Antibiothérapie suppressive (dans les infections ostéo-articulaires)

Pr Olivier Robineau

Service Universitaire des Maladies Infectieuses et du Voyageur du Pr Senneville, Tourcoing

Quelques définitions

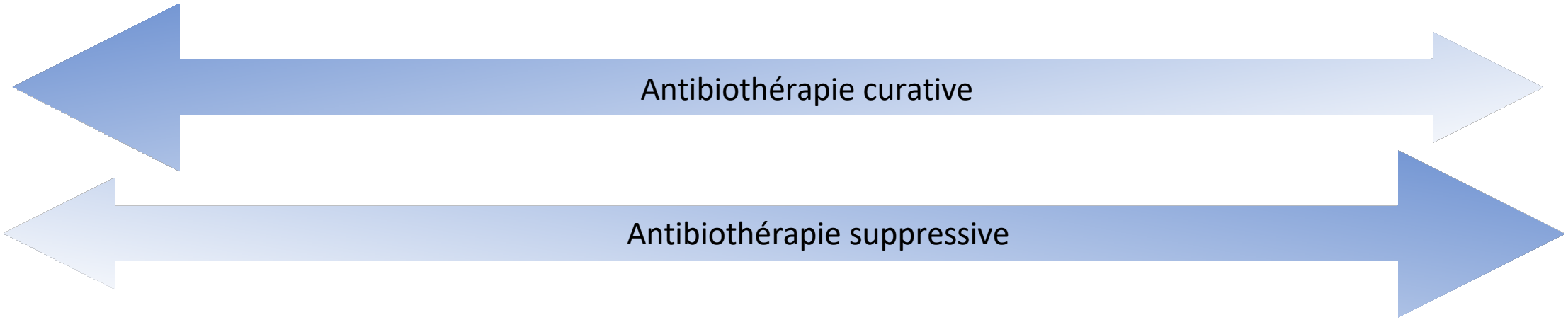
- Palliatif: Qui atténue les symptômes d'une maladie sans agir sur la cause et ou sans la guérir

- Suppressif: fait de faire cesser d'être, de mettre fin à l'existence

- Antibiothérapie suppressive: alternative à un traitement curateur médicochirurgical.
- Raison?
- Modalité?
- Durée?

prise en charge des IOAP

Changement du matériel pour traiter l'infection	Maintien du matériel et traitement de l'infection	Maintien du matériel et « contenir l'infection »
• En deux temps • En un temps	• DAIR	• DAIR • Parfois même le DAIR n'est pas possible



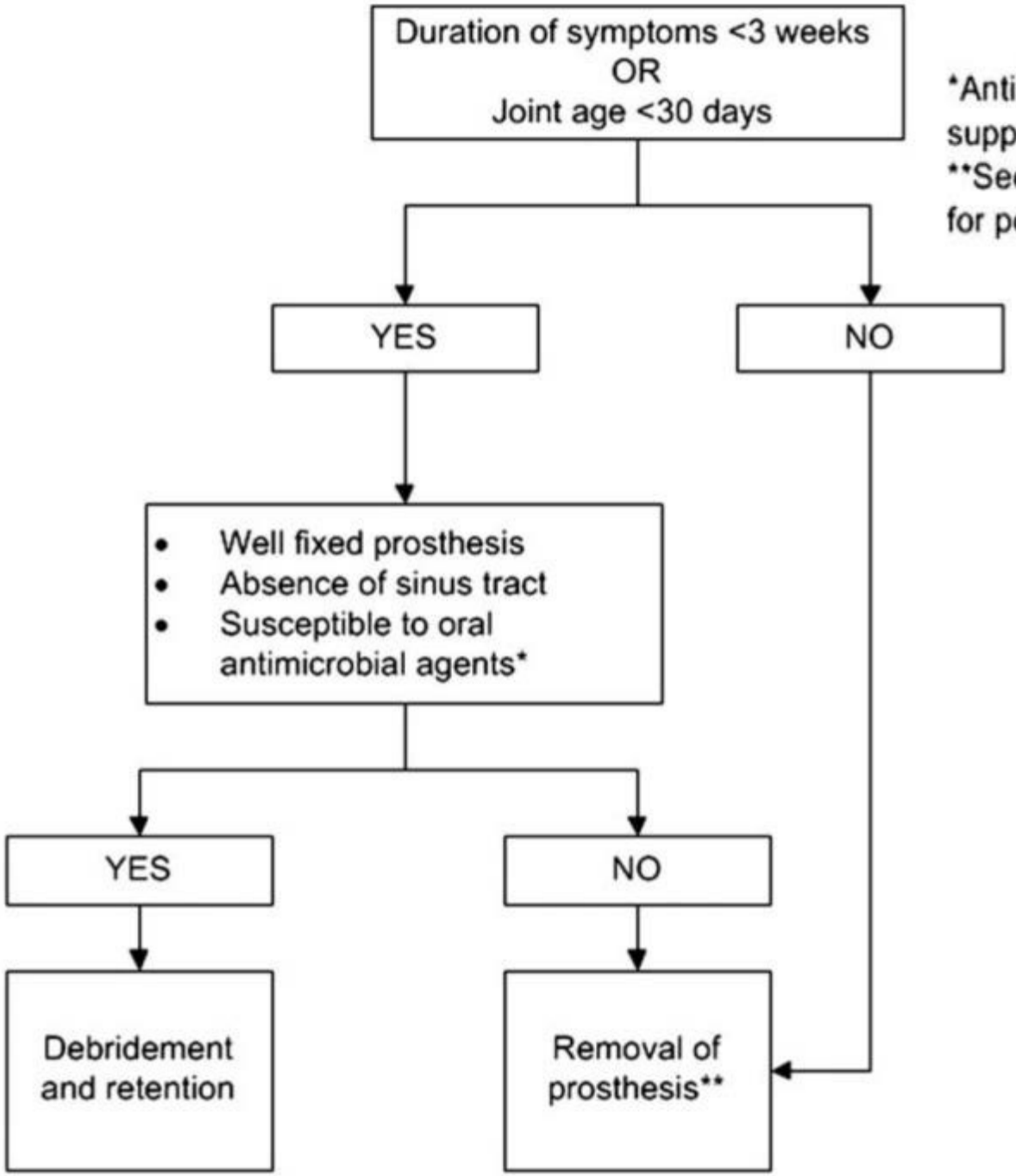
prise en charge des IOA

Changement du matériel pour traiter l'infection	Maintien du matériel et traitement de l'infection	Maintien du matériel et « contenir l'infection »

Stratégie thérapeutique dépend:
- de la cinétique de la gravité des éléments cliniques et paracliniques
- de l'histoire orthopédique
- Des comorbidités

