CENTRE HOSPITALIER UNIVERSITAIRE DE NANTES

SMIT CHU NANTES

UNIVERSITÉ DE NANTES

# L'antibiothérapie probabiliste dans les infections de prothèse ostéo-articulaires: du changement ?

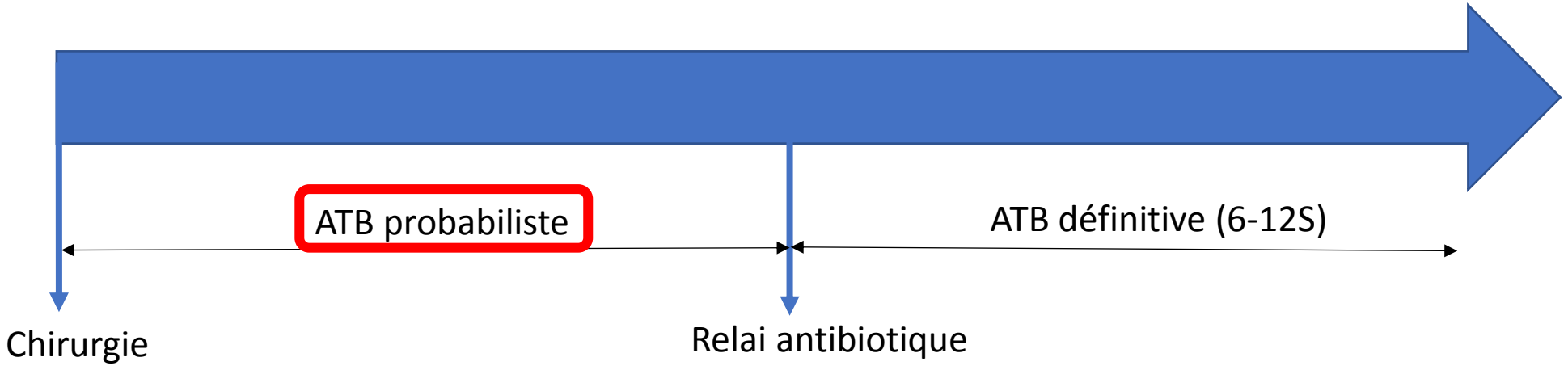
8ème Réunion d'échange sur les Infections sur Prothèse

16 mai 2019

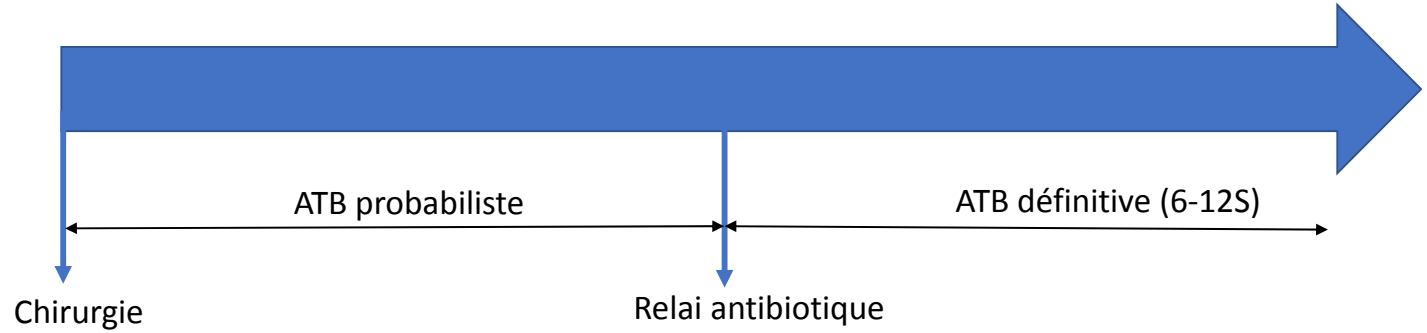
Dr Raphaël LECOMTE – SMIT CHU Nantes

# Antibiothérapie probabiliste : de quoi parle t'on ?

- Infections  de prothèses ostéo-articulaires nécessitent un traitement médico-chirurgical.




- Balance bénéfice risque
  - ATB large spectre
  - Toxicité des ATB, écologie, coût




1. Que nous disent les recommandations/qu'est-ce qui est fait actuellement en France ?
2. Faut-il vraiment prescrire une ATB probabiliste (et quel risque prend t'on dans le cas contraire) ?
3. Quel microbiologie/spectre envisager ?
4. Quel anti cocci gram positif ?
5. Quand effectuer le relai pour l'antibiothérapie définitive ?

# Question 1: Que nous disent les recommandations et qu’est-ce qui est fait actuellement en France ?

RECOMMANDATION DE BONNE PRATIQUE

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

HAUTE AUTORITÉ DE SANTÉ

Mars 2014

Une antibiothérapie probabiliste doit être débutée au bloc opératoire, dès que les prélèvements profonds sont réalisés. Cette antibiothérapie doit couvrir au minimum *S. aureus* sensible à la méticilline et les entérobactéries communautaires. L'antibiothérapie probabiliste doit aussi être choisie en fonction de l'épidémiologie locale, notamment s'il existe des ISO à *S. aureus* résistant à la méticilline ou à entérobactérie multirésistante. L'antibiothérapie probabiliste doit toujours être intraveineuse initialement. Les recommandations de pratique clinique de la SPILF (6, 96)

Il s'agit de l'association :

- (i) uréïdopénicilline/inhibiteur de bêta-lactamase et vancomycine ;
- (ii) céphalosporine de 3$^{e}$ génération et vancomycine ; ou
- (iii) carbapénem (sauf ertapénem) et vancomycine ; ou
- (iv) céphalosporine de 3$^{e}$ génération et fosfomycine.

L'épidémiologie locale est importante à prendre en compte pour la mise en place d'une antibiothérapie probabiliste (8).

RECOMMANDATION DE BONNE PRATIQUE

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

HAUTE AUTORITÉ DE SANTÉ

29th ECCMID EUROPEAN CONGRESS OF CLINICAL MICROBIOLOGY AND INFECTIOUS DISEASES Amsterdam, Netherlands 13 – 16 April 2019

# Post operative empirical antimicrobial therapy (EAT) for bone and joint infection (BJI), a national practice study in French reference centers for bone and joint infection

C. Costa[1], J Michon[1], A Baldolli[1], F Guerin[2], G Rochcongar[3], R Verdon[1]

[1] Department of Infectious Disaeses, CHU Caen Normandie, Caen France; [2] Microbiology Laboratory, CHU Caen Normandie, Caen, France; [3] Department of Orthopedic surgery, CHU Caen Normandie, Caen, France

- 30 centres français
- 80% de réponse
- Protocole écrit dans 58% des centres

| Anti Gram-positive antibiotics | Vancomycin | Daptomycin | Linezolid | Ceftaroline |
|---|---|---|---|---|
| Use as 1st line | 42% (n=10) | 37% (n=9) | 34% (n=8) | 4% (n=1) |
| Use as alternative therapy | 52 % (n=12) | 52 % (n=12) | 17 % (n=4) | 0 |
| Posology used | Bolus of 15-30 mg/kg then 30-60 mg/kg/d | 10-12 mg/kg/d | 600mgx2/d | 500mgx2/d ?? |

| Anti Gram-negative antibiotics | Piperacillin-Tazobactam | Cefepime | Ceftriaxone |
|---|---|---|---|
| Use as 1st line | 83% (n=20) | 25% (n=6) | 13% (n=3) |
| Posology used | 4gx3/d | 2gx3/d | 2g/d |

# Question 2 : Faut-il vraiment prescrire une ATB probabiliste (et quel risque prend t'on dans le cas contraire) ?

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

- Rétrospectif
- 98 IPOA
- PTH/PTG à *S. aureus*
- Suivi moyen de 43,6 mois
- 78,6% de rémission
- 17% SARM, 27% de polymicrobien

**Table 2. Characteristics of Surgical Procedures and Antibiotic Therapy in 98 Patients With Total Hip or Knee Prosthesis Infection Due to *Staphylococcus aureus* According to Outcome**

| Characteristic | Remission ($n$ = 77) | Treatment failure ($n$ = 21) | $P$ |
|---|---|---|---|
| Delay from onset of infection to revision, mean days ± SD | 119.4 ± 238.2 | 79 ± 111.7 | .80 |
| Removal of all infected implants | 45 (58.4) | 12 (57.1) | .99 |
| Gentamicin-loaded cement spacer[a] | 27 (35.1) | 7 (33.3) | .84 |
| Adequate empirical postsurgical antibiotic therapy[b] | 73 (94.8) | 17 (80.9) | .04 |
| Rifampin-fluoroquinolone combination therapy | 37 (48.1) | 2 (9.5) | .001 |
| Rifampin combination therapy | 58 (75.3) | 10 (47.6) | .002 |
| Total duration of antibiotic therapy, mean days ± SD | 165.7 ± 108.8 | 145.1 ± 101.6 | .44 |

**NOTE.** Data are no. (%) of patients unless otherwise indicated. SD, standard deviation.

[a] Including 26 patients with 2-stage replacement and 8 with arthrodesis.

[b] At least 1 antibiotic agent active against intraoperative pathogen(s).

