

Best-of

« résistance, nouvelles molécules »

David Lebeaux



Déclaration d'intérêts de 2014 à 2018

- **Intérêts financiers : NON**
- **Liens durables ou permanents : NON**
- **Interventions ponctuelles : OUI**
- **Intérêts indirects : NON**

Déclaration de liens d'intérêt avec les industries de santé en rapport avec le thème de la présentation (loi du 04/03/2002) :

Intervenant : Lebeaux David

Titre : Best-Of

- | | | |
|---|---|---|
| <input type="radio"/> Consultant ou membre d'un conseil scientifique | <input type="checkbox"/> OUI | <input checked="" type="checkbox"/> NON |
| <input type="radio"/> Conférencier ou auteur/rédacteur rémunéré d'articles ou documents | <input checked="" type="checkbox"/> OUI | <input type="checkbox"/> NON |
| <input type="radio"/> Prise en charge de frais de voyage, d'hébergement ou d'inscription à des congrès ou autres manifestations | <input checked="" type="checkbox"/> OUI | <input type="checkbox"/> NON |
| <input type="radio"/> Investigateur principal d'une recherche ou d'une étude clinique | <input type="checkbox"/> OUI | <input checked="" type="checkbox"/> NON |

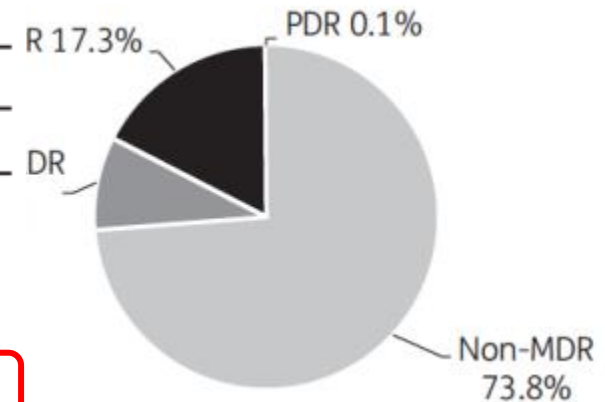
Bactéries Gram négatif : épidémiologie

- « Anciennes » nouvelles molécules
 - Ceftolozane/tazobactam (C/T)
 - Ceftazidime/avibactam (C/A)

Bactéries Gram négatif : épidémiologie

Table 1. Antimicrobial susceptibility data for the 1445 *P. aeruginosa* isolates tested

Antibiotic ^a	MIC ₅₀ (mg/L)	MIC ₉₀ (mg/L)	EUCAST 2018	
			%S	%R
TIC	32	256	18.8	81.2
TZP	8	128	73.5	26.5
CAZ	4	32	79.7	20.3
FEP	4	16	79.4	20.6
COZ/TZB	1	2	94.6	5.4
CAZ/AVI	2	8	94.2	5.8
ATM	4	32	-	14.8
IPM	2	16	72.8	15.6
MEM	1	16	70.1	14.1
CIP	0.25	>16	61.6	38.4
TOB	0.5	32	83.7	16.3
AMK	4	8	91.6	8.4
CST	1	2	94.6	5.4



, 2017
eruginosa (infections)

J Antimicrob Chemother
doi:10.1093/jac/dkz147

Spanish nationwide
resista

Ester del Barrio-Tofino¹, Laura
Gabriel Cabot¹,
on behalf of

Bactéries Gram négatif : épidémiologie

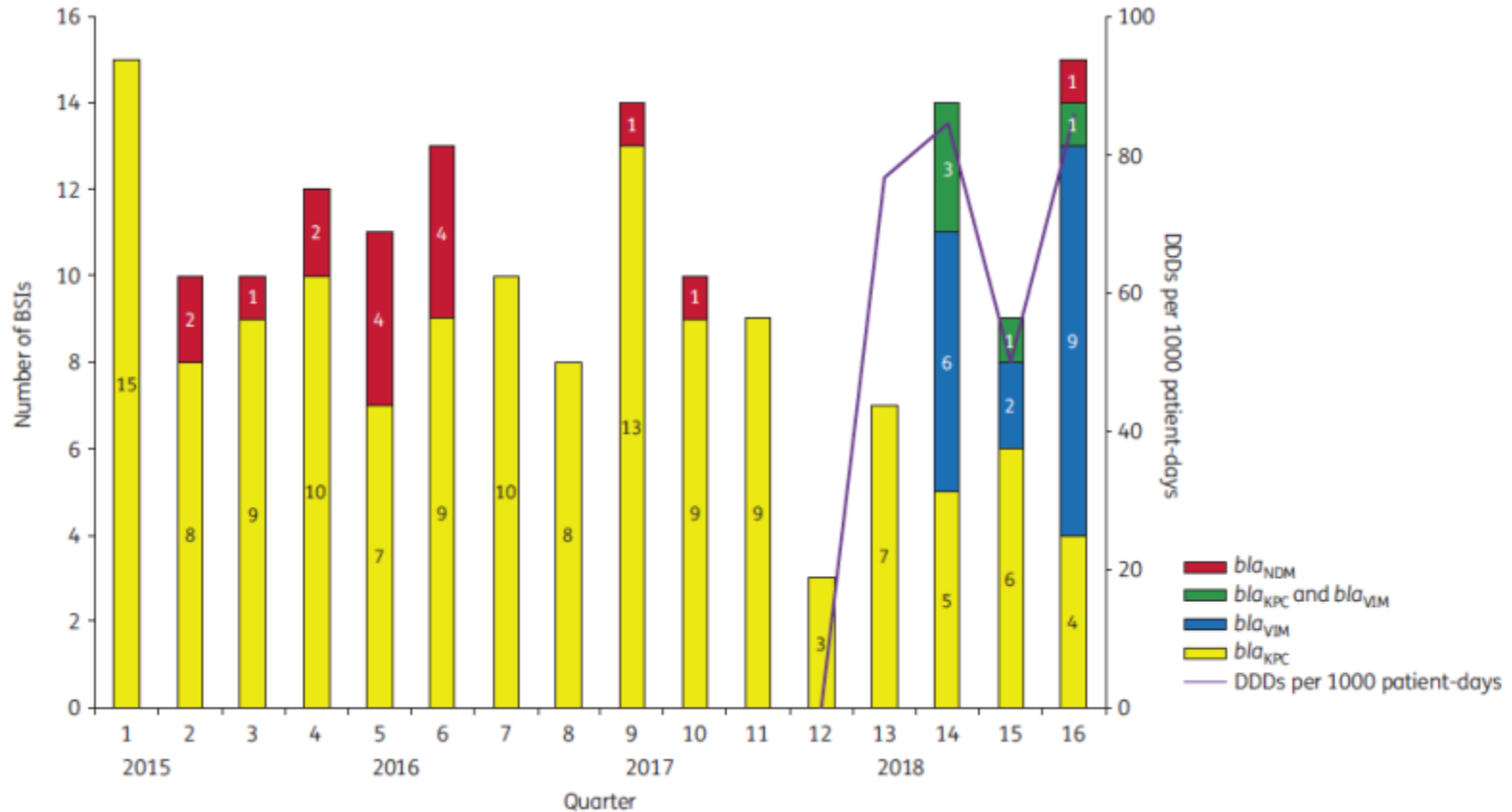
Antimicrobial agent	MIC ₅₀	MIC ₉₀	Range	CLSI ^a		EUCAST	
	(mg/L)			%S	%R	%S	%R
All isolates carrying ESBLs (n = 733)							
Ceftazidime-avibactam	0.25	0.5	≤0.015 to 4	100.0	0.0	100.0	0.0
Ceftolozane-tazobactam	0.5	2	≤0.12 to >16	90.2	7.3	83.9	16.1
Ceftazidime	16	>32	0.25 to >32	19.9	67.1	4.5	80.1
Aztreonam	>16	>16	0.5 to >16	10.5	78.7	1.0	89.5
Ceftriaxone	>8	>8	1 to >8	0.1	98.9	0.1	98.9
Cefepime	>16	>16	≤0.12 to >16	11.3	71.2 ^b	5.7	80.9
Piperacillin-tazobactam	4	64	0.25 to >128	84.4	7.6	71.2	15.6
Meropenem	0.03	0.06	≤0.015 to 2	99.5	0.0	100.0	0.0
Levofloxacin	8	>16	≤0.03 to >16	29.9	65.9	21.3	72.9
Gentamicin	1	>16	≤0.12 to >16	57.4	40.1	56.2	42.6
Amikacin	2	8	0.5 to >32	97.4	0.7	93.2	2.6
Trimethoprim-sulfamethoxazole	>8	>8	≤0.5 to >8	27.8	72.2	27.8	71.5
Tigecycline	0.25	1	≤0.06 to 8	98.1	0.1 ^c	95.8	1.9
Colistin	0.12	0.25	≤0.06 to >8	99.2 ^d		99.2	0.8

2017, USA

Castanheira M. *et al* 2019 AAC



Bactéries Gram négatif : épidémiologie dynamique



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Bactéries Gram négatif : C/T phase 3

PAVM et HAP sévère : cf topo JF Timsit JNI 2019
MERO VS C/T = non infériorité

Bactéries Gram négatif : C/A phase 3

**Efficacy and safety of ceftazidime-avibactam versus meropenem
in patients with nosocomial pneumonia, including ventilator-
associated pneumonia: Results from REPROVE, a randomised,
double-blind, multicentre phase 3 non-inferiority trial**

Etude randomisée 2013-2015

Non infériorité (C/A 2/0,5gX3/J VS méro 1gX3/J) 7-14j

720 pneumopathies nosocomiales (dont 1/3 PAVM)

Crit jugmt : guérison clinique à J21-25

Exclusion si infection monomicrobienne à Gram positif

Torres, A. *et al* 2018 LID

Patient Characteristics	Results
Age, median (IQR)	60 (48–70)
Weight (kg), median (IQR)	74.5 (64.0–90.5)
LOS, median (IQR)	31.5 (14.5–65.0)
Male gender, n (%)	120 (58.5)
Charlson Comorbidity Index, median (IQR)	4 (3–6)
Comorbidities, n (%)	
Solid organ transplant	35 (17.1)
Pulmonary disease	82 (40.0)
Diabetes mellitus	69 (33.7)
Heart failure	47 (22.9)
Renal disease	54 (26.3)
Liver disease	22 (10.7)
Cancer	33 (16.1)
APACHE II score, median (IQR)	19 (11–24)
ICU at time of infection, n (%)	105 (51.2)
Therapy Characteristics	Results
Hospital day	
Hospital day	
Concomitant	
Duration of c	
High-dose th	
Renally adjusted dose ^b , n (%)	63 (30.7)

