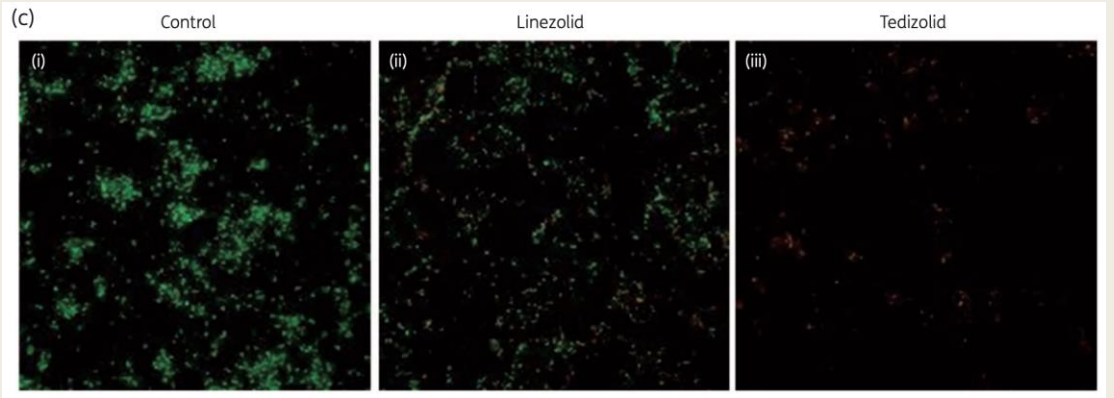
Evaluation in vitro de l'efficacité du Tedizolide et du Linezolide sur 3 souches de SASM



Activité intra-ostéoblastique
Tedizolide = Linezolide



Activité sur SASM intra-biofilm (MBEC)
Tedizolide = Linezolide



Prévention formation biofilm (bMICs)
Tedizolide > Linezolide

Med Mal Infect. 2019 Nov 3. pii: S0399-077X(18)30695-4. doi: 10.1016/j.medmal.2019.10.002. [Epub ahead of print]

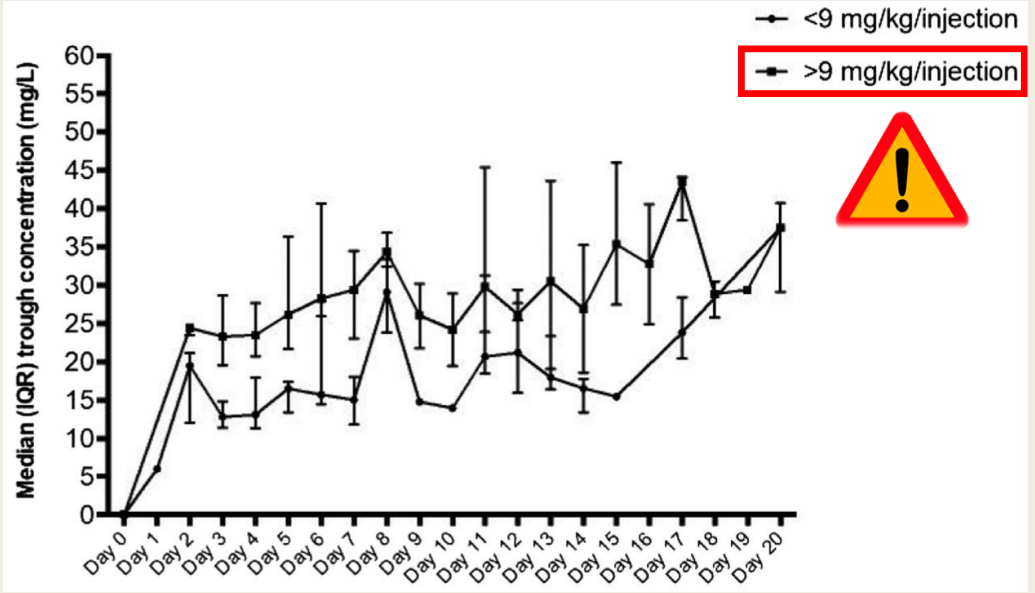
Subcutaneous teicoplanin in staphylococcal bone and joint infections.

Destrem AL[1], Valour F[2], Ronde-Ousteau C[3], Gaudias J[3], Rogeaux O[4], Ferry T[2], Forestier E[4].

Médecine et maladies infectieuses
Revue de la Société de pathologie infectieuse de langue française

Etude descriptive rétrospective multicentrique

n=40	*n* (%) or mean ± SD
Native BJI	6 (15%)
Arthritis	1 (2.5%)
Osteitis	2 (5%)
Spondylodiscitis	3 (7.5%)
Prosthetic BJI	34 (85%)
Knee prosthesis	19 (47.5%)
Hip prosthesis	8 (20%)
Spinal osteosynthesis	2 (5%)
Peripheral osteosynthesis	4 (10%)
Acute BJI	19 (47.5%)
Chronic BJI	21 (52.5%)



- Objectif de C_{res} ≥ 15mg/l obtenu pour 85% des patients
- Pas d'EI cutanéomuqueux
- Echecs à 1 an = 37,5%

13 patients = 3 inj / semaine
C_{res} médiane à J15 = 28,2mg/l
(0 échec à 1 an)

Essai randomisé ouvert monocentrique contrôlé
Ukraine

Open Forum Infectious Diseases 2018 Dec
MAJOR ARTICLE

Dalbavancin for the Treatment of Osteomyelitis in Adult Patients: A Randomized Clinical Trial of Efficacy and Safety