IDSA Infectious Diseases Society of America

# Early onset prosthetic hip and knee joint infection: treatment and outcomes in Victoria, Australia

T.N. Peel [a,b,*], A.C. Cheng [c,d], P.F.M. Choong [a,e], K.L. Buising [b]

THE JOURNAL OF Hospital Infection

- Cohorte de 147 patients (10 hôpitaux en Australie)
- Janvier 2006 décembre 2008
- IPOA < J90 de la pose
- 147 patients
- DAIR dans 76% des cas
- Suivi médian de 20 mois
- 76% (IC 95% 68-83) de succès

**Table I**
Microbiology results and spectrum of empiric antibiotic therapy

| Micro-organism | No. of isolates | Percentage of isolates susceptible to antibiotic administered initially |
|---|---|---|
| Meticillin-susceptible *Staphylococcus aureus* | 41 | 98% |
| Meticillin-resistant *Staphylococcus aureus* | 38 | 50% |
| Coagulase-negative staphylococci | 31 | 39% |
| *Enterococcus* sp. | 23 | 30% |
| Gram-negative bacillus | 58 | 33% |
| Other[a] | 7 | 86% |

[a] Other included four *Streptococcus* species, two *Corynebacterium* species and one *Moraxella catarrhalis*.

ATB active dans 47% des cas seulement

**Table III**
Univariate and multivariate analysis of factors associated with treatment failure

| Variable | Treatment success ($N = 104$) | Treatment failure ($N = 43$) | *P*-value | Hazard ratio (95% CI)[a] | *P*-value |
|---|---|---|---|---|---|
| Age | 73.5 (67.5–80.5) | 74 (66–81) | 0.6 | | |
| Female sex | 62 (72%) | 24 (28%) | 0.8 | | |
| Joint replaced | | | 0.2 | | |
| Hip | 82 (69%) | 36 (31%) | | | |
| Knee | 22 (76%) | 7 (24%) | | | |
| Arthroplasty indication | | | 0.002 | | |
| Primary | 62 (79%) | 16 (21%) | | Ref. | – |
| Aseptic revision | 11 (65%) | 6 (35%) | | 2.1 (0.8–5.7) | 0.2 |
| Septic revision | 1 (14%) | 6 (86%) | | 7.5 (2.4–23.1) | <0.001 |
| Fractured neck of femur | 30 (67%) | 15 (33%) | | 2.1 (0.95–4.8) | 0.07 |
| Hypotension at presentation[a] | 5 (56%) | 4 (44%) | 0.04 | 4.9 (1.5–15.7) | 0.007 |
| Effective empiric antibiotic therapy | 56 (81%) | 13 (19%) | 0.007 | 0.20 (0.09–0.47) | <0.001 |
| Gram-negative bacillus | 35 (60%) | 23 (40%) | 0.04 | | |
| Management strategy | | | 0.006 | | |
| Debridement and retention | 87 (78%) | 24 (22%) | | Ref. | – |
| Antibiotics alone | 1 (25%) | 3 (75%) | | 1.2 (0.3–4.6) | 0.8 |
| One-stage exchange | 4 (44%) | 5 (56%) | | 3.1 (1.0–9.2) | 0.048 |
| Two-stage exchange | 3 (60%) | 2 (40%) | | 1.1 (0.2–5.2) | 0.9 |
| Resection | 9 (50%) | 9 (50%) | | 0.6 (0.2–1.6) | 0.3 |
| Duration antibiotic therapy (days) | | | <0.001 | | |
| >365 | 35 (80%) | 9 (20%) | | Ref. | – |
| 180–365 | 29 (91%) | 3 (9%) | | 1.1 (0.27–4.2) | 0.9 |
| 90–180 | 10 (77%) | 3 (23%) | | 1.4 (0.27–7.6) | 0.7 |
| 60–90 | 8 (53%) | 7 (47%) | | 7.3 (2.2–24.4) | 0.001 |
| 30–60 | 13 (52%) | 12 (48%) | | 8.0 (2.6–23.9) | <0.001 |
| <30 | 9 (50%) | 9 (50%) | | 18.5 (5.4–63.1) | <0.001 |

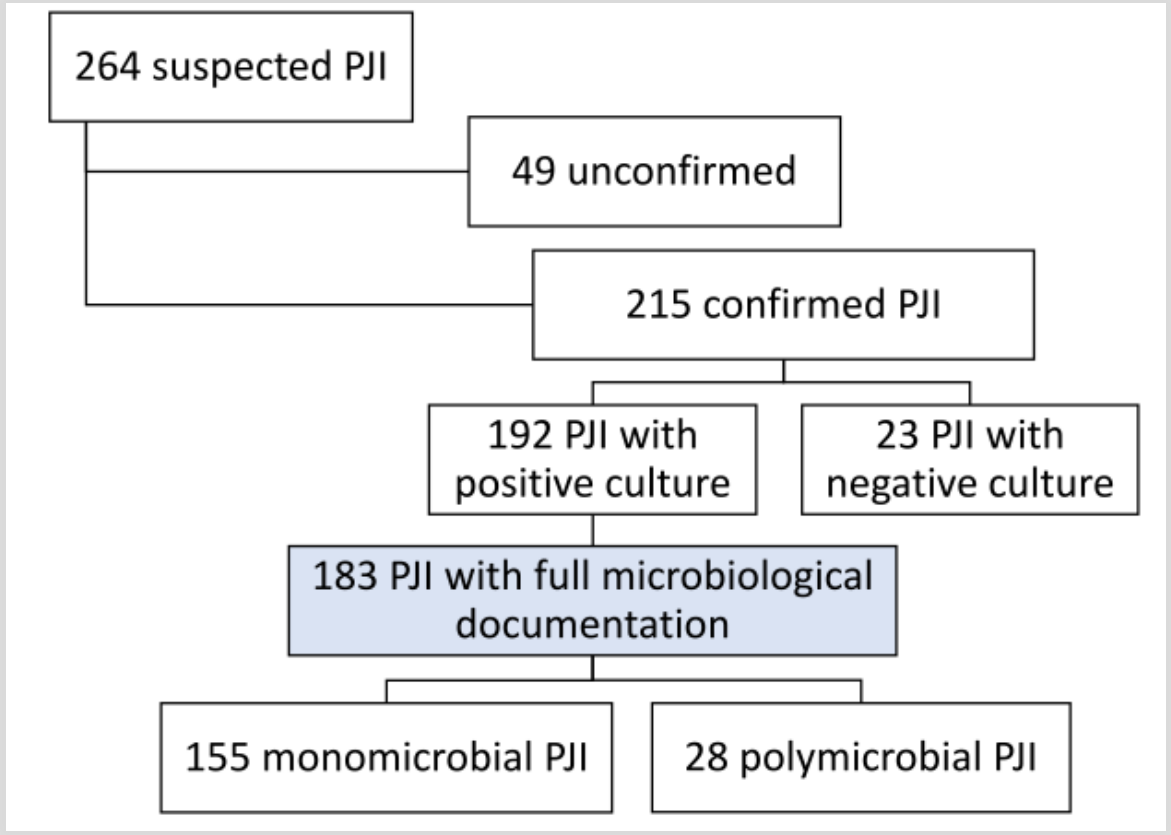
Likelihood ratio chi-squared $\chi^2 = 64.2$; $P > \chi^2 < 0.00001$.
[a] Systolic blood pressure <90 mmHg.


Peel *et al* 2011

# Question 3 : Quelle microbiologie ? Quel spectre envisager ?

# 3. Quelle microbiologie ? Quel spectre envisager ?

- PHRC microbios
- Etude prospective française multicentrique
- 183 IPOA (PTG/PTH)
- 15,3% d'infections polymicrobiennes