Antibiothérapie curative

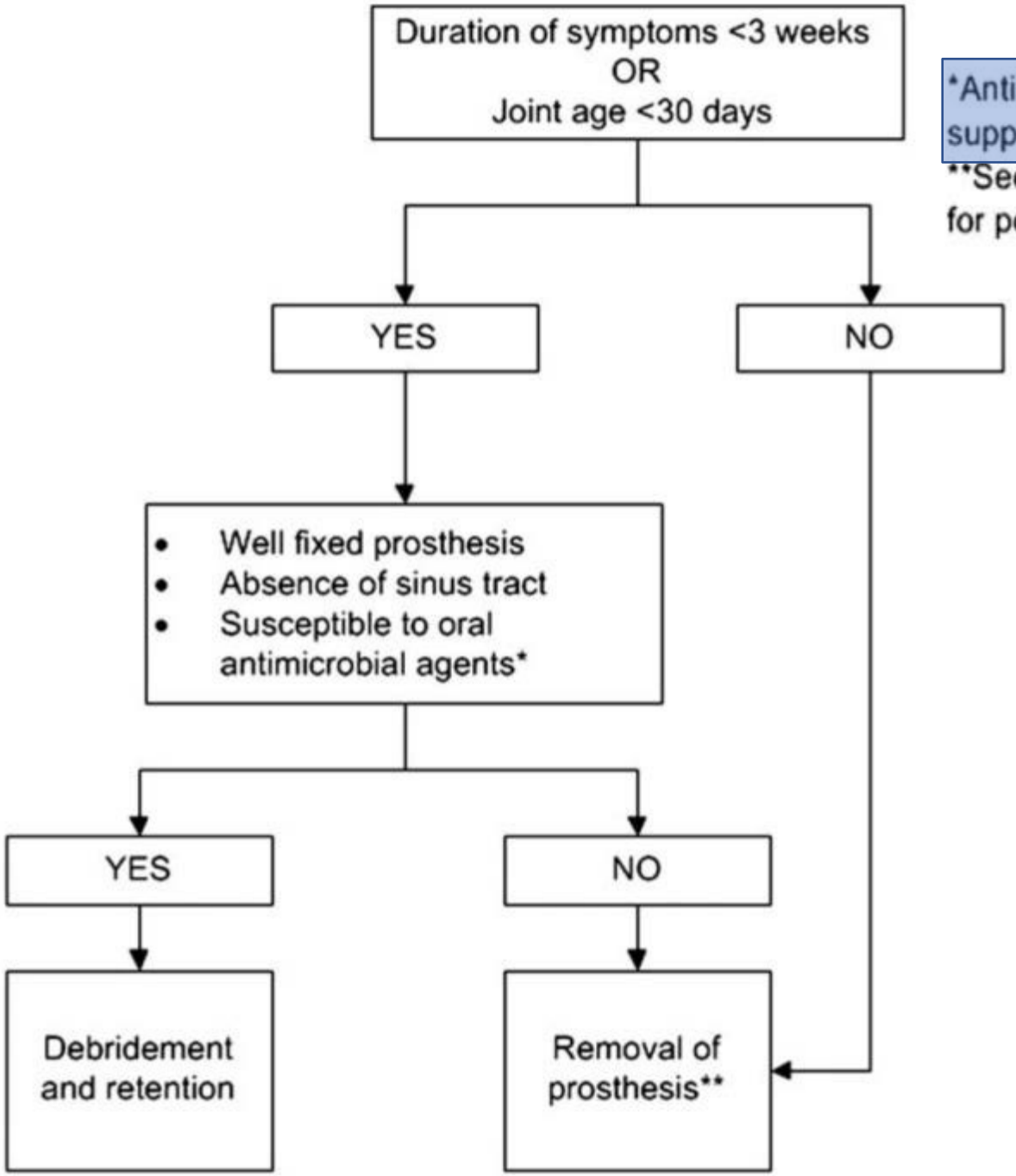
Antibiothérapie suppressive



*Antimicrobial agents that are recommended for prolonged use for chronic suppression or treatment of biofilm bacteria (see text for details)
**See Figure 3 and recommendation 18 and accompanying Evidence Summary for possible exceptions

oratory monitoring for efficacy and toxicity is advisable. The decision to offer chronic suppressive therapy must take into account the individual circumstances of the patient including the ability to use rifampin in the initial phase of treatment, the potential for progressive implant loosening and loss of bone stock, and the hazards of prolonged antibiotic therapy; it is therefore generally reserved for patients who are unsuitable for, or refuse, further exchange revision, excision arthroplasty, or amputation.

IDSA 2013



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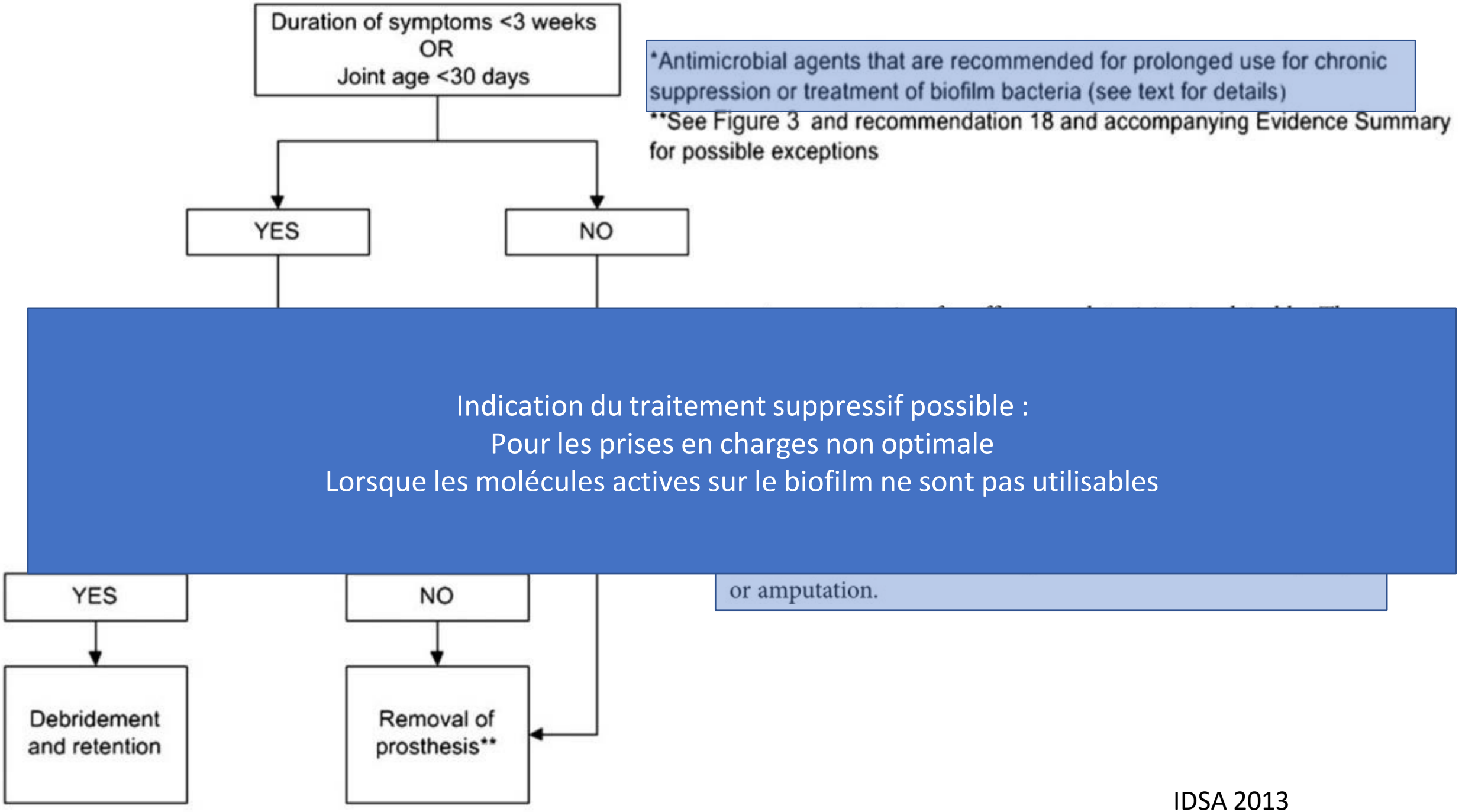
IDSA 2013


Duration of symptoms <3 weeks
OR
Joint age <30 days
*Antimicrobial agents that are recommended for prolonged use for chronic suppression or treatment of biofilm bacteria (see text for details)
**See Figure 3 and recommendation 18 and accompanying Evidence Summary for possible exceptions
YES
NO
Indication du traitement suppressif possible :
Pour les prises en charges non optimale
Lorsque les molécules actives sur le biofilm ne sont pas utilisables
or amputation.
YES
NO
Debridement and retention
Removal of prosthesis**

IDSA 2013

Antibiothérapie suppressive avant les années 2000

- Travaux rétrospectifs
- Indications du suppressif non évidente
- Haut taux d'échec:
  - sauf Segreti et col
- PEC chirurgical hétérogène (sauf Segreti (DAIR))

Johnson et col, JBJS, 1986
Goulet et col, JA, 1988
Tsoukayama Orthopeadics, 1991
Brandt et col, CID, 1997
Segretti et col, CID, 1998

Patient no.	Suppressive antibiotic(s) (dosage)	Duration (mo) of therapy	Antibiotic therapy continued?	Outcome	Complications
1	Cephalexin (500 mg q.i.d.)	103	Yes	Success	None
2	Penicillin (500 mg po q.i.d.)	69	Yes	Success	None
3	Cefadroxil (500 mg po b.i.d.)	96	Yes	Success	None
4	Oxacillin (500 mg po q.i.d.)	51	Yes	Success	None
5	Minocycline/rifampin (100 mg b.i.d./600 mg q.d. po)	56	Yes	Success	None
6	Minocycline/rifampin (100 mg/600 mg po q.d.)	69	Yes	Success	Diarrhea
7	Ampicillin (500 mg po q.i.d.)	12	No	Success	None
8	Minocycline/rifampin (100 mg/600 mg po q.i.d.)	59	Yes	Success	None
9	Dicloxacillin (500 mg po q.i.d.)	22	No	Failure*	None
10	Amoxicillin/clavulanate (500 mg po t.i.d.)	103	Yes	Success	None
11	Minocycline/rifampin (100 mg/600 mg po q.d.)	16	No	Success	Diarrhea
12	Dicloxacillin (500 mg po q.i.d.)	28	No	Success	None
13	Penicillin (500 mg po q.i.d.)	49	Yes	Success	None
14	Minocycline/rifampin (100 mg/600 mg po q.d.)	50	Yes	Success	None
15	TMP-SMZ/rifampin (one DS po q.d./600 mg po q.d.)	71	Yes	Success	None
16	Clindamycin (300 mg po t.i.d.)	4	No	Failure	None
17	Dicloxacillin (500 mg po q.i.d.)	9	No	Failure	Diarrhea
18	Dicloxacillin (500 mg po q.i.d.)	13	No	Failure	Diarrhea, drug rash

NOTE. DS = double strength; TMP-SMZ = trimethoprim-sulfamethoxazole.
* After antibiotic therapy was discontinued.