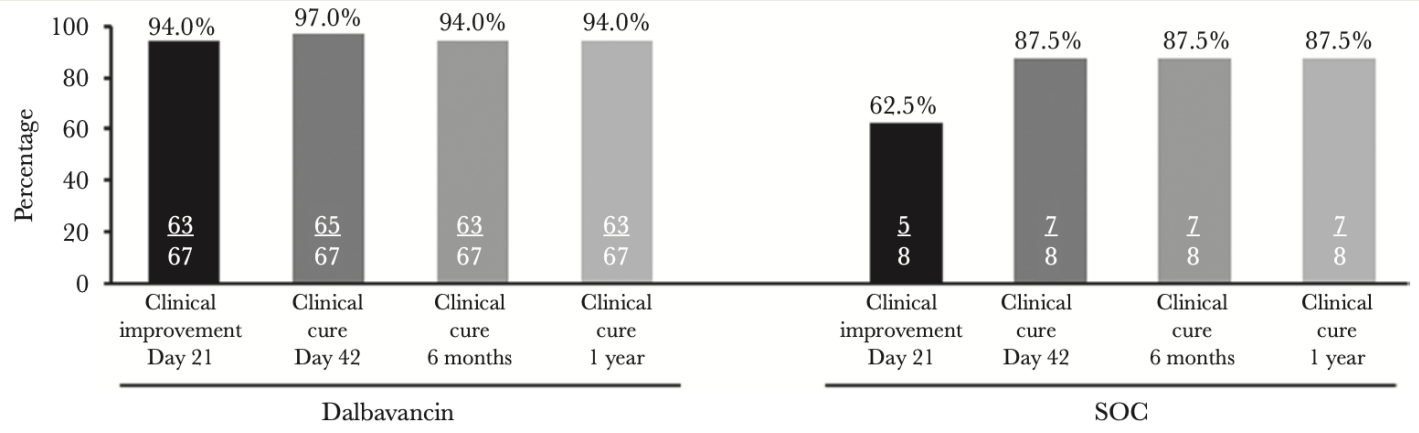
Urania Rappo,[1,a,*] Sailaja Puttagunta,[1,a,*] Vadym Shevchenko,[2] Alena Shevchenko,[2] Alena Jandourek,[1,b] Pedro L. Gonzalez,[3] Amy Suen,[1] Veronica Mas Casullo,[1] David Melnick,[1,c] Rosa Miceli,[1] Milan Kovacevic,[1] Gertjan De Bock,[1,d] and Michael W. Dunne[1,a]

- **Ostéomyélites**
  n = 80
- Randomisation 7:1
- **Dalbavancine**
  1500mg IV J1 et J8
- **Standard of Care**
  4 à 6 sem
- Réponse clinique à S6

Tibia: 27 (38.6)	Tibia: 2 (20)
Foot: 17 (24.3)	Foot: 2 (20)
Femur: 11 (15.7)	Femur: 4 (40)
Humerus: 4 (5.7)	Fibula: 1 (10)
Hand: 4 (5.7)	Pelvic bone: 1 (10)
Ulna: 1 (1.4)	
Fibula: 2 (2.9)	
Pelvic bone: 1 (1.4)	
Other: 3 (4.3)	

1h *vs* 101h !!

Outcome	Dalbavancin (n = 67)	Standard of Care (n = 8)
Length of hospital stay, d		
Mean ± SD	15.8 ± 7.1	33.3 ± 14.2
Median (range)	15.0 (8–38)	30.5 (11–56)
Days of IV antibiotic treatment		
Mean ± SD	2.0 ± 0	31.6 ± 7.0
Median (range)	2 (2–2)	29 (29–49)
Total IV infusion duration, h		
Mean ± SD	1.0 ± 0.02	101.3 ± 20.8
Median (range)	1.0 (1.0–1.1)	112.6 (66.9–113.3)



Adverse Event	Dalbavancin, No. (%) (n = 70)	SOC, No. (%) (n = 10)
Patients experiencing ≥1 of:		
TEAE	10 (14.3)[a]	0 (0)
Drug-related TEAE	1 (1.4)	0 (0)
Serious TEAE	2 (2.9)[b]	0 (0)
Death	1 (1.4)[c]	0 (0)
TEAE leading to premature discontinuation of study drug	0 (0)	0 (0)

Antimicrob Agents Chemother. 2019 Apr 25;63(5). pii: e02280-18. doi: 10.1128/AAC.02280-18. Print 2019 May.

Safety and Efficacy of Prolonged Use of Dalbavancin in Bone and Joint Infections.

Morata L[1], Cobo J[2], Fernández-Sampedro M[3], Guisado Vasco P[4], Ruano E[5], Lora-Tamayo J[6], Sánchez Somolinos M[7], González Ruano P[8], Rico Nieto A[9], Arnaiz A[10], Estébanez Muñoz M[11], Jiménez-Mejías ME[12], Lozano Serrano AB[13], Múñez E[14], Rodriguez-Pardo D[15], Argelich R[16], Arroyo A[17], Barbero JM[18], Cuadra F[19], Del Arco A[20], Del Toro MD[21,22], Guio L[23], Jimenez-Beatty D[24], Lois N[25], Martin O[26], Martínez Alvarez RM[27], Martinez-Marcos FJ[28], Porras L[29], Ramírez M[30], Vergas García J[31], Soriano A[32].