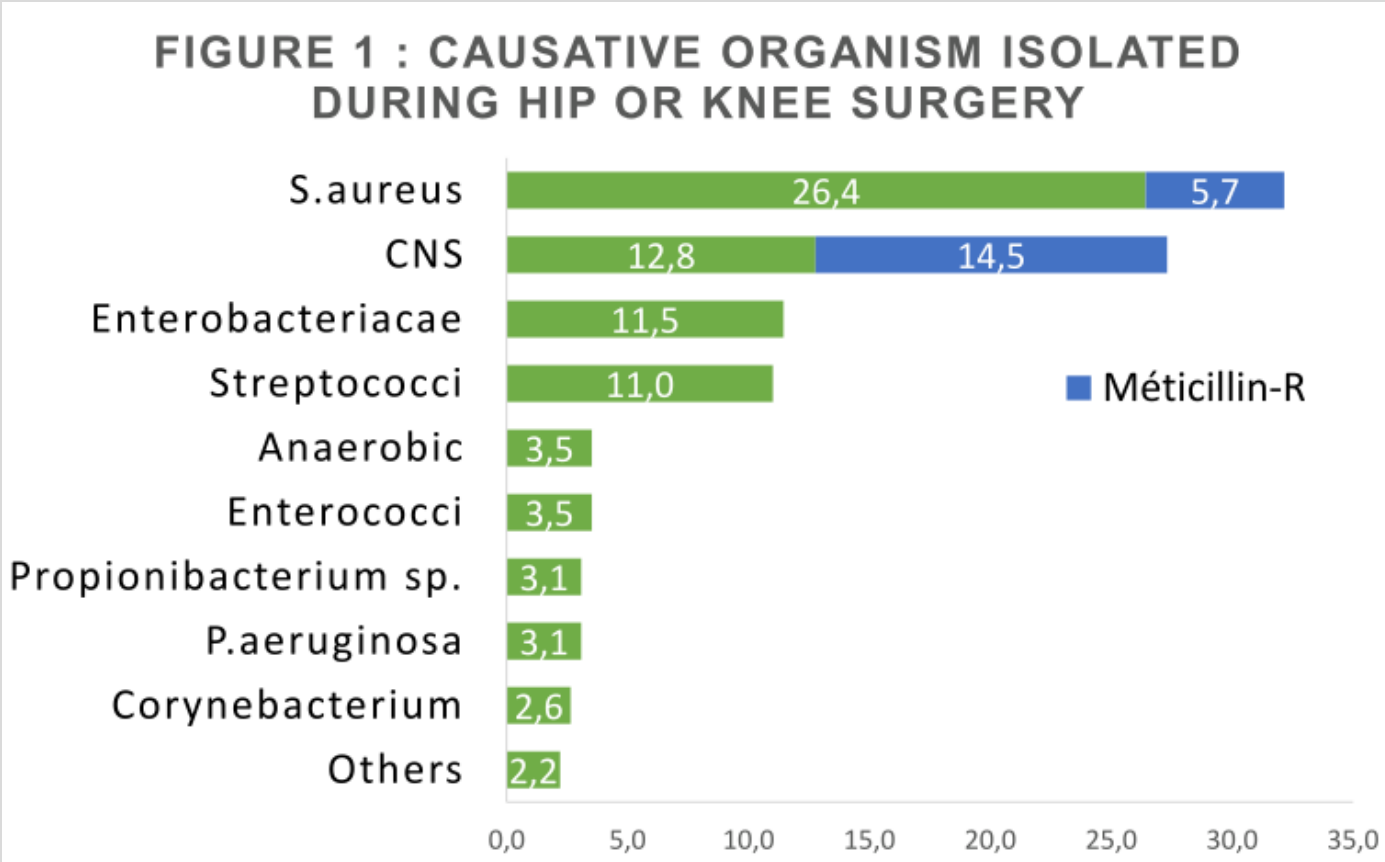


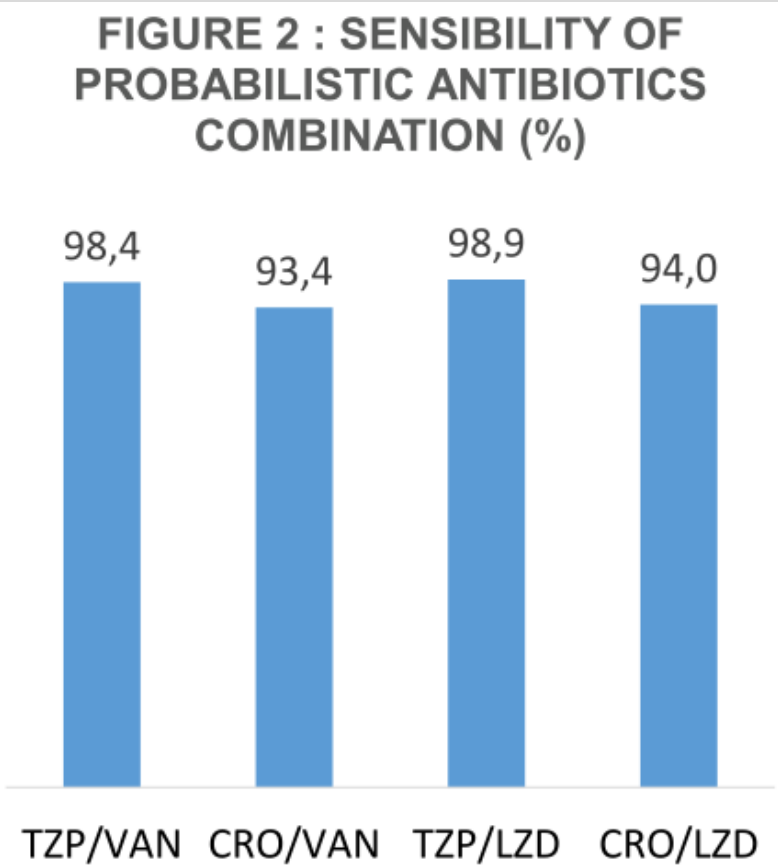



Luc DEROCHE[1], Pascale BEMER[2], Chloé PLOUZEAU[3], Didier TANDE[4], Anne-Sophie VALENTIN[1], Anne JOLIVET-GOUGEON[5], Cécile LEMARIE[6], Laurent BRET[7], Cédric ARVIEUX[5], Louis BERNARD[1], and the CRIOGO

1:CHU Tours ; 2:CHU Nantes ; 3:CHU Poitiers ; 4:CHU Brest ; 5:CHU Rennes ; 6:CHU Angers; 7:CHR Orléans

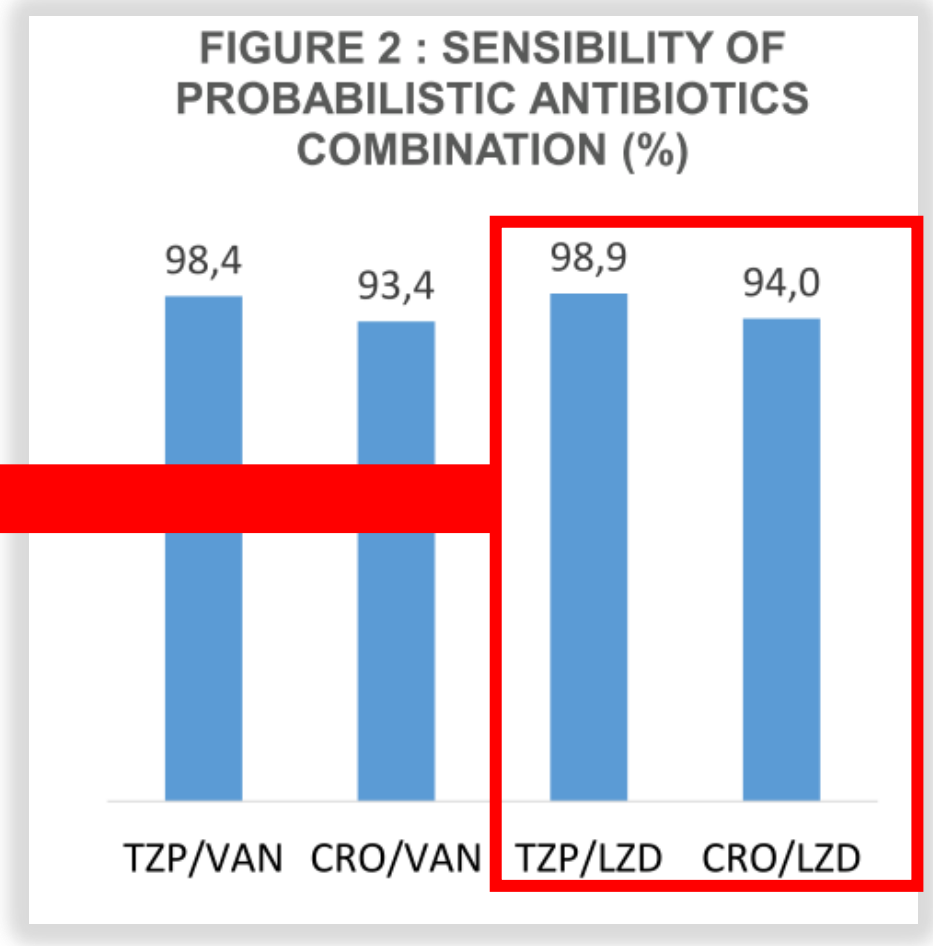
# 3. Quelle microbiologie ? Quel spectre envisager ?



# 3. Quelle microbiologie? Quel spectre envisager?

Différences entre CRO et TZP: 4,9%
- *Pseudomonas aeruginosa* : 3,1%
- Autres (Quelques anaérobies - BLSE)
- Entérocoques (mais rattrapés par le LZD/VAN)



# Microbiologic Profile of Staphylococci Isolated from Osteoarticular Infections: Evolution over Ten Years

Marie Titécat,[1] Eric Senneville,[2,3,5] Frédéric Wallet,[1,5] Hervé Dezèque,[4,5] Henri Migaud,[3–5] René J. Courcol,[1,5] and Caroline Loïez[1,5]

- Etude rétrospective monocentrique
- CHU de Lille
- 2002-2011
- Prélèvements per-opératoire IOA
- SCN : ≥ 2 prélèvements +
- 5006 isolats identifiés

Gram-positive cocci ≥70%:

- *S. aureus* (19%);
- CoNS (39%);
- *Enterococcus* spp./*Streptococcus* spp. (13%).

Gram-negative bacilli ≥15%:

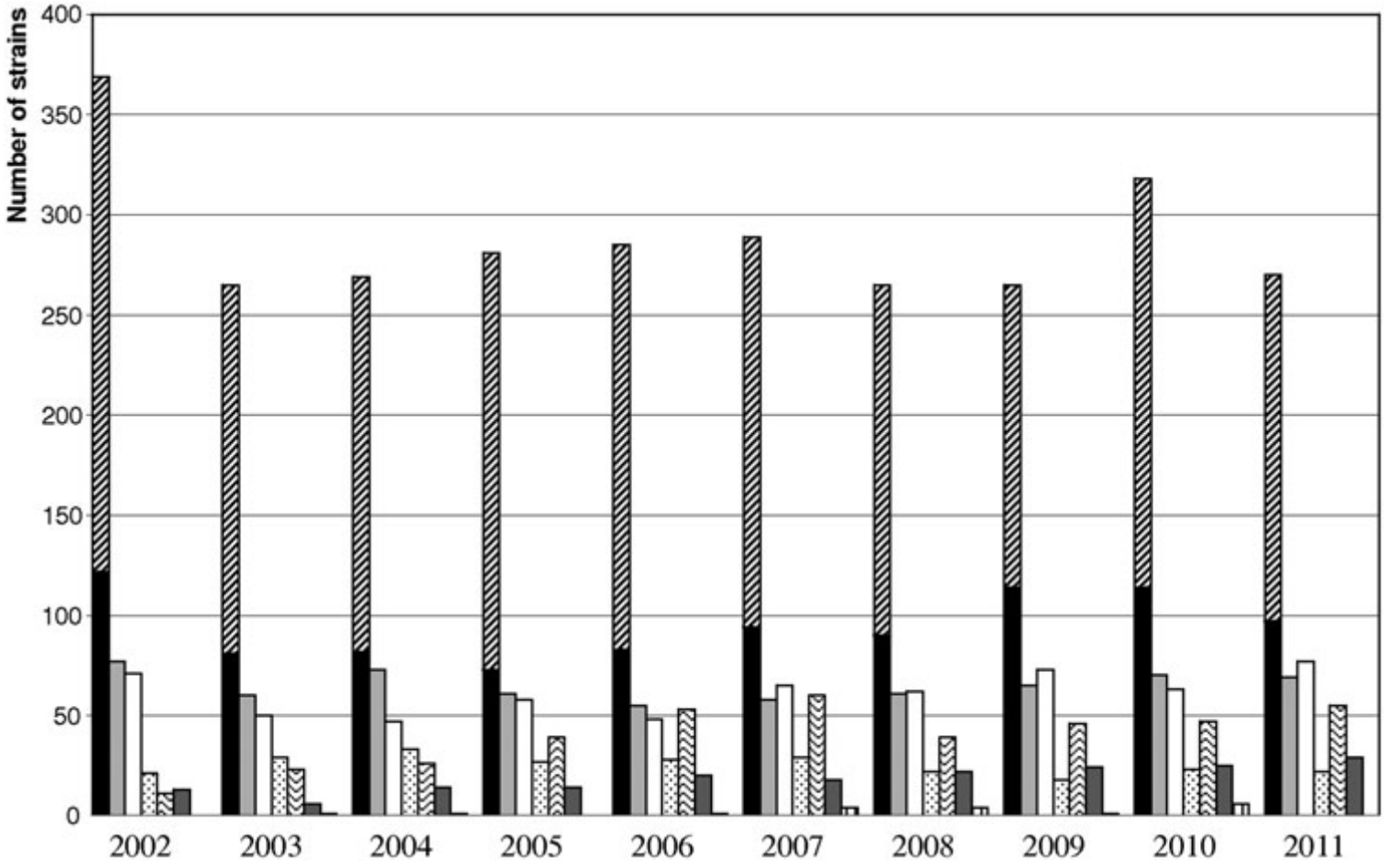
- Enterobacteriaceae (12%);
- Non-fermenting bacilli (5%).