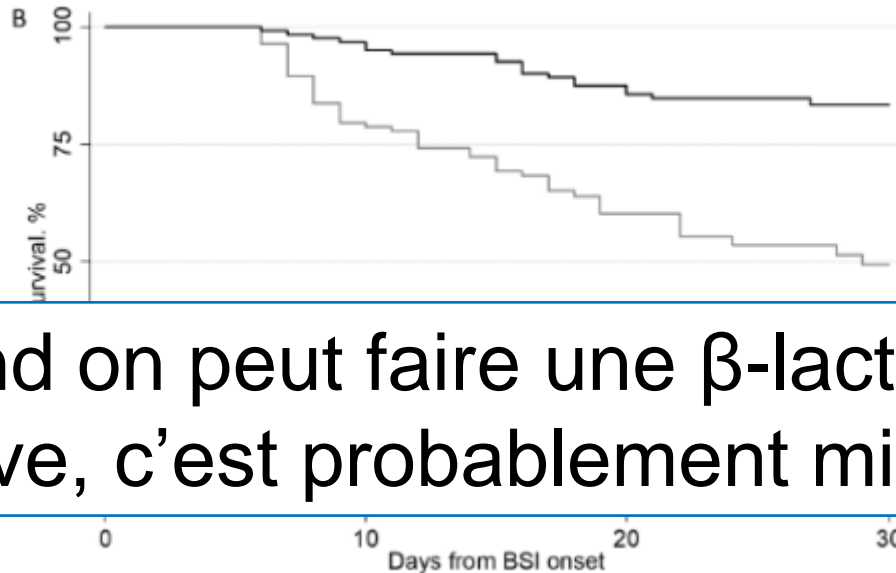
Effect	Point Estimate of Odds Ratio (OR)	95% Confidence Interval for OR
Mortality		
Ceftolozane-tazobactam started >4 days after culture	5.55	2.14–14.40
Age ≥60	0.20	0.07–0.57
Charlson Comorbidity Index (each 1 point)	1.24	1.01–1.52
Vasopressor use	5.68	2.15–14.98
APACHE II score (each 1 point)	1.14	1.08–1.22
Clinical success		
Ceftolozane-tazobactam started ≤4 days after culture	2.93	1.40–6.10
Vasopressor use	0.16	0.070–0.344
APACHE II score (each 1 point)	0.95	0.91–0.99
Microbiological cure		
Ceftolozane-tazobactam started <4 days after culture	2.59	1.24–5.38
		0.13–0.54
		0.05–0.30
		0.15–0.73

Importance de tester tôt les antibiotiques de 2^{ème} ligne

Bactéries Gram négatif : C/A en « vraie-vie »

Table 4. Multivariate Analysis of Factors Associated With 30-Day Mortality in the 208 Patients With *Klebsiella pneumoniae* Carbapenemase-producing *K. pneumoniae* Bacteremia

Variable	Without Propensity Score Adjustment		Adjusted for the Propensity Score for Therapy With CAZ-AVI	
	P Value	OR (95% CI)	P Value	OR (95% CI)
Mechanical ventilation				4.31 (1.99–9.33)
Charlson comorbidity index ≥ 3				3.30 (1.61–6.77)
Neutropenia				3.36 (1.25–8.75)
Septic shock				2.94 (1.46–5.92)
Any regimen that included CAZ-AVI				0.27 (.13–.57)



Quand on peut faire une β -lactamine active, c'est probablement mieux !

Bactéries Gram négatif : optimisation

European Journal of Clinical Microbiology & Infectious Diseases

http

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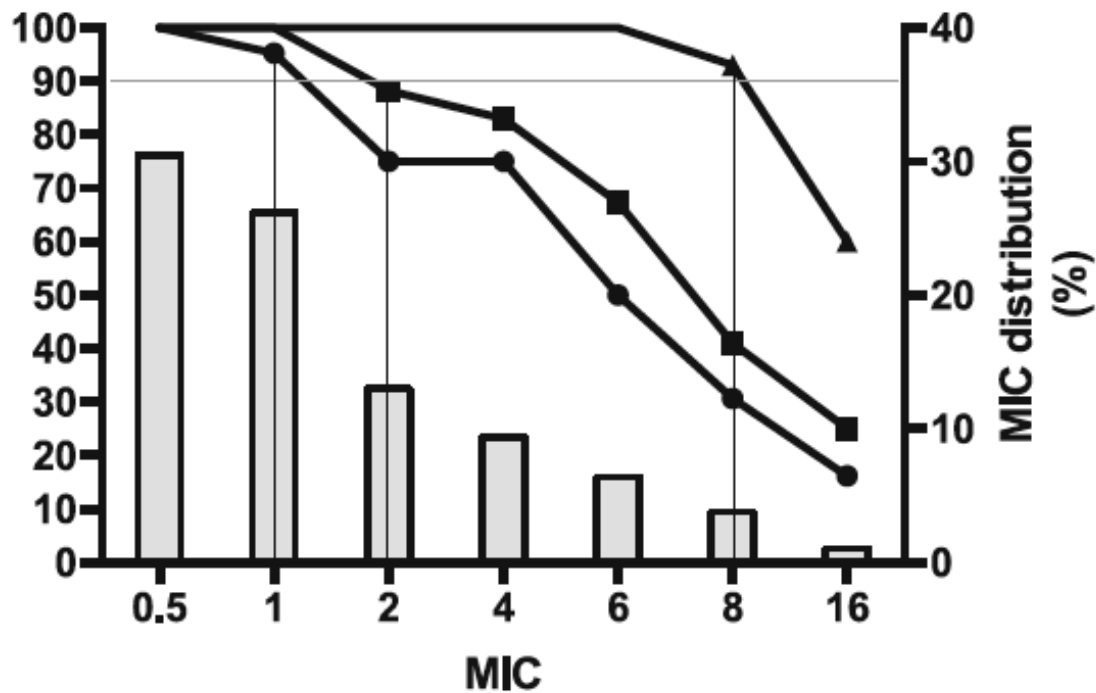
W

W

Be

All

PTA (%)



- 2g q8h (ORAE) (1h infusion)
- 2g q8h (ORAE) (4h infusion)
- ▲ 2g q8h (ORAE) (Continuous infusion)

$fT > 4 \times CMI$ of 90%

Mortalite hospitaliere = 15%



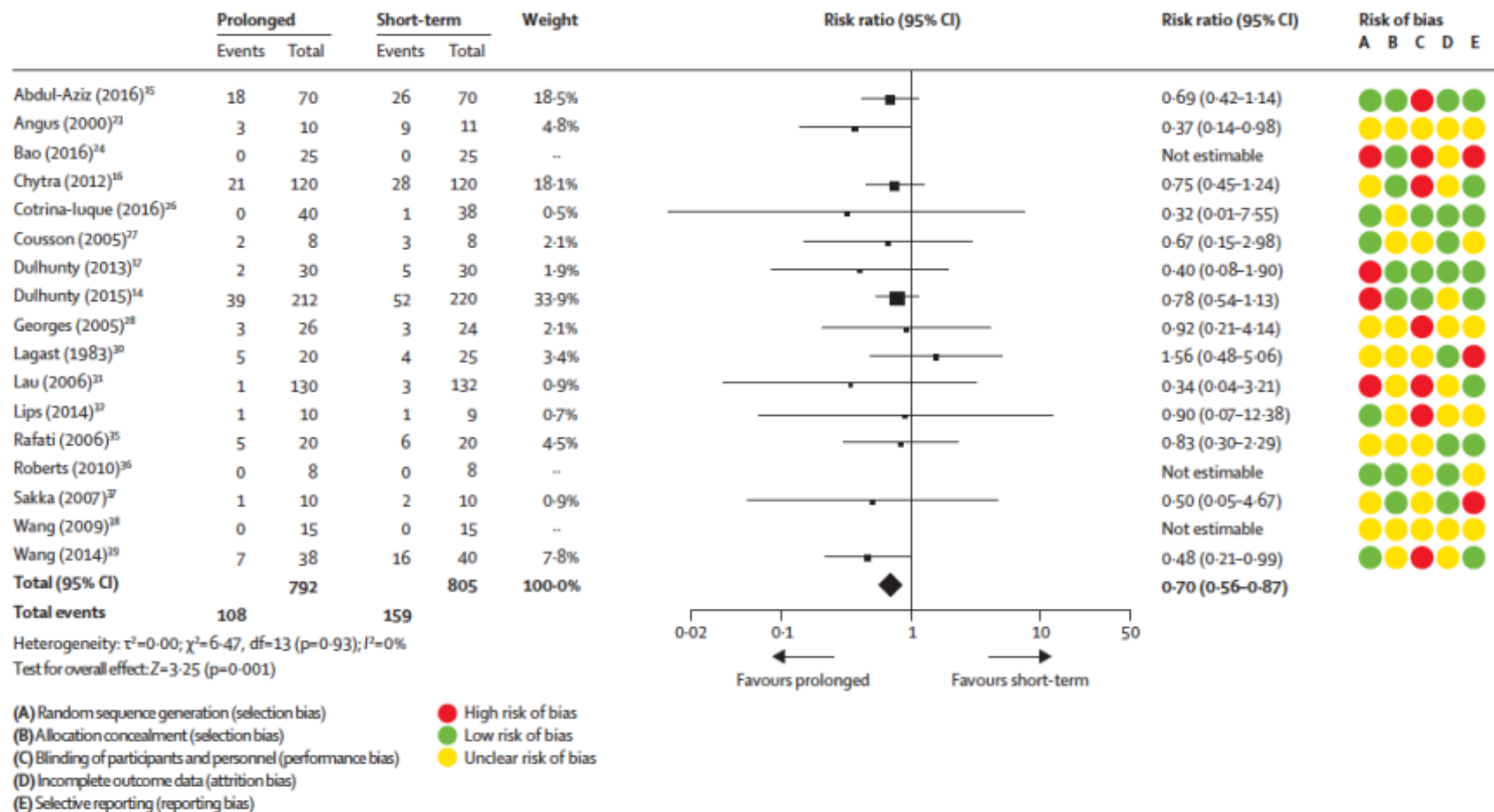


Figure 2: Forest plot of mortality among patients treated with prolonged versus short-term infusion of antipseudomonal antibiotics

Bactéries Gram négatif : nouveaux inhibiteurs

β-lactamine	Inhibiteur de β-lactamase	
Imipenem /Cilastatine	Relebactam	- Entérobactéries (ESBL, KPC, AmpC +/- OXA48) (<i>In vitro</i> : Schmidt-Malan, M. <i>et al</i> 2018 AAC / Galani, I. <i>et al</i> EJCMID 2019) - <i>P. aeruginosa</i> MDR (<i>In vitro</i> : Lob, SH. <i>et al</i> 2019 JAC)
Meropénème	Vaborbactam	- <i>In vitro</i> : Pfaller <i>et al</i> IJAA 2018 : KPC = 99% S, OXA-48 = 24% S, MBL = 4% S - MEM-VAB (272) VS Pipé/Tazo (273) UTI (TANGO-I → non infériorité : Kaye, K.S. <i>et al</i> JAMA 2018) - MEM-VAB VS BAT si CRE (TANGO-II → supériorité sur la « guérison clinique » : Wunderink, G.G. <i>et al</i> Infect Dis Ther 2018)

