Antibiothérapie et durée des IOA

Dr K. BOUILLER

Centre de compétence CHU Besançon

Quelle est la durée de traitement d'une infection de PTG à 6 semaines de la pose à SAMS traitée par lavage et changement des pièces mobiles

A. 2 sem
B. 4 sem
C. 6 sem
D. 9 sem
E. 12 sem
F. > 12 sem

Quelle est la durée de traitement d'une infection de PTG à 6 mois de la pose à SAMS avec prise en charge chirurgicale par changement de PTG

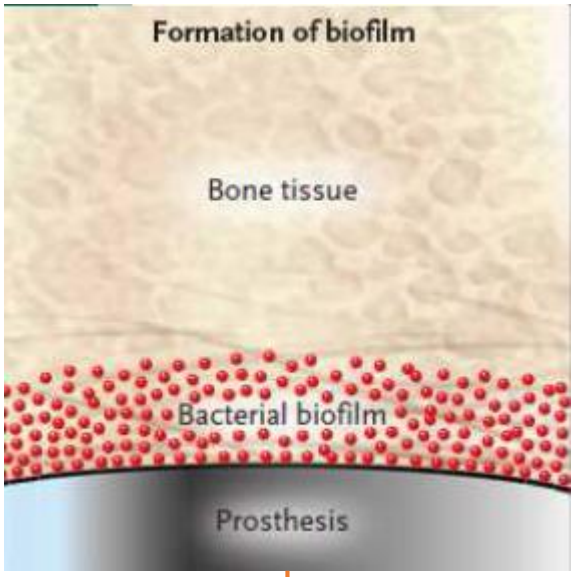
A. 2 sem
B. 4 sem
C. 6 sem
D. 9 sem
E. 12 sem
F. > 12 sem

AVANT de parler de traitement

1. Diagnostic clinique évoqué
2. Confirmation microbiologique
3. **+/- Prise en charge chirurgical ++++**

PUIS….

4. Antibiothérapie
   - ATB probabiliste
   - ATB documentée
   - Administration : Intraveineux/Per os
   - Durée de traitement



Chirurgie
+
ATB

Patel R, *NEJM* 2009, 361:787–794

Le pronostic ne dépend pas que de l'antibiothérapie…
La chirurgie

- **Type I : infection post-opératoire précoce**
  - Moins de 1 mois après la chirurgie
  - Tableau clinique marqué : fièvre, frissons, cicatrice inflammatoire, douleur, cicatrice qui ne se referme pas…
  - Staphylocoque doré, BGN++
- **Type II : infection tardive (>1 mois) ou chronique**
  - SCN, proprionibacterium acnes
  - **Tableau moins franc : douleur persistante, fistule**

→ Lavage articulaire + **changement des pièces mobiles**

→ Changement de prothèse (1 ou 2 temps)

- **Type III : infection aiguë hématogène ou secondaire**
  - Staphylocoque doré, BGN++
  - L'infection de matériel n'est pas au 1°plan

→ Lavage articulaire + changement des pièces mobiles (SC<4 semaines)

- **Type IV : prélèvement opératoire positif mais patient asymptomatique**
  - L'infection passe souvent inaperçue
  - 3%

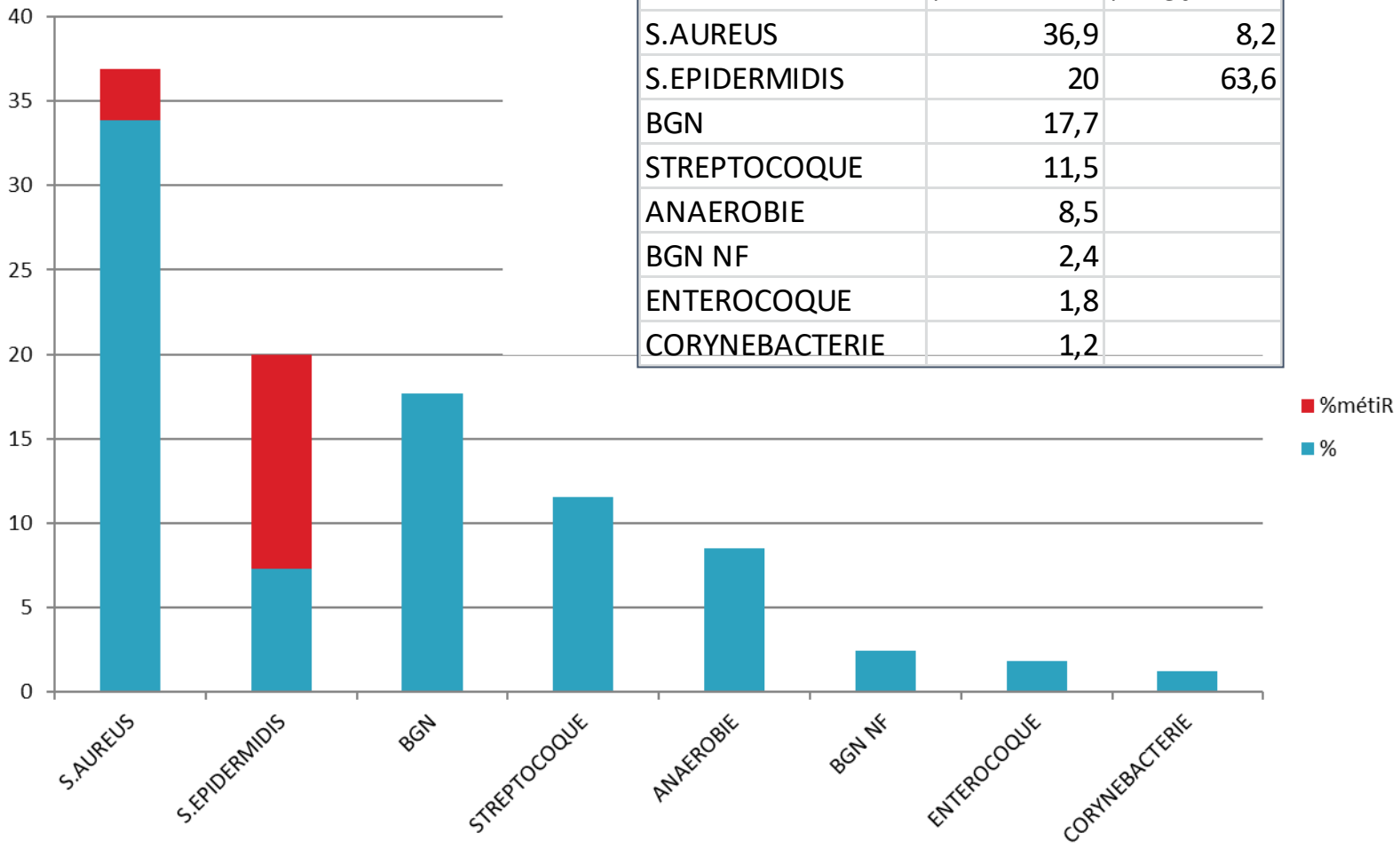
Types d'infection (selon Tsukyama DT et al. 1996)

Traitement probabiliste

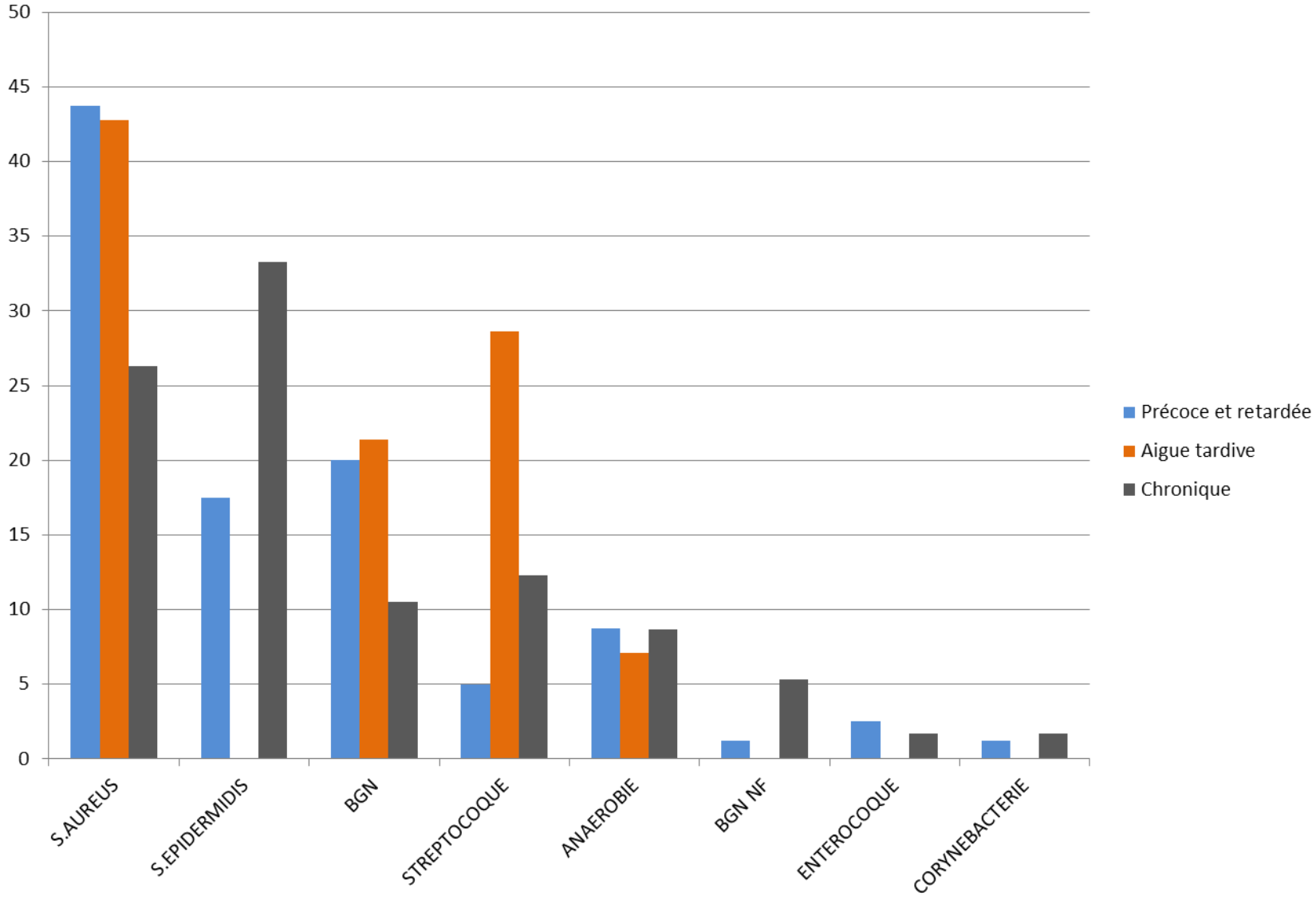
Epidémiologie globale CHU Besançon 2015-2018

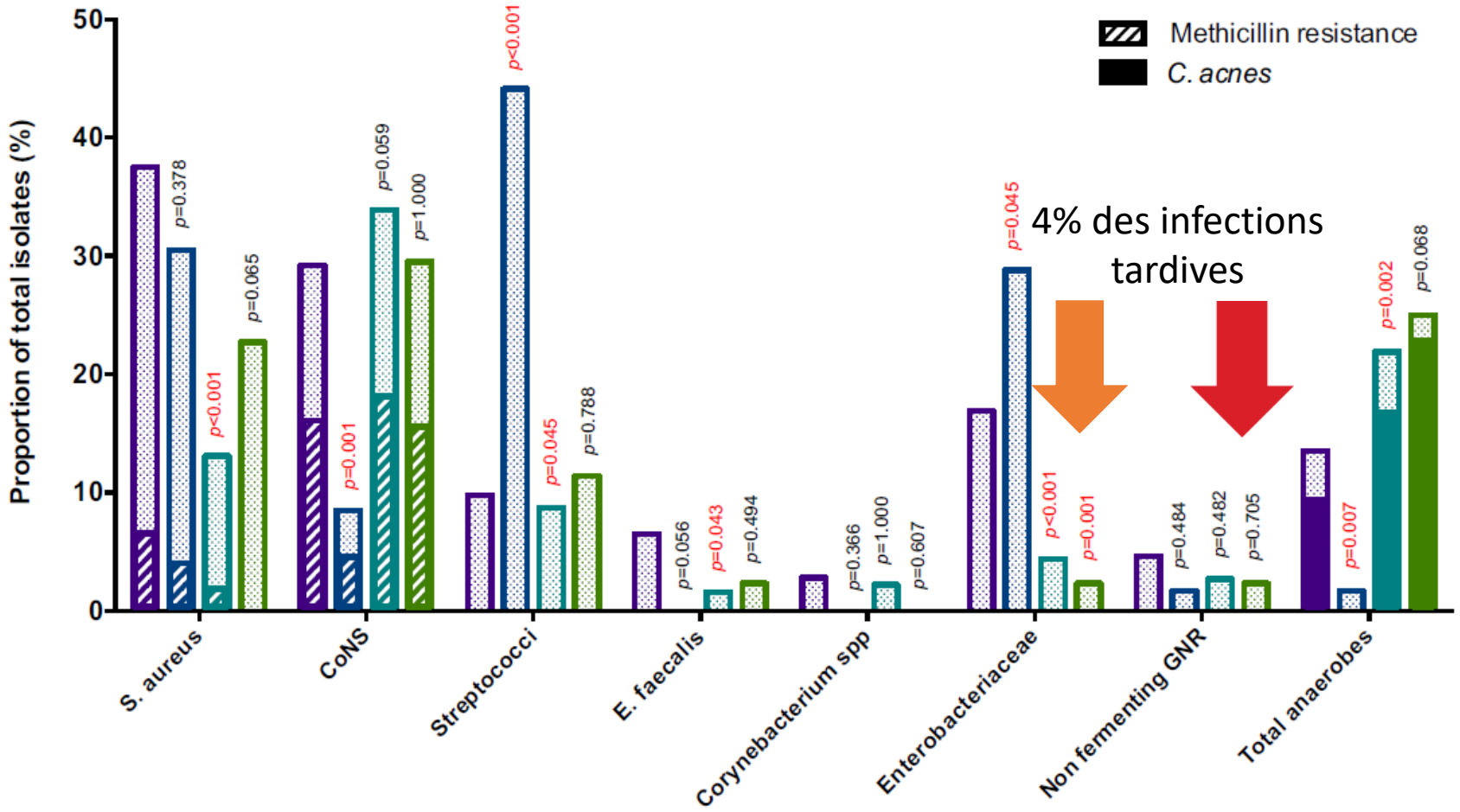
132 patients (IPA) / 165 micro organismes

	%	%métiR
S.AUREUS	36,9	8,2
S.EPIDERMIDIS	20	63,6
BGN	17,7	
STREPTOCOQUE	11,5	
ANAEROBIE	8,5	
BGN NF	2,4	
ENTEROCOQUE	1,8	
CORYNEBACTERIE	1,2	



Selon le type d'infection





Early/delayed PJI - Within a year following surgery

Late acute PJI - Over a year following surgery, symptoms < 4 weeks, and a seeding from an obvious source

Late chronic PJI - Over a year following the surgery, symptoms > 4 weeks, with no seeding from an obvious source

Late exacerbated PJI - Over a year following the surgery, symptoms < 4 weeks, with no seeding from an obvious source