Other micro-organisms:

- Anaerobes (8%);
- Gram-positive bacilli (4%);
- Others (1%).

Titécat et al. Surgery 2015

# Une stabilité au cours du temps des germes identifiés




Gram-positive cocci ≥70%:
- *S. aureus* (19%);
- CoNS (39%);
- *Enterococcus* spp./*Streptococcus* spp. (13%).

Gram-negative bacilli ≥15%:
- Enterobacteriaceae (12%);
- Non-fermenting bacilli (5%).

Other micro-organisms:
- Anaerobes (8%);
- Gram-positive bacilli (4%);
- Others (1%).

Titécat et al. Surgery 2015

# En revanche des phénotypes de résistance qui évoluent…

- *S. aureus*:
  - Diminution SARM
  - Peu de résistance aux aminostides (1% en 2011)

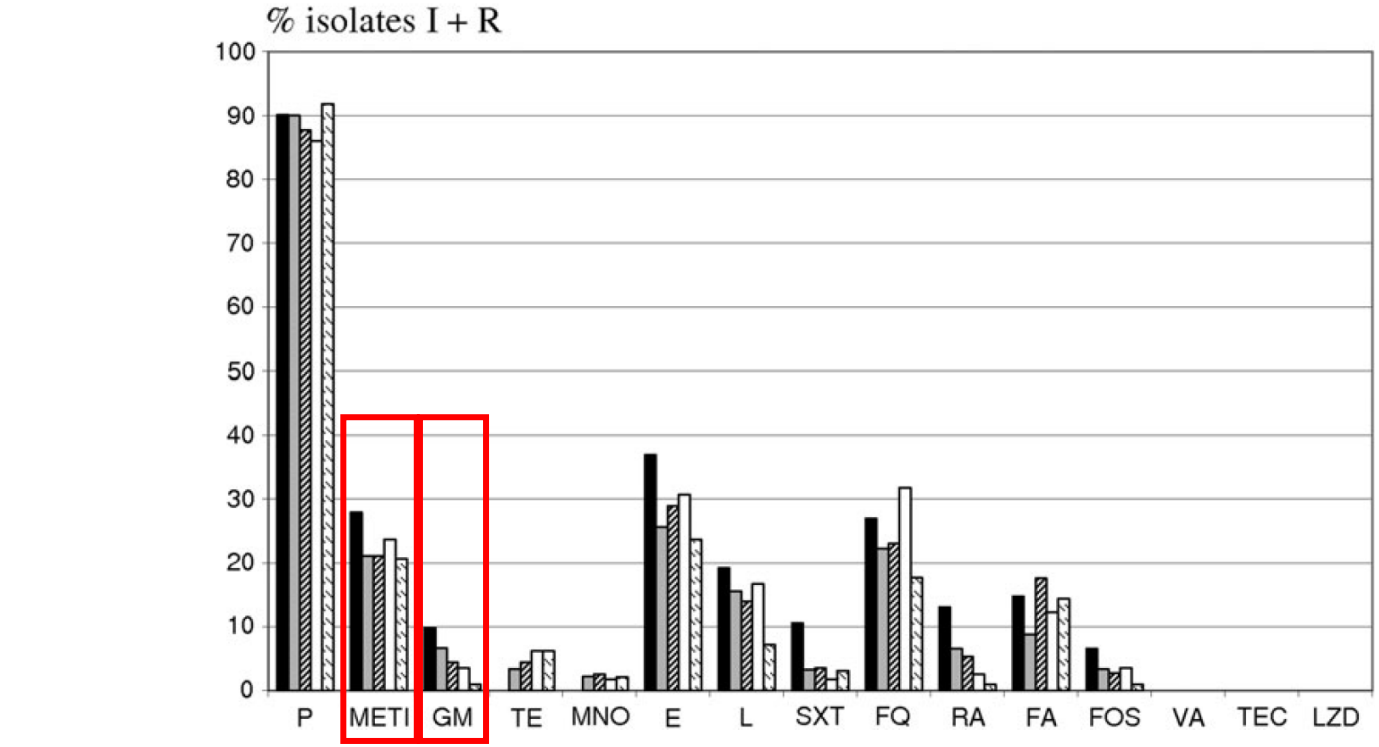



**FIG. 2.** Resistance of *Staphylococcus aureus* isolated from osteoarticular infections in the period 2002–2011. I = intermediate; R = resistant; P = benzylpenicillin; iMETI = methicillin; GM = gentamicin; TE = tetracycline; MNO = minocycline; E = erythromycin; L = lincomycin; SXT = trimethoprim-sulfamethoxazole; FQ = fluoroquinolones; RA = rifampicin; FA = fusidic acid; FOS = fosfomycin; VA = vancomycin; TEC = teicoplanin; LZD = linezolid.
■ 2002 (n = 247) ▒ 2008 (n = 175) ▨ 2009 (n = 151) □ 2010 (n = 204) ▧ 2011 (n = 173)

Titécat et al. Surgery 2015

# En revanche des phénotypes de résistance qui évoluent…

- *S. aureus*:
  - Diminution résistance à la méticilline (20 vs 27%)
  - Peu de résistance aux aminostides (1% en 2011)
- SCN:
  - Augmentation de la résistance à la méticilline (44 vs 30%)
  - Apparition de la résistance au LNZ (3,3 vs 0,4%)