→ Pas révolutionnaire

Bactéries Gram négatif : nouveaux inhibiteurs

β-lactamine	Inhibiteur de β-lactamase	
Imipenem /Cilastatine	Relebactam	- Entérobactéries (ESBL, KPC, AmpC +/- OXA48) (<i>In vitro</i> : Schmidt-Malan, M. <i>et al</i> 2018 AAC / Galani, I. <i>et al</i> EJCMID 2019) - <i>P. aeruginosa</i> MDR (<i>In vitro</i> : Lob, SH. <i>et al</i> 2019 JAC)
Meropénème	Vaborbactam	- <i>In vitro</i> : Pfaller <i>et al</i> IJAA 2018 : KPC = 99% S, OXA-48 = 24% S, MBL = 4% S - MEM-VAB (272) VS Pipé/Tazo (273) UTI (TANGO-I → non infériorité : Kaye, K.S. <i>et al</i> JAMA 2018) - MEM-VAB VS BAT si CRE (TANGO-II → supériorité sur la « guérison clinique » : Wunderink, G.G. <i>et al</i> Infect Dis Ther 2018)
Méropénème	Nacubactam	<i>In vivo</i> UTI : activité contre Carbapénémases classes A, B et D (Monogue, M.L. <i>et al</i> AAC 2018)

Bactéries Gram négatif : nouveaux inhibiteurs

In Vivo Efficacy of Meropenem with a Novel Non- β -Lactam- β -Lactamase Inhibitor, Nacubactam, against Gram-Negative Organisms Exhibiting Various Resistance Mechanisms in a Murine Complicated Urinary Tract Infection Model

Monogue, M.L. *et al* AAC 2018

CAIRD no.	Country of origin	Carbapenemase class	β -Lactamase(s)	MIC			
				CAZ-AVI	Meropenem	Meropenem-Nacubactam (1:1)	Nacubactam
KP 593	Philippines	B	NDM-1; SHV-11; CTX-M-15; OXA-1	>64	64	4	>256
ECL 101	Vietnam	B	NDM-1; LAP-2; ACT-17; TEM-1	>64	256	2	1
EC 492	China	B	NDM-1; CTX-M-3	>64	256	1	1 to >256 ^c
ECL 103	Turkey	D	OXA-48	2	16	2	2
KP 599	United States	A	KPC-2; SHV-11	2	512	2	2 ^b
ECL 104							
KP 604							
KP 611							
KP 612							
KP 614	United Kingdom	D	OXA-48, OXA-1, SHV-76, TEM-1, CTX-M-15	2	128	8	2 to >256 ^c
KP 615	United Kingdom	A	KPC-3; SHV-11	2	128	1	2 ^b

De l'espoir contre les MBL

^aCAZ-AVI, ceftazidime-avibactam; EC, *Escherichia coli*; KP, *Klebsiella pneumoniae*; ECL, *Enterobacter cloacae*.

^bIsolates showing trailing or skipped wells with results above the MIC value.

^cThe MIC range is shown where it was not possible to establish a mode.

86% MBL Sensibles

MICs (mg/liter) by treatment*

		ATM	CZA	C/T	AMC	ATM+ CZA	ATM+ C/T	ATM+ AMC
	OXA-10 + CMY-16 + TEM-1	32	>256	>256	16	0.125	24	8
<i>E. coli</i>	NDM-1 + CTX-M-15 + TEM-1	>256	>256	>256	12	1	>256	2
<i>E. coli</i>	NDM-1 + OXA-1 + OXA-2 + CTX-M-15 + TEM-1	>256	>256	>256	24	2	>256	8
<i>E. coli</i>	NDM-1 + CTX-M-15 + TEM-1	>256	>256	>256	32	6	>256	8
<i>E. coli</i>	NDM-4 + CTX-M-15 + OXA-1	>256	>256	>256	96	6	>256	4
<i>E. coli</i>	NDM-4 + CTX-M-15 + CMY-6	>256	>256	>256	>256	6	>256	24
<i>E. coli</i>	NDM-5 + TEM-1 + CTX-M-15	>256	>256	>256	96	8	>256	64
<i>E. coli</i>	NDM-6 + CTX-M-15 + OXA-1	>256	>256	>256	16	1	>256	2
<i>E. coli</i>	NDM-7 + ESBL	>256	>256	>256	96	4	>256	32
<i>K. pneumoniae</i>	NDM-1 + CTX-M-15 + SHV-11 + OXA-1	>256	>256	>256	12	0.125	24	0.38
<i>K. pneumoniae</i>	NDM-1 + CTX-M-15 + CMY-4 + OXA-1	>256	>256	>256	32	0.75	>256	16
<i>K. pneumoniae</i>	NDM-1 + CTX-M-15 + OXA-1 + OXA-9 + TEM-1 + SHV-28 + SHV-11	>256	>256	>256	32	0.25	>256	3
<i>K. pneumoniae</i>	NDM-1 + OXA-1 + SHV-11	>256	>256	>256	12	0.047	0.094	0.094
<i>K. pneumoniae</i>	NDM-1 + OXA-1 + CTX-M-15 + TEM-1 + SHV-28 + OXA-9 + CMY-6	>256	>256	>256	16	0.047	3	0.25
<i>K. pneumoniae</i>	NDM-1 + TEM-1 + CTX-M-15 + SHV-12 + OXA-9	>256	>256	>256	12	0.125	96	1
<i>K. pneumoniae</i>	NDM-1 + TEM-1 + CTX-M-15 + SHV-12 + OXA-9	>256	>256	>256	12	0.125	96	0.5
<i>K. pneumoniae</i>	NDM-1 + TEM-1 + CTX-M-15 + SHV-11 + OXA-1	>256	>256	>256	12	0.064	8	0.38
<i>Salmonella enterica</i>	NDM-1 + CTX-M-15 + TEM-1 + OXA-1 + OXA-9 + OXA-10	>256	>256	>256	16	0.125	16	0.5
<i>E. coli</i>	VIM-1 + CTX-M-3	>256	>256	>256	16	0.125	24	0.5
<i>E. coli</i>	VIM-4 + ESBL	16	>256	>256	24	1.5	24	16
<i>K. pneumoniae</i>	VIM-1 + SHV-5	>256	>256	>256	>256	0.25	192	1.5
<i>K. pneumoniae</i>	VIM-1 + SHV-12	>256	>256	>256	16	0.125	4	0.25
<i>K. pneumoniae</i>	VIM-1 + ESBL	>256	>256	>256	>256	12	16	12
<i>K. pneumoniae</i>	VIM-1 + SHV-5	16	>256	>256	>256	6	12	32
<i>K. pneumoniae</i>	VIM-1 + TEM-1 + SHV-5	96	>256	>256	>256	96	64	48
<i>K. pneumoniae</i>	VIM-1 + SHV-5	>256	>256	>256	24	0.25	8	0.75
<i>K. pneumoniae</i>	VIM-1 + SHV-5	>256	>256	>256	12	0.125	2	0.38
<i>K. pneumoniae</i>	VIM-19 + CTX-M-3 + TEM-1 + SHV-1	6	32	>256	16	0.047	2	1.5
<i>Enterobacter cloacae</i>	VIM-1 + SHV-70	256	128	>256	48	0.094	0.25	0.19
<i>E. cloacae</i>	VIM-4 + CTX-M-15 + TEM-1 + SHV-31	64	>256	>256	64	1	64	32
<i>Citrobacter freundii</i>	VIM-2 + TEM-1 + ESBL	16	16	>256	32	0.25	2	24
<i>C. freundii</i>	VIM-2 + TEM-1 + OXA-9 + OXA-10	32	24	>256	32	1.5	16	24
<i>E. coli</i>	IMP-8 + SHV-12	128	>256	>256	24	0.19	2	0.38
<i>K. pneumoniae</i>	IMP-8 + SHV-12	>256	48	>256	12	0.094	32	0.25

?

MBL



Aztreonam
Treatment
Producing

Cécile Emeraud^{a,b,c,d}
Laurent Dortet^{a,b,c}



20^{es} JN

Bactéries Gram négatif : nouvelles molécules

Short Communication

In vitro activity of cefiderocol, a siderophore cephalosporin, against a recent collection of clinically relevant carbapenem-non-susceptible Gram-negative bacilli, including serine carbapenemase- and metallo- β -lactamase-producing isolates (SIDERO-WT-2014 Study)



Krystyna M. Kazmierczak^{a,*}, Masakatsu Tsuji^b, Mark G. Wise^a, Meredith Hackel^a, Yoshinori Yamano^c, Roger Echols^d, Daniel F. Sahm^a

- **Céfidérocol**

- Céphalosporine se liant
- Entrée dans périplasm
- Spectre = BGN

9205 souches

In vitro

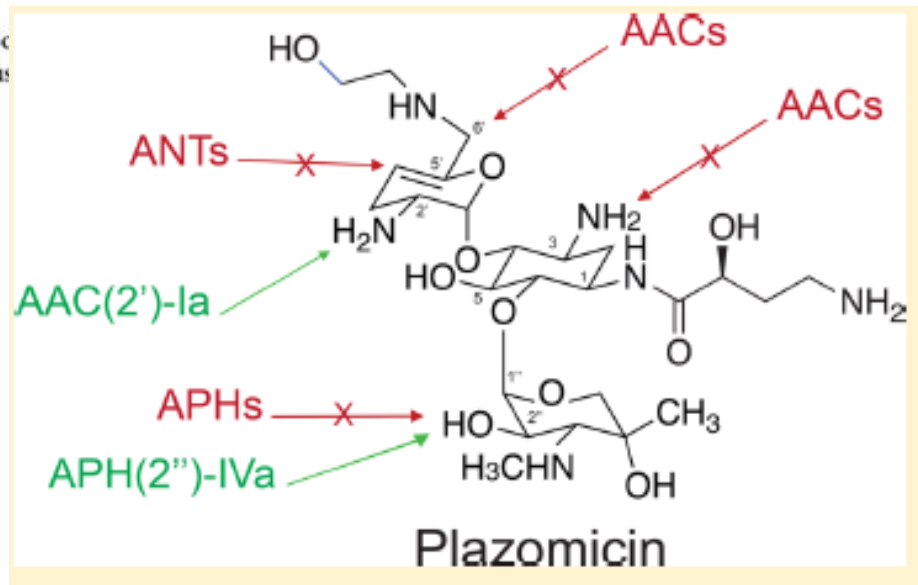
CMI \leq 4 μ g/ml pour 97% des souches

- Classes A
- **Classes B (VIM, IMP, NDM-1)**
- Classes D

Bactéries Gram négatif : plazomicine

Plazomicin Retains Antibiotic Activity against Most Aminoglycoside Modifying Enzymes