Segreti et col. Clin Infect Dis. 1998

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6					
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Quelques arrêts de traitement sans échec (suivi médian de 5 ans)
Plus d'échec chez les patients présentant une infection « retardée »
Au total: 83% de succès sous traitement

Segreti et col. Clin Infect Dis. 1998

Années 2000: PEC « moderne » de l’infection « aigue » (rifampicine+++)

CLINICAL ORTHOPAEDICS AND RELATED RESEARCH
Number 414, pp. 55–60

Long-Term Suppression of Infection in Total Joint Arthroplasty

Nalini Rao, MD,**; Lawrence S. Crossett, MD**; Raj K. Sinha, MD, PhD**; and Jack L. Le Frock, MD, PhD*

- Etude prospective!
- 37 patient traités par:
  - DAIR
  - 6 semaines d'ATB curatif
  - ATB suppressif
- 86% de succès

TABLE 1. Demographic and Clinical Characteristics of the Patients

Characteristics	Number of Patients (%)
Age (years)	
Median	77
Range	62–96
Age group	
55–65	1 (3)
66–75	15 (42)
76–85	13 (36)
86–96	7 (19)
Gender	
Male	19 (53)
Female	17 (47)
Prosthetic joint	
Hips	15 (42)
Knees	19 (53)
Elbow	2 (5.5)
Onset	
Early	13 (36)
Late	23 (64)
Symptoms	
Acute	17 (47)
Chronic	19 (53)
Outcome	
Good	31 (86)
Failed	5 (14)
Duration of treatment (months)	
Mean	52.6
Range	6–128
Duration of followup (months)	
Mean	61.5
Range	16–128

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Pathogènes et choix thérapeutiques

TABLE 2. Frequency of Pathogens in Infected Joint Arthroplasty

Pathogens	*Number (%)
Methicillin-sensitive Staphylococcus aureus	7 (19)
Methicillin-resistant Staphylococcus aureus	6 (17)
Methicillin-sensitive coagulase negative staphylococcus species	5 (14)
Methicillin-resistant coagulase negative staphylococcus species	13 (36)
Group B streptococcus	3 (8)
Enterococcus	1 (3)
Escherichia coli	1 (3)
Candida albicans	1 (3)

*One patient had enterococcus and methicillin-resistant coagulase-negative staphylococcus species

Suppressive Antibiotics	Dosage	*Number of Patients	**Pathogen	Success Rate (%)	Followup (months) Median/Range
Minocycline/Rifampin	100 mg/600 mg qd	11	MRCNS, MRSA	82%	66/(12–114)
Sulfamethoxazole-Trimethoprim/Rifampin	1 DS*** bid/600 mg qd	1	MRCNS	0%	16
Cephalexin/Rifampin	500 mg bid/600 mg qd	1	MSCNS	100%	6
Minocycline	100 mg qd	2	MRCNS	100%	40/(33–47)
TMP/Sulfa	1 DS*** bid	2	MRCNS, GBS	100%	24/(16–32)
Cephalexin	500 mg bid	4	MSSA	75%	57.5/(22–128)
Dicloxacillin	500 mg bid	3	MSSA, MSCNS	100%	96/(96–120)
Oxacillin	500 mg bid	2	MSCNS	100%	104/(88–120)
Levofloxacin	500 mg qd	5	MRCNS, E. coli	100%	21/(12–43)
Penicillin	500 mg bid	2	GBS	100%	82/(72–92)
Clindamycin	300 mg bid	1	MSSA	0%	18
Amoxicillin/Doxycycline	500 mg tid/100 mg bid	1	MRCNS, Enterococcus	100%	12
Fluconazole	400 mg qd	1	C. albicans	100%	35
Linezolid	600 mg qd	1	MRSA	100%	9

Rao et col. Clin Orthop Rel Res. 2003

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Rao et col. Clin Orthop Rel Res. 2003

Pathogènes et choix thérapeutiques

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			*Number			Followup
Escherichia coli	1 (3)	Penicillin	500 mg bid	2	GBS	100%	82/(72–92)
Candida albicans	1 (3)	Clindamycin	300 mg bid	1	MSSA	0%	18
		Amoxicillin/Doxycycline	500 mg tid/100 mg bid	1	MRCNS, Enterococcus	100%	12
		Fluconazole	400 mg qd	1	C. albicans	100%	35
		Linezolid	600 mg qd	1	MRSA	100%	9

*One patient had enterococcus and methicillin-resistant coagulase-negative staphylococcus species

Pas de différence entre les patients à la symptomatologie aigue ou chronique
Pb de la définition du traitement suppressif parfois trop proche du curatif

Rao et col. Clin Orthop Rel Res. 2003

Journal of Antimicrobial Chemotherapy (2009) **63**, 1264–1271
doi:10.1093/jac/dkp107
Advance Access publication 31 March 2009