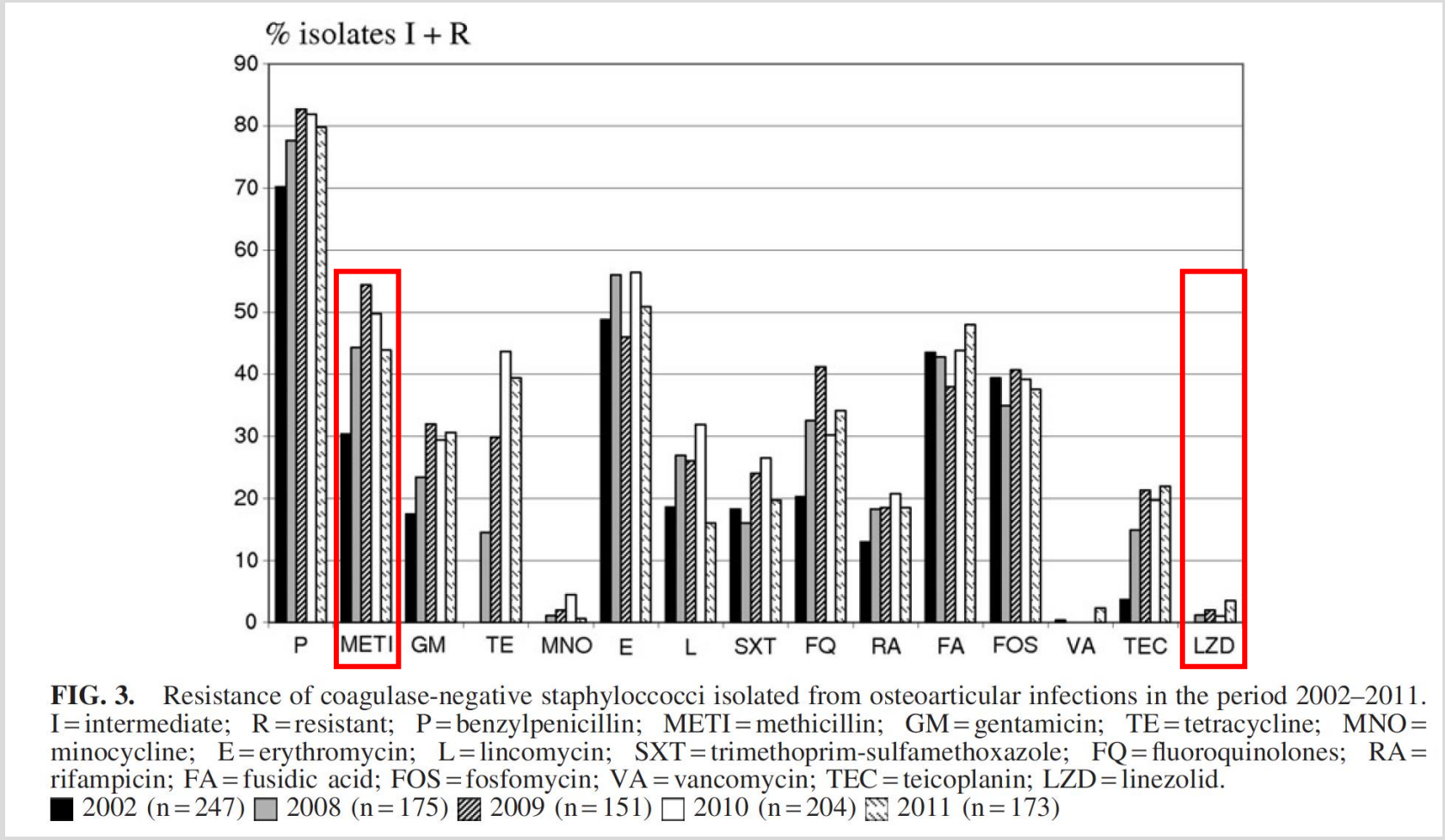



**FIG. 3.** Resistance of coagulase-negative staphyloccocci isolated from osteoarticular infections in the period 2002–2011. I = intermediate; R = resistant; P = benzylpenicillin; METI = methicillin; GM = gentamicin; TE = tetracycline; MNO = minocycline; E = erythromycin; L = lincomycin; SXT = trimethoprim-sulfamethoxazole; FQ = fluoroquinolones; RA = rifampicin; FA = fusidic acid; FOS = fosfomycin; VA = vancomycin; TEC = teicoplanin; LZD = linezolid.
■ 2002 (n = 247) ▒ 2008 (n = 175) ▨ 2009 (n = 151) □ 2010 (n = 204) ▧ 2011 (n = 173)

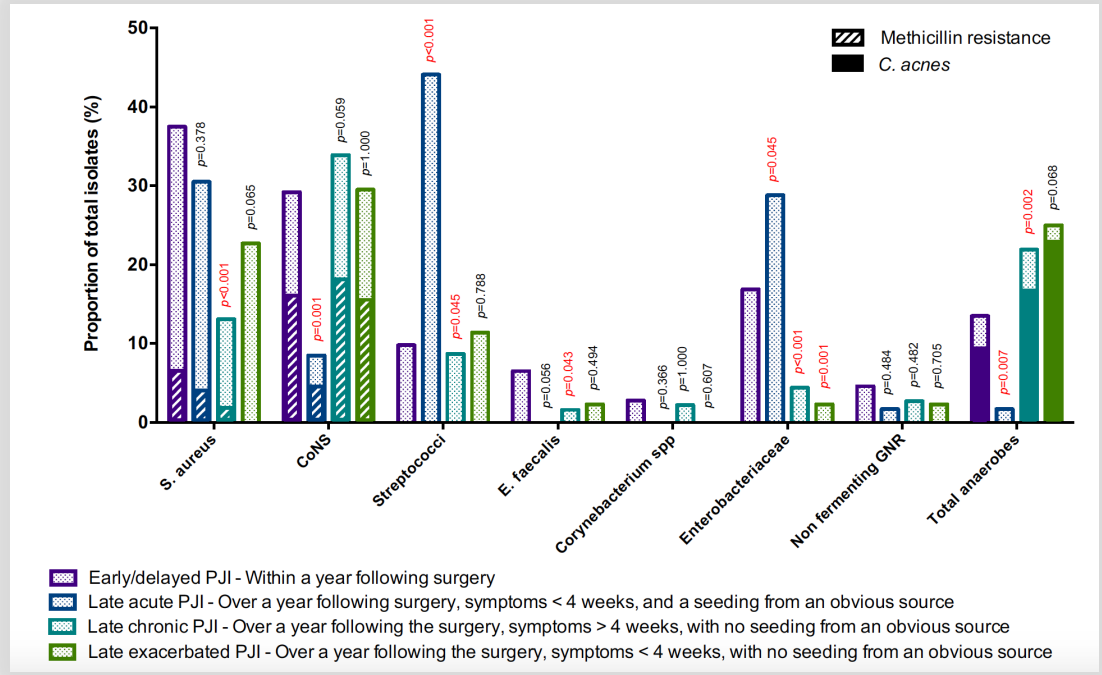
Titécat et al. Surgery 2015

# Microbiologic epidemiology depending on time to occurrence of prosthetic joint infection: a prospective cohort study

C. Triffault-Fillit [1, 2, *], T. Ferry [1, 2, 7], F. Laurent [1, 3, 7], P. Pradat [4], C. Dupieux [1, 3, 7], A. Conrad [1, 2, 7], A. Becker [1, 2], S. Lustig [1, 5, 7], M.H. Fessy [1, 6, 7], C. Chidiac [1, 2, 7], F. Valour [1, 2, 7] for the Lyon BJI Study Group[8]

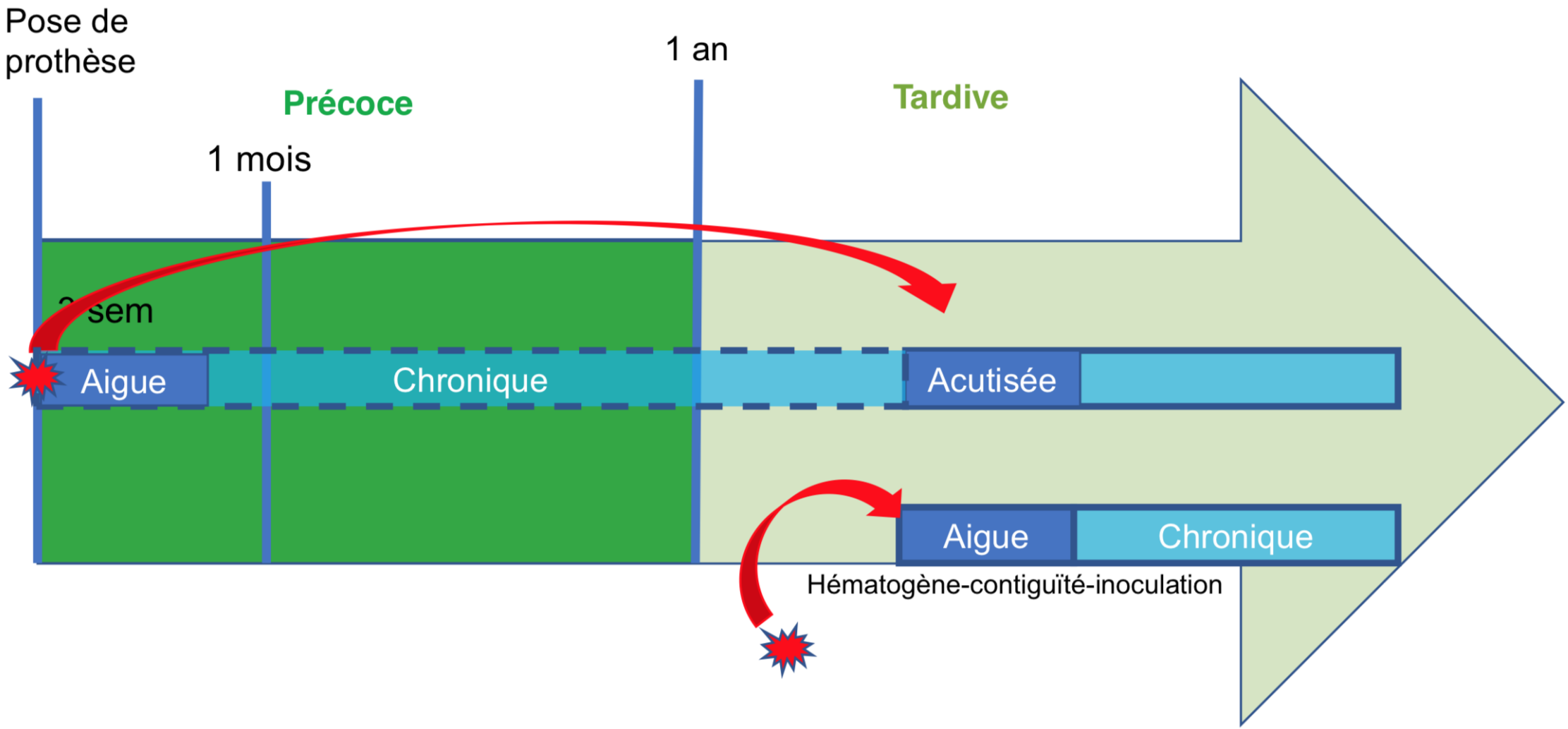
CMI CLINICAL MICROBIOLOGY AND INFECTION
ESCMID