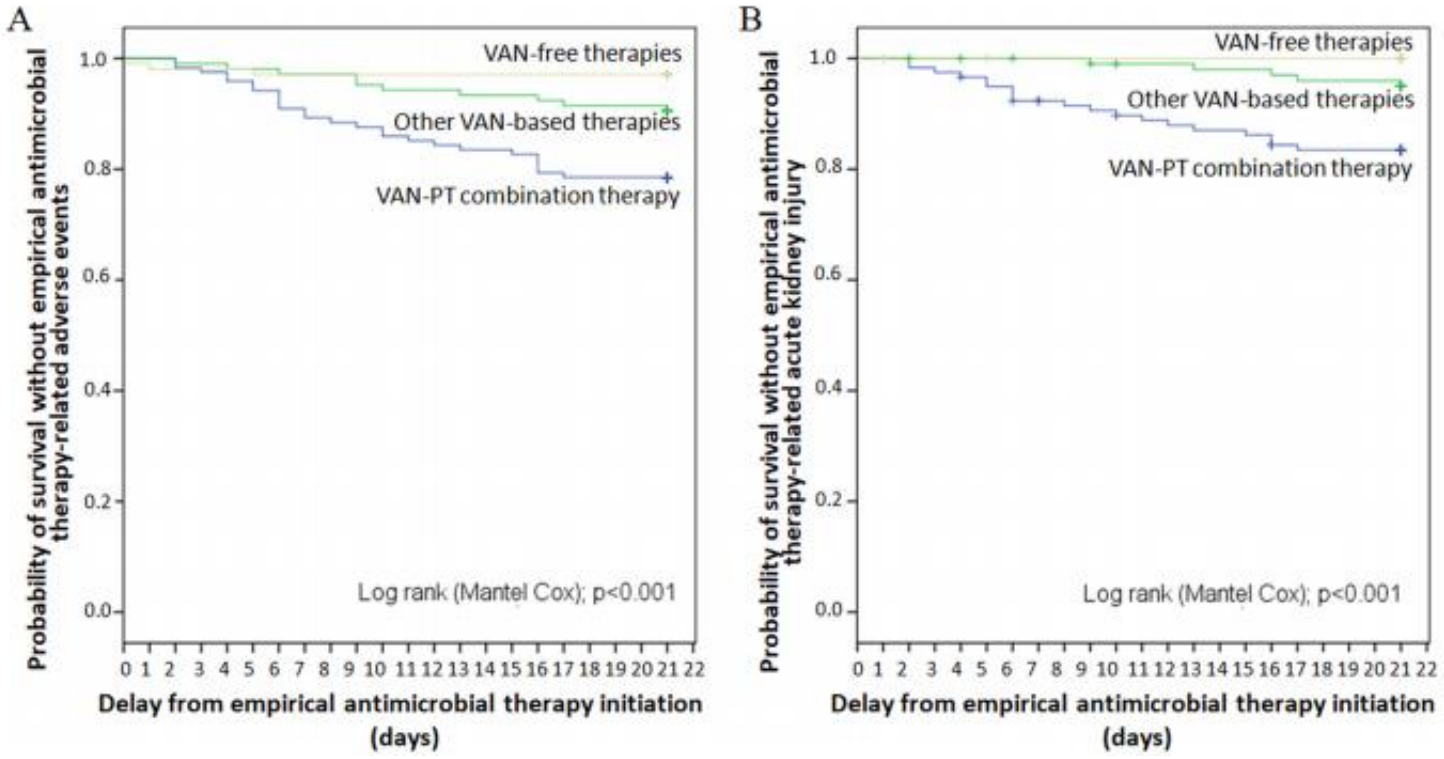
Triffault-fillit et al. CMI

AMERICAN SOCIETY FOR MICROBIOLOGY | Antimicrobial Agents and Chemotherapy®

CLINICAL THERAPEUTICS

Prospective Cohort Study of the Tolerability of Prosthetic Joint Infection Empirical Antimicrobial Therapy

Claire Triffault-Fillit,[a,b] Florent Valour,[a,b,c] Ronan Guillo,[a,b] Michel Tod,[a,d,e] Sylvain Goutelle,[a,d,e] Sébastien Lustig,[a,e,f] Michel-Henry Fessy,[a,e,g] Christian Chidiac,[a,b,c] Tristan Ferry,[a,b,c] on behalf of the Lyon BJI Study Group



European Journal of Clinical Microbiology & Infectious Diseases
https://doi.org/10.1007/s10096-019-03594-z

ORIGINAL ARTICLE

Probabilistic chemotherapy in knee and hip replacement infection: the place of linezolid

Luc Deroche[1] · Chloé Plouzeau[1] · Pascale Bémer[2] · Didier Tandé[3] · Anne Sophie Valentin[4] · Anne Jolivet-Gougeon[5] · Carole Lemarié[6] · Laurent Bret[7] · Marie Kempf[6] · Geneviève Héry-Arnaud[3] · Stéphane Corvec[2] · Christophe Burucoa[1] · Cédric Arvieux[8] · Louis Bernard[9] · and the CRIOGO (Centre de Référence des Infections Ostéo-articulaires du Grand Ouest) Study Group

Table 2 Antimicrobial susceptibility to probabilistic chemotherapy of microorganisms isolated from hip and knee surgery

	TZP	CTX	VAN	LZD	TZP/VAN	TZP/LZD	CTX/VAN	CTX/LZD
Isolated bacteria								
Staphylococcus aureus ($n = 73$)	82.2%	82.2%	100%	100%	100%	100%	100%	100%
Coagulase-negative Staphylococci ($n = 62$)	53.2%	53.2%	95.2%	100%	98%	100%	98%	100%
Enterobacteriaceae ($n = 26$)	88.5%	88.5%	–	–	88.5%	88.5%	88.5%	88.5%
Streptococci without Enterococci ($n = 25$)	100%	100%	100%	100%	100%	100%	100%	100%
Enterococci ($n = 8$)	100%	0%	100%	100%	100%	100%	100%	100%
Pseudomonas aeruginosa ($n = 7$)	100%	0%	–	–	100%	100%	0%	0%
All infections, polymicrobial included ($n = 183$)	73.2%	68.3%	84.2%	84.7%	98.4%	98.9%	93.4%	94.0%

HAS
HAUTE AUTORITÉ DE SANTÉ

Recommandation de bonne pratique

Prothèse de hanche ou de genou : diagnostic et prise en charge de l'infection dans le mois suivant l'implantation

Mars 2014

Recommandation 20

AE	Il est recommandé de prescrire : vancomycine et pipéracilline-tazobactam ou vancomycine et céphalosporine de 3e génération (ceftriaxone ou cefotaxime) en attendant l'identification microbiologique.

Tableau 1. **Proposition de traitement antibiotique probabiliste**

ATB	Doses
Vancomycine*	1 000 mg IVL en 1 h (1 250 mg en 1 h - 1 h 30 si poids 80-100 kg ; 1 500 mg si poids > 100 kg)/12 h Réaliser un dosage du taux résiduel à la 72e heure si le traitement est poursuivi pour adapter la dose (objectif de taux résiduel à 20-30 mg/L)
Pipéracilline-tazobactam	4 g IVL/8 h (toutes les 6 h si poids >100 kg)
Cefotaxime	2 g IVL/8 h (3 g/8 h si poids 70-100 kg ; 3 g/6 h si poids > 100 kg)
Ceftriaxone	2 g IVL/24 h (1,5 g/12 h si poids 70-100 kg ; 2 g/12 h si poids > 100 kg)

Consensus document

Management of prosthetic joint infections. Clinical practice guidelines by the Spanish Society of Infectious Diseases and Clinical Microbiology (SEIMC)

Javier Ariza Cardenal [a], Javier Cobo Reinoso [b,*], Josu Baraia-Etxaburu Artetxe [c], Natividad de Benito Hernández [d], Guillermo Bori Tuneu [e], Javier Cabo [f], Pablo Corona Pérez-Cardona [g], Jaime Esteban Moreno [h], Juan Pablo Horcajada Gallego [i], Jaime Lora-Tamayo Morillo-Velarde [j], Óscar Murillo Rubio [k], Julián Palomino Nicás [l], Jorge Parra Ruiz [m], Carlos Pigrau Serrallach [n], José Luis del Pozo León [o], Melchor Riera Jaume [p], Dolores Rodríguez Pardo [q], Mar Sánchez-Somolinos [r], Álex Soriano Viladomiu [s], María Dolores del Toro López [t] y Basilio de la Torre Escuredo [u]

Table 5
Empirical and targeted antimicrobial therapy in the eradicative attempt of management with implant retention

	Recommended therapy	Alternative in patients allergic to β-lactams	Recommended duration
Initial phase of treatment (planktonic bacteria)			
Empirical treatment	Vancomycin or daptomycin or cloxacillin iv [&] + ceftazidime or cefepime or meropenem iv	Vancomycin or daptomycin iv + aztreonam iv	Until the results of cultures are available

Traitement documenté

European Journal of Clinical Microbiology & Infectious Diseases
https://doi.org/10.1007/s10096-019-03594-z

ORIGINAL ARTICLE

Probabilistic chemotherapy in knee and hip replacement infection: the place of linezolid

Luc Deroche[1] · Chloé Plouzeau[1] · Pascale Bémer[2] · Didier Tandé[3] · Anne Sophie Valentin[4] · Anne Jolivet-Gougeon[5] · Carole Lemarié[6] · Laurent Bret[7] · Marie Kempf[6] · Geneviève Héry-Arnaud[3] · Stéphane Corvec[2] · Christophe Burucoa[1] · Cédric Arvieux[8] · Louis Bernard[9] · and the CRIOGO (Centre de Référence des Infections Ostéo-articulaires du Grand Ouest) Study Group

	FQ	SXT	Clindamycin	Rifampicin	Tetracycline
Staphylococcus aureus ($n = 73$)	80.8%	97.3%	95.8%	93.1%	96.4%
MSSA ($n = 60$)	95.0%	96.7%	98.3%	94.9%	95.6%
MRSA ($n = 13$)	15.4%	100.0%	84.6%	84.6%	100.0%
Coagulase-negative Staphylococci ($n = 62$)	57.4%	82.3%	75.4%	91.9%	73.3%
MSCoNS ($n = 33$)	96.6%	96.6%	89.7%	96.6%	89.5%
MRCoNS ($n = 29$)	21.9%	69.7%	62.5%	87.9%	61.5%
Enterobacteriaceae ($n = 26$)	73.1%	84.6%	–	–	–
Streptococci without Enterococci ($n = 25$)	85%	100%	81.3%	91.3%	73.3%
Pseudomonas aeruginosa ($n = 7$)	100%	0%	–	–	–

HAS
HAUTE AUTORITÉ DE SANTÉ

Recommandation de bonne pratique

Prothèse de hanche ou de genou : diagnostic et prise en charge de l'infection dans le mois suivant l'implantation

	Traitement initial	Relais oral exclusif[1]
Staphylocoques multisensibles[2]		
Poids ≤ 70 kg	Oxacilline ou cloxacilline[3] IV 1,5 g/4 h **OU** Cefazoline[4] 1 g/6 h IV	Ofloxacine[5,6,7] à la dose de 200 mg 2x/j **ET** rifampicine[8,9] 900 mg 1x/j
Poids > 70 kg	Oxacilline ou cloxacilline3 IV 2 g/4 h **OU** Cefazoline[4] 2 g/8 h IV	Ofloxacine[5,6,7] à la dose de 200 mg 3x/j **ET** rifampicine[8,9] 600 mg 2x/j
Entérobactéries sensibles[10]		
Poids ≤ 70 kg	Cefotaxime 2 g/8 h IV **OU** Ceftriaxone 2 g/24 h IV	Ofloxacine[5,6] à la dose de 200 mg 2x/j **OU** ciprofloxacine[6] 500 mg 2x/j
Poids > 70 kg	Cefotaxime 9 à 12 g/j IV en 3 à 6 injections **OU** Ceftriaxone 1,5 à 2 g/12 h IV	Ofloxacine[5,6] à la dose de 200 mg x3/j **OU** ciprofloxacine[6] 750 mg 2x/j
Streptocoques (sauf entérocoques)		
Si poids ≤ 70 kg	Amoxicilline 1,5 g/4 h IV **OU** ceftriaxone[2,3] 2 g/24 h IV	Clindamycine[4] 600 mg x3/j **OU** amoxicilline[5] 2 g 3x/j
Si poids > 70 kg	Amoxicilline 2 g/4 h IV **OU** ceftriaxone[2,3] 1,5 à 2 g/12 h IV	Clindamycine[4] 600 mgx4/j **OU** amoxicilline[5] 3 g 3x/j

Consensus document

Management of prosthetic joint infections. Clinical practice guidelines by the Spanish Society of Infectious Diseases and Clinical Microbiology (SEIMC)

Javier Ariza Cardenal [a], Javier Cobo Reinoso [b,*], Josu Baraia-Etxaburu Artetxe [c], Natividad de Benito Hernández [d], Guillermo Bori Tuneu [e], Javier Cabo [f], Pablo Corona Pérez-Cardona [g], Jaime Esteban Moreno [h], Juan Pablo Horcajada Gallego [i], Jaime Lora-Tamayo Morillo-Velarde [j], Óscar Murillo Rubio [k], Julián Palomino Nicás [l], Jorge Parra Ruiz [m], Carlos Pigrau Serrallach [n], José Luis del Pozo León [o], Melchor Riera Jaume [p], Dolores Rodríguez Pardo [q], Mar Sánchez-Somolinos [r], Álex Soriano Viladomiu [s], María Dolores del Toro López [t] y Basilio de la Torre Escuredo [u]

Targeted treatment			
MSSA/MSSE*	(Cloxacillin or cefalozin) ± daptomycin iv	Daptomycin + fosfomycin iv	7-14 days
MRSA/MRSE*	Vancomycin (alone) or daptomycin + (cloxacillin or fosfomycin) iv	Daptomycin + fosfomycin iv	7-14 days
Streptococcus spp	Ceftriaxone or penicillin iv	Vancomycin iv	7 days
E. faecalis	Ampicillin ± ceftriaxone iv	Vancomycin or teicoplanin iv	7 days
Gram-negative bacilli	β-lactam iv ** †	Ciprofloxacin iv	7 days

**consider adding rifampin after the 5th day of treatment*

*** consider combining an anti-pseudomonal β-lactam plus ciprofloxacin in PJI caused by* P. aeruginosa

Sequential phase treatment (biofilm-embedded bacteria)			
Staphylococcus spp			
Treatment of choice			
	Rifampin + levofloxacin po	-	Until completing 8 weeks
Alternatives without fluoroquinolones			
	Rifampin po + (daptomycin or fosfomycin) iv	-	2-4 weeks, then oral treat.
	Rifampin + (LNZ, fusidic, CMX, clindamycin, or minocyclin) po	-	Until completing 8 weeks of treat.
Alternatives without rifampin			
	Daptomycin iv + (fosfomycin or cloxacillin) iv	-	2-6 weeks, then oral treat.
	Daptomycin iv + (LNZ or CMX or levofloxacin) po	-	2-6 weeks, then oral treat.
	Levofloxacin + (LNZ, CMX, clindamycin or fusidic) po	-	Until completing 8 weeks of treat.
	LNZ + (CMX or fusidic) po	-	Until completing 8 weeks of treat.
	Clindamycin + fusidic po	-	Until completing 8 weeks of treat.
	Levofloxacin or moxifloxacin or CMX or LNZ po	-	Until completing 8 weeks of treat.
Streptococcus spp			
	(Ceftriaxone or penicillin iv) ± rifampin po	Vancomycin iv ± rifampin po	2-6 weeks, then oral treat.
	Amoxicillin ± rifampin po	Levofloxacin ± rifampin po	Until completing 8 weeks of treat.
	Levofloxacin ± rifampin po	-	Until completing 8 weeks of treat.
E. faecalis			
	Ampicillin ± ceftriaxone iv	Vancomycin or teicoplanin iv	2-6 weeks, then oral treat.
	Amoxicillin ± rifampin po	LNZ ± rifampin po	Until completing 8 weeks of treat.