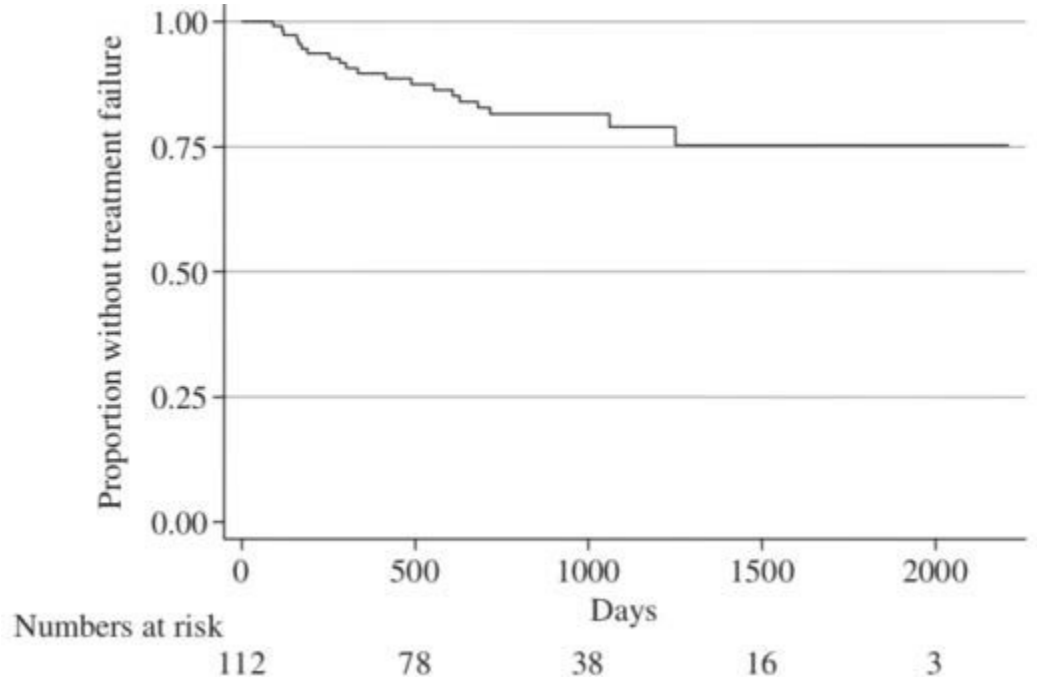
JAC

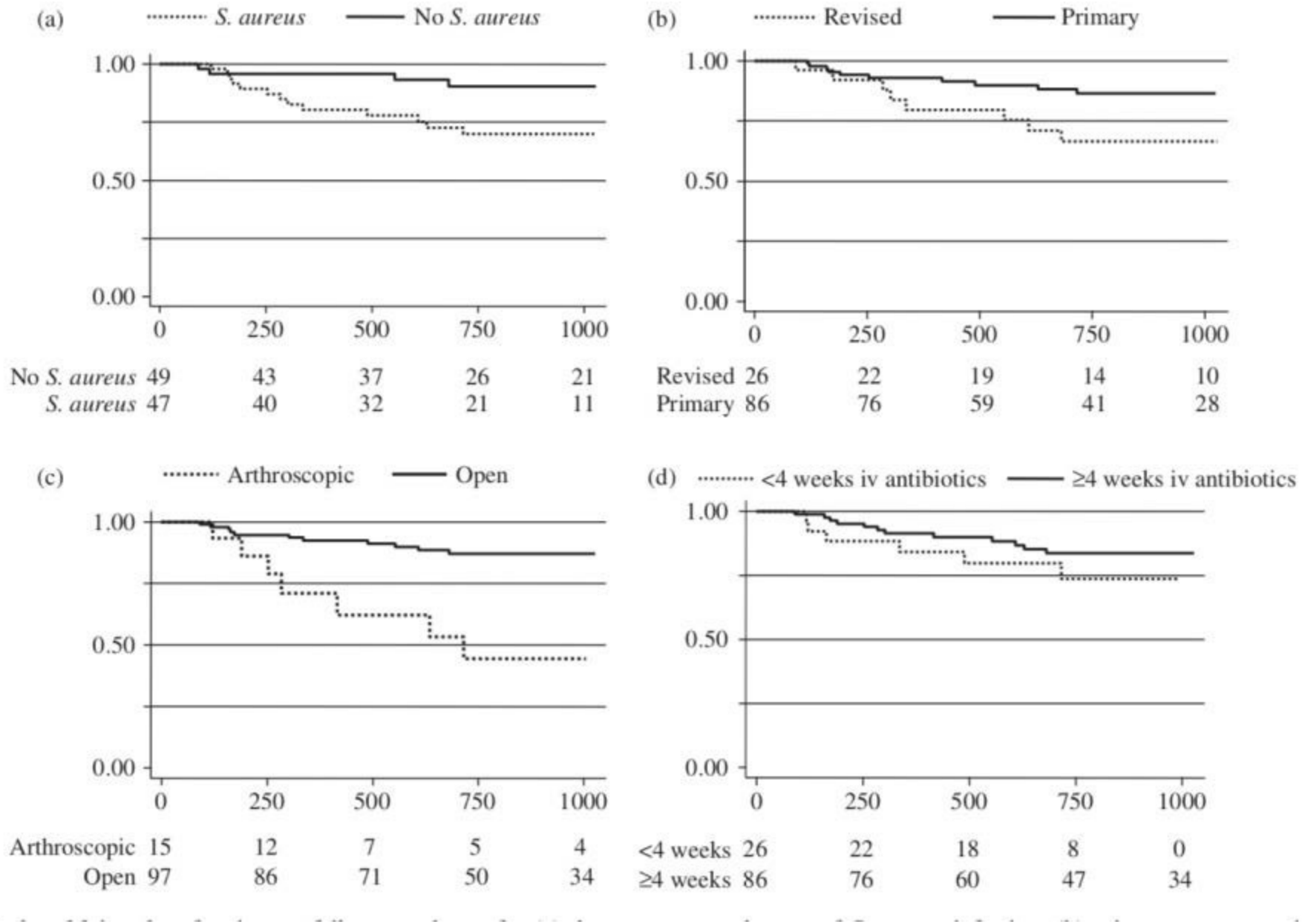
One hundred and twelve infected arthroplasties treated with 'DAIR' (debridement, antibiotics and implant retention): antibiotic duration and outcome

I. Byren[1,2*†], P. Bejon[1,2†], B. L. Atkins[1–3], B. Angus[2], S. Masters[1], P. McLardy-Smith[1], R. Gundle[1] and A. Berendt[1]

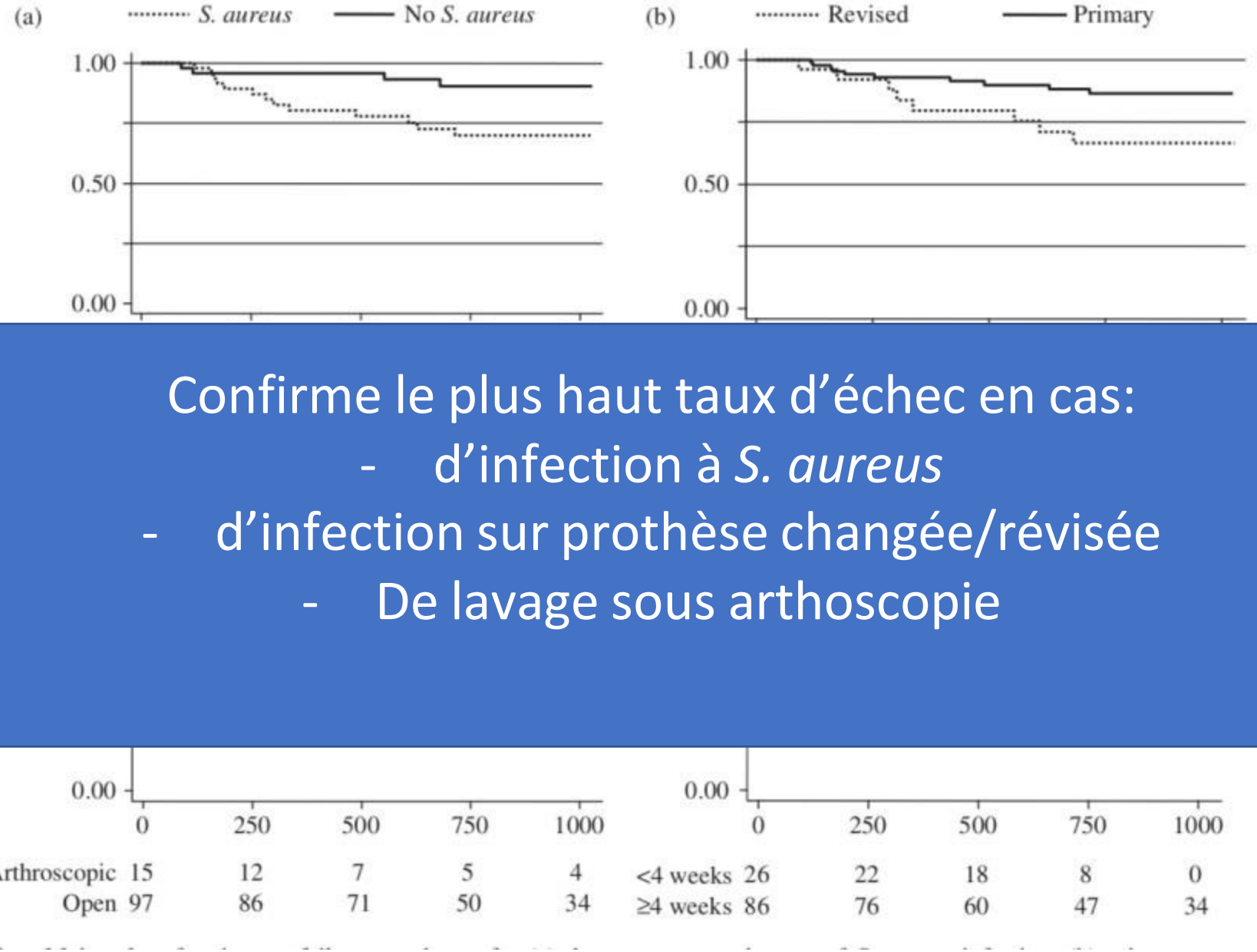
- âgés, nombreuses comorbidités
- prothèses posées < 3 mois chez 69% des patients
- DAIR
- Durée AB = 1,5 ans
- 18% d'échecs seulement

	Hazard ratio	95% CI	*P*
Implant to debridement ≥90 days	1.1	0.31–3.8	0.89
Intravenous antibiotics ≥28 days	0.49	0.18–1.37	0.18
Arthroscopy versus open	4.2	1.5–12.5	0.008
S. aureus	2.9	1.0–8.4	0.050
Revised versus primary arthroplasty	3.1	1.2–8.3	0.008
Presence of co-morbidity	1.81	0.55–5.9	0.32