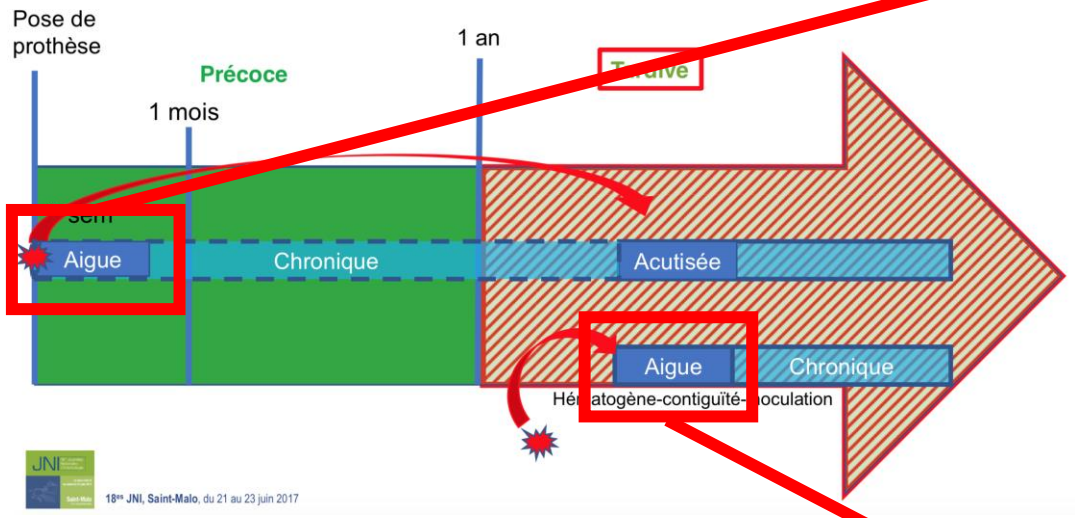
- Etude de cohorte 2011 – 2016
- 576 infections de prothèse (1er épisode, PTH 50%, PTG 45%)
- Epidémiologie :
  - SA : 28,9%
  - SCN : 28,6%
  - Entérobactéries : 14,1%
  - Streptocoques : 13,1%
  - *C Acnes* : 10,6%
  - Polymicrobien : 18,2%

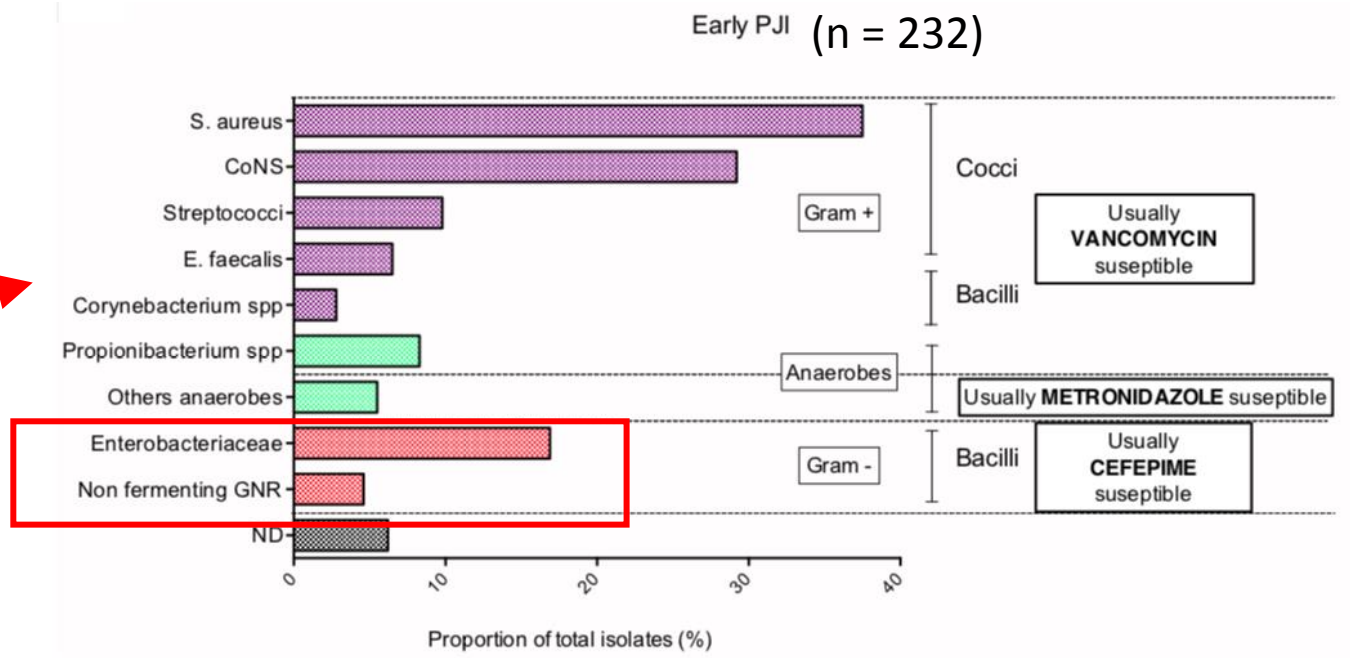


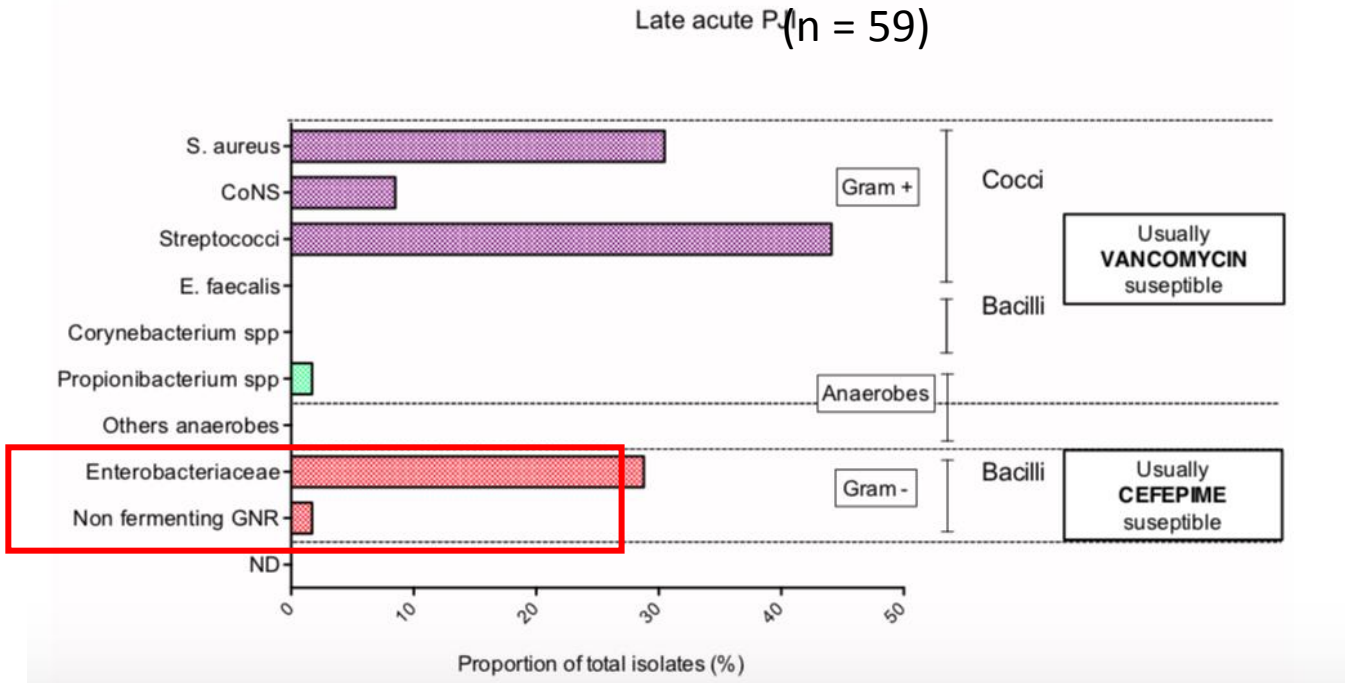

Clin Microbiol Infect. 2019 Mar;25(3):353-358.

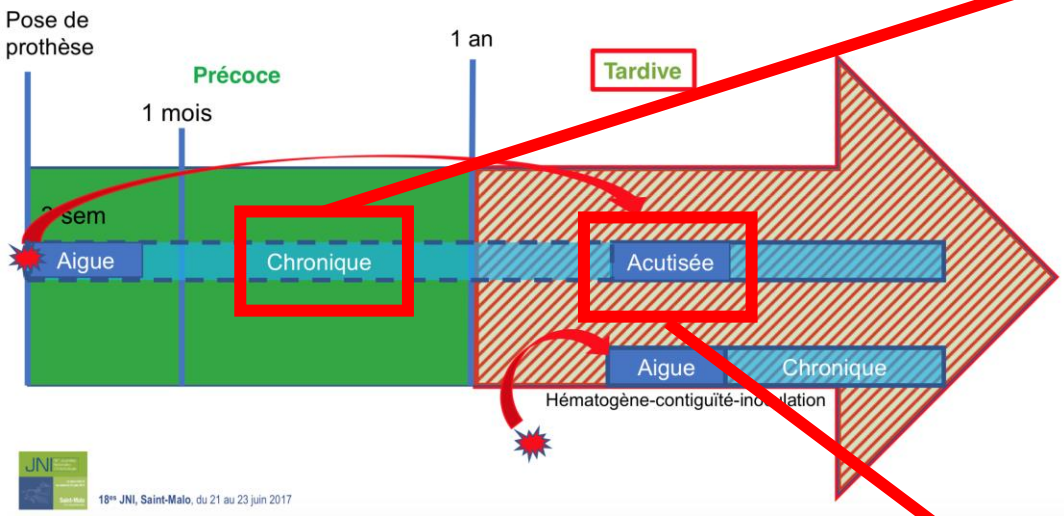
# Une épidémiologique variable selon le délai pose – infection.