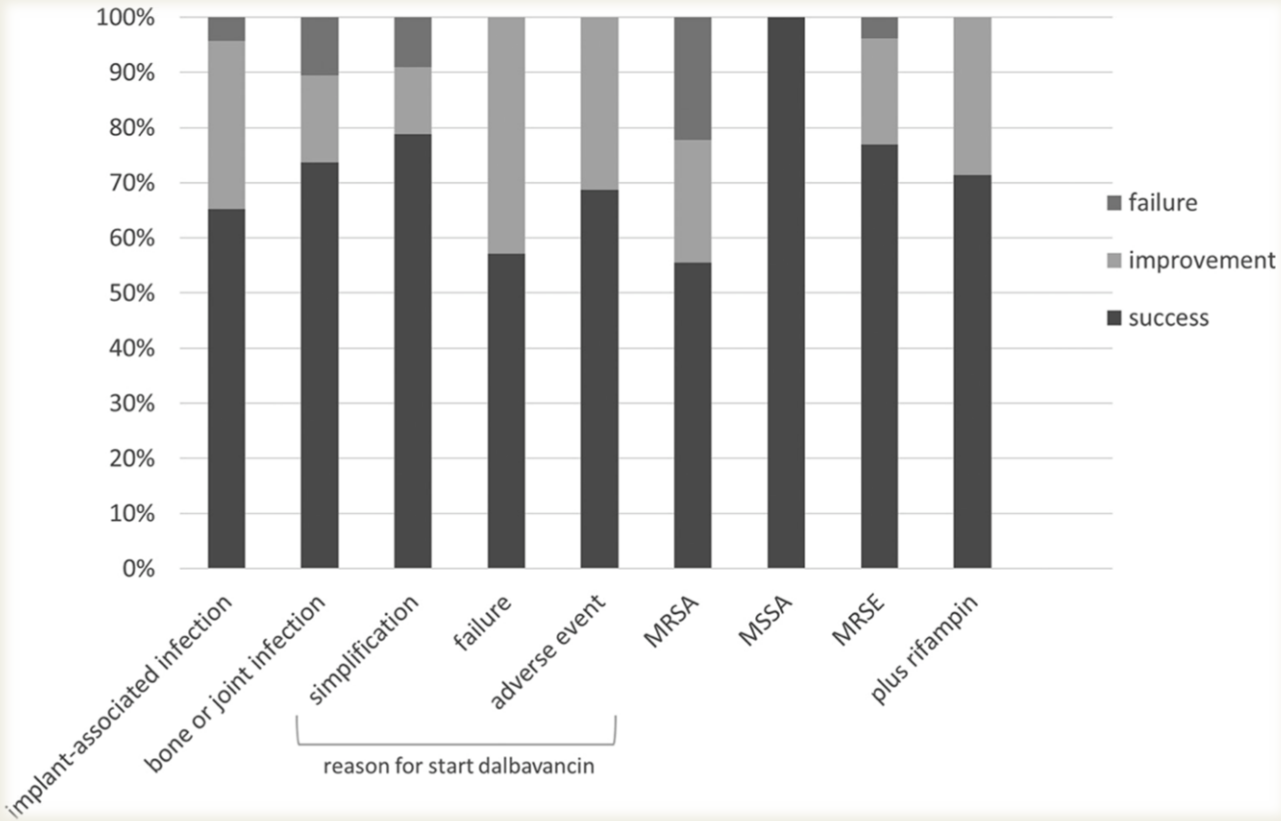
Microorganism(s)	No. (%) of patients with: Implant-associated infection (*n* = 45)	Bone or joint infection (*n* = 19)
Staphylococcus epidermidis	26 (57.7)	4 (21)
Staphylococcus aureus	4 (8.9)	10 (52.6)
Staphylococcus lugdunensis	2 (4.4)	0
Staphylococcus capitis	1 (2.2)	0
Streptococcus pneumoniae	1 (2.2)	0
Enterococcus faecalis	4 (8.9)	1 (5.2)
Enterococcus faecium	3 (6.6)	1 (5.2)
Corynebacterium striatum	2 (4.4)	1 (5.2)
Streptococcus spp.[a]	0	3 (15.7)
Anaerobes[b]	2 (4.4)	1 (5.2)
Gram negatives[c]	2 (4.4)	0
Polymicrobial	5 (11.1)	3 (15.7)
Negative culture	3 (6.6)	1 (5.2)

dont 26 prothèses

Etude descriptive rétrospective mono centrique

64 IOA traitées par Dalbavancine

Effets indésirables = 7/64	
Digestifs	4
Rash (spontanément résolutif)	1
Phlébite	1
Asthénie	1
↑ créat de 40µM	1



ANTIBIOTHÉRAPIE SUSPENSIVE

Clin Microbiol Infect. 2019 Sep 17. pii: S1198-743X(19)30492-6. doi: 10.1016/j.cmi.2019.09.007. [Epub ahead of print]

Suppressive antibiotic therapy in prosthetic joint infections: a multicentre cohort study.

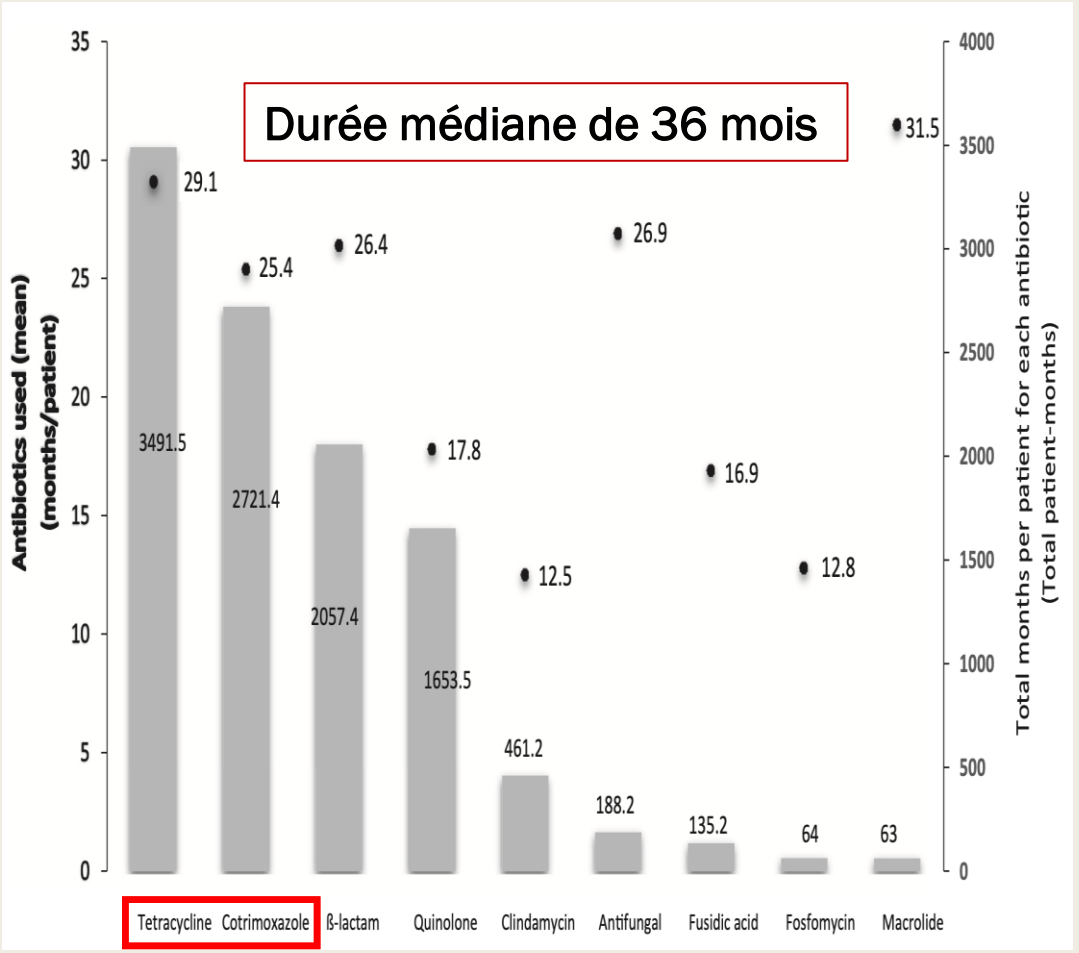
Escudero-Sanchez R[1], Senneville E[2], Digumber M[2], Soriano A[3], Del Toro MD[4], Bahamonde A[5], Del Pozo JL[6], Guio L[7], Murillo O[8], Rico A[9], García-País MJ[10], Rodríguez-Pardo D[11], Iribarren JA[12], Fernández M[13], Benito N[14], Fresco G[15], Muriel A[16], Ariza J[8], Cobo J[15].