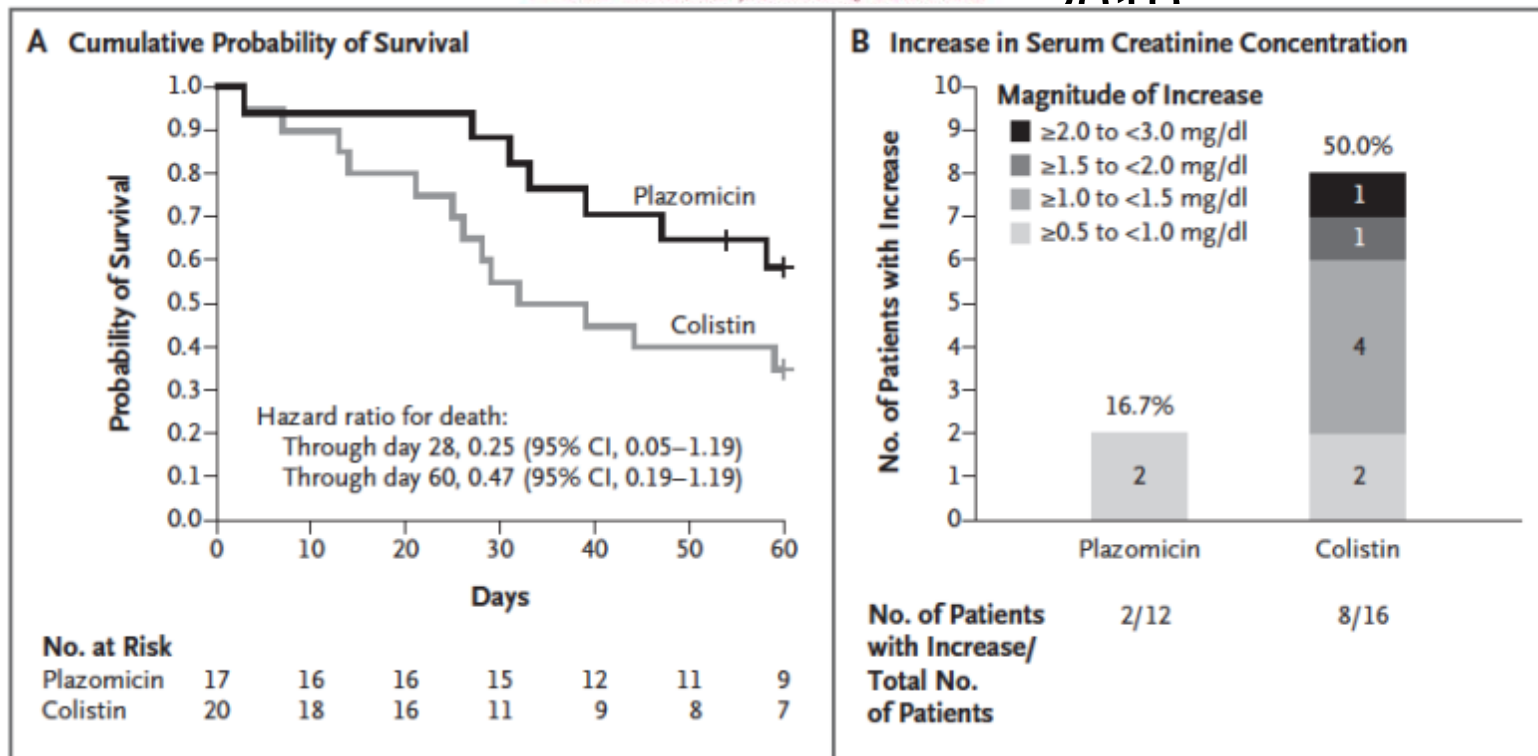
Georgina Cox,[†] Linda Ejim,[†] Peter J. Stogios,[‡] Kalinka Koteva,[†] Emily B. Arthur O. Sieron,[†] Alexei Savchenko,^{‡,||} Alisa W. Serio,[‡] Kevin M. Kraus



Bactéries Gram négatif : nouvelles molécules

The NEW ENGLAND JOURNAL of MEDICINE

2010



Bactéries Gram négatif : nouvelles molécules

Open Forum Infectious Diseases

BRIEF REPORT

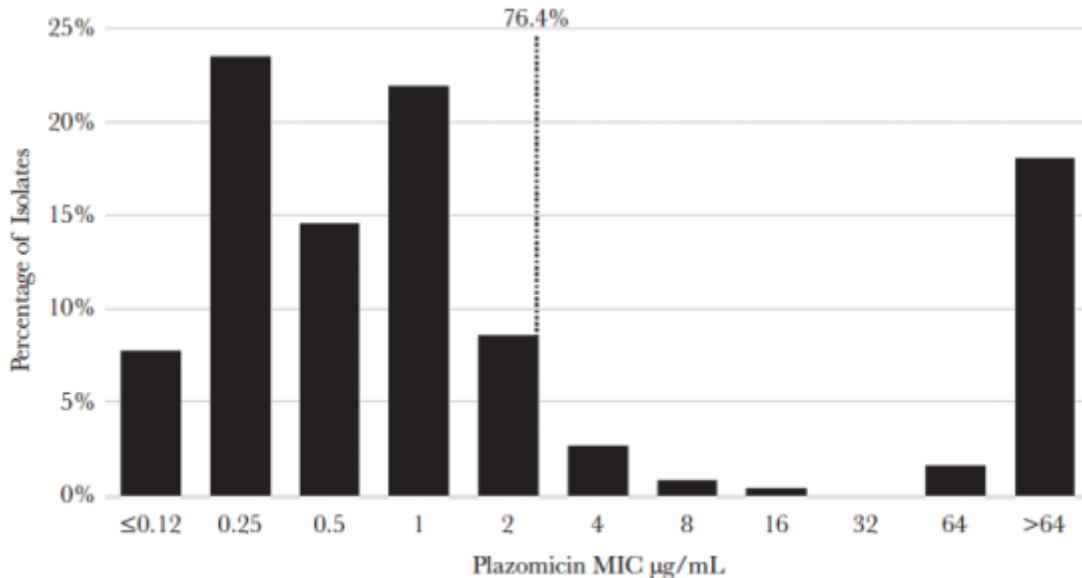
2019

Plazomicin Is Active Against Metallo- β -Lactamase-Producing Enterobacteriaceae

Alisa W. Serio, Tiffany Keepers, and Kevin M. Krause

Department of Clinical Microbiology, Achaogen, Inc., South San Francisco, California

488 MBL-producing strains



Bactéries Gram positif : linézolid

- 1 warning : émergence et diffusion de la résistance en cas d'utilisation systématique ++++
- A intégrer dans le traitement probabiliste des IOA

Bactéries Gram positif : linézolid

Journal of
Antimicrobial
Chemotherapy

J Antimicrob Chemother 2018; **73**: 41–51
doi:10.1093/jac/dkx370 Advance Access publication 30 October 2017

Long-lasting successful dissemination of resistance to oxazolidinones in MDR *Staphylococcus epidermidis* clinical isolates in a tertiary care hospital in France

Laurent Dortet^{1-4*}†, Philippe Glaser^{4,5†}, Najjby Kassis-Chikhani⁶, Delphine Girlich²⁻⁴, Philippe Ichai⁷, Marc Boudon⁷, Didier Samuel⁷, Elodie Creton²⁻⁴, Dilek Imanci⁸, Rémy Bonnin²⁻⁴, Nicolas Fortineau¹⁻⁴ and Thierry Naas¹⁻⁴

- Gène *cfr* sur un plasmide
- Corrélation avec consommation linézolid

Bactéries Gram positif : linézolid

Open Forum Infectious Diseases

MAJOR ARTICLE



Clinical Outcomes Associated With Linezolid Resistance in Leukemia Patients With Linezolid-Resistant *Staphylococcus epidermidis* Bacteremia

Stephanie A. Folan,¹ Kayleigh R. Marx,¹ Frank P. Tverdek,¹ Issam Raad,² Victor E. Mulanovich,² Jeffrey J. Tarrand,³ Samuel A. Shelburne,^{2,4,5} and Samuel L. Aitken^{1,5}

¹Division of Pharmacy, ²Department of Infectious Diseases, Infection Control, and Employee Health, ³Department of Laboratory Medicine, and ⁴Department of Genomic Medicine, The University of Texas MD Anderson Cancer Center, Houston, Texas; ⁵Center for Antimicrobial Resistance and Microbial Genomics, UTHealth McGovern Medical School, Houston, Texas

Staph coag-neg liné-R = 40%



Bactéries Gram positif : *S. epi* méti-R RFP-R

- Cf présentation Frédéric Laurent



Global spread of three multidrug-resistant lineages of *Staphylococcus epidermidis*

Jean Y. H. Lee¹, Ian R. Monk¹, Anders Gonçalves da Silva^{2,3}, Torsten Seemann^{3,4}, Kyra Y. L. Chua⁵, Angela Kearns⁶, Robert Hill⁶, Neil Woodford⁶, Mette D. Bartels⁷, Birgit Strommenger⁸, Frederic Laurent⁹, Magali Dodémont¹⁰, Ariane Deplano¹⁰, Robin Patel¹¹, Anders R. Larsen¹², Tony M. Korman¹³, Timothy P. Stinear^{13,15} and Benjamin P. Howden^{2,3,14,15*}

Bactéries Gram positif : tédizolid

- **2 phases 3 pour ABSSSI**
 - Tédi VS Liné : Xiaoju Lv *et al* AAC 2019
 - Tédi VS Liné : Mikamo, H. *et al* J Infect Chemother 2018
- **Question de la tolérance si traitement prolongé ?**

Bactéries Gram positif : tédizolid

Open Forum Infectious Diseases

ID CASE

Correction of Linezolid-Induced Myelotoxicity After Switch to Tedizolid in a Patient Requiring Suppressive Antimicrobial Therapy for Multidrug-Resistant *Staphylococcus epidermidis* Prosthetic-Joint Infection

Tristan Ferry,^{1,2,3,4} Cécile Batailler,^{2,3,4,5} Anne Conrad,^{1,2,3,4} Claire Triffault-Fillit,^{1,3,4} Frédéric Laurent,^{2,3,4,6} Florent Valour,^{1,2,3,4} and Christian Chidiac,^{1,2,3,4}; on behalf of the Lyon BJI Study Group