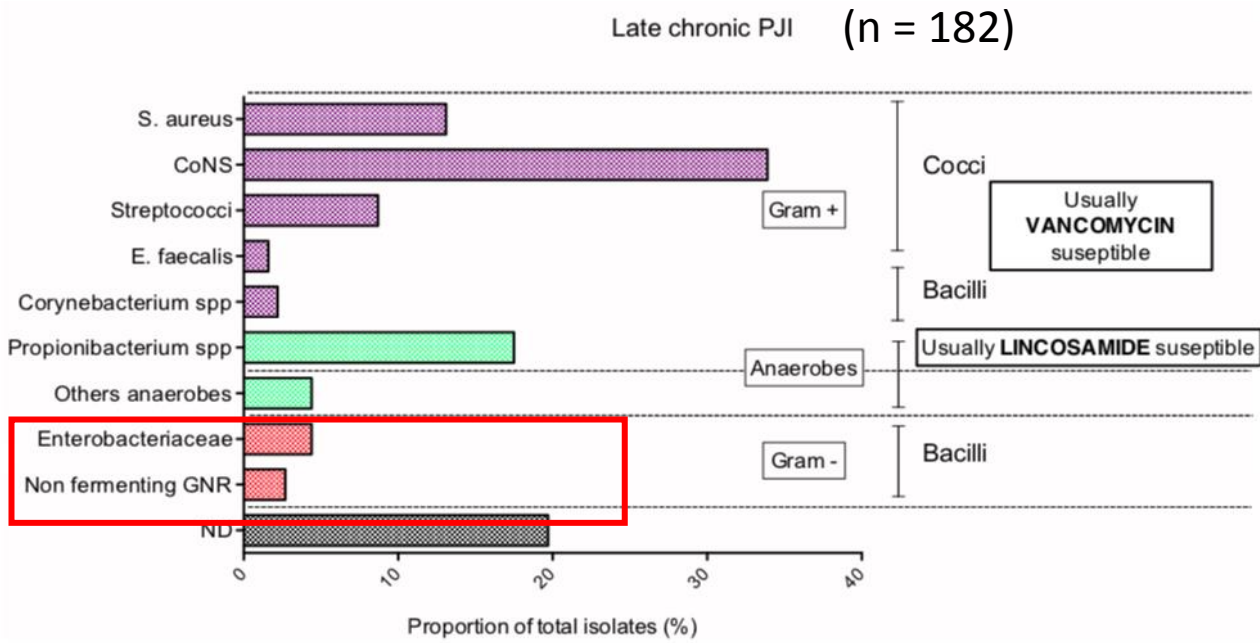


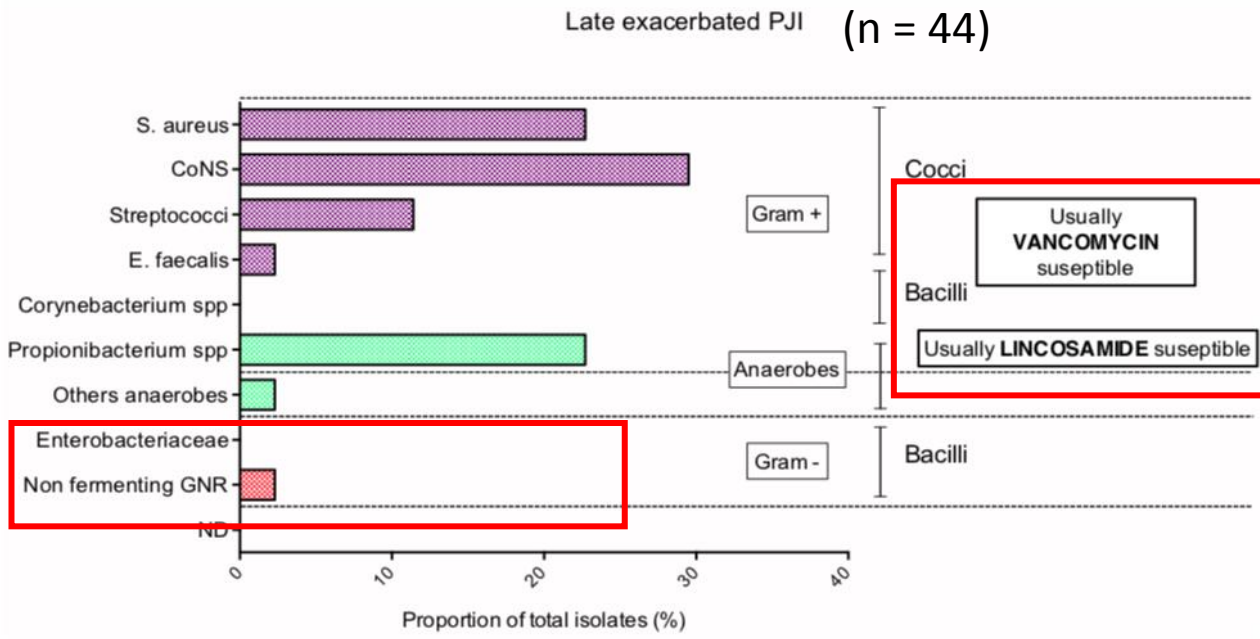

Pose de prothèse
1 an
Précoce
1 mois
Aigue
Chronique
Acutisée
Aigue
Chronique
18es JNI, Saint-Malo, du 21 au 23 juin 2017


Early PJI (n = 232)
S. aureus
CoNS
Streptococci
E. faecalis
Corynebacterium spp
Propionibacterium spp
Others anaerobes
Enterobacteriaceae
Non fermenting GNR
ND
Gram +
Gram -
Anaerobes
Cocci
Bacilli
Bacilli
Usually VANCOMYCIN suseptible
Usually METRONIDAZOLE suseptible
Usually CEFEPIME suseptible
0
10
20
30
40
Proportion of total isolates (%)


Late acute PJI (n = 59)
S. aureus
CoNS
Streptococci
E. faecalis
Corynebacterium spp
Propionibacterium spp
Others anaerobes
Enterobacteriaceae
Non fermenting GNR
ND
Gram +
Gram -
Anaerobes
Cocci
Bacilli
Bacilli
Usually VANCOMYCIN suseptible
Usually CEFEPIME suseptible
0
10
20
30
40
50
Proportion of total isolates (%)



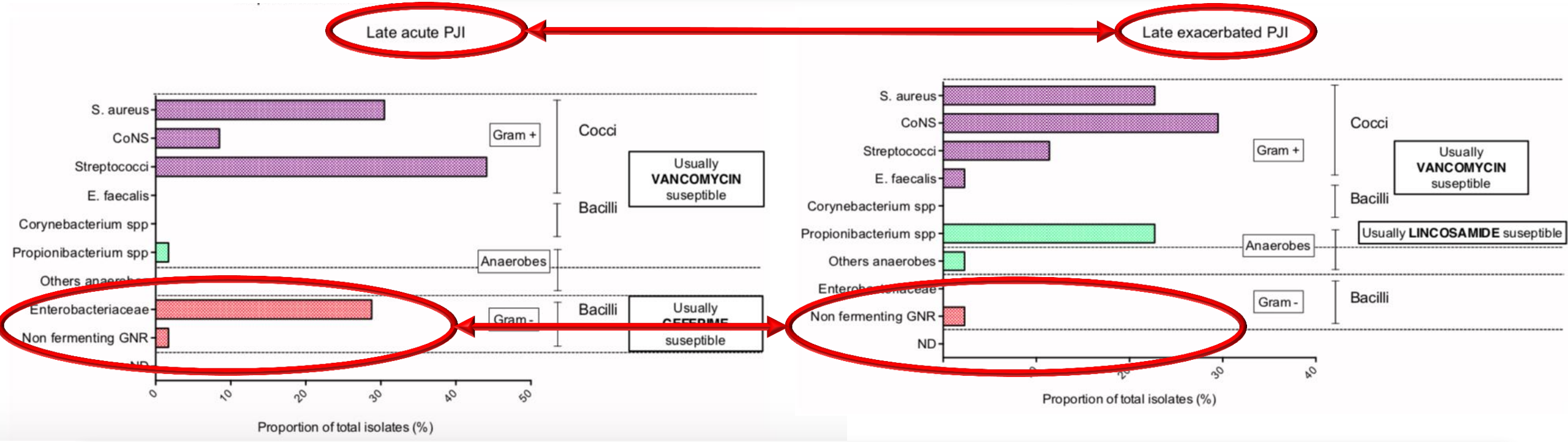




Clin Microbiol Infect. 2019 Mar;25(3):353-358.

Late acute: Symptoms < 3 weeks AND an obvious exogenous origin),
Late chronic:

- Symptoms > 3 weeks,
- Acute exacerbation of a late chronic PJI: Symptoms < 3 weeks WITHOUT any obvious origin




one of the most challenging diagnosis problems in the field.

# Question 4 : Quel anti cocci gram positif ?

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

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

Published: 2019.03.02

JBJI mars 2019

- 40 patients (20 DPC, 20 VAN)
- En association avec Cefotaxime, aztreonam ou Cefepime
- Dose DPC : 10-12 mg/kg
- 50% de traitement conservateur
- Durée moyenne d'ATB probabiliste avant relai : 6.07 ± 0.85 Jours.
- 90% de succès dans les 2 groupes

**Table 3.** Compared tolerance to antibiotic treatment of 40 patients treated empirically for either Vancomycin or Daptomycin