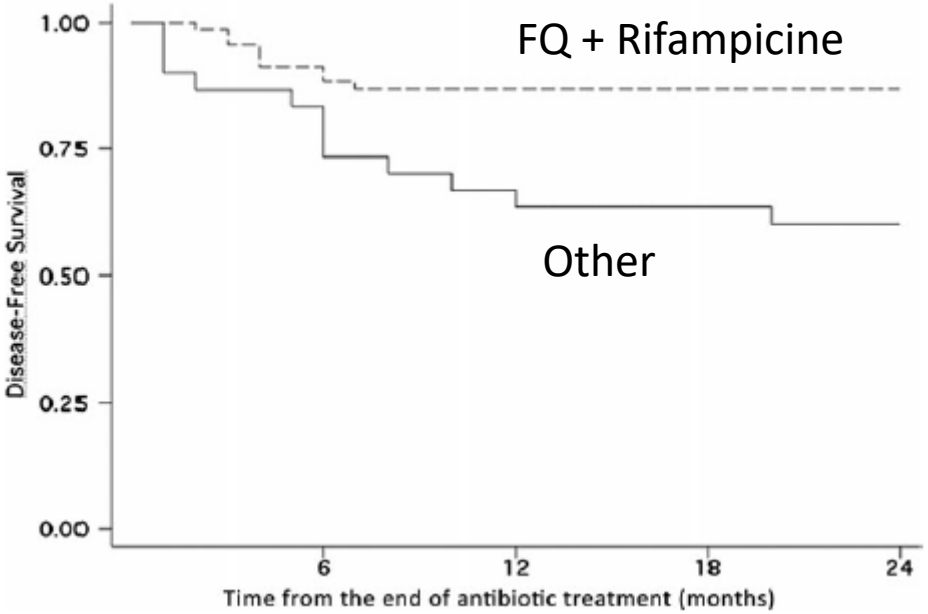
E. faecium	Vancomycin or teicoplanin iv Linezolid po		2-6 weeks, then oral treat. Until completing 8 weeks of treat.
Gram-negative bacilli			
Treatment of choice			
	Ciprofloxacin po	-	Until completing 8 weeks of treat.
Alternatives without fluoroquinolones			
	β-lactam iv ± colistin iv or β-lactam iv ± fosfomycin iv	Aztreonam iv ± colistin iv	6 weeks, then oral treat.
	CMX	-	Until completing 8 weeks of treat.
Alternatives against multi-drug resistant Gram-negative bacilli			
	β -lactam (CI) iv + colistin iv β-lactam (CI) iv + fosfomycin iv	Aztreonam iv (CI) + colistin iv	6 weeks

MAJOR ARTICLE

Outcome and Predictors of Treatment Failure in Total Hip/Knee Prosthetic Joint Infections Due to *Staphylococcus aureus*

Eric Senneville, Donatienne Joulie, Laurence Legout, Michel Valette, Hervé Dezèque, Eric Beltrand, Bernadette Roselé, Thibaud d'Escrivan, Caroline Loïez, Michèle Caillaux, Yazdan Yazdanpanah, Carlos Maynou, and Henri Migaud

Centre National de Référence des Infections Ostéo-Articulaires Nord-Ouest, Roger Salengro Faculty Hospital of Lille, Lille, France



Clinical Infectious Diseases

MAJOR ARTICLE

The Not-So-Good Prognosis of Streptococcal Periprosthetic Joint Infection Managed by Implant Retention: The Results of a Large Multicenter Study

Jaime Lora-Tamayo,[1,2] Éric Senneville,[3] Alba Ribera,[2,4,5] Louis Bernard,[6,7] Michel Dupon,[8] Valérie Zeller,[9] Ho Kwong Li,[5] Cédric Arvieux,[7,10] Martin Clauss,[11] Ilker Uçkay,[12] Dace Vigante,[13] Tristan Ferry,[14] José Antonio Iribarren,[15] Trisha N. Peel,[16] Parham Sendi,[17] Nina Gorišek Miksić,[18] Dolors Rodríguez-Pardo,[2,19] María Dolores del Toro,[2,20] Marta Fernández-Sampedro,[2,21] Ulrike Dapunt,[22] Kaisa Huotari,[23] Joshua S. Davis,[24] Julián Palomino,[2,20] Danielle Neut,[25] Benjamin M. Clark,[26] Thomas Gottlieb,[27] Rihard Trebše,[28] Alex Soriano,[2,29,30] Alberto Bahamonde,[31] Laura Guío,[2,32] Alicia Rico,[33] Mauro J. C. Salles,[34] M. José G. Pais,[35] Natividad Benito,[2,36] Melchor Riera,[2,37] Lucía Gómez,[38] Craig A. Aboltins,[39] Jaime Esteban,[40] Juan Pablo Horcajada,[41] Karina O'Connell,[42] Matteo Ferrari,[43] Gábor Skaliczki,[44] Rafael San Juan,[1,2] Javier Cobo,[2,45] Mar Sánchez-Somolinos,[2,46] Antonio Ramos,[47] Efthymia Giannitsioti,[48] Alfredo Jover-Sáenz,[49] Josu Mirena Baraia-Etxaburu,[50] José María Barbero,[51] Peter F. M. Choong,[52] Nathalie Asseray,[7,53] Séverine Ansart,[7,54] Gwenäel Le Moal,[7,55] Werner Zimmerli,[11] and Javier Ariza[2,4]; for the Group of Investigators for Streptococcal Prosthetic Joint Infection[a]

Table 2. Etiology of 462 Episodes of Streptococcal Periprosthetic Joint Infection

Streptococcus		
S. agalactiae		**159 (34.4%)**
S. pyogenes		**36 (7.8%)**
S. pneumoniae		**21 (4.5%)**
Other large-colony β-haemolytic streptococci		**121 (26.2%)**
S. dysagalactiae	49 (10.6%)	
Group G streptococci	40 (8.7%)	
Other β-haemolytic streptococci	28 (6.1%)	
S. equisimilis	4 (0.9%)	
S. anginosus group		**32 (6.9%)**
S. anginosus	17 (3.7%)	
S. constellatus	8 (1.7%)	
S. milleri	4 (0.9%)	
S. intermedius	3 (0.6%)	
Viridans group		**86 (18.6%)**
Unspecified viridans streptococci	25 (5.4%)	
S. mitis	25 (5.4%)	
S. oralis	17 (3.7%)	
S. sanguis	10 (2.2%)	
S. salivarius	4 (0.9%)	
S. gordonii	2 (0.4%)	
S. mutans	2 (0.4%)	
S. parasanguis	1 (0.2%)	
Other streptococci		**7 (1.5%)**
S. bovis	6 (1.3%)	
S. canis	1 (0.2%)	

		All Evaluable Cases—Overall Failure (n = 444, 187 Failures)					Evaluable Cases Not Failing within the First 30 days (n = 389, 132 Failures)				
Variable	Categories	Failures/n	HR (95%CI)	P	aHR (95%CI)	P	Failures/n	HR (95%CI)	P	aHR (95%CI)	P
Treatment with rifampin[c]	Per day	…	…				…	0.99 (0.97–1.00)	**.05**	0.98 (0.96–0.998)	**.03**
	>14 days	…	…				33/116	0.72 (0.48–1.06)	**.09**		
	≤14[a] days	…	…				99/273				
Treatment with β-lactams[c]	Per day	…	…				…	0.99 (0.98–1.01)	.99		
	>14 days	…	…				87/270	0.85 (0.59–1.22)	.39		
	≤14[a] days	…	…				45/119				
Treatment with glycopeptides[c]	Days	…	…				…	1.04 (1.02–1.06)	**<.01**	1.04 (1.02–1.06)	**<.01**
	>14 days	…	…				16/29	2.37 (1.40–4.00)	**<.01**		
	≤14[a] days	…	…				116/360				
Treatment with co-trimoxazole[c]	Days	…	…				…	1.03 (1.00–1.06)	**.04**	1.04 (1.002–1.08)	**.04**
	>14 days	…	…				6/9	2.33 (1.03–5.30)	**.04**		
	≤14[a] days	…	…				126/380				

Fiaux et al. BMC Infectious Diseases (2016) 16:568
DOI 10.1186/s12879-016-1889-0

RESEARCH ARTICLE Open Access

Outcome of patients with streptococcal prosthetic joint infections with special reference to rifampicin combinations

E. Fiaux[1], M. Titecat[2], O. Robineau[3], J. Lora-Tamayo[4], Y. El Samad[5], M. Etienne[1], N. Frebourg[6], N. Blondiaux[7], B. Brunschweiler[8], F. Dujardin[9], E. Beltrand[10], C. Loiez[2], V. Cattoir[11], J. P. Canarelli[8], C. Hulet[12], M. Valette[3], S. Nguyen[3], F. Caron[1], H. Migaud[13], and E. Senneville[3,14*] on behalf of the G4 bone and joint infection study group (G4BJIS)

Table 3 Outcome of 95 episodes of streptococcal prosthetic joint infections; univariate analysis

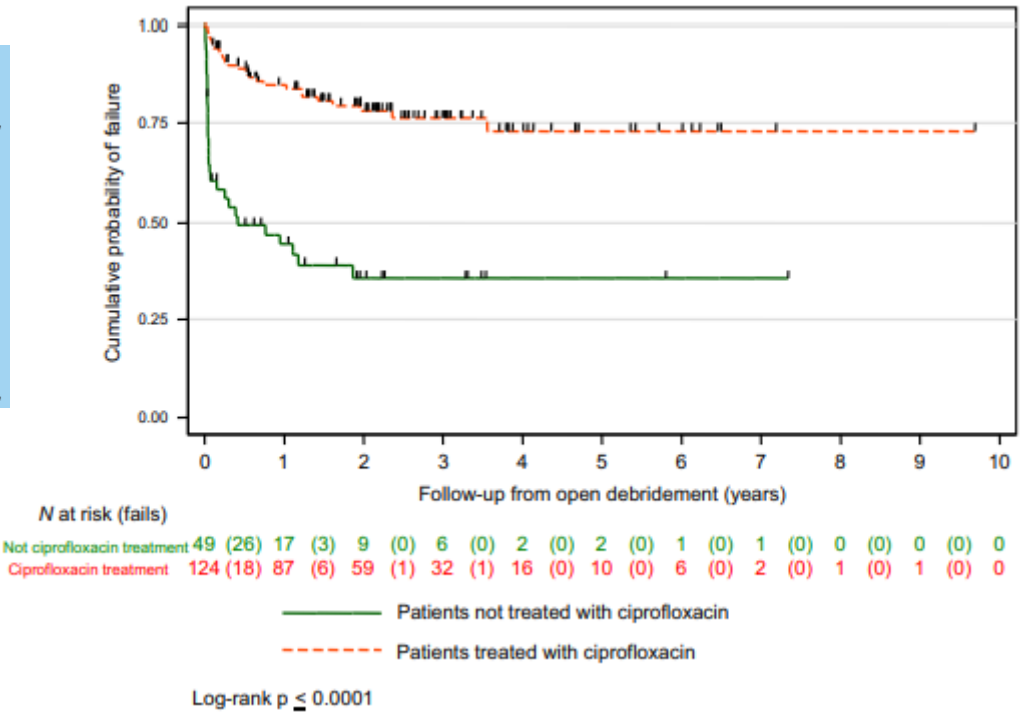
Variables	Remission ($n = 67$)	Failure ($n = 28$)	p
Age > 70 years	35 (36.8 %)	11 (39.3 %)	.25
≥1 comorbidity	46 (68.7 %)	24 (85.7 %)	.09
Total hip arthroplasty	40 (42.1 %)	10 (35.7 %)	.03
Type of infection (early/delayed/late)	20 (29.8 %)/18 (26.9 %)/29 (43.3 %)	11 (39.3 %)/7 (25 %)/10 (35.7 %)	.19
Fever	35 (36.8 %)	17 (60.7 %)	.45
CRP in mg/L, mean value ± SD	154.6 ± 121.9	207.2 ± 148.3	.09
S. agalactiae (group B streptococci)	27 (28.4 %)	10 (35.7 %)	.68
Antibiotic treatment prior to admission	18 (18.9 %)	8 (28.6 %)	.86
Sinus tract	15 (15.8 %)	3 (10.7 %)	.18
Concomitant bacteremia at the time of diagnosis	11 (16.4 %)	8 (28.6 %)	.18
DAIR	32 (33.7 %)	23 (82.1 %)	.002
Primary arthroplasty	53 (79.1 %)	20 (71.4 %)	.42
Hematogenous origin	10 (14.9 %)	8 (28.6 %)	.12
Rifampicin based combinations	44 (46.3 %)	8 (28.6 %)	.001
Rifampicin + levofloxacin	24 (25.2 %)	4 (14.3 %)	.04

DAIR: surgical debridement with retention of the fixed components and antibiotic therapy
Results are presented in no. of cases and percentage of the total in each column

Gram-negative prosthetic joint infection: outcome of a debridement, antibiotics and implant retention approach. A large multicentre study

D. Rodríguez-Pardo[1], C. Pigrau[1], J. Lora-Tamayo[2], A. Soriano[3], M. D. del Toro[4], J. Cobo[5], J. Palomino[6], G. Euba[2], M. Riera[7], M. Sánchez-Somolinos[8], N. Benito[9], M. Fernández-Sampedro[10], L. Sorli[11], L. Guio[12], J. A. Iribarren[13], J. M. Baraia-Etxaburu[14], A. Ramos[15], A. Bahamonde[16], X. Flores-Sánchez[17], P. S. Corona[17] and J. Ariza[2] on behalf of the REIPI Group for the Study of Prosthetic Infection*

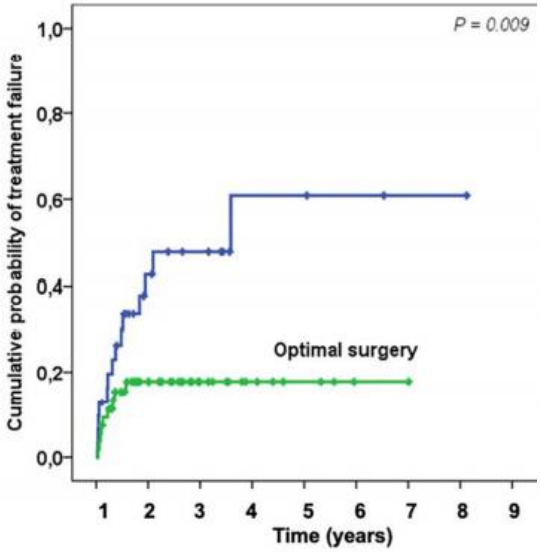
Microorganisms	*N* = 174 episodes with 211 isolates (100%)[a]
Enterobacteriaceae	162 (77)
Escherichia coli	63 (30)
Proteus spp.	31 (15)
Enterobacter spp.	29 (14)
Klebsiella spp.	14 (7)
Morganella morganii	10 (5)
Serratia marcescens	8 (4)
Salmonella spp.	5 (2)
Citrobacter spp.	2 (1)
Pseudomonas spp.[b]	43 (20)
Other gram-negative bacteria	6 (2)[c]