CMI CLINICAL MICROBIOLOGY AND INFECTION
ESCMID

Etude rétrospective descriptive multicentrique
29 hôpitaux / 13 ans / 302 patients

LES RAISONS D'UN CHOIX…	
Décision du chirurgien	27,2%
Risque peropératoire	26,5%
Patient âgé	23,5%
Décision du patient	23,2%
Préserver la fonction	22,8%
Symptômes mineurs	11,6%

Microorganism	n (%)
CoNS	98 (32.5)
S. aureus	94 (31.1)
MSSA	73 (24.1)
MRSA	21 (7.0)
Streptococcus sp.	28 (9.3)
Enterococcus sp.	17 (5.6)
Enterobacteriaceae	26 (8.6)
Escherichia coli	8 (2.6)
Proteus sp.	6 (2.0)
Klebsiella sp.	5 (1.7)
Morganella sp.	3 (1.0)
Enterobacter sp.	2 (0.7)
Citrobacter sp.	1 (0.3)
Non-fermenting GNB	20 (6.6)
Pseudomonas sp.	19 (6.3)
Acinetobacter sp.	1 (0.3)
GPB	10 (3.3)
Cutibacterium sp.	8 (2.6)
Clostridium sp.	2 (0.6)
Fungi	6 (2.0)
Negative culture	22 (7.3)
Polymicrobial	41 (13.6)
High virulence	144 (47.7)

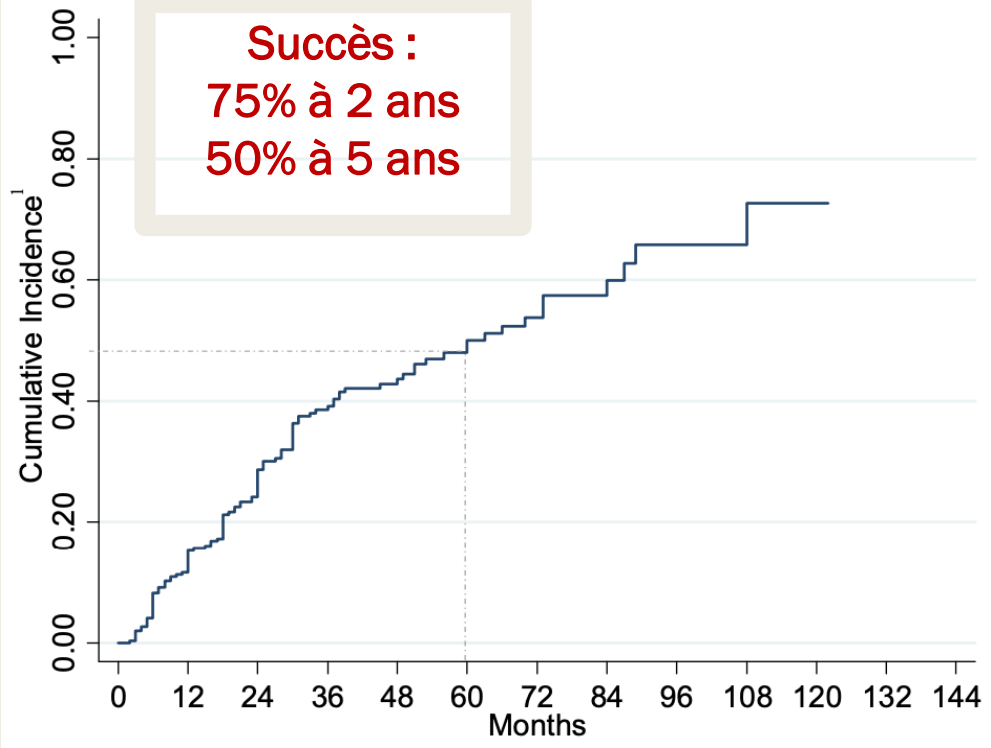


- Début par ATB iv = 34,1%
- Bithérapie initiale = 17,9%

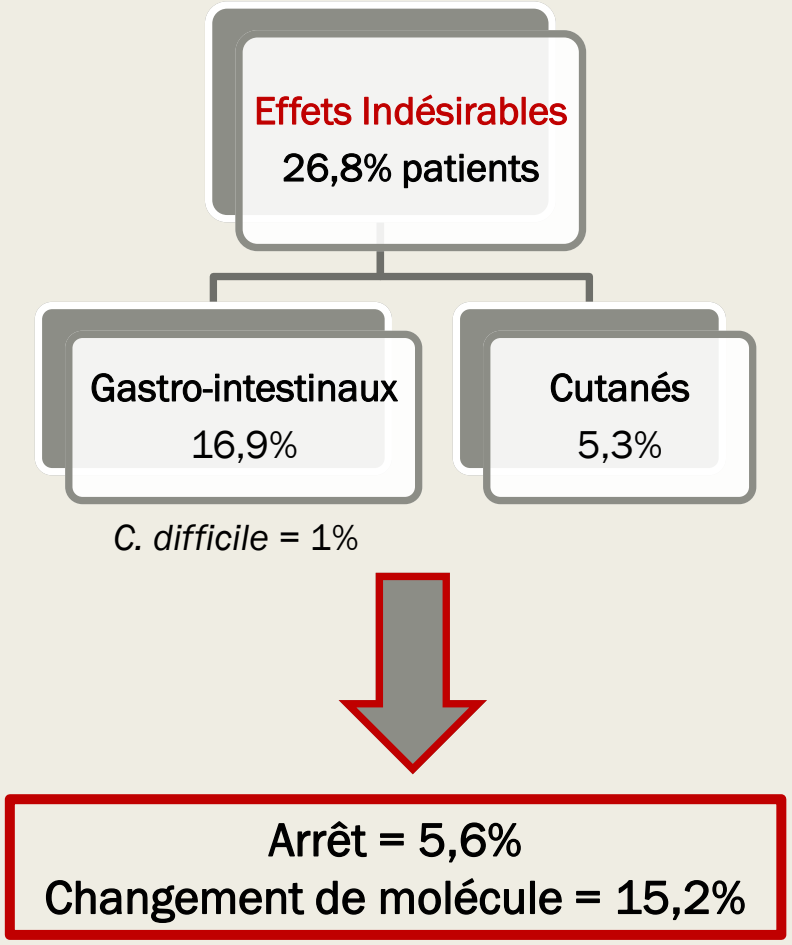
Clin Microbiol Infect. 2019 Sep 17. pii: S1198-743X(19)30492-6. doi: 10.1016/j.cmi.2019.09.007. [Epub ahead of print]

Suppressive antibiotic therapy in prosthetic joint infections: a multicentre cohort study.