¹Service de Maladies Infectieuses, Hôpital de la Croix-Rouge, Hospices Civils de Lyon, France; ²Université Claude Bernard Lyon 1, France; ³Centre International de Recherche en Infectiologie, CIRI, Inserm U1111, CNRS UMR5308, ENS de Lyon, UCBL1, France; ⁴Centre Interrégional de Référence des Infections Ostéo-articulaires Complexes (CRIOAc Lyon), Hospices Civils de Lyon, France; ⁵Service de Chirurgie Orthopédique, Hôpital de la Croix-Rouge, Hospices Civils de Lyon, France; ⁶Laboratoire de Bactériologie, Institut des Agents Infectieux, Hôpital de la Croix-Rouge, Hospices Civils de Lyon, France

Ferry, T *et al* OFID 2018

20th JNI, Lyon du 5 au 7 juin 2019

Clinical Infectious Diseases

CORRESPONDENCE

Long-term Use of Tedizolid as Suppressive Therapy for Recurrent Methicillin-Resistant *Staphylococcus aureus* Graft Infection

TO THE EDITOR— Tedizolid is an oxazolidinone antibiotic recently approved by the Food and Drug Administration (FDA) for acute bacterial skin and skin structure infections (ABSSSIs). Initial phase I and II studies have suggested that tedizolid may offer an improved safety profile over line-

Nigo, M. *et al* CID 2018

Bactéries Gram positif : tédizolid



Thrombocytopenia with Tedizolid and Linezolid

Erica Yookyung Lee,^a Aisling R. Caffrey^{a,b,c}

Analyse données pharmacovigilance FDA

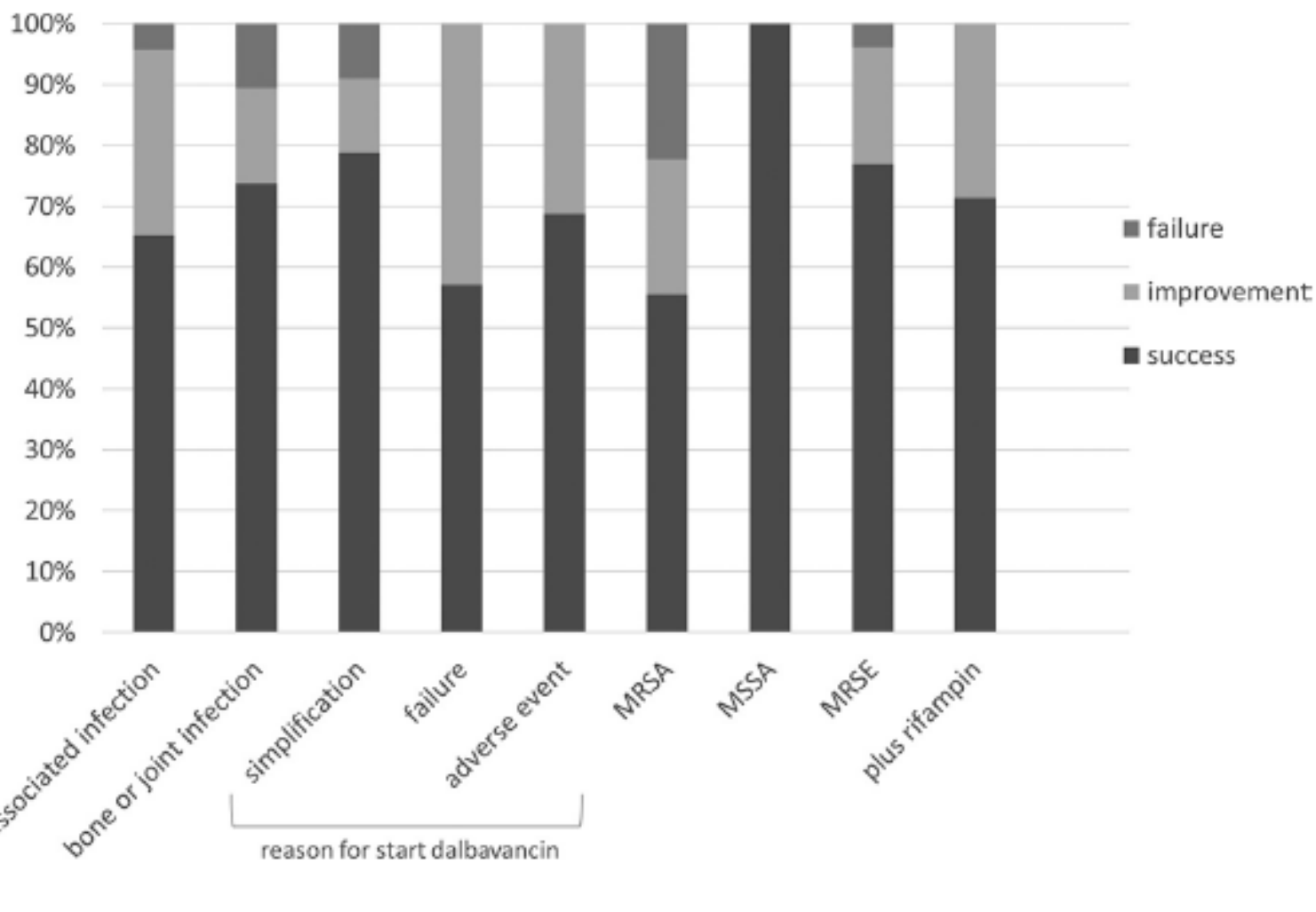
TABLE 1 Thrombocytopenia from adverse event reports

Medication	No. of adverse events	No. (%) with thrombocytopenia	Reporting odds ratio (95% CI)	Proportional reporting ratio (95% CI)
July 2014 to December 2016				
All medications	1,995,573	1,468 (0.07)		
Linezolid				
Tedizolid				

Nécessité de plus de données sur tédi prolongé

Bactéries Gram positif : ceftaroline

- **Ceftaroline VS Vanco (ABSSSI) : Claeys, K.C. *et al* Infect Dis Ther 2019**
- **Capture study experience**
 - Ostéomyélite (Johnson, L.B. *et al* BMC Infect Dis 2019) : n=150
 - Endocardite (Destache, C.J. *et al* IJAA 2019) : n= 55



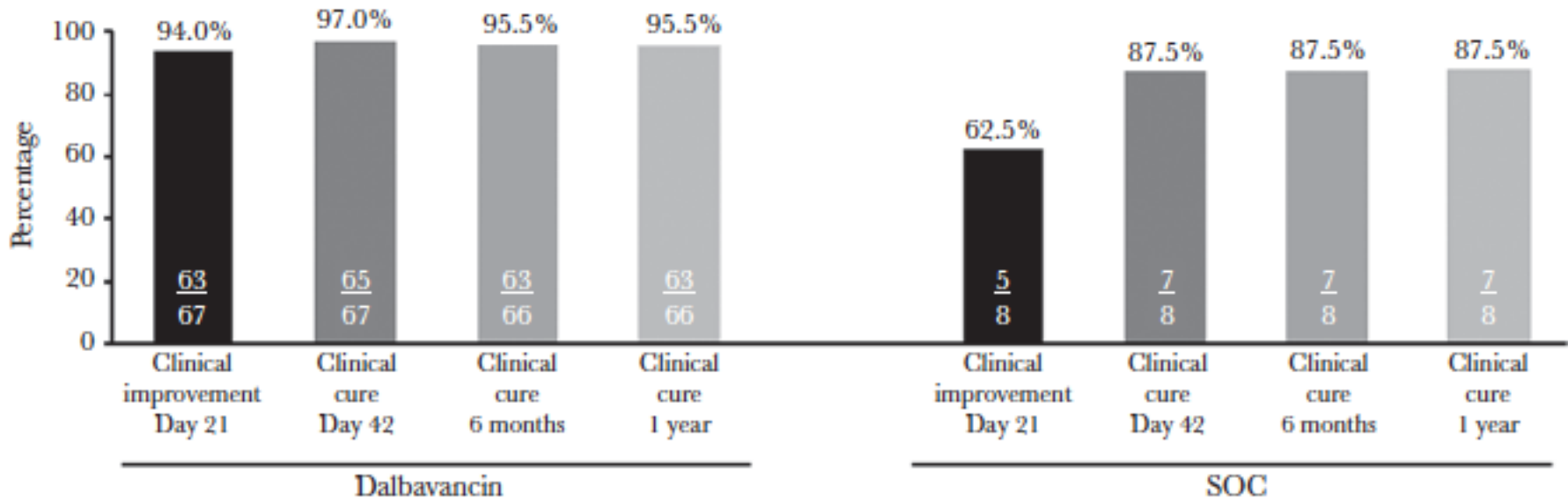
Bactéries Gram positif : dalbavancine

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MAJOR ARTICLE



A



Types d'infections ??

Bactéries Gram positif : dalbavancine

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BRIEF REPORT

Dalbavancin as Primary and Sequential Treatment for Gram-Positive Infective Endocarditis: 2-Year Experience at the General Hospital of Vienna

Selma Tobudic,¹ Christina Forstner,^{1,2} Heinz Burgmann,¹
Heimo Lagler,¹ Michael Ramharter,^{1,3} Christoph Steininger,¹
Matthias (G) Vossen,¹ Stefan Winkler,¹ and Florian Thalhammer¹

27 endocardites → Succès = 93%
Mais introduction dalba après négativation
des hémoc chez 24/27 patients

Bactéries Gram positif : daptomycine/β-lactam

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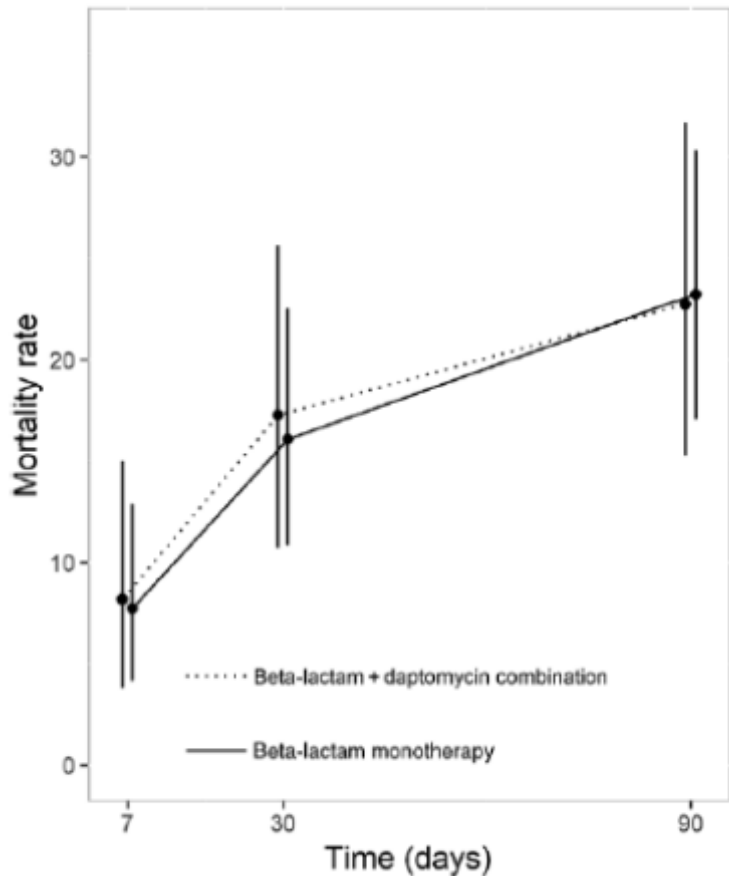
MAJOR ARTICLE