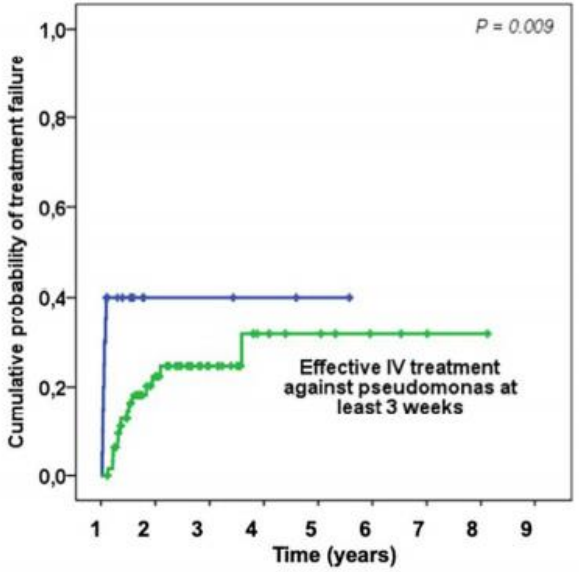


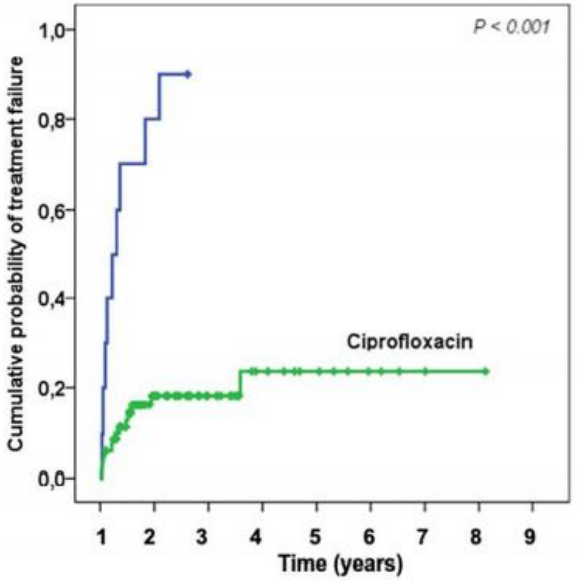
frontiers in Medicine

ORIGINAL RESEARCH
published: 26 October 2020
doi: 10.3389/fmed.2020.513242

Pseudomonas aeruginosa Implant-Associated Bone and Joint Infections: Experience in a Regional Reference Center in France

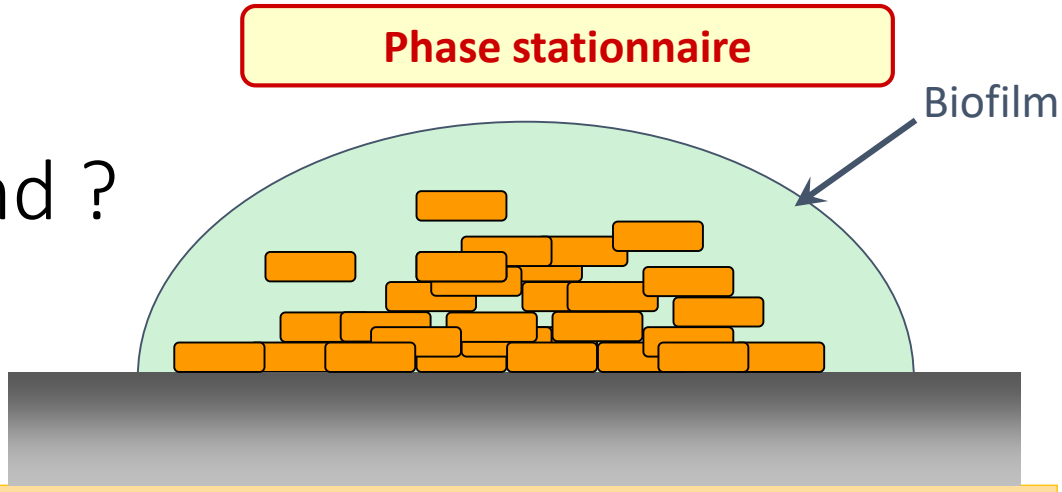






Traitement suppressif

Pourquoi ? Quand ?



Intérêt du traitement suppressif

- Eradication de l'infection considérée comme impossible
- Laisser les bactéries en phase stationnaire dans le biofilm
- Eviter les complications infectieuses (bactériémies/abcès…)

Indication traitement suppressif ???

- Chirurgie non optimal (pas de changement pièces mobiles, retrait de prothèse impossible)
- ATB non optimal (SA et pas de RFP, BGN et pas de FQ)
- Chirurgie complexe avec risque important si récidive
- Immunosuppression sévère, ou comorbidités importantes

PATIENT DEPENDANT
INTERET DE LA RCP +++

Diagnosis and Management of Prosthetic Joint Infection: Clinical Practice Guidelines by the Infectious Diseases Society of America[a]

Microorganism	Preferred Treatment	Alternative Treatment
Staphylococci, oxacillin-susceptible	Cephalexin 500 mg PO tid or qid or Cefadroxil 500 mg PO bid	Dicloxacillin 500 mg PO tid or qid Clindamycin 300 mg PO qid Amoxicillin-clavulanate 500 mg PO tid
Staphylococci, oxacillin-resistant	Cotrimoxazole 1 DS tab PO bid Minocycline or doxycycline100 mg PO bid	
β-hemolytic streptococci	Penicillin V 500 mg PO bid to qid or Amoxicillin 500 mg PO tid	Cephalexin 500 mg PO tid or qid
Enterococcus spp, penicillin susceptible	Penicillin V 500 mg PO bid to qid or Amoxicillin 500 mg PO tid	
Pseudomonas aeruginosa	Ciprofloxacin 250–500 mg PO bid	
Enterobacteriaceae	Cotrimoxazole 1 DS tab PO bid	β-lactam oral therapy based on in vitro susceptibilities
Propionibacterium spp	Penicillin V 500 mg PO bid to qid or Amoxicillin 500 mg PO tid	Cephalexin 500 mg PO tid or qid Minocycline or doxycycline 100 mg PO bid

Table 7
Antibiotics most frequently used as suppressive antimicrobial therapy (SAT)

	Experience in prolonged treatments	Precautions and main adverse events
Beta-lactams	Low toxicity in the treatment of actinomycoses[265,266]. However, hypersensitivity reactions are frequent with the use of penicillin[267]. β-lactams are the most frequently used antibiotics for SAT in various case series of PJI[91-93,99]	Skin rash, hypersensitivity reactions
Clindamycin	Very little experience has been reported: treatment of suppurative hidrosadenitis[268] and bone and joint infections[144,269]. Low toxicity	Skin rash. Digestive intolerance. *C. difficile*-associated colitis
Co-trimoxazole	There is a great deal of experience with its use; low toxicity is reported when low doses are used as prophylaxis of opportunistic infections[270]. The use of high doses in bone and joint infections has frequently led to discontinuation due to digestive intolerance[143,152]	Digestive intolerance, leukopenia, megaloblastic anemia, hypersensitivity reactions. Recently, cases of sudden death on patients being administered co-trimoxazole along with spironolactone or inhibitors of the renin-angiotensin system have been reported[271,272]. In a study addressing the impact of antimicrobials on fecal microbiota, a transitory increase of resistance to co-trimoxazole, amoxicillin, and amoxicillin-clavulanate acid was observed[273]
Macrolides	There is experience of prolonged administration of macrolides for preventing infections in patients with chronic pulmonary obstructive disease, with infrequent adverse events[274,275]	A higher risk of sudden death in patients under treatment with macrolides plus amoxicillin has been reported[276], although it has recently been questioned whether these patients may be affected by other circumstances that could prolong the QT segment[277]
Fluoroquinolones	There is acceptable experience with the use of levofloxacin and ofloxacin in the treatment of multi-drug resistant tuberculosis (although the number of patients is scarce)[278]	The use of fluoroquinolones has been associated with a higher risk of tendinopathy. This risk is increased in elderly patients, renal chronic failure and patients under treatment with corticosteroids[279]
Rifampin	There is experience of long treatments with rifampin for brucellosis or tuberculosis. Short treatments of rifampin are more associated with toxicity	Rifampin must never be used alone due to a high risk of resistance. There are frequent drug-to-drug interactions.
Tetracyclins	There is experience in the treatment of acne. Adverse events are more frequent with minocycline than with doxycycline	Minocycline: skin pigmentation, drug-induced lupus (53 cases per 100,000 treatments) and hepatitis (1 case per 10,000 treatments and month)[280-282]. Doxycycline: drug-induced photosensitivity, digestive adverse events, including esophageal ulcers and erosions.

Eur J Clin Microbiol Infect Dis
DOI 10.1007/s10096-017-2971-2

ORIGINAL ARTICLE

Prolonged suppressive antibiotic therapy for prosthetic joint infection in the elderly: a national multicentre cohort study

Table 3 Agents used for first-line PSAT in 136 patients with PJIs (96 with single and 40 with double therapy)

Agents used for PSAT	Daily dosage	No. of patients (%)	Micro-organisms found (*n* patients treated)
Penicillins, *n* (%)		35 (25.7)	
Amoxicillin	500 mg bid–2 g tid	24	*Streptococcus* (11), *Enterococcus* (3), Enterobacteriaceae (2), *Corynebacterium* (2), anaerobes (2),*Campylobacter* (1), *Listeria* (1)
Oxacillin	1 g tid	2	MSSA
Cloxacillin	1 g bid–1 g tid	3	CNS (2), MRSA (1)
Amoxicillin/clavulanate	500 mg tid–1 g tid	3	MSSA
Imipenem, *n* (%)	500 mg tid	1	Enterobacteriaceae
Cephalosporins, *n* (%)		8 (5.9)	
Cefazolin	1 g three times a week (IV, post-dialysis)	1	MSSA
Cephalexin	1 g bid	1	MSSA
Cefadroxil	1 g tid	1	CNS
Cefixime	200 mg bid	1	*Salmonella*
Cefpodoxime	200 mg bid	2	Enterobacteriaceae (1), *Pasteurella* (1)
Ceftriaxone	2 g qd	2	Enterobacteriaceae (2)
Sulphamethoxazole–trimethoprim, *n* (%)	400 mg qd–800 mg tid[a]	29 (21.3)	MSSA (7), MRSA (5), CNS (5), Enterobacteriaceae (4), *Streptococcus* (3), anaerobe (2),*Listeria* (1)
Fluoroquinolones, *n* (%)		**28 (20.6)**	
Ofloxacin	200 mg qd–200 mg tid	21	CNS (4), Enterobacteriaceae (4), MSSA (4), MRSA (1), *Streptococcus* (1), *Pasteurella* (1)
Ciprofloxacin	500 mg bid–750 mg bid	4	Enterobacteriaceae (1), *Pasteurella* (1), NCS (1), *Pseudomonas* (1)
Levofloxacin	500 mg qd–500 mg bid	3	MRSA (1), *Enterococcus* (1), *Pasteurella* (1)
Clindamycin, *n* (%)	600 mg bid, tid and qid	19 (14)	MRSA (6), MSSA (6), CNS (2), *Streptococcus* (2), anaerobes (1)
Rifampin[b], *n* (%)	600 mg qd–900 mg tid[b]	19 (14)	CNS (7), MRSA (5), MSSA (4)
Pristinamycin, *n* (%)	500 mg tid–2 g tid	16 (11.8)	MSSA (10), CNS (3), MRSA (1), *Streptococcus* (1)
Doxycycline, *n* (%)	100 mg qd–100 mg bid	11 (8.1)	MSSA (2), MRSA (2), CNS (4), *Yersinia* (1), *Streptococcus* (1)
Fusidic acid[b], *n* (%)	500 mg tid	6 (4.4)	CNS (2), MRSA (2), MSSA (1)
Teicoplanin, *n* (%)	600 mg tid–1200 mg tid per week (IV)	5 (3.7)	CNS (3), MRSA (2)

Infection
DOI 10.1007/s15010-017-1077-1

ORIGINAL PAPER

Suppressive antibiotic therapy with oral tetracyclines for prosthetic joint infections: a retrospective study of 78 patients

M. Pradier[1,5] · O. Robineau[1,2,5] · A. Boucher[1,2,5] · M. Titecat[2,3,5] · N. Blondiaux[1,5] · M. Valette[1,5] · C. Loïez[3,5] · E. Beltrand[1,5] · S. Nguyen[4] · H. Dézeque[3,5] · H. Migaud[2,3,5] · Eric Senneville[1,2,3,5]

Indication traitement suppressif

- Chirurgie non optimal (pas de changement pièces mobiles, retrait de prothèse impossible)
- ATB non optimal (SA et pas de RFP, BGN et pas de FQ)
- Chirurgie complexe avec risque important si récidive
- Immunosuppression sévère, ou comorbidités importantes

Table 3 Characteristics of the curative antibiotic initial treatment in 78 patients treated with cycline-based antibiotic suppressive therapy

Curative antibiotic therapy	No. of patients (%)
Combination with rifampicin	54 (69.2)
Rifampicin/fluoroquinolones[a]	29 (37.2)
Rifampicin/cycline	12 (15.4)
Rifampicin/other[b]	13 (16.7)
Without rifampicin, *n* (%)	24 (30.8)
fluoroquinolones/other[c]	7 (9.0)
Cyclines/other[d]	8 (10.3)
Others[e]	10 (12.8)

Table 5 Compared outcome of patients treated with 2-year versus continued suppressive antibiotic therapy (SAT) for prosthetic joint infections

Outcome	2-year SAT ($n = 26$)	Continued SAT ($n = 52$)	p value
Discontinuation for SAT-related adverse effect	2 (7.7%)	4 (7.7%)	1
Death	2 (7.7%)	2 (3.85%)	0.47
Failure	11 (42.3%)	11 (21.2%)	0.05

Durée de traitement

2009

Recommandations de pratique clinique

Infections ostéo-articulaires sur matériel

(prothèse, implant, ostéosynthèse)

Recommandation de bonne pratique

Prothèse de hanche ou de genou :
diagnostic et prise en charge de l'infection
dans le mois suivant l'implantation

Mars 2014

La durée optimale de l'antibiothérapie IV (initiale) n'ayant pas été évaluée dans la littérature, celle-ci est comprise entre 5 jours et 6 semaines en fonction des micro-organismes retrouvés et du terrain. Seules des hémocultures positives nécessiteraient une antibiothérapie IV d'au moins 7 jours.

Le relais oral exclusif pourra alors être envisagé si l'évolution locale est satisfaisante.