Byren et col. JAC 2009

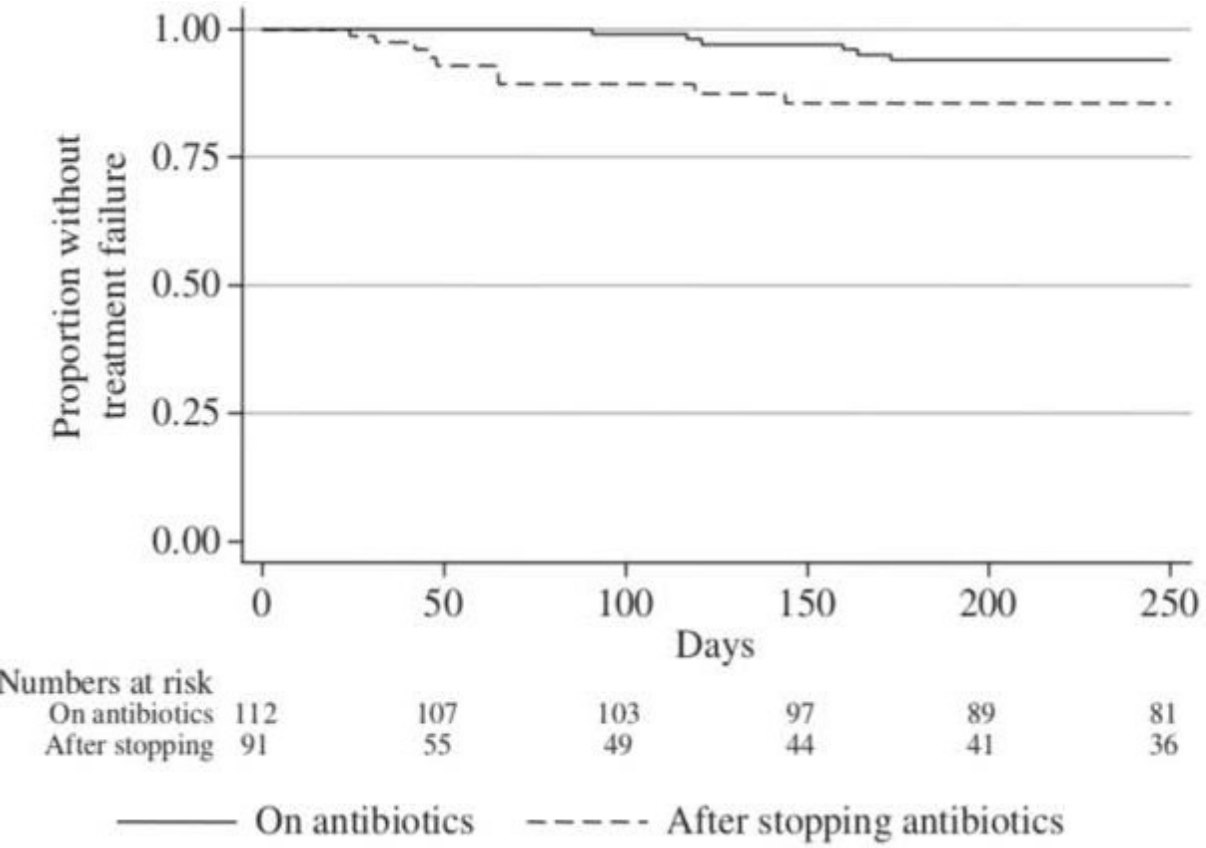


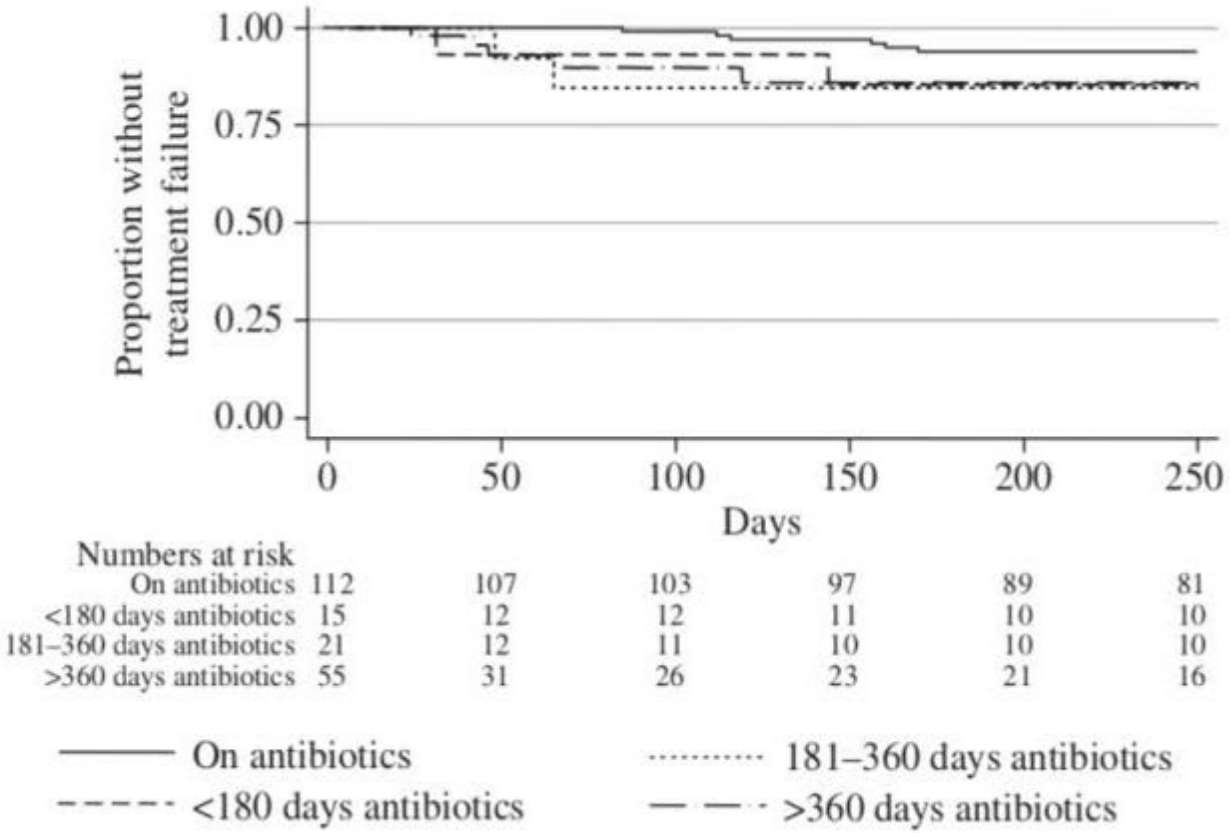
Confirme le plus haut taux d'échec en cas:

- d'infection à *S. aureus*
- d'infection sur prothèse changée/révisée
- De lavage sous arthoscopie

Byren et col. JAC 2009

Suppressif: reculer pour mieux sauter?





Byren et col. JAC 2009

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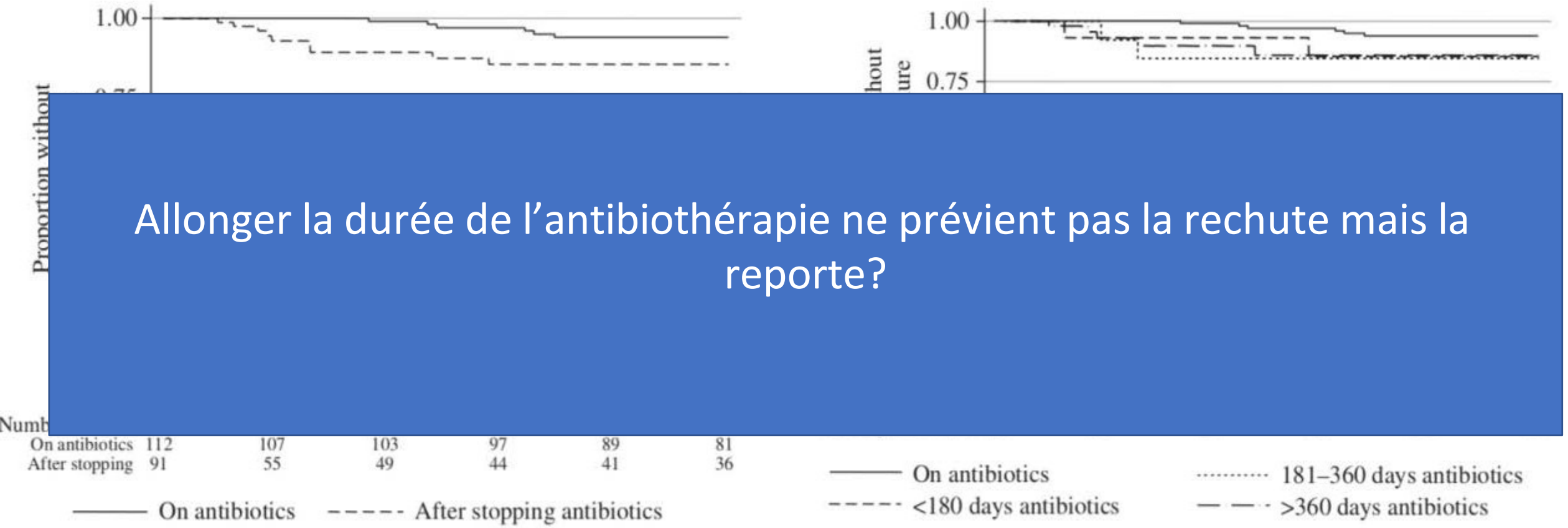

Allonger la durée de l'antibiothérapie ne prévient pas la rechute mais la reporte?