Impact of β-Lactam and Daptomycin Combination Therapy on Clinical Outcomes in Methicillin-susceptible *Staphylococcus aureus* Bacteremia: A Propensity Score-matched Analysis

Sara Grillo,^{1,2} Guillermo Cuervo,^{1,2,3} Jordi Carratalà,^{1,2,3,4} Immaculada Grau,^{1,2,4,5} Natalia Pallarès,^{6,7} Cristian Tebé,^{6,8} Lluïsa Guillem Tió,¹ Oscar I Carmen Ardanuy,^{2,4,5,9} M. Angeles Dominguez,^{2,3,4,9} Evelyn Shaw,^{1,2,3} Carlota Gudiol,^{1,2,3,4} and Miquel Pujol^{1,2,3}

355 *S. aureus* MS BSI (136 bi, 214 mono)
Etude de cohorte rétrospective
Monocentrique
Score de propension



Bactéries Gram positif : combinaisons

- CAMERA 2, ECCMID 2019,
- Prospective randomisée, BSI SARM
- Vanco ou Dapto + placebo ou β -lactam (flucloxacilline ou céfazoline)

- daptomycine/ β -lactamine :
 - A limiter aux bactériémies persistantes ?
 - Autres β -lactamine ?

Bactéries Gram positif : combinaisons



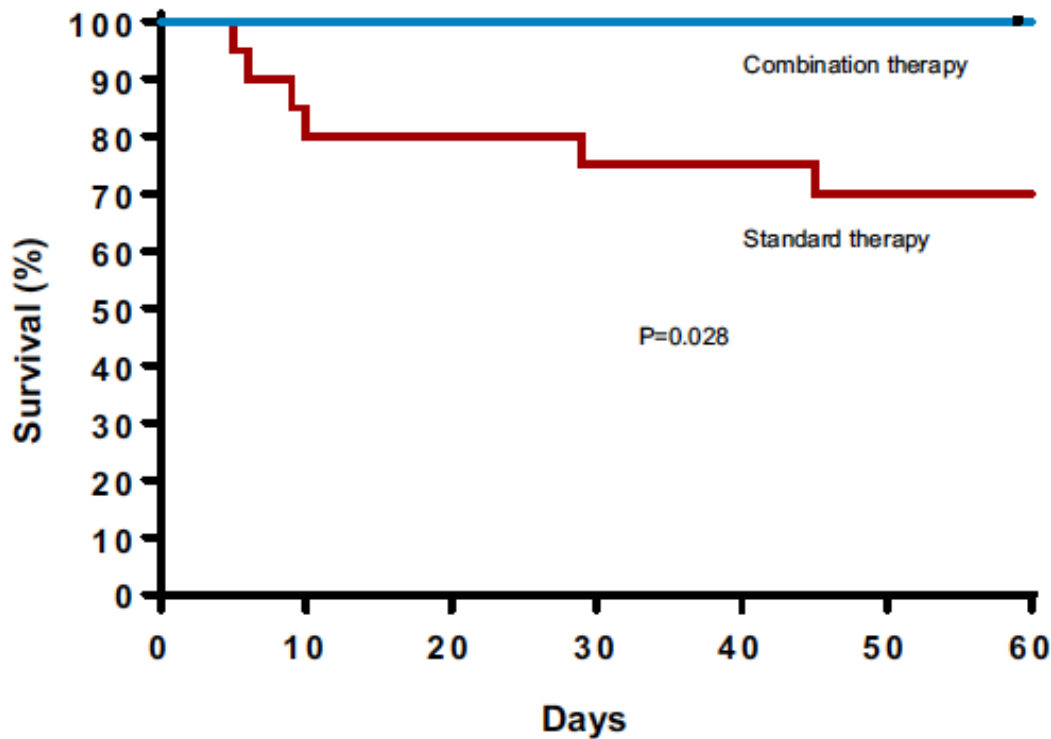
AMERICAN
SOCIETY FOR
MICROBIOLOGY

Antimicrobial Agents
and Chem

Clinical Data on
of Care Monoth
Staphylococcus

Matthew Geriak,^a Fadi Haddad,^b
Krista Ouellette,^a Marcus Zervos

CLINICAL THERAPEUTICS



Résistance : d'autres pistes que les antibio ?

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Journal of Hospital Infection 99 (2018) 481–486



Available online at www.sciencedirect.com

Journal of Hospital Infection

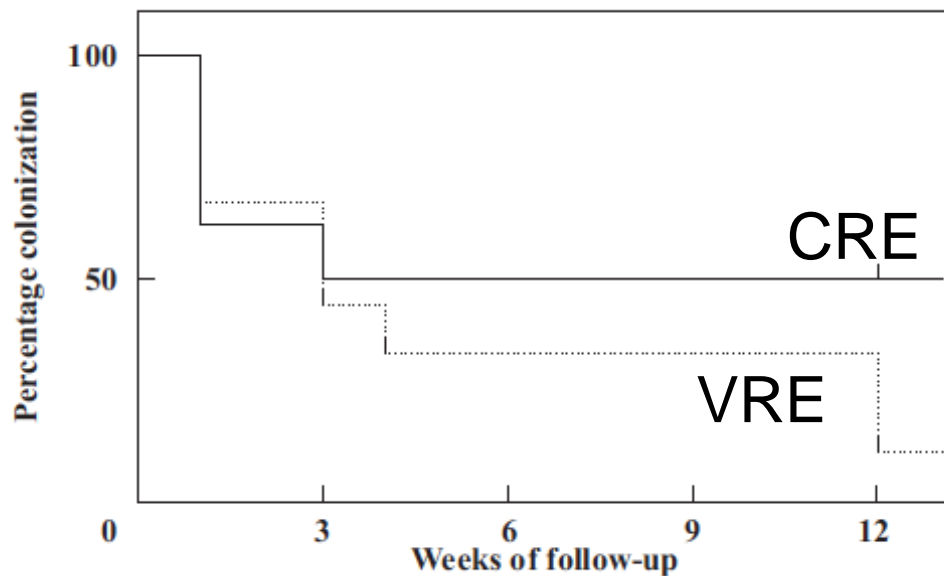
journal homepage: www.elsevier.com/locate/jhin



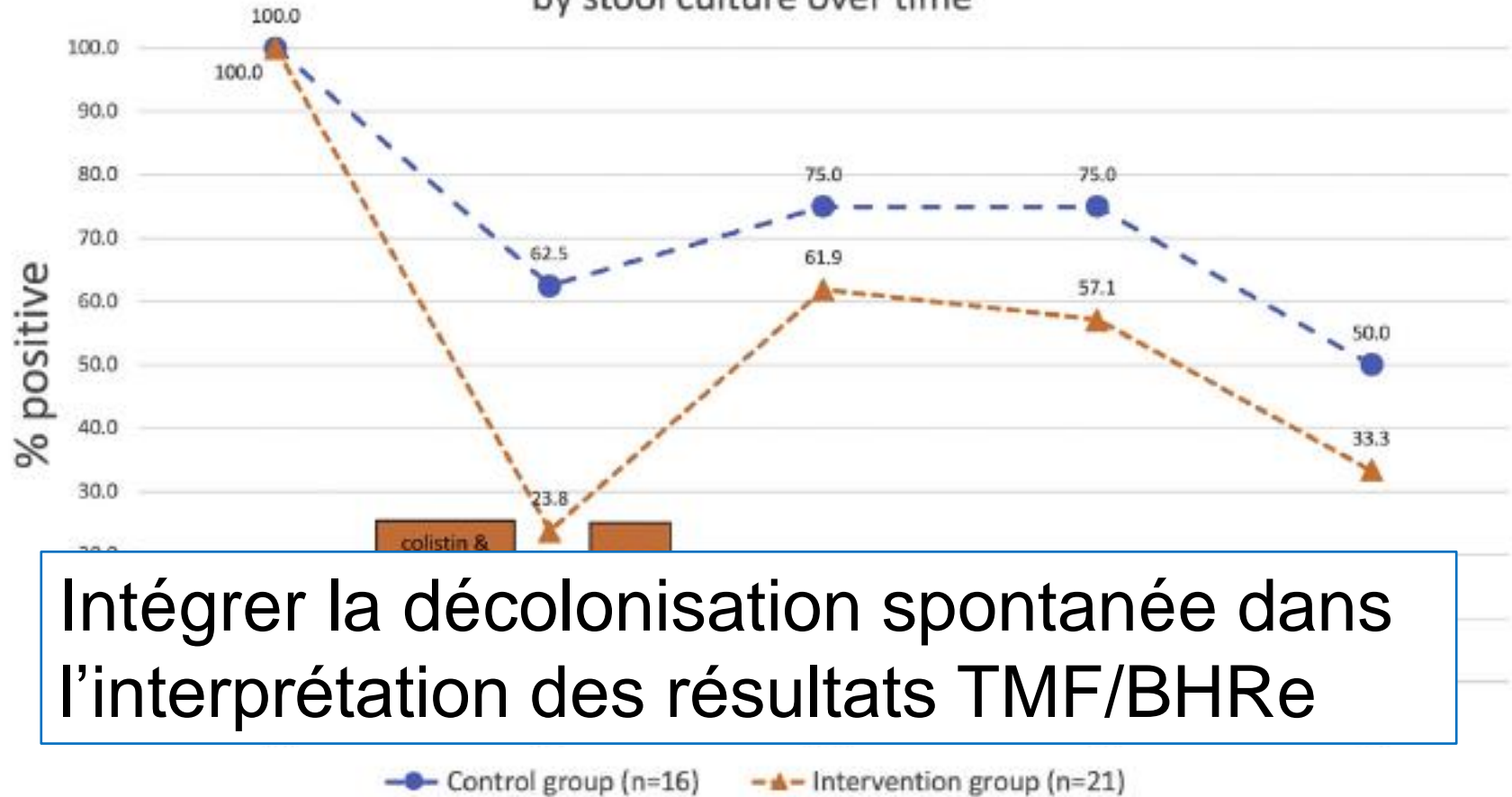
TMF et portage de BHRé
17 patients

Clearance of carbapenem-resistant Enterococci vs vancomycin-resistant enterococci carriage by faecal microbiota transplant: a prospective comparative study

A. Dinh^{a,*}, H. Fessi^b, C. Duran^a, R. Batista^c, H. Michelon^d, R. Lepeule^e, D. Vittecoq^f, L. Escaut^f, I. Sobhani^g, C. Lawr^h, P. Ronco^b, B. Davido^a



Evolution of detectable ESBL / CPE carriage by stool culture over time



Intégrer la décolonisation spontanée dans l'interprétation des résultats TMF/BHRe

Résistance : d'autres pistes que les antibio ?