3.3.2.1.3 Durée totale de traitement

Il est recommandé d'administrer le traitement antibiotique pour une durée minimale de 6 semaines. Les durées usuelles rapportées dans la littérature sont de 6 à 12 semaines. La poursuite de l'antibiothérapie au-delà de 12 semaines doit être argumentée **(avis d'expert).**

<u>Recommandations internationales :</u>

- 3 mois pour les PTH
- 6 mois pour les PTG

ORIGINAL ARTICLE

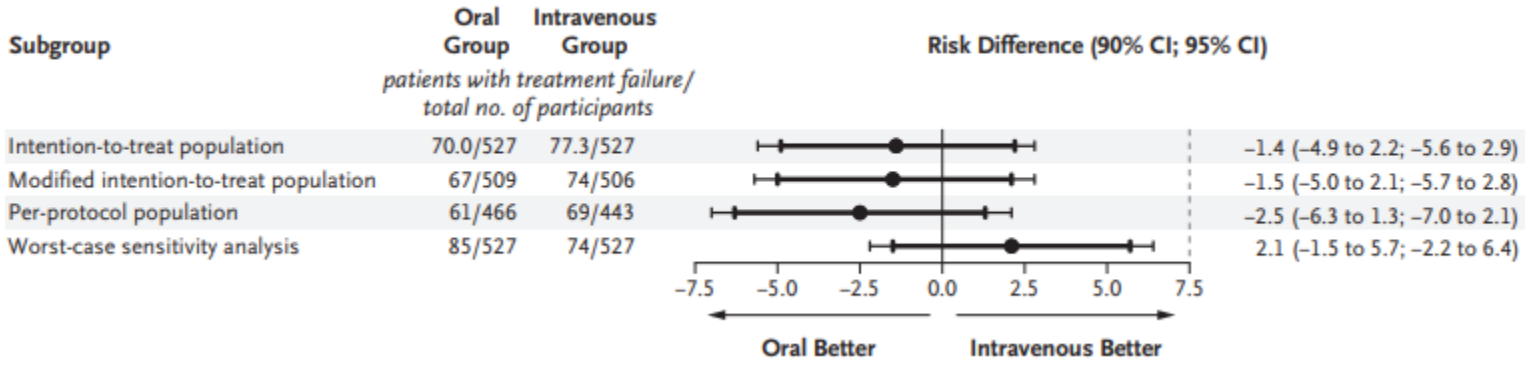
Oral versus Intravenous Antibiotics for Bone and Joint Infection

Ho-Kwong Li, M.R.C.P., Ines Rombach, D.Phil., Rhea Zambellas, M.Sc., A. Sarah Walker, Ph.D., Martin A. McNally, F.R.C.S.(Orth.), Bridget L. Atkins, F.R.C.P., Benjamin A. Lipsky, M.D., Harriet C. Hughes, M.A.(Cantab.), Deepa Bose, F.R.C.S., Michelle Kümin, Ph.D., Claire Scarborough, M.R.C.P., Philippa C. Matthews, D.Phil., et al., for the OVIVA Trial Collaborators*

January 31, 2019
N Engl J Med 2019; 380:425-436
1056/NEJMoa1710926

Characteristic	Intravenous Group (N=527)	Oral Group (N=527)	Total (N=1054)
Age — yr			
Median (interquartile range)	61 (49–70)	60 (49–70)	60 (49–70)
Range	18–92	18–91	18–92
Male sex — no. (%)	320 (60.7)	358 (67.9)	678 (64.3)
Baseline surgical procedure — no. (%)			
No implant or device present; débridement of chronic osteomyelitis performed	153 (29.0)	169 (32.1)	322 (30.6)
No implant or device present; débridement of chronic osteomyelitis not performed	25 (4.7)	29 (5.5)	54 (5.1)
Débridement and implant retention	124 (23.5)	123 (23.3)	247 (23.4)
Removal of orthopedic device for infection	89 (16.9)	78 (14.8)	167 (15.8)
Prosthetic joint implant removed	68 (12.9)	67 (12.7)	135 (12.8)
Prosthetic joint implant, one-stage revision	47 (8.9)	43 (8.2)	90 (8.5)
Surgery for diskitis, spinal osteomyelitis, or epidural abscess; débridement performed	8 (1.5)	5 (0.9)	13 (1.2)
Surgery for diskitis, spinal osteomyelitis, or epidural abscess; débridement not performed	13 (2.5)	13 (2.5)	26 (2.5)

IV au moins 7 jours



International Journal of Infectious Diseases 63 (2017) 37–42

Contents lists available at ScienceDirect

International Journal of Infectious Diseases

journal homepage: www.elsevier.com/locate/ijid

Etude multicentrique/rétrospective
Changement des pièces mobiles+++
Dans les 7 jours suivant les SC

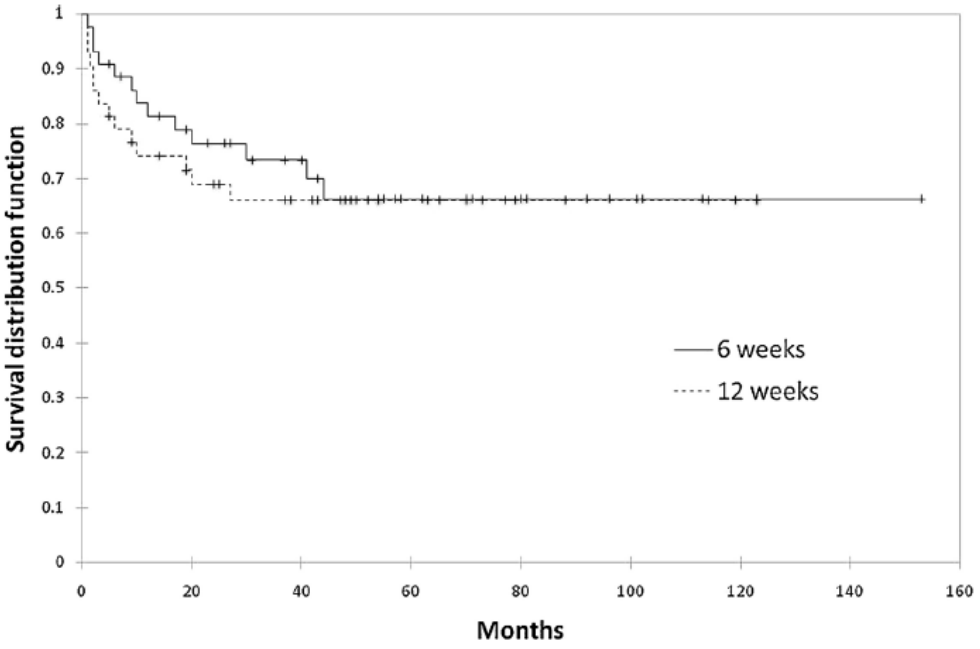
Antibiotic therapy duration for prosthetic joint infections treated by Debridement and Implant Retention (DAIR): Similar long-term remission for 6 weeks as compared to 12 weeks

Hélène Chaussade[a], Ilker Uçkay[b,*], Albert Vuagnat[c], Jérôme Druon[a], Guillaume Gras[a], Philippe Rosset[a], Benjamin A. Lipsky[b,d], Louis Bernard[a,b]

Table 1
Demographic and clinical comparisons of long-term remission rates of 87 patients with a prosthesis joint infection treated by debridement and implant retention (DAIR), stratified upon the duration of antibiotic treatment.

Variables	Six weeks $n=44$ (%)	Twelve weeks $n=43$ (%)	Comparison P-value
Female sex	20 (45.45)	22 (51.16)	.59
Median age (years)	71	71	.96
Joints			
Hip arthroplasty	31 (70.45)	29 (67.44)	.76
Knee arthroplasty	23 (29.55)	14 (32.56)	.76
Center			
Garches	2 (4.55)	4 (9.30)	.67
Geneva	10 (22.73)	10 (23.26)	.67
Tours	32 (72.73)	29 (67.44)	.67
Indication for arthroplasty			
Arthritis or fracture	34 (82.93)	38 (92.68)	.18
Infection onset			
Early (<3 months	26 (59.09)	34 (79.07)	.045
Delayed (3–12 months)	3 (6.82)	4 (9.30)	.045
Late (>12 months)	15 (34.09)	5 (11.63)	.045
Causative pathogens			
MRSA	5 (11.36)	7 (16.28)	.51
CoNS	13 (29.55)	12 (27.91)	.87
Antibiotic treatment			
Combination treatment	32 (72.73)	36 (83.72)	.21
Rifampin + other	30 (68.18)	30 (69.77)	.87
Fluoroquinolones + other	26 (59.09)	28 (65.12)	.56
Flurooquinolone + Rifampin	22 (50.00)	22 (51.16)	.91
Exclusively intravenous therapy	17 (38.64)	14 (32.56)	.55
Death	11 (25.00)	13 (30.23)	.59

CoNS: coagulase-negative staphylococci; MRSA: methicillin-resistant *Staphylococcus aureus*.



PHRC : DATIPO

- Évaluer l'efficacité de 2 Durées d'Antibiothérapie (6 s versus 12 s) dans le Traitement des Infections sur Prothèses Ostéo-articulaires (IPOA), avec changement prothétique (en 1T ou 2T long) ou non (lavage articulaire)
- Étude multicentrique, de non infériorité, prospective, randomisée, ouverte
- Stratification sur :
  - la technique chirurgicale (changement prothétique en 1T ou 2T, ou lavage avec maintien de l'implant)
  - la topographie de l'articulation (hanche/genou)
  - le rang de l'infection (1er épisode/2ème épisode et plus)

JNI 20es Journées Nationales d'Infectiologie
Lyon
et la région Auvergne-Rhône-Alpes
du mercredi 5 juin 2019
au vendredi 7 juin 2019

DATIPO

Durée d'Antibiothérapie (6 versus 12 s) pour le Traitement des Infections sur Prothèse Ostéoarticulaires

Louis BERNARD
pour le groupe DATIPO

Jeudi 06 Juin 2019

Méthode

- **Essai clinique**
  - Contrôlé, randomisé (2 groupes parallèles)
  - Ouvert
  - Non-infériorité,
  - Multicentrique (national: 28 centres)

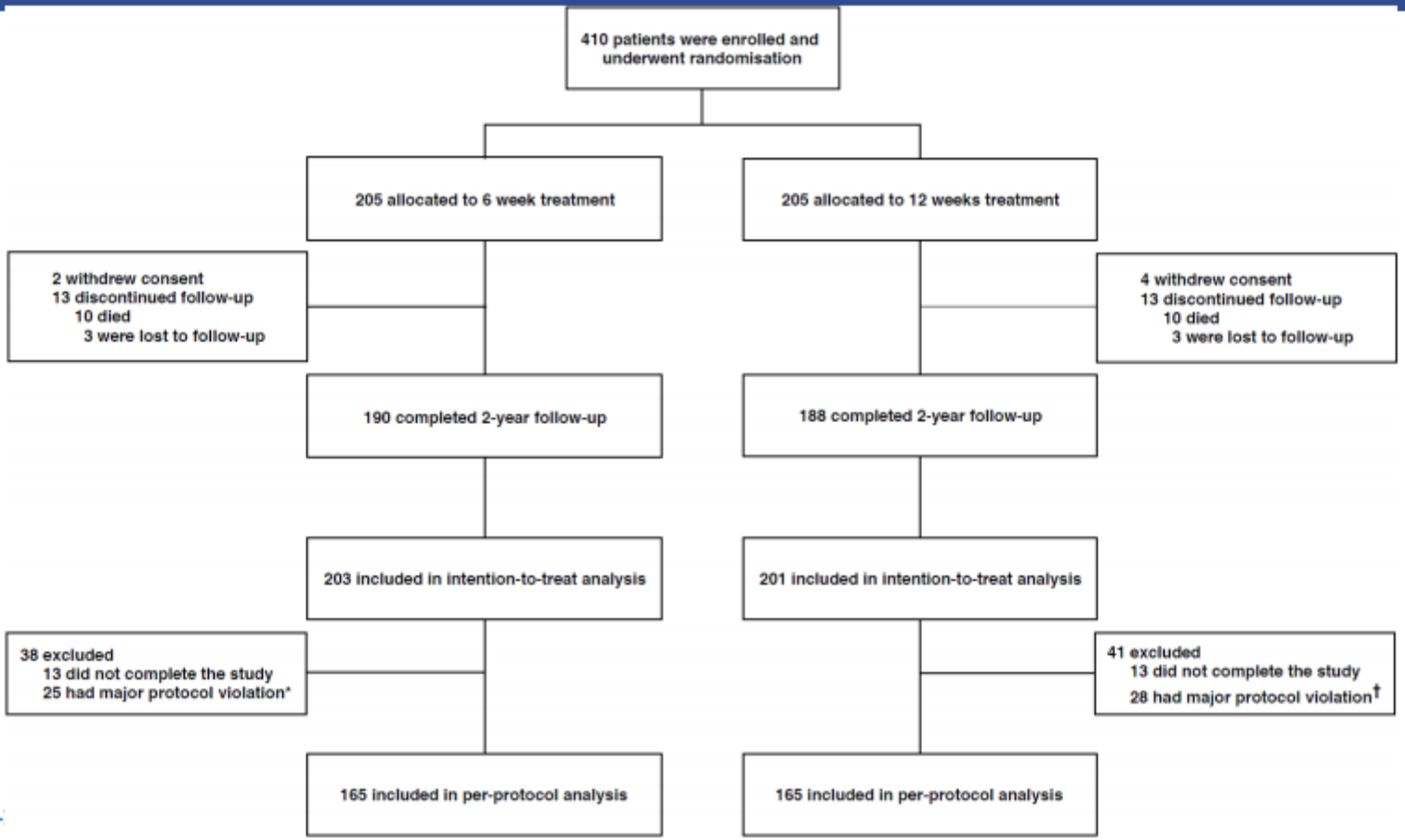
- **Comparant 6 vs 12 semaines de traitement antibiotique (selon les recommandations)/ IPOA avec changement prothétique (en 1 temps ou 2 temps long) ou non (lavage articulaire)**

OBJECTIFS - Principal (1)

- *Objectif principal* = fréquence des persistances ou rechute d'infection au même germe dans les 2 ans suivant la fin de l'antibiothérapie

- Suivi S6, S12, S24, S52 et S104

Flow Chart


410 patients were enrolled and underwent randomisation
205 allocated to 6 week treatment
205 allocated to 12 weeks treatment
2 withdrew consent
13 discontinued follow-up
10 died
3 were lost to follow-up
4 withdrew consent
13 discontinued follow-up
10 died
3 were lost to follow-up
190 completed 2-year follow-up
188 completed 2-year follow-up
203 included in intention-to-treat analysis
201 included in intention-to-treat analysis
38 excluded
13 did not complete the study
25 had major protocol violation*
41 excluded
13 did not complete the study
28 had major protocol violation†
165 included in per-protocol analysis
165 included in per-protocol analysis

Baseline

Caractéristiques	6 s (n=203)	12 s (n=201)
Age (range)	68 (62; 78)	70 (63; 77)
Homme no-%	143 (70.4)	130 (64.7)
Chirurgie — no. (%)		
Rang de Chirurgie ≥2	30 (14.8)	29 (14.4)
Lavage-Débridement	82 (40.4)	85 (42.3)
1T	77 (37.9)	73 (36.3)
2T	44 (21.7)	43 (21.4)

CLINIQUE

Présentation clinique	6 semaines (n=203)	12 semaines (n=201)
Infection post opératoire	68 (33.5)	66 (32.8)
Infection aiguë hématogène	47 (22.7)	37 (18.4)
Délais sepsis/chirurgie	17 [5 ; 85]	18 [5 ; 110]
Fièvre-oui (%)	83 (42.4)	62 (31.6)
Fistule-oui (%)	81 (40.3)	76 (39.6)
CRP à la prise en charge.	108.4 (99.0)	113.2 (100.8)