Byren et col. JAC 2009

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

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

Investigation performed at the Orthopaedic and Rheumatologic Institute, Cleveland Clinic Foundation, Cleveland, Ohio

- première étude comparative
- Methodologie: Entre la cohorte et le cas-témoins
- Score de propension sur:
  - L'age
  - sexe,
  - IMC
  - Score de Charlson
  - Nb e PEC chirurgicale
  - Type de chirurgie septique
  - Traitement curatif
  - Micro-organisme (staphylococcus aureus vs les autres)

Siquiera et col. J Bone Joint Surg Am. 2015

Résultats

TABLE I Results of Univariate Analyses Comparing Baseline Characteristics Between Suppression and Non-Suppression Groups

Variable	Suppression Group (N = 92)	Non-Suppression Group (N = 276)	P Val
Charlson comorbidity index*	4 [3, 5]	4 [2, 5]	0.34
Age† *(yr)*	63.7 ± 11.7	64.2 ± 11.5	0.72
BMI† *(kg/m²)*	33.6 ± 9.2	33.2 ± 8.6	0.71
Sex‡			0.90
Female	36 (39.1)	112 (40.6)	
Male	56 (60.9)	164 (59.4)	
Index surgery‡			0.63
Irrigation and debridement with polyethylene exchange	54 (58.7)	152 (55.1)	
2-stage revision	38 (41.3)	124 (44.9)	
No. of previous revisions*	1 [0, 3]	1 [0, 2]	0.37
Pathogen‡			0.33
S. aureus	44 (47.8)	114 (41.3)	
Non-*S. aureus*	48 (52.2)	162 (58.7)	
Joint‡			0.94
Knee	71 (77.2)	210 (76.1)	
Hip	21 (22.8)	66 (23.9)	
Duration of symptoms* *(days)*	30 [7, 90]	14 [5, 45]	0.02
Duration of intravenous antibiotic therapy* *(wk)*	6 [6, 6]	6 [6, 6]	0.17
Previous joint infection anywhere‡	41 (44.6)	130 (47.1)	0.76
Infecting organism class‡			0.21
Virulent§	54 (58.7)	147 (53.2)	
Indolent#	31 (33.7)	55 (20.0)	
Fungal and acid-fast bacilli	0	1 (0.3)	
Miscellaneous and contaminants	5 (5.4)	22 (7.2)	
Multiple organisms‡	18 (19.6)	35 (12.7)	0.13

*The values are given as the median with the 25th and 75th percentiles in brackets. †The values are given as the mean and standard deviatio
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Siquiera et col, J Bone Joint Surg Am. 2015

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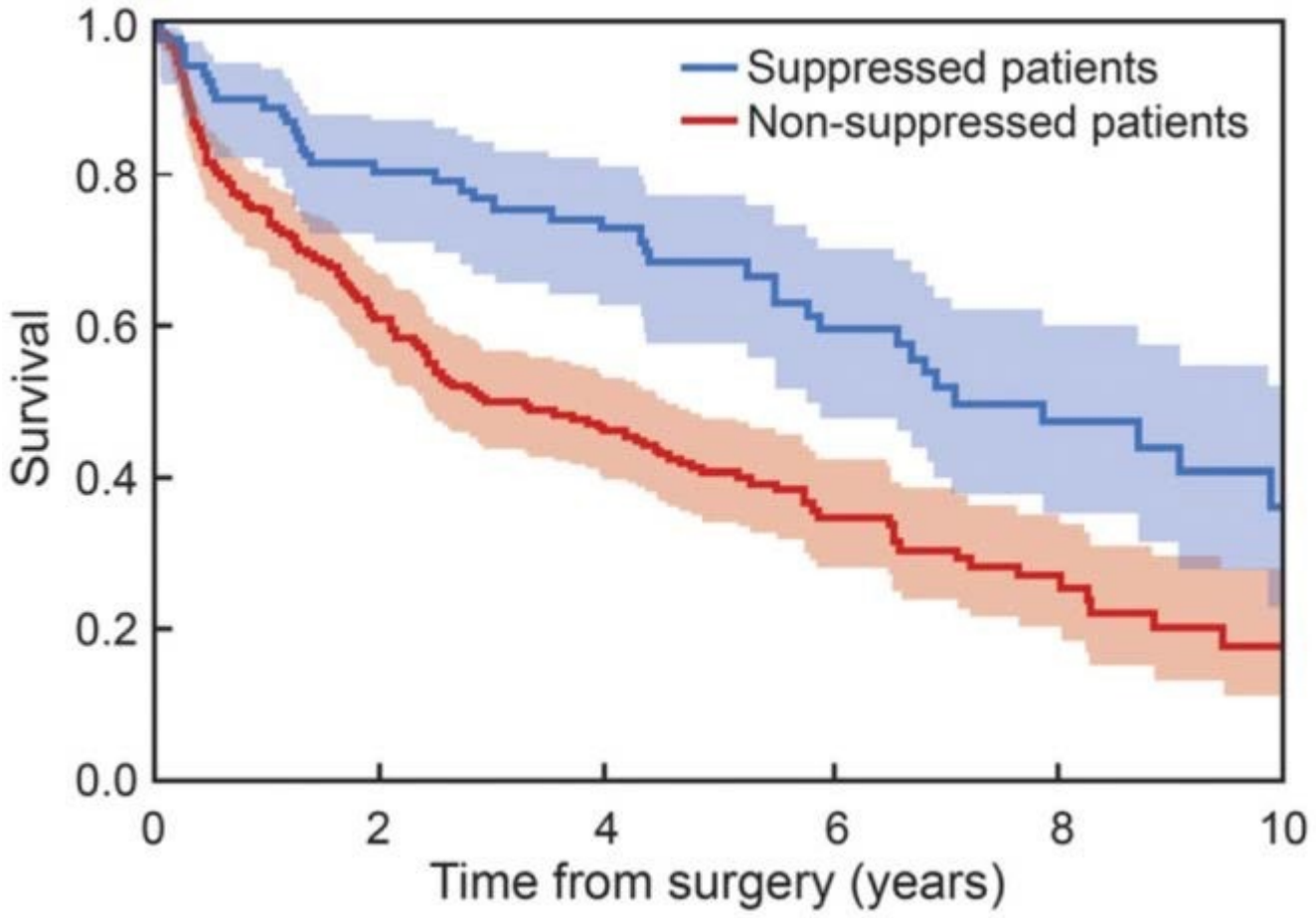
organisms. #Includes coagulase-negative Staphylococcus and Propionibacterium species.

Pourquoi les patients similaires ont-ils eu des PEC différentes?