Escudero-Sanchez R[1], Senneville E[2], Digumber M[2], Soriano A[3], Del Toro MD[4], Bahamonde A[5], Del Pozo JL[6], Guio L[7], Murillo O[8], Rico A[9], García-País MJ[10], Rodríguez-Pardo D[11], Iribarren JA[12], Fernández M[13], Benito N[14], Fresco G[15], Muriel A[16], Ariza J[8], Cobo J[15].



FACTEURS DE RISQUES D'ECHECS (analyse multivariée)		
Age > 70 ans	SHR = 0,63	p = 0,013
Prothèse Membre sup	SHR = 2,44	p = 0,000
Infection à CG+	SHR = 0,62	p = 0,025



IPOA FUNGIQUE

Bone Joint J. 2019 May;101-B(5):589-595. doi: 10.1302/0301-620X.101B5.BJJ-2018-1227.R2.

Fungal prosthetic joint infection in total hip or knee arthroplasty: a retrospective single-centre study of 26 cases.

Theil C[1], Schmidt-Braekling T[1], Gosheger G[1], Idelevich EA[2], Moellenbeck B[1], Dieckmann R[1].

The Bone & Joint Journal
Over 70 years of orthopaedic excellence

Etude rétrospective descriptive
mono centrique
2009 – 2017
26 PJI fongiques

- *Candida spp. = 100%*
- *Coïnfection bactérienne = 50%*

Ciments imprégnés d'antifungique

Patient demographics	Total hip arthroplasty	Total knee arthroplasty
Mean age, yrs (range)	71 (40 to 84)	74 (55 to 90)
Median BMI, kg/m² (IQR)	32 (27 to 39)	27 (20 to 34)
Median Charlson Comorbidity Index (IQR)	7.5 (5 to 8)	7 (3 to 13)
High-risk, n (%)	17 (*94*)	7 (*88*)
Smoking, n (%)	6 (*33*)	3 (*38*)
Diabetes, n (%)	5 (*28*)	4 (*50*)
Immunosuppression, n (%)	7 (*39*)	3 (*38*)
Megaprosthetic reconstruction, n (%)	6 (*33*)	3 (*38*)
Median previous surgeries for PJI, n (IQR)	1 (0.5 to 2)	2 (1 to 4)
Median previous aseptic revisions, n (IQR)	1 (0.5 to 2.5)	2 (1 to 5)

Outcome	Total hip arthroplasty (n = 18)	Total knee arthroplasty (n = 8)
Surgical treatment, n (%)		
Implant retention and antifungal treatment	N/A	1 (*12*)
One-stage exchange	2 (*11*)	N/A
Two-stage exchange	16 (*89*)	7 (*88*)
Spacer exchange	11 (*61*)	3 (*38*)
Postoperative revision surgery	13 (*72*)	2 (*25*)
Systemic antifungal treatment, n (%)		
Caspofungin	9 (*50*)	5 (*63*)
Anidulafungin	1 (*6*)	N/A
Micafungin	3 (*17*)	N/A
Fluconazole	3 (*17*)	N/A
Micafungin	N/A	1 (*12*)
Vorcionazole	N/A	2 (*25*)
Amphotericin	2 (*11*)	N/A
Mean duration, wks (range)	10 (4 to 19)	14 (1 to 32)
***Candida* species, n (%)**		
Candida albicans	16 (*89*)	3 (*38*)
Candida parapsilosis	N/A	3 (*38*)
Candida dubliniensis	N/A	1 (*12*)
Candida glabrata	1 (*6*)	1 (*12*)
Candida famata	1 (*6*)	N/A
Candida guilliermondii	1 (*6*)	N/A
Fluconazole resistance, n (%)	2 (*11*)	2 (*25*)
Bacterial co-infection, n (%)	8 (*44*)	5 (*63*)

Succès = 38,5%
(i.e. guérison avec prothèse fonctionnelle)

OPAT

Clin Infect Dis. 2019 May 6. pii: ciz362. doi: 10.1093/cid/ciz362. [Epub ahead of print]

Quality indicators for appropriate outpatient parenteral antimicrobial therapy (OPAT) in adults: a systematic review and RAND-modified Delphi procedure.

Berrevoets MAH[1,2], Ten Oever J[1,2], Oerlemans AJM[3], Kullberg BJ[1,2], Hulscher ME[2,3], Schouten JA[2,3].

Clinical Infectious Diseases

Procédure DELPHI à partir revue de la littérature

Objectif : proposition d'indices de qualité

Résultats :

- 33 items
- dont 12 prioritaires

		Cumulative Points
Organization		
1	There should be a structured OPAT program to provide a framework for safe and effective care.	45
2	There should be a formal OPAT care team.	21
3	There should be a policy on patient selection criteria for OPAT.	21
Initiation		
1	There should be an OPAT treatment and monitoring plan.	34
2	A competent member of the OPAT team should perform the initial assessment.	28
3	Patients and their families should be informed about OPAT.	13
Continuation		
1	There should be a mechanism in place for urgent discussion and review of emergent clinical problems during OPAT according to clinical need.	38
2	There should be a system in place for rapid communication between the patient and team members.	29
3	Laboratory results should be delivered to physicians within 24 hours after obtaining material for testing.	12
Outcome		
1	The OPAT team should document clinical response to antimicrobial management.	29
2	The OPAT team should document adverse events related to devices, antibiotic use, and toxicity.	28
3	The OPAT team should monitor quality indicators for OPAT care and make these data available.	17

Abbreviation: OPAT, outpatient parenteral antimicrobial therapy.