Bactériologie

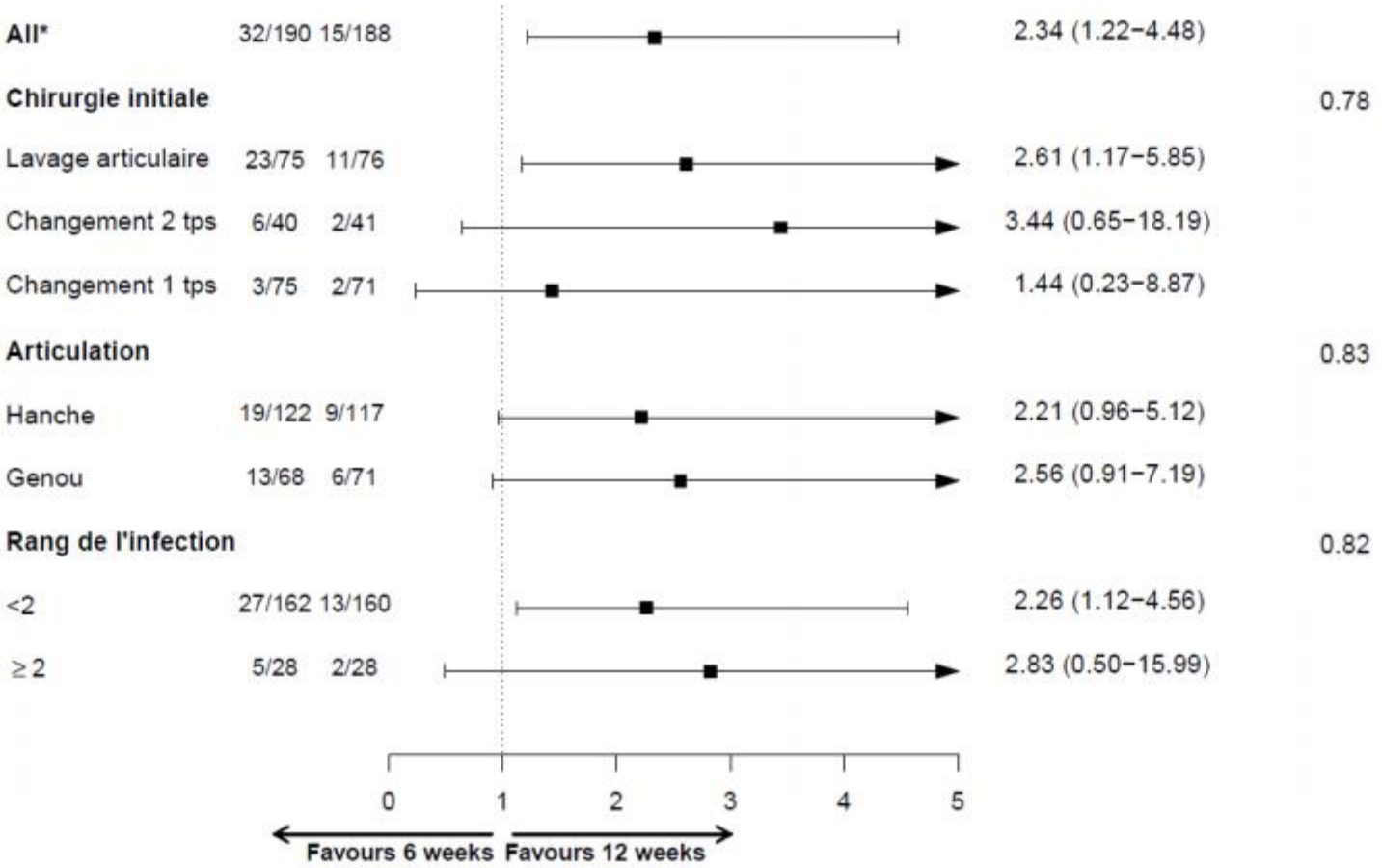
	6 s (n=235)	12 s (n=231)
Enterobactéries	20 (8.5)	21 (9.1)
Anaérobies	13 (5.5)	15 (6.5)
Entérocoques	7 (3.0)	9 (3.9)
Streptocoque	32 (13.6)	26 (11.3)
SCNMS	41 (17.5)	48 (20.8)
SCNMR	27 (11.5)	32 (13.8)
SAMS	83 (35.3)	62 (26.8)
SAMR	7 (3.0)	8 (3.4)

36%

39%

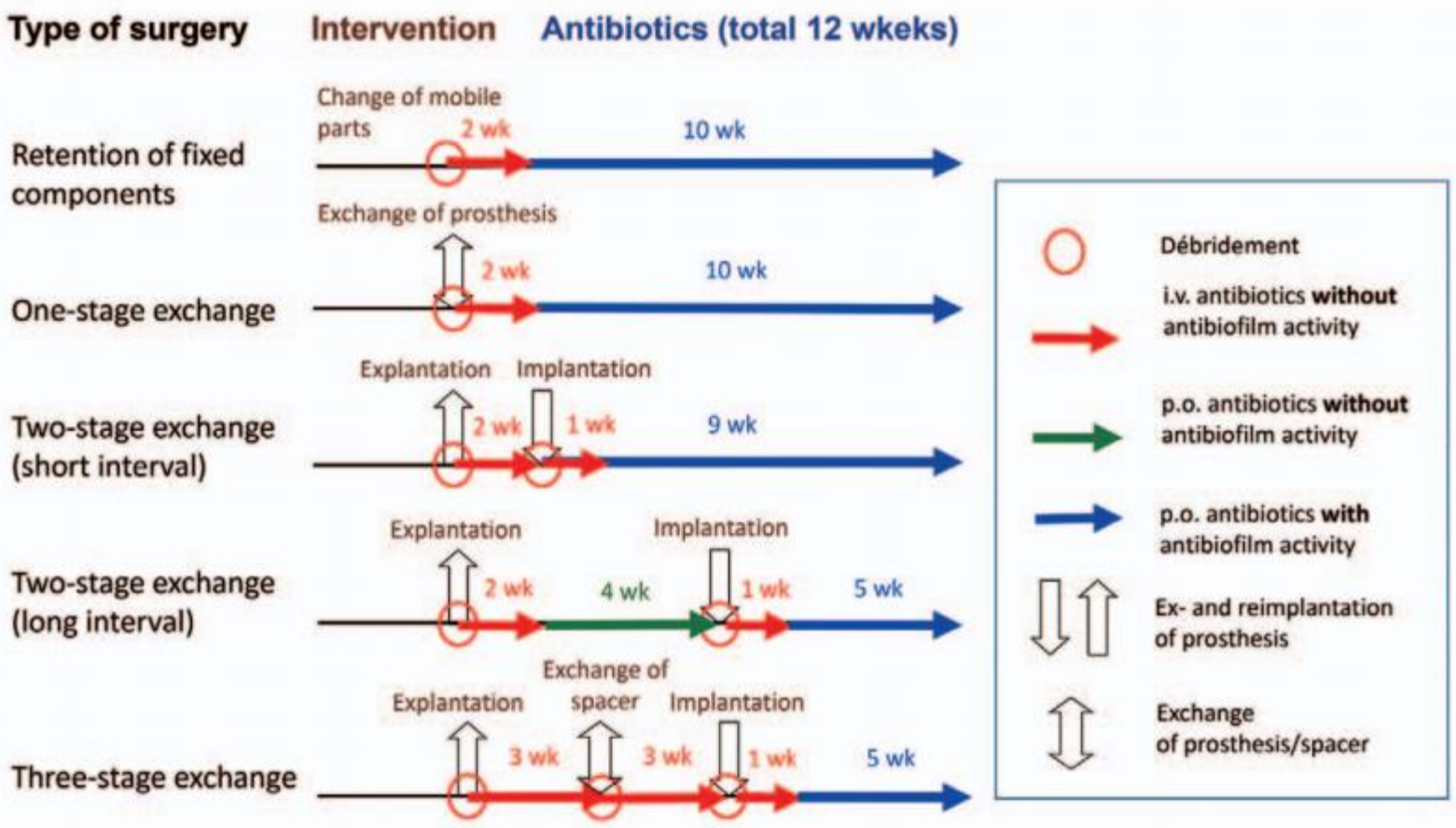
Antibiothérapie

	6 s (n=203)	12 s (n=201)
Durée initiale d'antibiothérapie reçue	45.0 (11.2) 42 [42 ; 43]	83.8 (12.0) 84 [84 ; 84]
Voie		
IV No (%)*	192 (94.6)	196 (97.5)
SC No (%)† §	7 (3.5)	13 (6.5)
PO No (%)‡ §	192 (94.6)	190 (94.5)
Durée IV en jours Médiane [IQR]	9 [5 ; 15]	9 [5 ; 15]


All*
32/190
15/188
2.34 (1.22−4.48)
Chirurgie initiale
0.78
Lavage articulaire
23/75
11/76
2.61 (1.17−5.85)
Changement 2 tps
6/40
2/41
3.44 (0.65−18.19)
Changement 1 tps
3/75
2/71
1.44 (0.23−8.87)
Articulation
0.83
Hanche
19/122
9/117
2.21 (0.96−5.12)
Genou
13/68
6/71
2.56 (0.91−7.19)
Rang de l'infection
0.82
<2
27/162
13/160
2.26 (1.12−4.56)
≥ 2
5/28
2/28
2.83 (0.50−15.99)
0
1
2
3
4
5
Favours 6 weeks
Favours 12 weeks

Conclusion

- Non infériorité non démontrée
- Plus d'échecs (x2) dans le bras 6 semaines
  surtout si L-D, changement 2T
- Analyse plus précise des facteurs d'échecs en cours.



ATTENTION :

- Si délai de la chirurgie respectée
- Si SA ou SCN = utilisation de RFP
- Si BGN = utilisation de FQ

MAIS…

- **Type I : infection post-opératoire précoce**
  - Moins de 1 mois après la chirurgie
  - Tableau clinique marqué : fièvre, frissons, cicatrice inflammatoire, doule
    cicatrice qui ne se referme pas…
  - Staphylocoque doré, BGN++
- **Type II : infection tardive (>1 mois) ou chronique**
  - SCN, proprionibacterium acnes
  - **Tableau moins franc : douleur persistante, fistule**
- **Type III : infection aiguë hématogène ou <u>secondaire</u>**
  - Staphylocoque doré, BGN++
  - L'infection de matériel n'est pas au 1°plan
- **Type IV : prélèvement opératoire positif mais patient asymptomatique**
  - L'infection passe souvent inaperçue
  - 3%

Impossibilité changement des pièces mobiles

hangement des pièces mobiles

Changement de prothèse impossible

2 temps)

Lavage articulaire

SC difficile à dater ?

Résultats du DAIR selon la durée des symptômes d'infection et l'âge de la prothèse)

Auteurs	N patients	% rémission	Facteurs associés à l'échec: durée en jours des signes d'infection (âge prothèse)
Brandt, 1997	33, *S. aureus*	31	> 2
Barberan, 2006	60, *Staphylococcus* spp.	65	(> 180)
Marculescu, 2006	99	46	> 8
Byren, 2009	122	84	(> 90)
Buller, 2012	309	52	> 21
Lora Tamayo, 2013	345 (*S. aureus*)	55	(> 90 : Log rank test p=0.054)
Kuiper, 2013	91	66	> 7
Triantafyllopoulos, 2015	60	70	> 5
Grammatopoulos, 2017	122	85	> 7 (42)
Urish, 2017	206	42	> 7
Tsang (meta-analyse), 2017	1296	28 vs 48	> 7 (28 = NS)

Diapo E. Senneville JNI 2020

Clinical Infectious Diseases

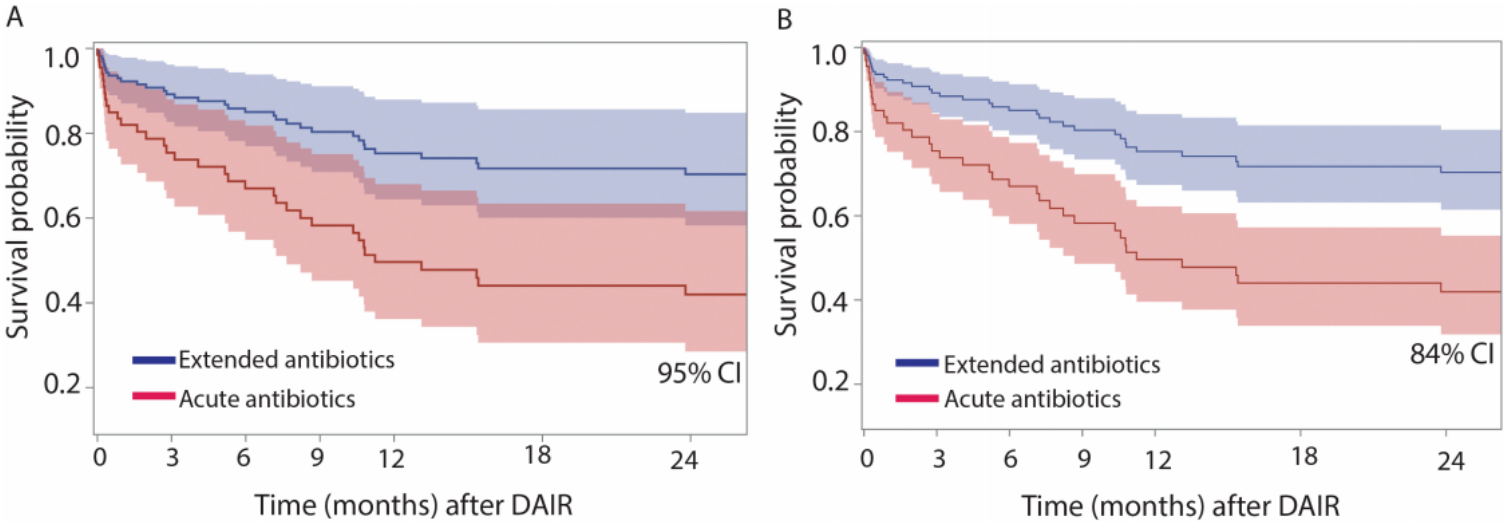
MAJOR ARTICLE

Benefits and Adverse Events Associated With Extended Antibiotic Use in Total Knee Arthroplasty Periprosthetic Joint Infection

Neel B. Shah,[1,a] Beverly L. Hersh,[2] Alex Kreger,[2] Aatif Sayeed,[2] Andrew G. Bullock,[2] Scott D. Rothenberger,[3] Brian Klatt,[4] Brian Hamlin,[5] and Kenneth L. Urish[4,6,7,8,a]

2020

Etude multicentrique observationelle
108 patients avec PTG infectées et DAIR (avec changement des pièces mobiles)
51 (47%) ATB prolongé >6sem
Echec = Nouvel IPA après 6 sem ou chirurgie articulaire
36 (33%) IPA précoce < 3 mois



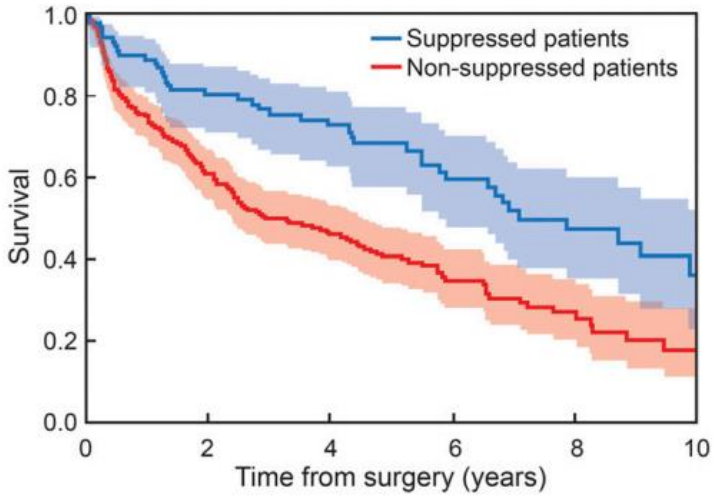
Pas de différence si ATB > 12 mois ou non

Chronic Suppression of Periprosthetic Joint Infections with Oral Antibiotics Increases Infection-Free Survivorship

2015

Marcelo B.P. Siqueira, MD, Anas Saleh, MD, Alison K. Klika, MS, Colin O'Rourke, MS, Steven Schmitt, MD, Carlos A. Higuera, MD, and Wael K. Barsoum, MD

Etude monocentrique (1996-2010)
IPA traité par DAIR ou 2tps
TTT suppressif (>6 mois) (n=92) vs non suppressif (n=276)
Echec clinique à 5 ans