Innovations for the treatment of a complex bone and joint infection due to XDR *Pseudomonas aeruginosa* including local application of a selected cocktail of bacteriophages

Tristan Ferry^{1-4*}, Fabien Boucher^{1,4,5}, Cindy Fevre⁶, Thomas Perpoint^{1,4}, Joseph Chateau^{1,2,4,5}, Charlotte Petitjean⁶, Jérôme Josse^{2-4,7}, Christian Chidiac^{1,2-4}, Guillaume L'hostis⁶, Gilles Leboucher⁸ and Frédéric Laurent^{2-4,7} on behalf of the Lyon Bone and Joint Infection Study Group[†]

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BRIEF REPORT

Salvage Debridement, Antibiotics and Implant Retention (“DAIR”) With Local Injection of a Selected Cocktail of Bacteriophages: Is It an Option for an Elderly Patient With Relapsing *Staphylococcus aureus* Prosthetic-Joint Infection?

Tristan Ferry,^{1,2,4} Gilles Leboucher,⁸ Cindy Fevre,⁶ Yannick Herry,^{2,4,7} Anne Conrad,^{1,2,4} Jérôme Josse,^{2,3,4,8} Cécile Batailler,^{2,4,7} Christian Chidiac,^{1,2,4} Mathieu Medina,⁸ S. Lustig,⁷ and Frédéric Laurent^{2,3,4,8}; on behalf of the Lyon BJI Study Group

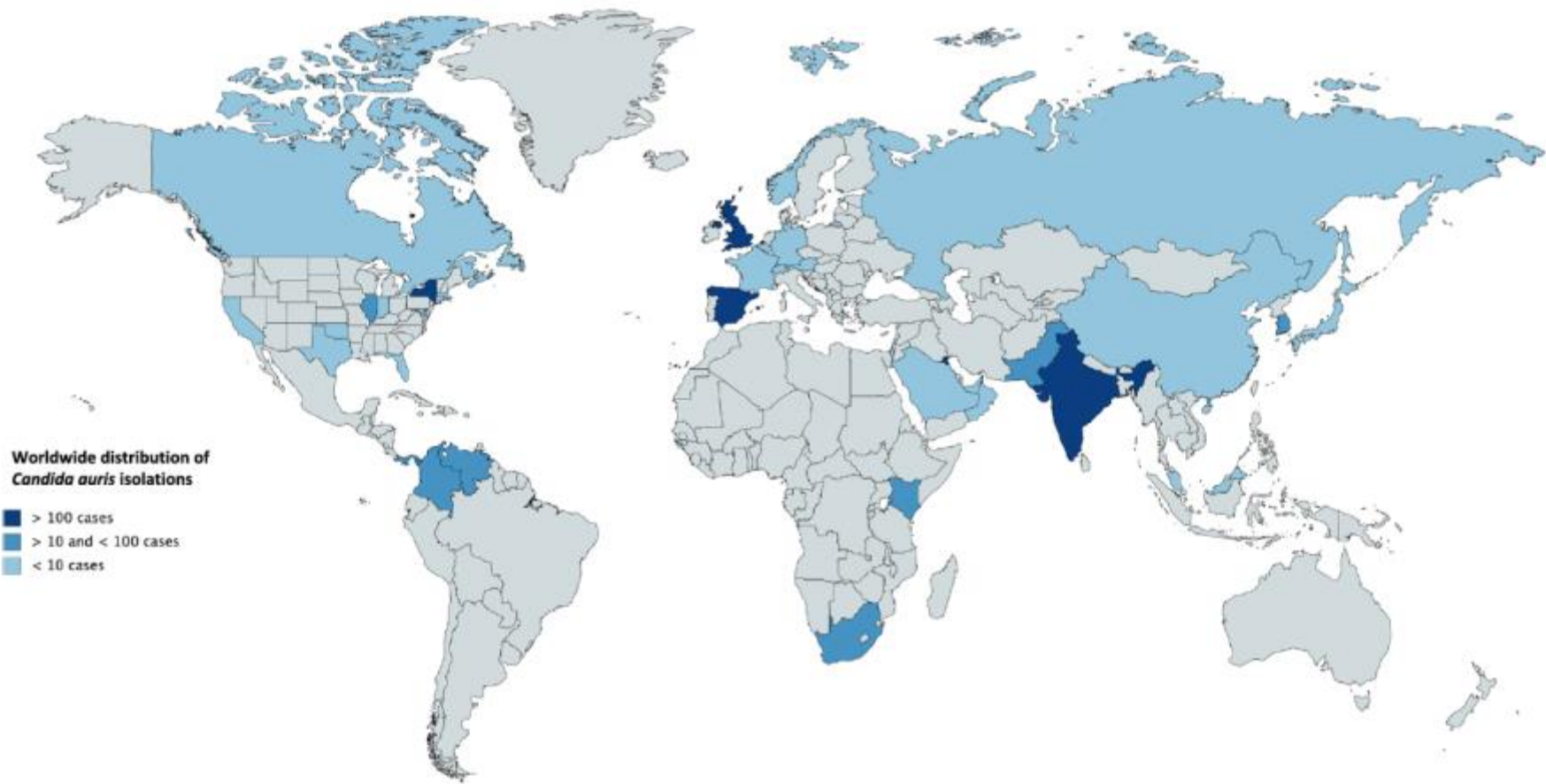
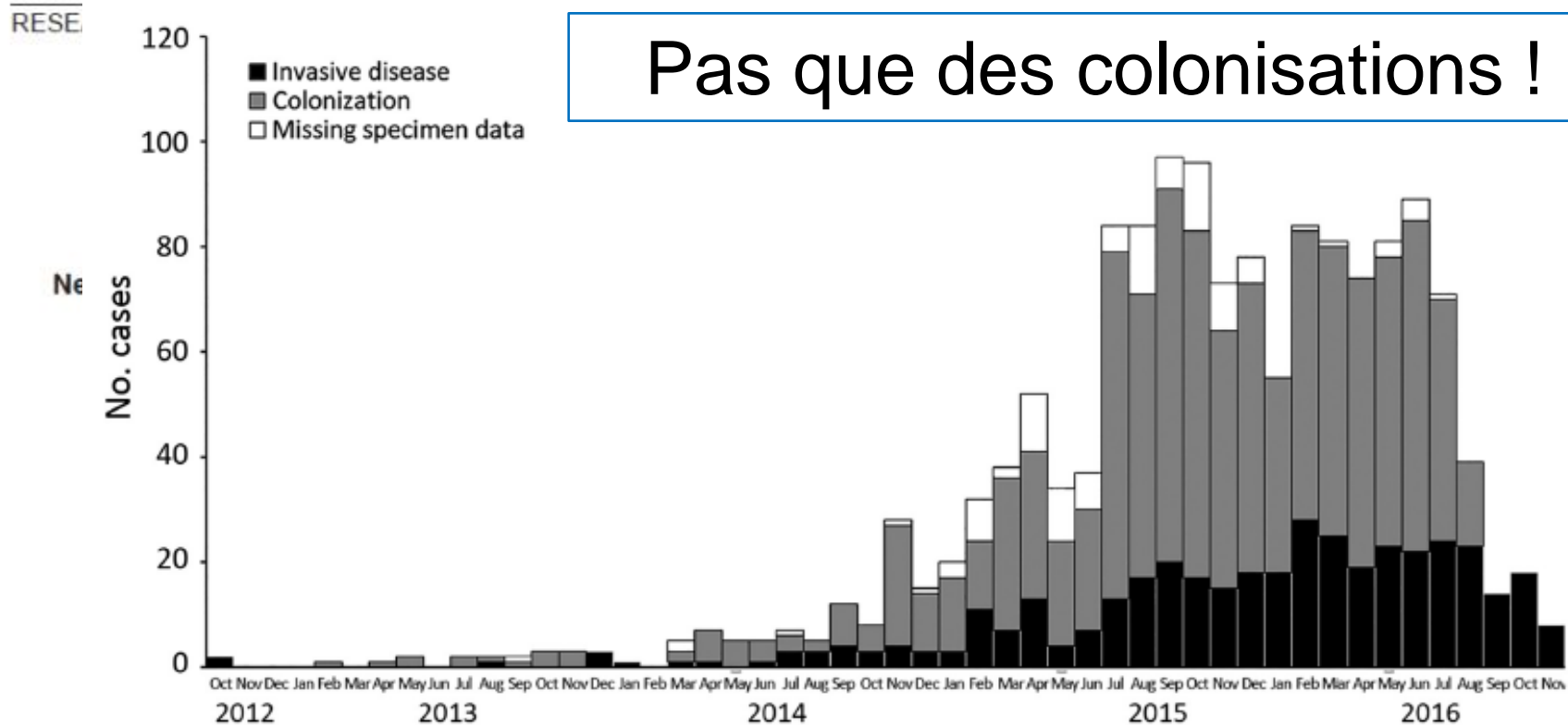