Siquiera et col, J Bone Joint Surg Am. 2015

Résultats



Siquiera et col, J Bone Joint Surg Am. 2015

Echec du traitement et raison de pose de prothèse

Pt	Sex	Age	Indication AST	Indication prosthesis	Revised prosthesis	Affected joint	Type of prosthesis	Months after implantation	Surgeries before start AST (n)	Micro-organism(s)	Outcome
1	M	70	comorbidity	osteoarthritis	yes	hip	standard	54 (late)	lavage (3)	*S. pyogenes*	Successful
2	M	69	comorbidity/prognosis	malignancy	yes	hip	tumor	1 (early)	no	*S. epidermidis*	Successful
3	M	40	poor soft tissue	malignancy	yes	hip	tumor	1 (early)	lavage (1)	*S. aureus*	Successful
4	M	71	prognosis	malignancy	yes	hip	standard	1 (early)	no	*S. epidermidis, E.cloacae*	Successful
5	F	76	comorbidity	osteoarthritis	yes	knee	standard	30 (late)	no	*S. epidermidis*	Successful
6	F	55	comorbidity/prognosis	malignancy	yes	hip	standard	1 (early)	lavage (1)	*S. aureus, E. faecalis*	Successful
7	F	71	patient wish	osteoarthritis	yes	hip	standard	39 (late)	lavage (1)	*Bacteroides fragilis*	Successful
8	F	47	poor soft tissue/bone stock	osteoarthritis	yes	hip	standard	1 (early)	DAIR (1), lavage (1)	*S. epidermidis (rifampin R)*	Successful
9	M	80	comorbidity	fracture	no	shoulder	standard	1 (early)	lavage (1)	*P. acnes*	Successful
10	M	52	pore bonestock/prognosis	malignancy	no	knee	tumor	6 (delayed)	DAIR (1)	*S. aureus*	Successful
11	M	35	pore bonestock	osteomyelitis	yes	hip	tumor	44 (late)	no	*S. epidermidis*	Successful
12	M	21	prognosis	malignancy	no	knee	tumor	24 (late)	excision sarcoma	*P. acnes*	Successful
13	M	73	poor soft tissue/bone stock	fracture	yes	hip	standard	78 (late)	DAIR (1), lavage (2)	*S. aureus*	Successful
14	M	88	comorbidity/prognosis	osteoarthritis	no	knee	standard	1 (early)	lavage (2)	*S. epidermidis*	Successful
15	F	54	poor bonestock	RA	yes	knee	tumor	27 (late)	no	*S. aureus*	Failed [1]
16	M	70	comorbidity/prognosis	RA	yes	knee	standard	176 (late)	lavage (1)	*S. aureus*	Failed [2]
17	F	59	poor soft tissue/bone stock	osteoarthritis	yes	hip	tumor	6 (delayed)	resposition (3)	*S. aureus, S. epidermidis*	Failed [1]
18	F	67	poor soft tissue	fracture	no	shoulder	standard	7 (delayed)	lavage (2)	*S. aureus*	Failed [2]
19	M	58	patient wish	malignancy	no	hip	tumor	2 (early)	DAIR (2)	*E.coli* (ESBL+), *E. faecalis*	Failed [2]
20	M	68	poor soft tissue	fracture	no	hip	tumor	43 (late)	DAIR (1), lavage (2)	*S. agalactiae*	Failed [3]
21	F	65	comorbidity	RA	yes	hip	tumor	9 (delayed)	DAIR (1)	*S. epidermidis*	Failed [1]

Wouthuyzen-Bakker et col, j bone joint inf, 2017

Ce qu'il ne faut pas faire!

Table 1. Clinical Characteristics of the Cohort (N = 510)

Variable	No. (%)
Age, y, mean (SD)	70.4 (11)
Sex	
Female	294 (58)
Male	216 (42)
Body mass index, [a] mean (SD)	32.1 (7.6)
Joint	
Knee	254 (50)
Hip	256 (50)
Arthroplasty	
Primary	351 (69)
Cemented	392 (77)
Comorbidities	
Diabetes mellitus	101 (20)
Heart failure	55 (11)
Rheumatoid arthritis	48 (9)
Chronic obstructive pulmonary disease	43 (8)
Chronic kidney disease	31 (6)
Liver cirrhosis	9 (2)
Alcohol use [b]	88 (21)
Active smoking [c]	57 (14)
History of fracture	50 (10)
Infection type	
Monomicrobial	327 (64)
Polymicrobial	160 (31)
Bacteremia	78 (15)
Microbial etiology	
Staphylococcus aureus	193 (38)
Coagulase-negative staphylococci	146 (29)
Streptococcus species	97 (19)
Enterococcus species	59 (12)
Other gram-positive bacteria	92 (18)
Gram-negative bacteria	88 (17)
Anaerobic bacteria	12 (2)
Therapy	
Rifampin use	282 (55)
Quinolone use	221 (43)
Modular component exchange	239 (47)

[a]Missing in 25 cases.
[b]Denominator was 410.
[c]Denominator was 411.

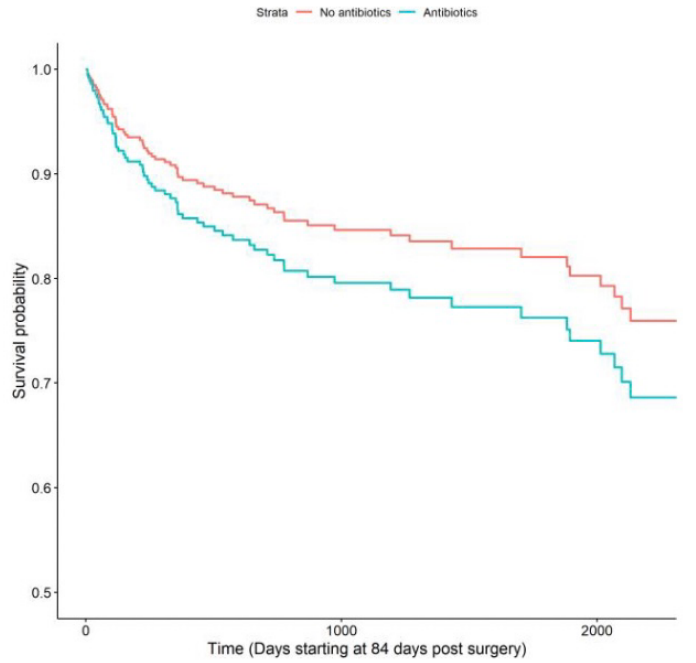


Figure 1. Estimated survival curve for treatment failure on and off Suppressive Antibiotic Therapy based on Cox model.

Table 2. Analysis of Treatment Outcomes With Suppressive Antibiotic Therapy as a Time-Varying Covariate

Group	No. of Patients	No. of Events	HR (95% CI)	*P* Value
Overall	510	66	1.37 (.79–2.39)	.27
PJI				
Knee	255	49	1.38 (.72–2.65)	.33
Hip	255	17	0.87 (.25–3.02)	.83
Knee after 180 d	236	37	1.02 (.50–2.10)	.95
Acute infection				
Early	367	30	1.41 (.63–3.17)	.40
Late	143	36	0.95 (.42–2.19)	.91
Cohort				
United States	184	36	0.36 (.11–1.15)	.09
Netherlands	236	16	11.46 (2.08–63.03)	.01
Spain	90	14	0.62 (.10–3.93)	.61

Geno Tai, OFID 2024

Auteurs	Design de l'étude	Effectif suppressif	Antibiothérapie curative	Durée moyenne d'antiobiothérapie suppressive	Chirurgie	Antibiothérapie suppressive : molécule utilisée / effets indésirables	Succès	Définition Echec et délai suivi
Pavoni CMI 2004	Rétrospectif 1995-2003	N=34	IV 6 semaines Rifampicine	> 6 mois	Hétérogène (14/34 DAIR)	Hétérogène / pas d'arrêt pour EI	91%	Clinique Suivi 9-57 mois
Marculescu CID 2006	Rétrospectif 1995-1999	N=88	28j IV Absence de Rifampicine	5-2673 jours (médiane à 541 jours)	DAIR	Hétérogène / NR	52%	Clinico-biologique Suivi = 700 jours (1-2779)
Koeppe IDCP 2008	Rétrospectif	N=12	IV/PO moyenne 48jRifampicine	NR	NR	NR	83%	Clinique Suivi = 28 mois (4-48)
El Helou EJCMID 2010	IPA SA et SCN 3 cohortes : -1 prospective P (n=14) -2 rétrospective R1 (n=31) et R2 (n=56)	P : N=13 R1 : N=24 R2 : N=34	P : 3/6 mois dont 4 semaines IV avec rifampicine R1 : 4 semaines IV avec rifampicine R2 : 4 sem IV sans rifampicine	P : 192 jours (140-306) R1 : 183 jours (3-323) R2 : 322 jours (6-365)	DAIR	Hétérogène / Effets indésirables : P=14% R1=29% R2=16%	P=13/14 (93%) R1= 21/31 (68%) R2 = 35/56 (63%)	Suivi à un an : clinique, radiologique, bactériologique
Prendki IJID 2014	Rétrospectif 2004 – 2008 Patients > 80 ans	N=38	59 jours (15-90) Rifampicine	> 6 mois	Hétérogène, chirurgie pour seulement 9/38 patients	Hétérogène / 10,5%	60%	Clinico-biologique Suivi médian : 24 mois

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			sans rifampicine					
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Hétérogénéité de:
-patients
-traitements
-suivi
Efficacité: 50 à 93%

Quels antibiotiques?

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

IDSA 2013

Antibiothérapie suppressive sans chirurgie = palliative?