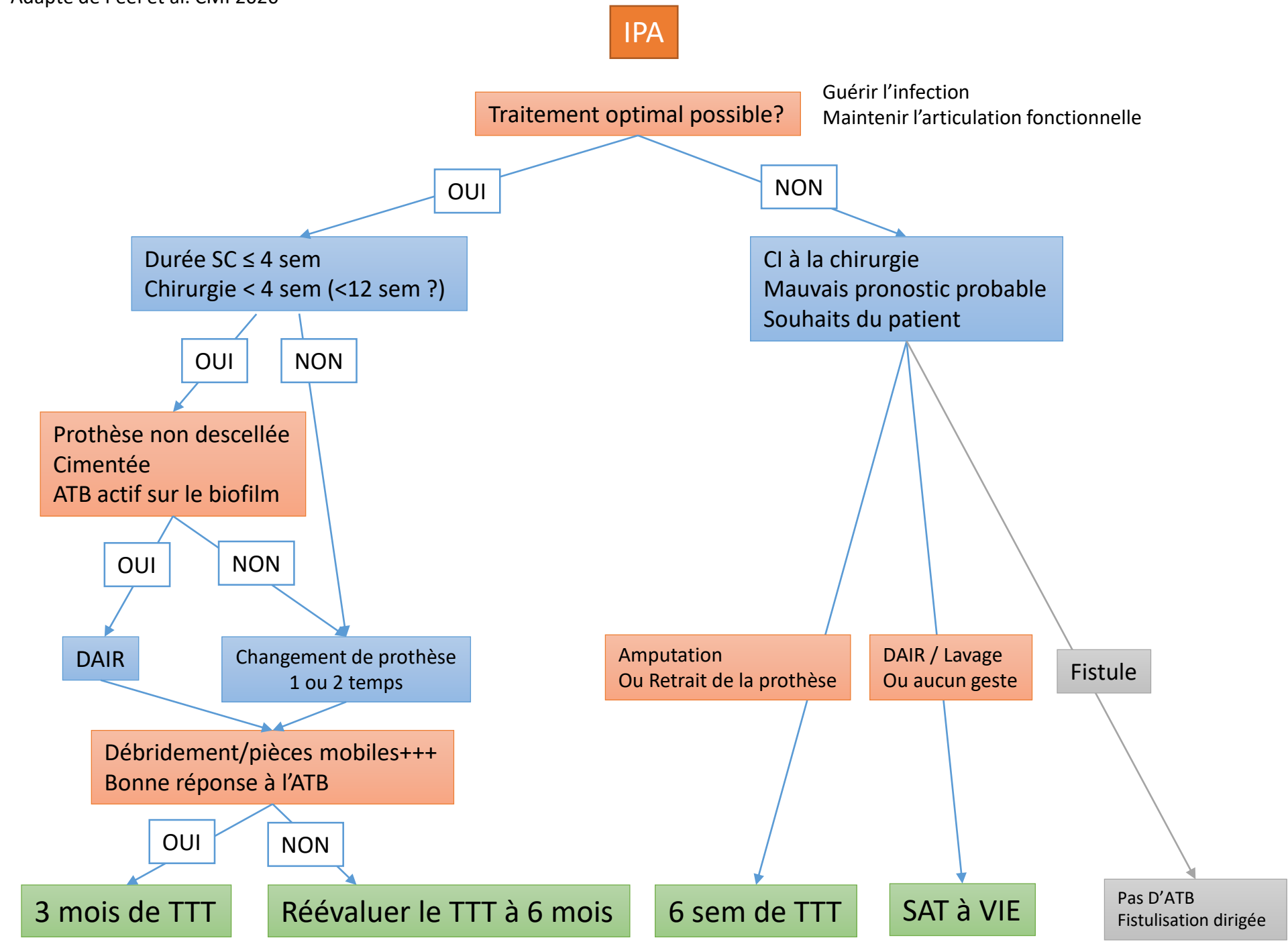


Variable	No Failure (N = 60)	Failure (N = 32)	P Value
Duration of symptoms† *(days)*	30 [6, 77.5]	28 [13.25, 83.75]	0.23
Onset of infection†			0.70
Early	24 (40.0)	12 (37.5)	
Late	36 (60.0)	20 (62.5)	

TABLE IV Cox Proportional Hazards Model Estimates of Survival, with Adjustment for Matching Covariates

Variable	HR	95% CI	P Value
Chronic suppressive antibiotics	0.48	0.34-0.67	<0.001
No. of previous revisions	1.12	1.04-1.21	0.005
Non-S. *aureus* infection	0.69	0.51-0.94	0.018
Age (per year)	1.01	1.00-1.03	0.11
Hip joint	0.86	0.59-1.24	0.42
Charlson comorbidity index (per index point)	1.02	0.92-1.14	0.67
Male sex	1.05	0.78-1.40	0.76
BMI (per index point)	1.00	0.99-1.02	0.92

Adapté de Peel et al. CMI 2020



AU TOTAL

A Besançon

- **<u>Traitement probabiliste :</u>**
  - Piperacilline-tazobactam (4g x4/j) + daptomycine (10 mg/kg)
- **<u>Traitement documenté</u>**
  - SA : Levofloxacine 750 mg/j + Rifampicine (600 à 900 mg/j)
  - Strepto : **Amox** +/- RFP ou FQ + RFP
  - BGN : FQ
- **<u>Durée :</u>**
  - 3 mois
  - Traitement suspensif A VIE:
    - A DISCUTER EN RCP
    - TTT utilisé : Doxy (100x2), Pristinamycine (1g x2/j) Amox (1g x2 ou 3/j), Bactrim forte (1 à 2 cp/j)

Treatment of Joint Prosthesis Infection in Accordance with Current Recommendations Improves Outcome

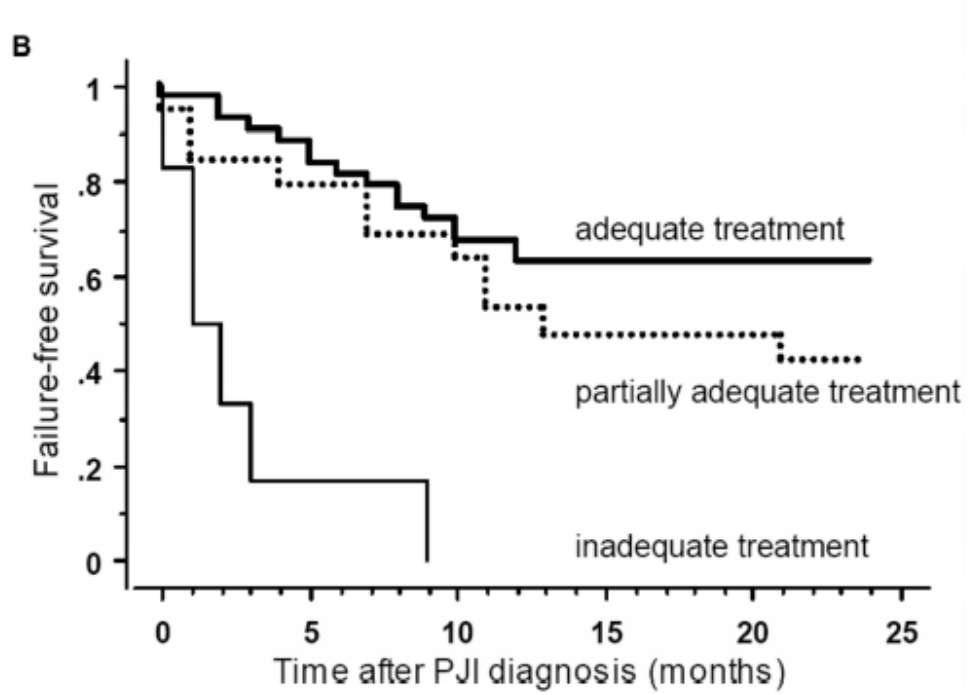
Belinda Y. Betsch,[1] Stefan Eggli,[2] Klaus A. Siebenrock,[2] Martin G. Täuber,[1,3] and Kathrin Mühlemann[1,3]

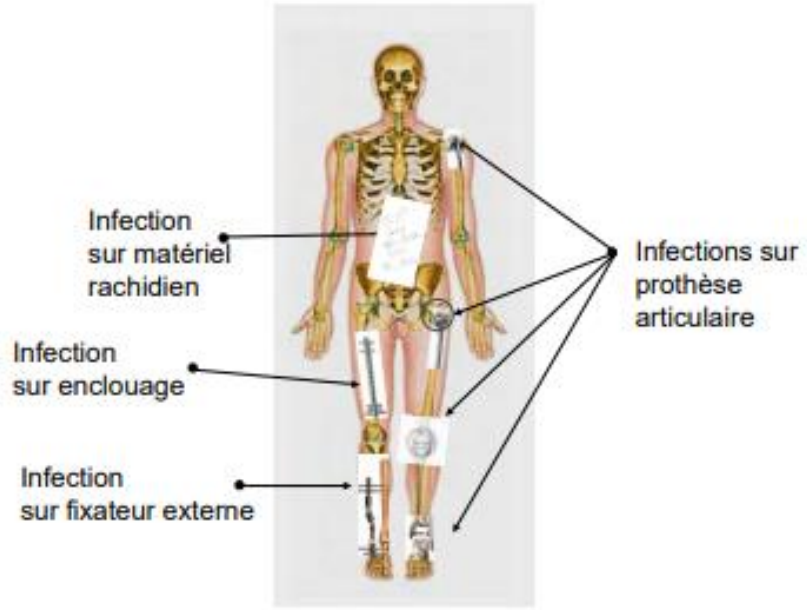
Departments of [1]Infectious Diseases and [2]Orthopedic Surgery, University Hospital Bern, and [3]Institute for Infectious Diseases, University of Bern, Bern, Switzerland

Antimicrobial treatment category	(1) Adequate (total duration of ⩾3 months, duration of therapy administered intravenously ⩾2 weeks, use of agent-appropriate drugs according to susceptibility testing and clinical studies, use of antibiotics with efficacy against surface-adhering bacteria, if possible), (2) partially adequate (duration of at least 2 but <3 months and/or <2 weeks of therapy administered intravenously), (3) inadequate (antimicrobial treatment not corresponding to the above or no antimicrobial treatment) [8]

Table 4. Outcome of 68 episodes of prosthetic joint infection according to antimicrobial treatment.

Variable	No. (%) of episodes
All infection episodes	68 (100)
Antimicrobial treatment[a]	
Adequate	32 (47.1)
Partially adequate	25 (36.8)
Inadequate	11 (16.2)
Antimicrobial treatment ⩾90 days	40 (58.8)
Intravenous treatment ⩾14 days	50 (73.5)
Type of oral treatment	
Rifampin combination	40 (58.8)
Clindamycin	7 (10.3)
Betalactam	7 (10.3)
Other	6 (8.8)
Intravenous treatment only	6 (8.8)
No antimicrobial treatment	*2 (3.0)*





Infection du rachis instrumenté

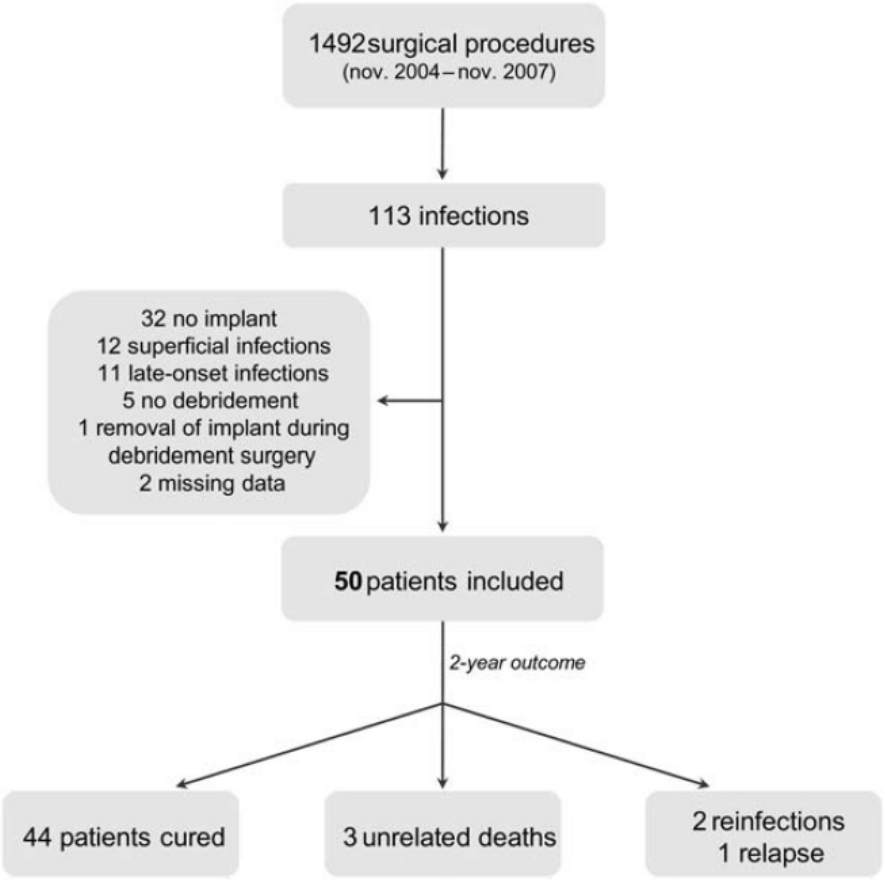
Three-Month Antibiotic Therapy for Early-Onset Postoperative Spinal Implant Infections

Vincent Dubée,[1] Thibaut Lenoir,[2] Véronique Leflon-Guibout,[3] Claire Briere-Bellier,[1] Pierre Guigui,[2,4] and Bruno Fantin[1,4]

[1]Service de Médecine Interne, [2]Service de Chirurgie Orthopédique et Rachidienne, and [3]Service de Microbiologie, Hôpital Beaujon, AP-HP, Clichy and [4]Université Denis Diderot, Paris, France

2012

ATB 2 sem IV
Puis relais 10 sem PO



Clinical Infectious Diseases

MAJOR ARTICLE

Successful 6-Week Antibiotic Treatment for Early Surgical-site Infections in Spinal Surgery

Marie-Paule Fernandez-Gerlinger,[1,2] Robin Arvieu,[3] David Lebeaux,[1,2] Karama Rouis,[1] Pierre Guigui,[2,3] Jean-Luc Mainardi,[1,2] and Benjamin Bouyer[2,3]

[1]Unité Mobile de Microbiologie Clinique, Service de Microbiologie, Hôpital Européen Georges Pompidou, AP-HP, [2]Faculté de Médecine, Université Paris Descartes, and [3]Service d'Orthopédie et de Traumatologie, Hôpital Européen Georges Pompidou, AP-HP, Paris, France

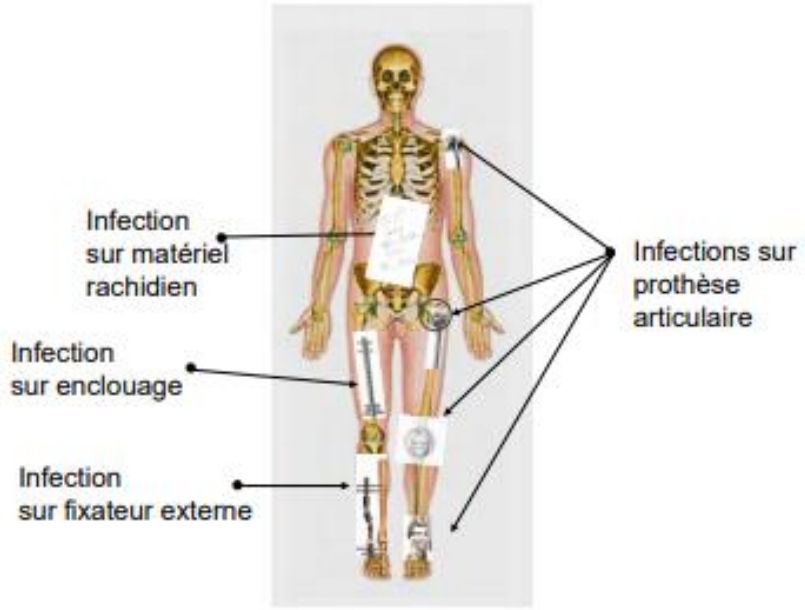
2018

- Etude prospective observationnel monocentrique
- Reprise chirurgicale d'une ISO vertébrale
- Si matériel : lavage du matériel
- Prélèvements osseux x 5