Fig. 3 Worldwide distribution of *C. auris* reported cases

Candida auris

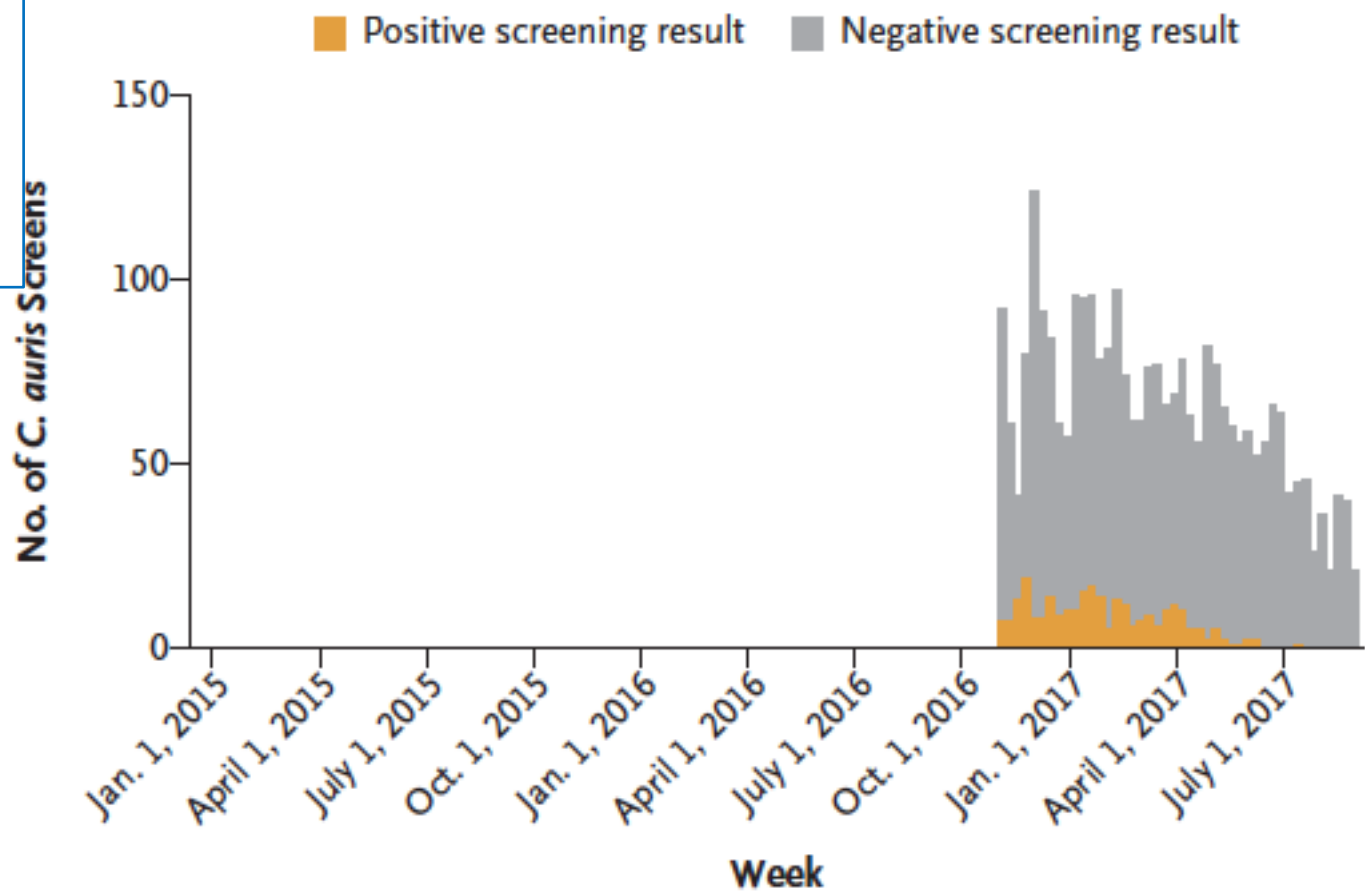
Pas que des colonisations !



Importance de « l'infection control »

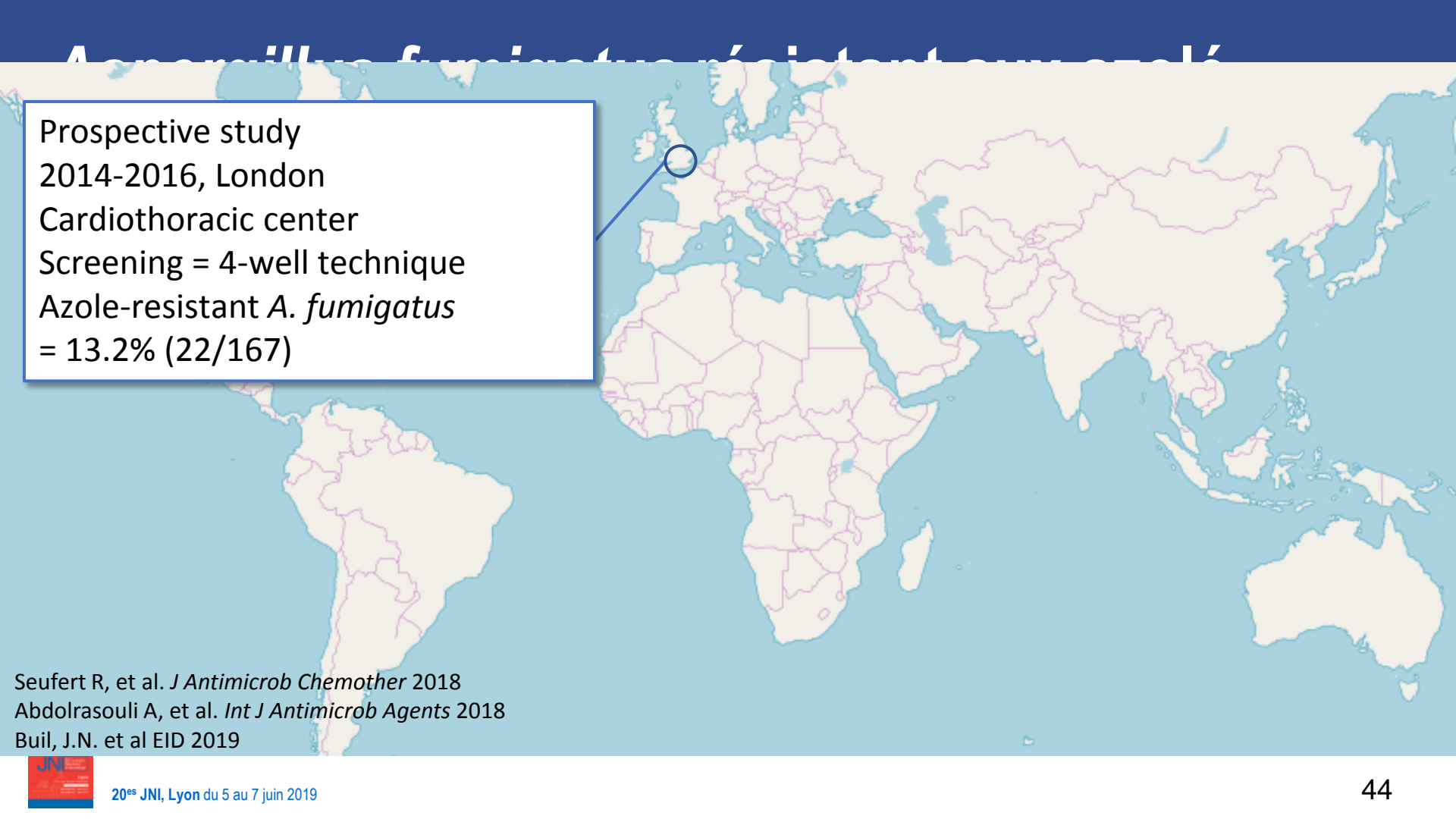
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Weekly Rates of Screening for *C. auris*



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Aspergillus fumigatus résistant aux azolé

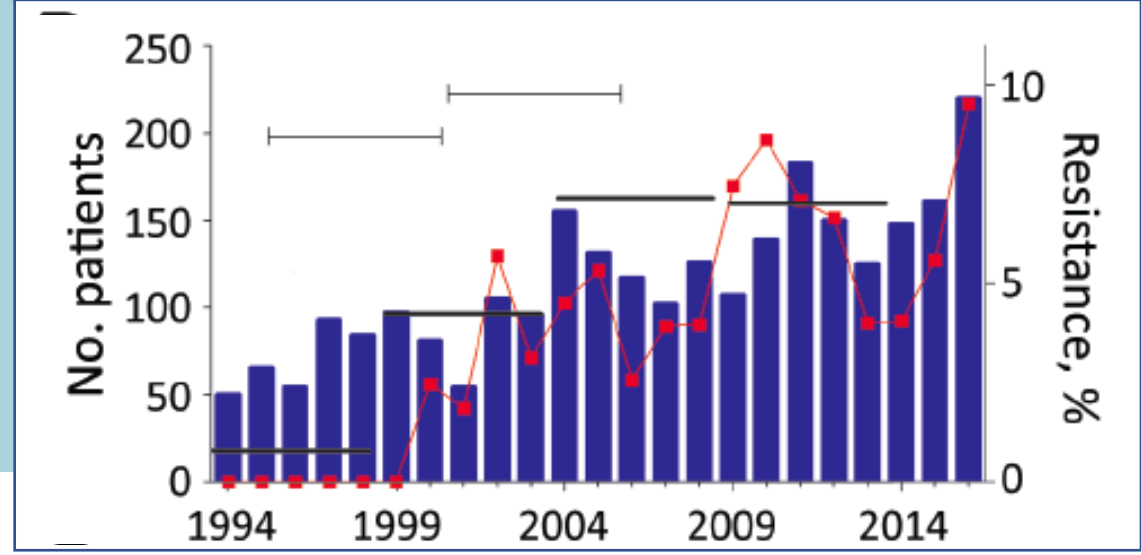
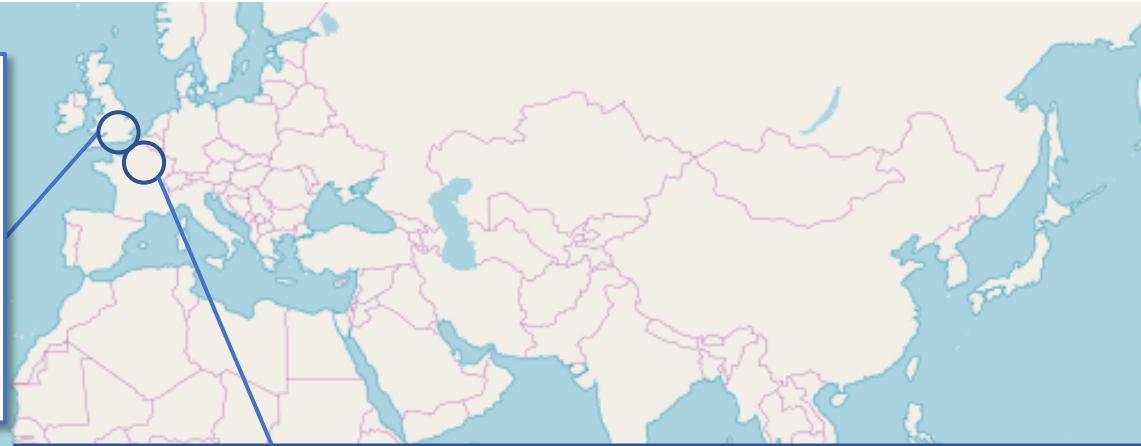


Prospective study
2014-2016, London
Cardiothoracic center
Screening = 4-well technique
Azole-resistant *A. fumigatus*
= 13.2% (22/167)

Seufert R, et al. *J Antimicrob Chemother* 2018
Abdolrasouli A, et al. *Int J Antimicrob Agents* 2018
Buil, J.N. et al *EID* 2019

Azole-resistant *Aspergillus fumigatus*

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Merci pour votre attention