Structuration

Compétence

Communication

Suivi

Clin Infect Dis. 2019 May 6. pii: ciz362. doi: 10.1093/cid/ciz362. [Epub ahead of print]

Quality indicators for appropriate outpatient parenteral antimicrobial therapy (OPAT) in adults: a systematic review and RAND-modified Delphi procedure.

Berrevoets MAH[1,2], Ten Oever J[1,2], Oerlemans AJM[3], Kullberg BJ[1,2], Hulscher ME[2,3], Schouten JA[2,3].

Clinical Infectious Diseases

Procédure DELPHI à partir revue de la littérature
Objectif : proposition d'indices de qualité

Résultats :
- 33 items
- dont 12 prioritaires

Organization		
1	Th	
2	Th	
3	Th	
Initiation		
1	Th	
2	A	
3	Pa	
Continuation		
1	Th	
2	members.	
3	Laboratory results should be delivered to physicians within 24 hours after obtaining material for testing.	12
Outcome		
1	The OPAT team should document clinical response to antimicrobial management.	29
2	The OPAT team should document adverse events related to devices, antibiotic use, and toxicity.	28
3	The OPAT team should monitor quality indicators for OPAT care and make these data available.	17

Abbreviation: OPAT, outpatient parenteral antimicrobial therapy.

Clinical Infectious Diseases

IDSA GUIDELINE

IDSA Infectious Diseases Society of America

hivma hiv medicine association

2018 IDSA Clinical Practice Guideline for the Management of Outpatient Parenteral Antimicrobial Therapy[a]

…icturation

…mpétence

…munication

Suivi

BEST-OF BIBLIO DU BEST-OF BIBLIO

Medicine (Baltimore). 2019 Jan;98(2):e14067. doi: 10.1097/MD.0000000000014067.

Top 100 cited articles on infection in orthopaedics: A bibliometric analysis.

Jiang Y[1], Hu R[2], Zhu G[1].

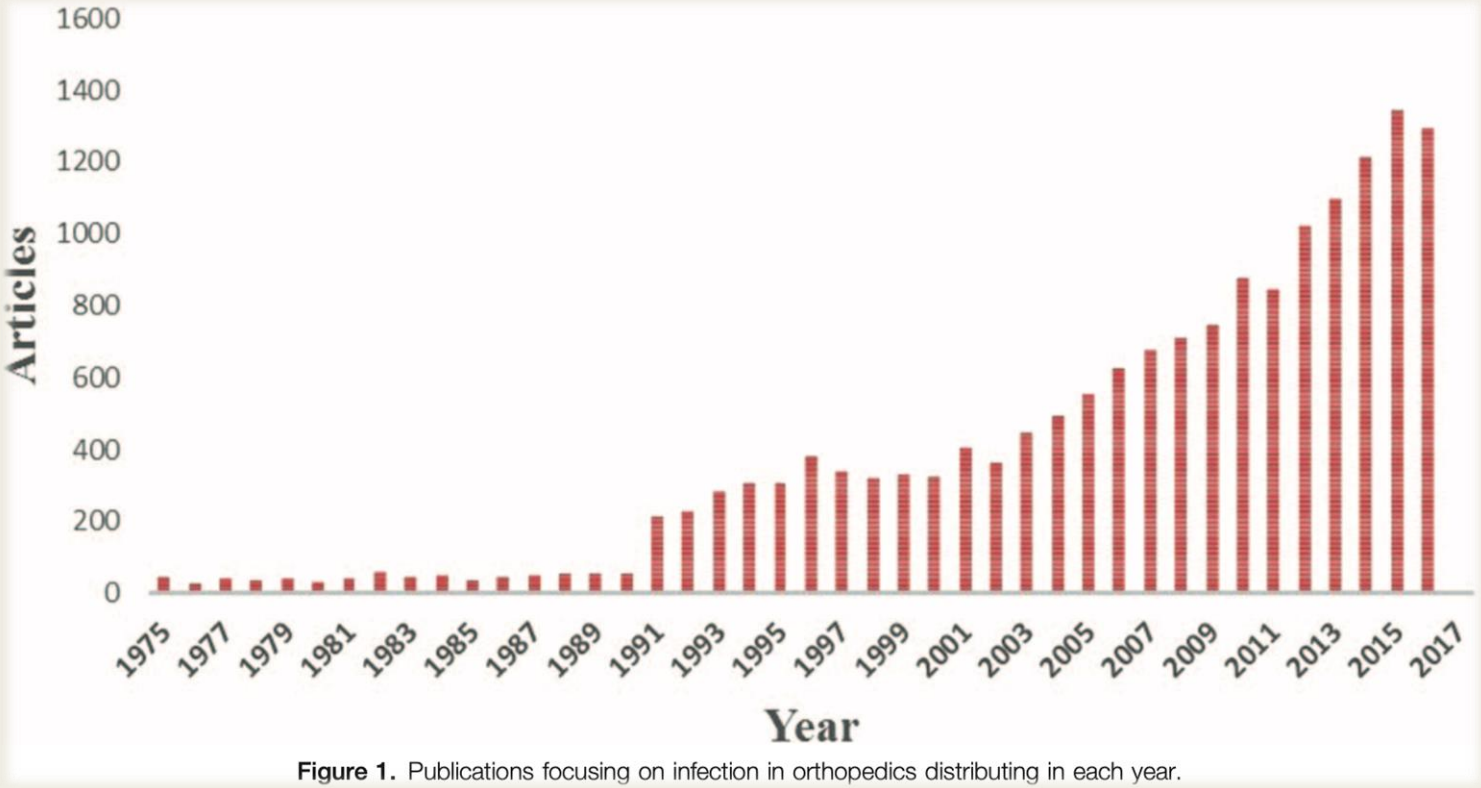


Figure 1. Publications focusing on infection in orthopedics distributing in each year.

Countries with no less 3 of the top 100 cited articles.

Country	Articles	Total citation
USA	75	23556
England	9	2659
Canada	7	2536
France	3	1358
Sweden	3	835
Swttzerland	3	1092

J Bone Joint Surg Am. 1976 Jun;58(4):453-8.

Prevention of infection in the treatment of one thousand and twenty-five open fractures of long bones: retrospective and prospective analyses.