- 85 patients inclus
- 87% infection sur matériel
- Durée de reprise chirurgicale 16 j(12-27)
- Echec = 7 patients (8,2%)

Table 1. Patient Characteristics

Patient Cohort	Success	Failure	Odds Ratio	*P* Value
Men	44 (56.4%)	2 (28.6%)	0.31 (0.06–1.7)	.18
Age (y)[a]	62.3 (52.5–72.1)	60.1 (20.2–75.5)	0.97 (0.9–1.1)	.24
Risk factors for surgical site infection				
Diabetes	5 (6.41%)	2 (28.6%)	5.84 (0.9–38.0)	.07
History of smoking	1 (1.28%)	2 (28.6%)	30.8 (2.4–400.6)	.009
Immunosuppression[b]	21 (27%)	2 (28.6%)	1.09 (0.2–6.0)	.9
Cardiovascular disease	23 (29.5%)	4 (57.1%)	3.2 (0.7–15.4)	.15
Morbid obesity	1 (1.28%)	1 (14.3%)	12.8 (0.7–231.7)	.08
Surgical indication			0.41 (0.15–1.1)	.08
Degenerative spine disease	37 (47.4%)	2 (28.6%)	…	…
Spinal deformity	11 (14.1%)	4 (57.2%)	…	…
Vertebral metastasis	9 (11.5%)	0	…	…
Vertebral fracture	19 (24.3%)	1 (14.3)	…	…
Spondylodiscitis	2 (2.6%)	0	…	…
Extent of surgery (number of operated vertebra)[a]	4 (3–6)	8 (7–16)	1.26 (1.1–1.5)	.003
Surgical implants[a,c]	67 (85.9%)	7 (100%)	1.14	.29
Spinopelvic arthrodesis	22 (28.2%)	6 (85.7%)	15.3 (1.7–134.3)	.014
Pathogen				
Staphylococcus aureus	32 (41.1%)	1 (14.3%)	0.24 (0.03–2.1)	.2
Coagulase-negative *staphylococci*[f]	15 (19.2%)	0	1.63	.22
Enterobacteriaceae and *enterococci*	21(26.9%)	6 (85.7%)	16.3 (1.85–143.4)	.012
Pseudomonas aeruginosa	8 (10.3%)	1 (14.3%)	1.46 (0.16–13.7)	.74
Cutibacterium acnes	8 (10.3%)	0	0.79	.38
Streptococci	5 (6.41%)	0	0.48	.49
Anaerobes	4 (5.13%)	1 (14.3%)	3.1 (0.29–32.1)	.34



Infection ostéo-articulaire avec retrait du matériel

J Antimicrob Chemother 2019; **74**: 2394–2399
doi:10.1093/jac/dkz202 Advance Access publication 18 May 2019

Journal of Antimicrobial Chemotherapy

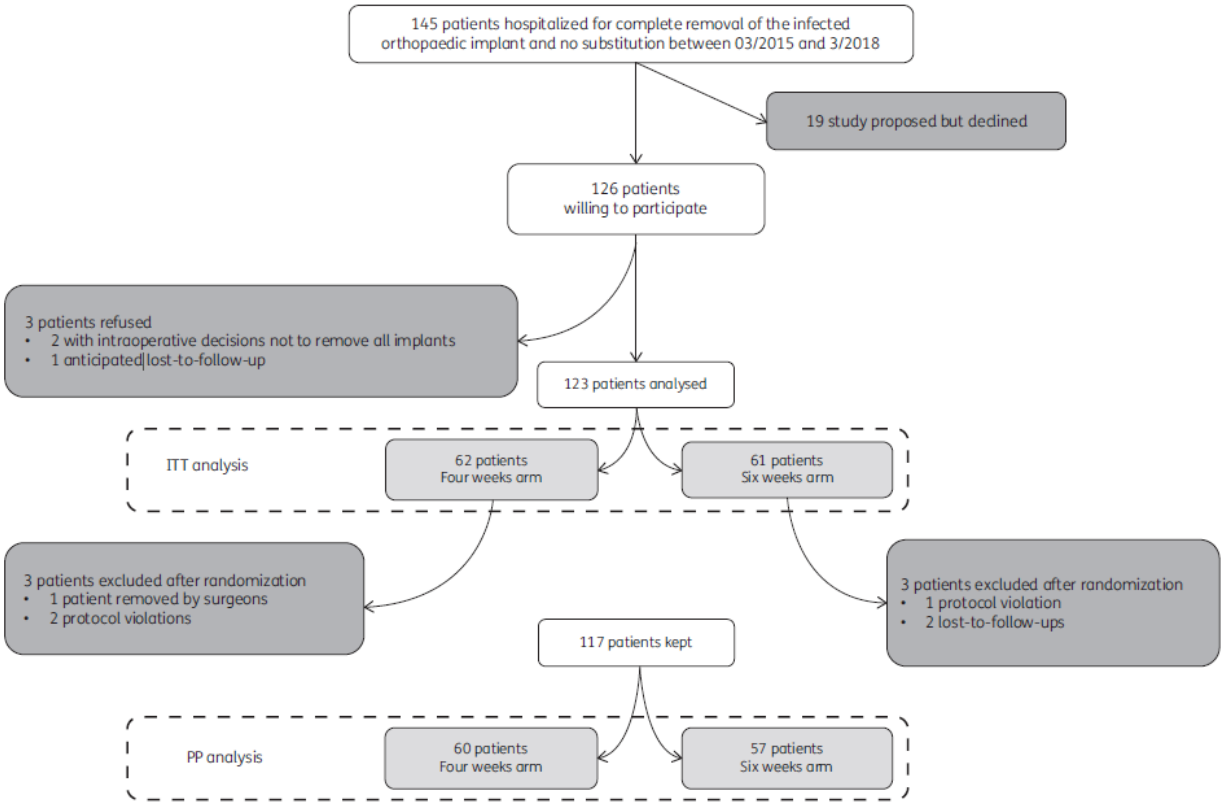
Four versus six weeks of antibiotic therapy for osteoarticular infections after implant removal: a randomized trial

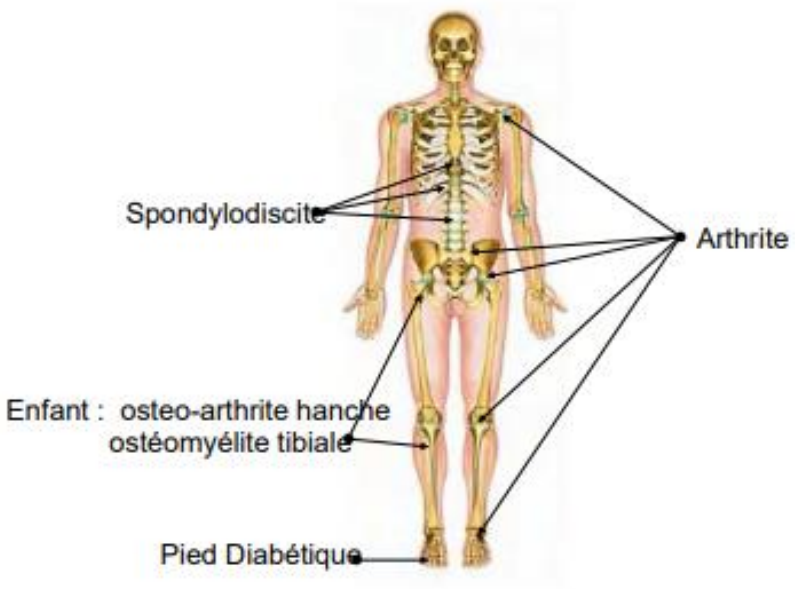
Mohamed Benkabouche[1]†, Guillaume Racloz[2,3]†, Hervé Spechbach[1], Benjamin A. Lipsky[4], Jean-Michel Gaspoz[1] and Ilker Uçkay [2,4,5]*

- Etude prospective monocentrique randomisée
- Critère d'inclusion : infection de matériel avec retrait du matériel sans repose immédiate (inclus changement de prothèse en 2 temps)

123 patients inclus
Infection de prothèse (39), osteosynthèse par plaque (44), materiel rachis (11) autre ostéosynthèse (30)
Suivi médian de 2,2 ans
92% suivi > 1 an

Taux d'échec
Récidive clinique:
4/62 (4sem) VS 3/61 (6sem) P=0,74
Récidive bactériologique :
2/62 (4sem) VS 1/61 (6sem) p=0,57





Infection de pied diabétique

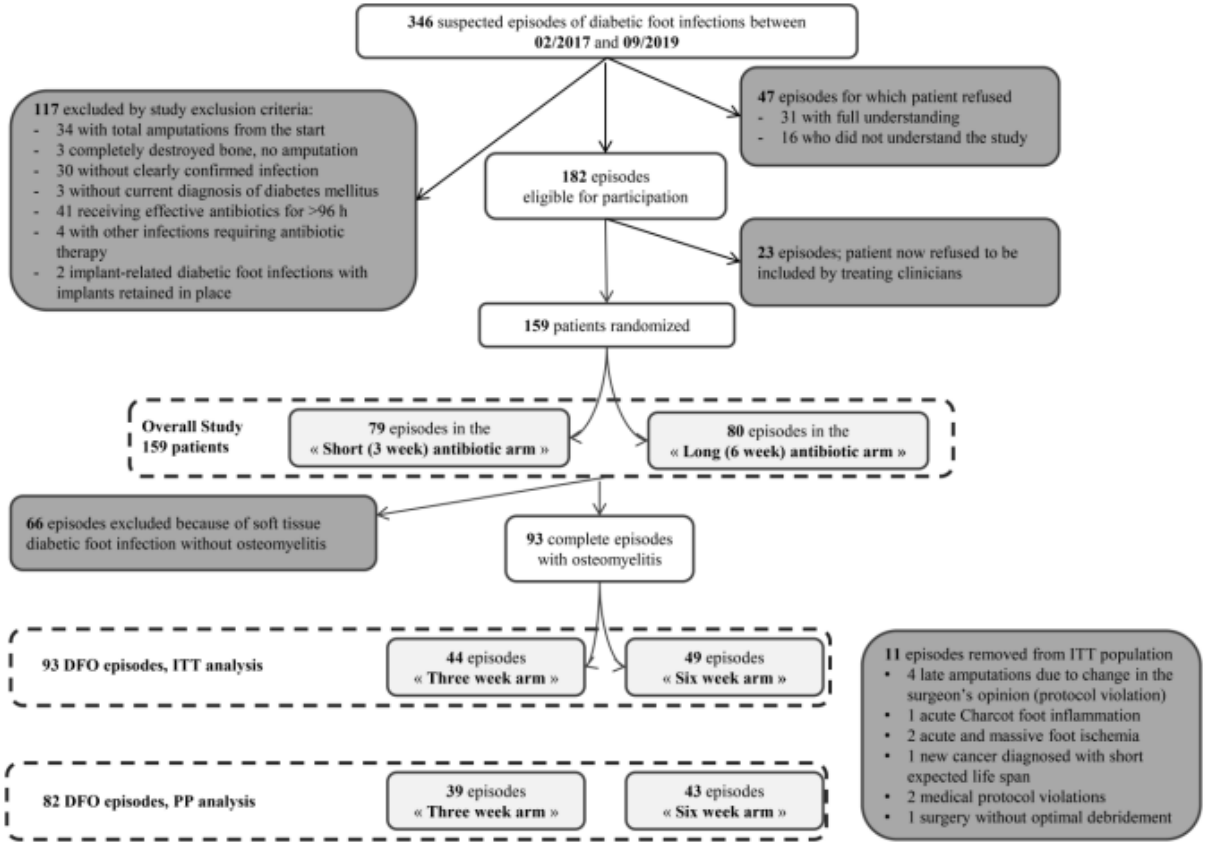
ACCEPTED MANUSCRIPT

Three versus six weeks of antibiotic therapy for diabetic foot osteomyelitis: A prospective, randomized, non-inferiority pilot trial

Karim Gariani, MD, Truong-Thanh Pham, MD, Benjamin Kressmann, RN, François R Jornayvaz, MD, Giacomo Gastaldi, MD, Dimitrios Stafylakis, MD, Jacques Philippe, MD, Benjamin A Lipsky, MD, İlker Uçkay, MD ✉ Author Notes

Clinical Infectious Diseases, ciaa1758, https://doi-org.scd1.univ-fcomte.fr/10.1093/cid/ciaa1758

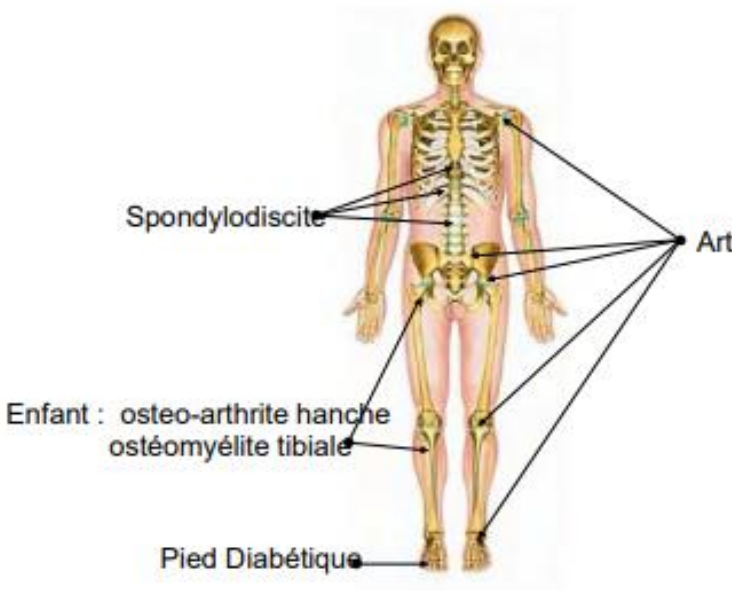
Published: 26 November 2020 **Article history** ▾



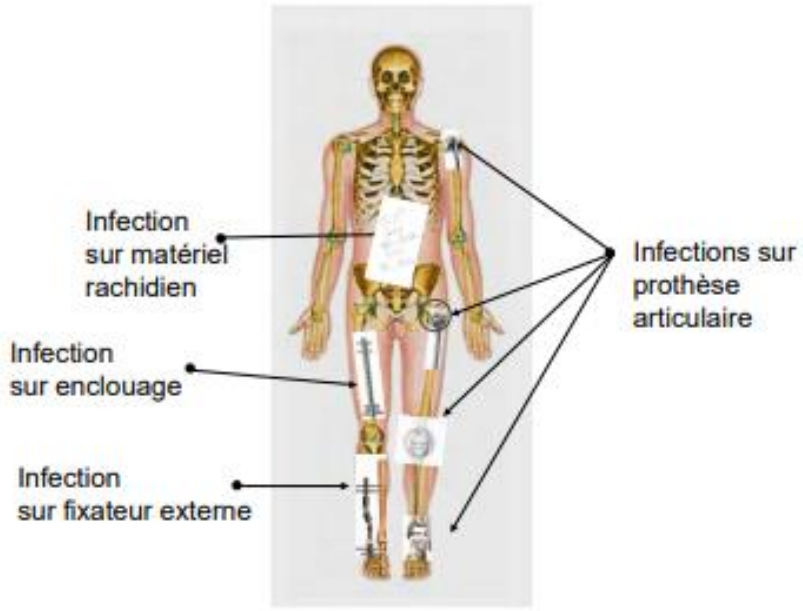
- Etude multicentrique non randomisée 3sem vs 6 sem
- **Inclusion** : Parage chirurgicale, mais pas d'amputation complète

Seul facteur associé à l'échec :
- Amputation partielle

Durée de traitement en fonction du type d'IOA



4 à 6 sem



12 sem

MERCI DE VOTRE ATTENTION