- 21 Patients âgés (86 ans) aux multiples comorbidités
- Pas de PEC chirurgicale
- Monothérapie pour la plupart des patients
- Observations en fin de suivi (suivi médian: 17.3 mois (1.4- 56.6)):
  - 8 patients ont présenté des évènements
    - 1 effet secondaire
    - 2 décès sans lien avec l'infection
    - 3 sepsis
    - 2 évolutions défavorables locales

Prendki et col, International Journal of Infectious Diseases 2017

Antibiothérapie suppressive sans chirurgie?

- 21 Patients âgés (86 ans) aux multiples comorbidités

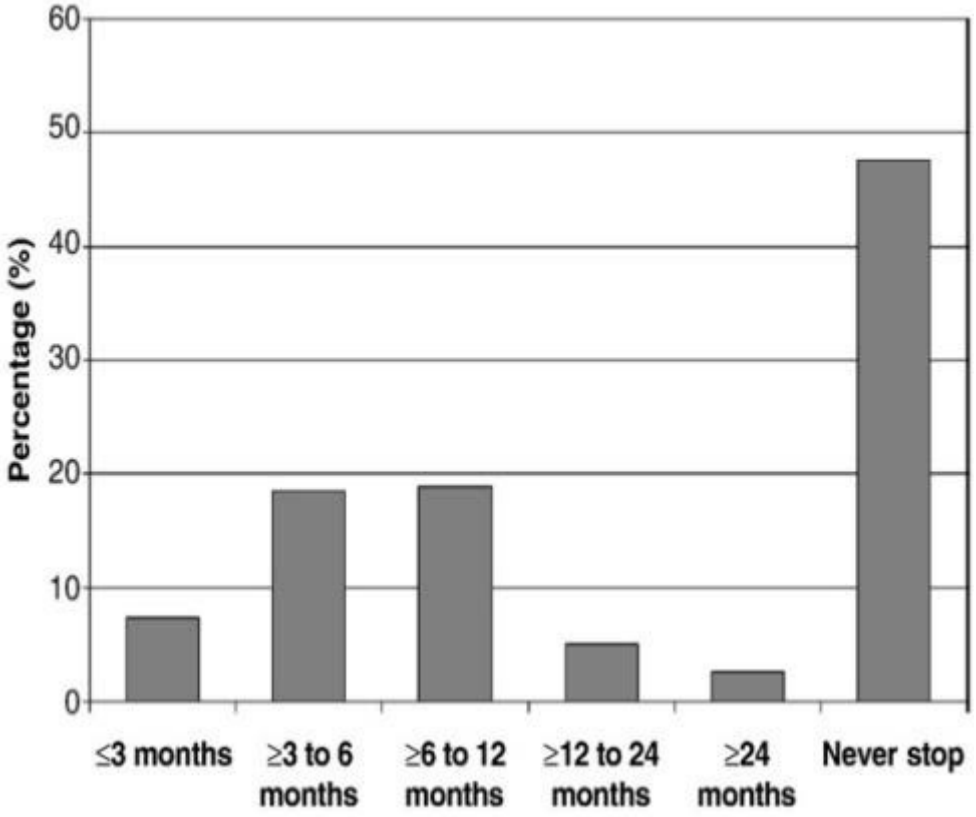
Place de la fistule?

- 3 sepsis
- 2 évolutions défavorables locales

Prendki et col, International Journal of Infectious Diseases 2017

Quelles sont les pratiques?

- Enquête portant sur 545 médecins sur la PEC des IOAP
- A propos de l'indication du DAIR et le traitement suppressif:
  - Risque opératoire: 76%
  - Délai long par rapport à la chirurgie initiale 50%
  - Refus de la chirurgie 1,3%
  - Comorbidités, âge avancé, espérance de vie courte: 2,1%
  - micro-organisme sensible, « faible virulence » 37,9%



Johannsson et col. DMID 2010

How We Approach Suppressive Antibiotic Therapy (SAT) Following Debridement, Antibiotics, and Implant Retention for Prosthetic Joint Infection

Nicolas Cortes-Penfield, et al. CID. 2023 August

Proposition indications SAT

Table 3. Factors We Suggest Guide Prescription of Suppressive Antibiotic Therapy Following DAIR

Factors strongly suggesting benefit from SAT after DAIR (the authors would offer SAT to most patients with at least 1 of these factors)
• Limited options for arthroplasty revision (ie, recurrent infection would require amputation, arthrodesis, or difficult wound coverage and likely result in a substantially worse functional outcome)a
• Recurrent PJI/prior PJI treatment failureb
• Infection with difficult-to-treat pathogens (*S. aureus*b and possibly othersa, eg *Pseudomonas aeruginosa* or Candida)
• Severe immunocompromise (ie, solid-organ or stem cell transplant, active chemotherapy, chronic systemic steroid therapy, TNF-inhibitor therapy, advanced HIV)a
• Underwent arthroscopy instead of open DAIR, or polyethylene liner was not exchangedb
Factors that may suggest benefit from SAT after DAIR (the authors would consider SAT in patients with at least 1 of these factors)
• Major end-organ disease predisposing to poor outcome (ie, cirrhosis, ESRD, or heart failure)b
• Age >75 y b or estimated life expectancy <10 ya
• Late hematogenous infection (onset >2 y after initial arthroplasty), particularly if associated with active bacteremiab
• Gram-negative infection that cannot be treated with a fluoroquinoloneb
• Patient strongly values the potential benefits of SAT over the potential risks after both have been explained in an informed shared-decision-making conversationa
Factors suggesting little benefit from SAT (the authors would not offer SAT to most patients with these factors)
• Completion of >6 wk of adjunctive rifampin for susceptible, monomicrobial coagulase-negative *Staphylococcus* spp. infection (as part of a minimum 3–6 mo total antibiotics)b
• Completion of a fluoroquinolone-based regimen for a gram-negative infectionb
• Culture-negative infectionb

Abbreviations: DAIR, debridement, antibiotics, and implant retention; ESRD, end-stage renal disease; HIV, human immunodeficiency virus; PJI, prosthetic joint infection; SAT, suppressive antibiotic therapy; TNF, tumor necrosis factor.

[a]Based on the consensus opinion of the authors, but not directly supported by the data identified in this review.

[b]Based on retrospective data identifying this as a risk factor for treatment failure.

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Conclusions

Quels patients?

- Ablation du matériel impossible:
  - Comorbidités
  - Raréfaction osseuse
  - Age
- Refus du patient
- Echecs multiples
- Micro-organisme résistant aux molécules de choix?
- Prise en charge initiale inappropriée?

Quels traitements?

- Pas de conclusion possible sur le traitement optimal:
  - Molécules?
  - Posologies?
- Cyclines au long court sont bien tolérées
- Rifampicine à éviter
- Place des nouvelles molécules
  - Tedizolide
  - Dalbavancine
- Durée: le plus longtemps possible

Ferry et col, Open Forum Infect Dis. 2018

Quelle efficacité?

- 50 à 80% de réussite
- Suivi souvent trop court
- Reculer pour mieux sauter: quelle importance?

Le traitement suppressif at-il un avenir?

- Pose primaire de prothèse X6 d'ici 2030
- Poses de plus en plus jeune (obésité et genou)
- Changement de prothèse plus fréquent
- Vieillissement/comorbidités

Merci de votre attention

Quelles recommandations?

3.3.2.2.6 Antibiothérapie suppressive

Elle consiste à maintenir une antibiothérapie orale dans la grande majorité des cas pour une durée indéterminée dans le but d'inhiber la multiplication bactérienne autour de la prothèse.

Elle ne s'applique qu'aux situations pour lesquelles la documentation bactérienne est connue et pour lesquelles l'infection persiste chez un malade inopérable ayant une prothèse non descellée. Elle ne se conçoit qu'avec des molécules bien supportées, d'administration aisée (voie orale) et pour lesquelles une monothérapie est possible [131, 242-244] **(grade C)**.

Contents lists available at ScienceDirect

The Journal of Arthroplasty

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Hip and Knee Section, Treatment, Antimicrobial Suppression: Proceedings of International Consensus on Orthopedic Infections

Federico Calabrò [1], Massimo Coen [1], Massimo Franceschini [1], Rafael Franco-Cendejas [1], Angela Hewlett [2], John Segreti [2], Eric Senneville [3]

- For patients in whom surgery is contraindicated because of the patient's general condition,
- when surgery is not expected to improve the functional outcome for patient, such as those with multiple prior failures
- for patients who refuse surgery.

Calabro et col, J of arthroplasty 2018