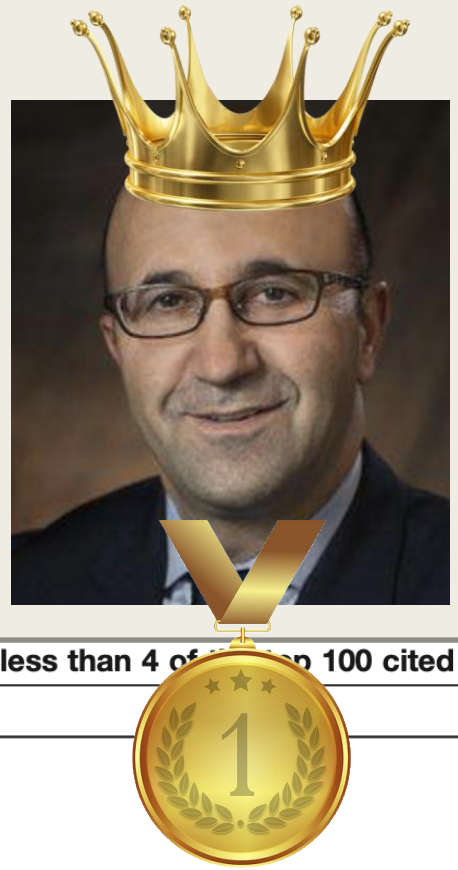
Gustilo RB, Anderson JT.

Medicine (Baltimore). 2019 Jan;98(2):e14067. doi: 10.1097/MD.0000000000014067.

Top 100 cited articles on infection in orthopaedics: A bibliometric analysis.

Jiang Y[1], Hu R[2], Zhu G[1].

Medicine®



Journals with no less than 3 of the top 100 cited articles.

Journals	Articles	Total citation
Journal of Bone And Joint Surgery American Volume	48	15052
Clinical Orthopedics And Related Research	14	4584
Spine	12	3905
Journal of Bone And Joint Surgery British Volume	9	2434
Acta Orthopedic Scandinavica	3	964
Journal of Arthroplasty	3	623

Institutions with no less 4 of the top 100 cited articles.

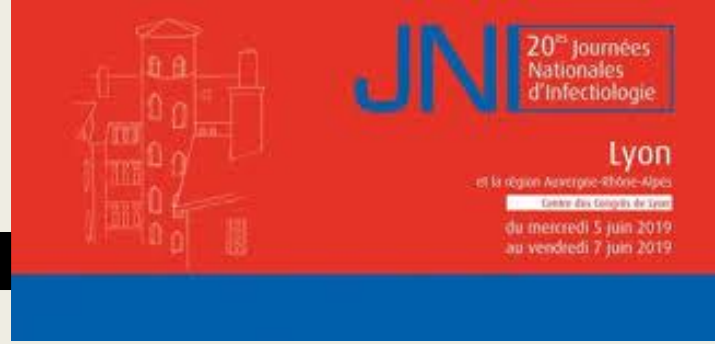
Institution	Articles	Total citation
Harvard University	6	1806
Massachusetts General Hospital	6	2132
Boston University	5	1411
Brigham and Women's Hospital	5	1421
Hospital Special Surgery	5	1287
The University of California, San Francisco	5	1887
Dartmouth Coll School Medicine	4	1172
Exponent Inc	4	1243
Mayo Clinic	4	1190

Authors with no less than 4 of [illegible]p 100 cited articles.

Author	Articles
Parvizi J	5
Katz JN	5
Losina E	5
Mahomed NN	5
Kurtz SM	4
Lau E	4
Poss R	4

MAIS AUSSI...

Mais aussi et déjà présenté lors du Best-of Infections sur matériel JNI 2019



J Clin Med. 2019 May 13;8(5). pii: E673. doi: 10.3390/jcm8050673.

The Different Microbial Etiology of Prosthetic Joint Infections according to Route of Acquisition and Time after Prosthesis Implantation, Including the Role of Multidrug-Resistant Organisms.

Benito N[1,2], Mur I[3,4], Ribera A[5], Soriano A[6], Rodríguez-Pardo D[7], Sorlí L[8], Cobo J[9], Fernández-Sampedro M[10], Del Toro MD[11], Guío L[12], Praena J[13], Bahamonde A[14], Riera M[15], Esteban J[16], Baraia-Etxaburu JM[17], Martínez-Alvarez J[18], Jover-Sáenz A[19], Dueñas C[20], Ramos A[21], Sobrino B[22], Euba G[23], Morata L[24], Pigrau C[25], Horcajada JP[26], Coll P[27,28], Crusi X[29], Ariza J[30]; REIPI (Spanish Network for Research in Infectious Disease) Group for the Study of Prosthetic Joint Infections / GEIO (Group for the Study of Osteoarticular Infections), SEIMC (Spanish Society of Infectious Diseases and Clinical Microbiolo[31].

Ou comment adapter au mieux l'antibiothérapie probabiliste

J Arthroplasty. 2018 Aug;33(8):2582-2587. doi: 10.1016/j.arth.2018.03.041. Epub 2018 Mar 27.

Predicting Failure in Early Acute Prosthetic Joint Infection Treated With Debridement, Antibiotics, and Implant Retention: External Validation of the KLIC Score.

Löwik CAM[1], Jutte PC[1], Tornero E[2], Ploegmakers JJW[1], Knobben BAS[3], de Vries AJ[3], Zijlstra WP[4], Dijkstra B[4], Soriano A[5], Wouthuyzen-Bakker M[6]; Northern Infection Network Joint Arthroplasty (NINJA).

	Variable	Score
K	Chronic renal failure (kidney)	2
L	Liver cirrhosis	1.5
I	Index procedure (revision surgery or prosthesis indicated for a fracture)	1.5
C	Cemented prosthesis	2
C	C-reactive protein >115 mg/L	2.5

J Infect. 2019 Jan;78(1):40-47. doi: 10.1016/j.jinf.2018.07.014. Epub 2018 Aug 7.

Clinical outcome and risk factors for failure in late acute prosthetic joint infections treated with debridement and implant retention.

Wouthuyzen-Bakker M[1], Sebillotte M[2], Lomas J[3], Taylor A[3], Palomares EB[4], Murillo O[4], Parvizi J[5], Shohat N[6], Reinoso JC[7], Sánchez RE[7], Fernandez-Sampedro M[8], Senneville E[9], Huotari K[10], Barbero JM[11], Garcia-Cañete J[12], Lora-Tamayo J[13], Ferrari MC[14], Vaznaisiene D[15], Yusuf E[16], Aboltins C[17], Trebse R[18], Salles MJ[19], Benito N[20], Vila A[21], Toro MDD[22], Kramer TS[23], Petersdorf S[24], Diaz-Brito V[25], Tufan ZK[26], Sanchez M[27], Arvieux C[28], Soriano A[29], ESCMID Study Group for Implant-Associated Infections (ESGIAI).

C	COPD	2
	CRP > 150 mg/L	1
R	Rheumatoid arthritis	3
I	Indication prosthesis: fracture	3
M	Male	1
E	Exchange of mobile components	-1
80	Age > 80 years	2

J Antimicrob Chemother. 2019 Aug 1;74(8):2394-2399. doi: 10.1093/jac/dkz202.

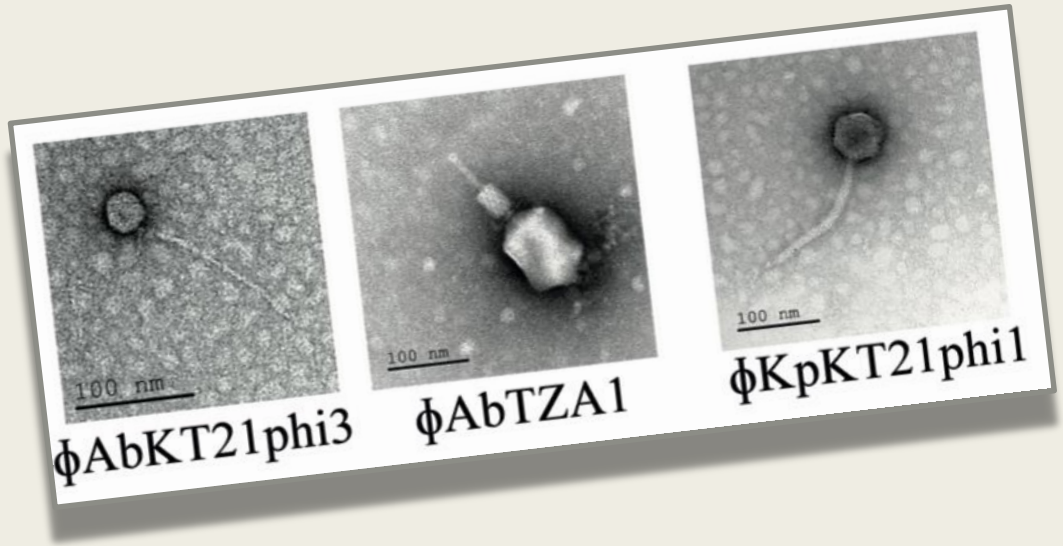
Four versus six weeks of antibiotic therapy for osteoarticular infections after implant removal: a randomized trial.

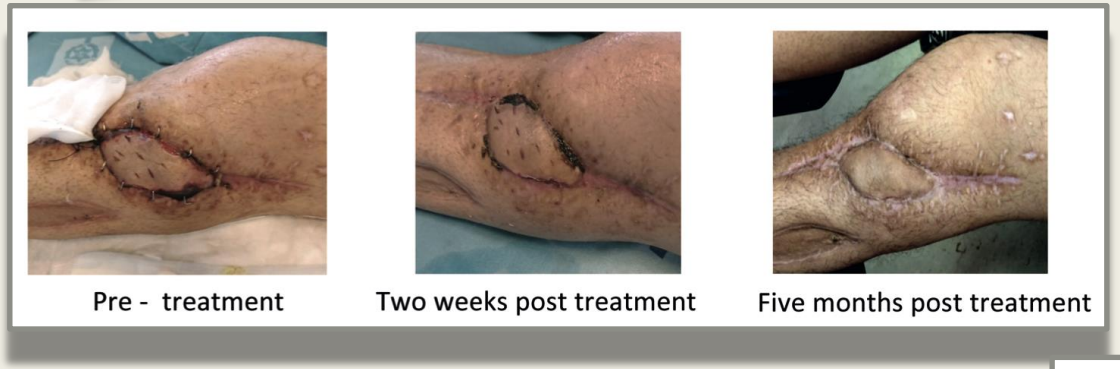
Benkabouche M[1], Racloz G[2,3], Spechbach H[1], Lipsky BA[4], Gaspoz JM[1], Uçkay I[2,4,5].

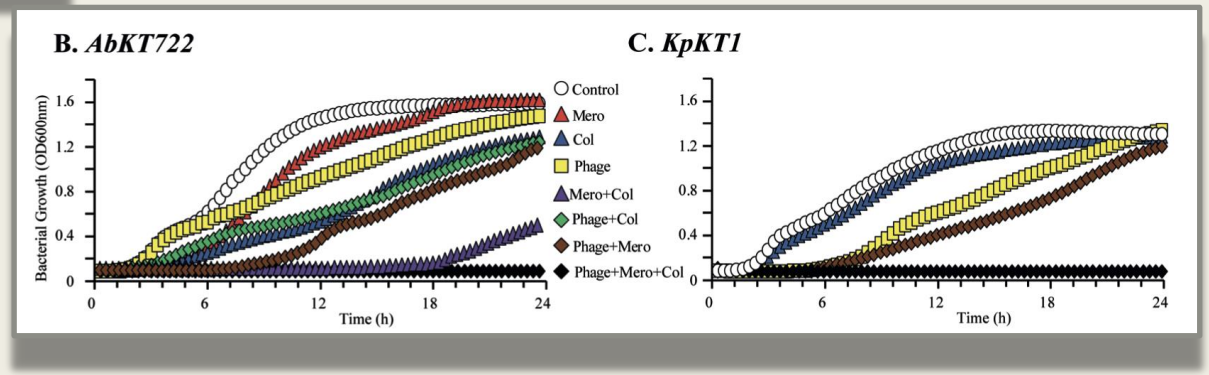
Essai randomisé mono centrique
4 sem atb *vs* 6 si ablation matériel
Non-infériorité démontrée

http://www.infectiologie.com/UserFiles/File/jni/2019/com/jni2019-best-of-materiel-valour.pdf

Pour l'année prochaine...







... littérature plus fournie à l'avenir ?

MERCI DE VOTRE ATTENTION