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

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

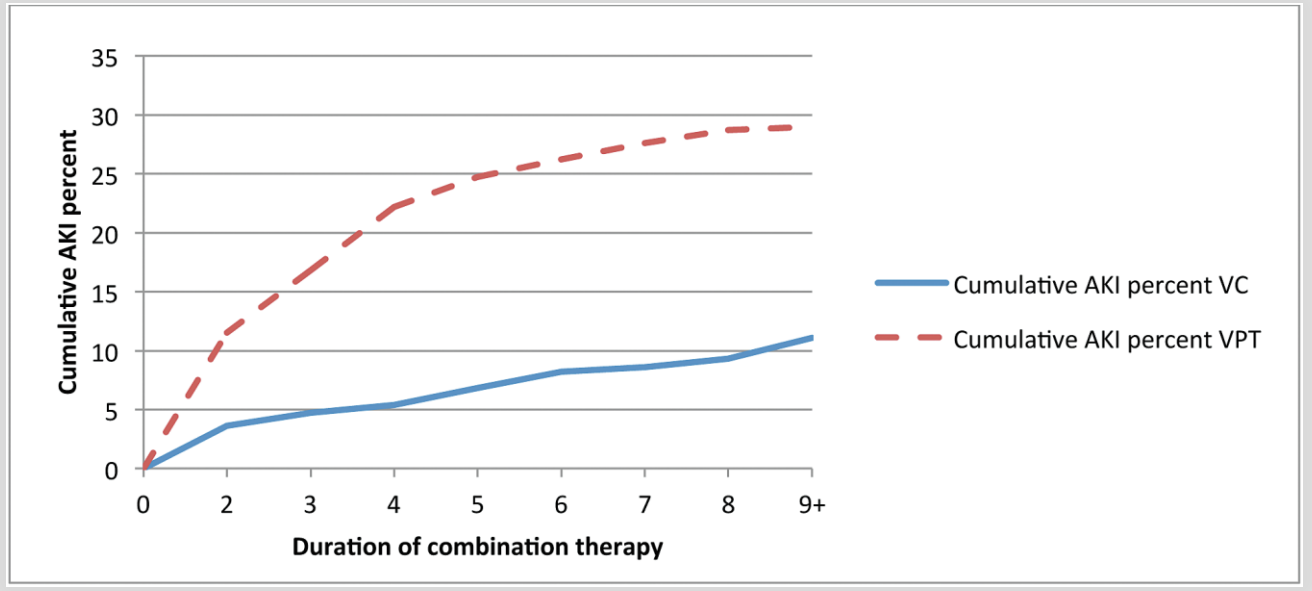
Clinical Infectious Diseases

MAJOR ARTICLE

# Risk of Acute Kidney Injury in Patients on Concomitant Vancomycin and Piperacillin–Tazobactam Compared to Those on Vancomycin and Cefepime

Bhagyashri Navalkele,[1,2] Jason M. Pogue,[2,7] Shigehiko Karino,[1,2] Bakht Nishan,[2] Madiha Salim,[2] Shantanu Solanki,[2] Amina Pervaiz,[2] Nader Tashtoush,[2] Hamadullah Shaikh,[2] Sunitha Koppula,[2] Jonathan Koons,[2] Tanveer Hussain,[2] William Perry,[2] Richard Evans,[3] Emily T. Martin,[3] Ryan P. Mynatt,[4] Kyle P. Murray,[5] Michael J. Rybak,[2,4,6] and Keith S. Kaye[1,2]

- Etude de cohorte américaine
- 558 patients:
  - 279 PIP-TAZ/VAN vs 279 CEP/VAN > 48h
- Définition IRA : RIFLE
- Modèle mutivarié ajusté sur sévérité, USI, durée bithérapie, dose vanco, autres nephrotoxiques
- Plus d'IRA (hazard ratio = 4.27; 95% confidence interval, 2.73–6.68) et plus tôt (3 vs 5 days P < .0001)
- Pas de différence de mortalité



Clinical Infectious Diseases

MAJOR ARTICLE

# Incidence of Acute Kidney Injury Among Critically Ill Patients With Brief Empiric Use of Antipseudomonal β-Lactams With Vancomycin

Diana J. Schreier,[1] Kianoush B. Kashani,[2,3] Ankit Sakhuja,[3] Kristin C. Mara,[4] Mohammad S. Tootooni,[5] Heather A. Personett,[1] Sarah Nelson,[1] Andrew D. Rule,[2] James M. Steckelberg,[6] Aaron J. Tande,[6] and Erin F. Barreto,[1,7]

CID 2019:68 (1 May)

- Rétrospectif, Mayo clinic 2006-2016
- 3299 patients
- Entre 24 et 72h de Vanco
- Définition AKIN stade 2 ou 3
- PTZ/VAN vs CEF/VAN, 1.11 [.85–1.45];
- PTZ/VAN vs MER/VAN, 1.04 [.71–1.42]

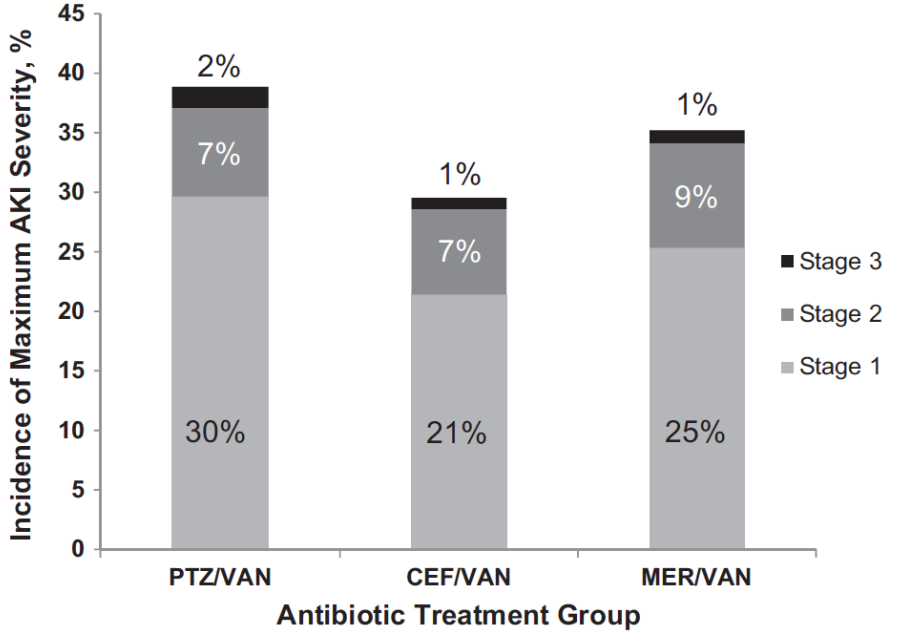
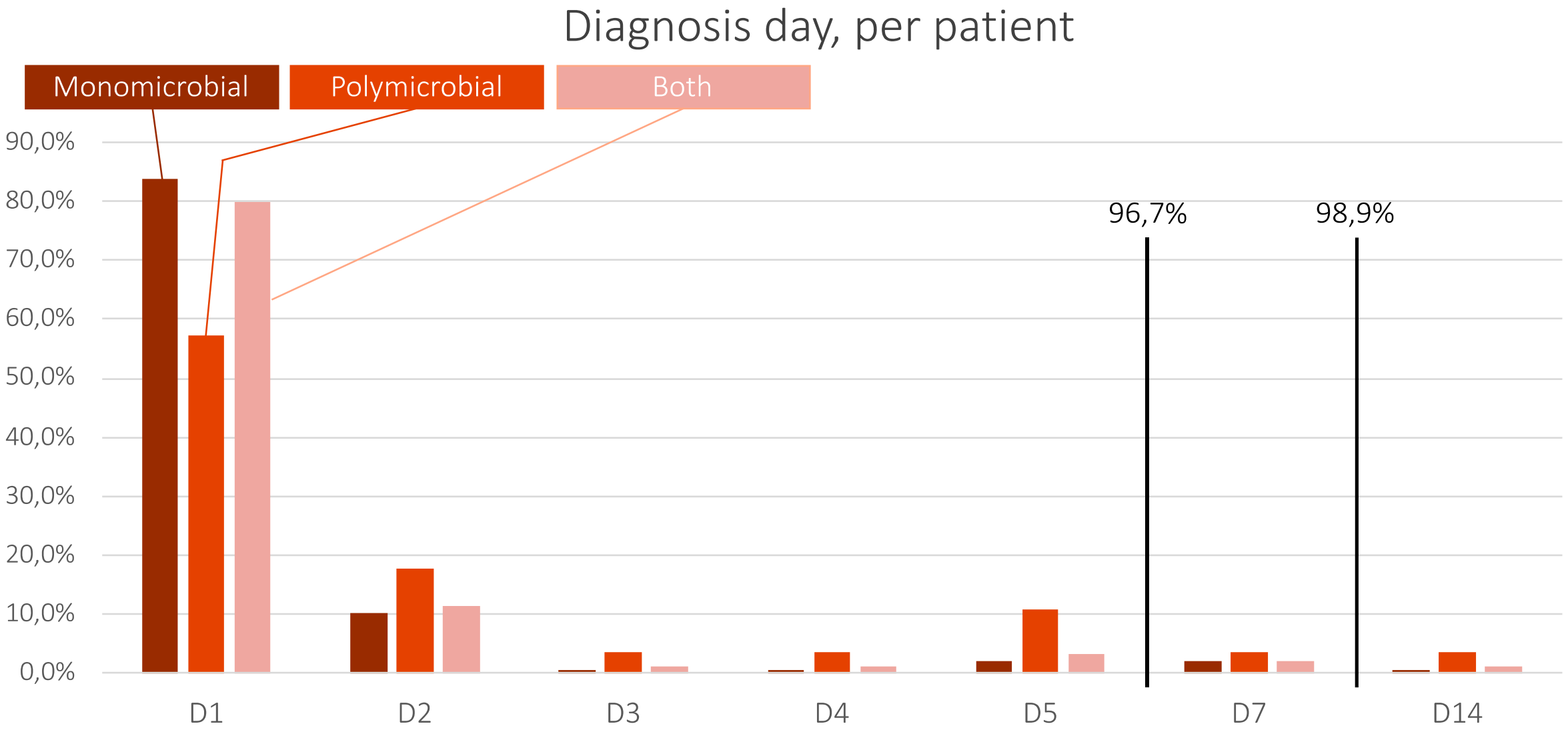



**Figure 2.** Incidence of maximum acute kidney (AKI) injury stage achieved across 3 antibiotic combinations: piperacillin-tazobactam (PTZ)/vancomycin (VAN), cefepime (CEF)/VAN, and meropenem (MER)/VAN. The overall incidences of stage 1, 2, and 3 AKI were 26%, 7%, and 1%, respectively. The incidences of stage 1 AKI development by serum creatinine in the PTZ/VAN, CEF/VAN, and MER/VAN groups were 62%, 51%, and 50%, respectively.

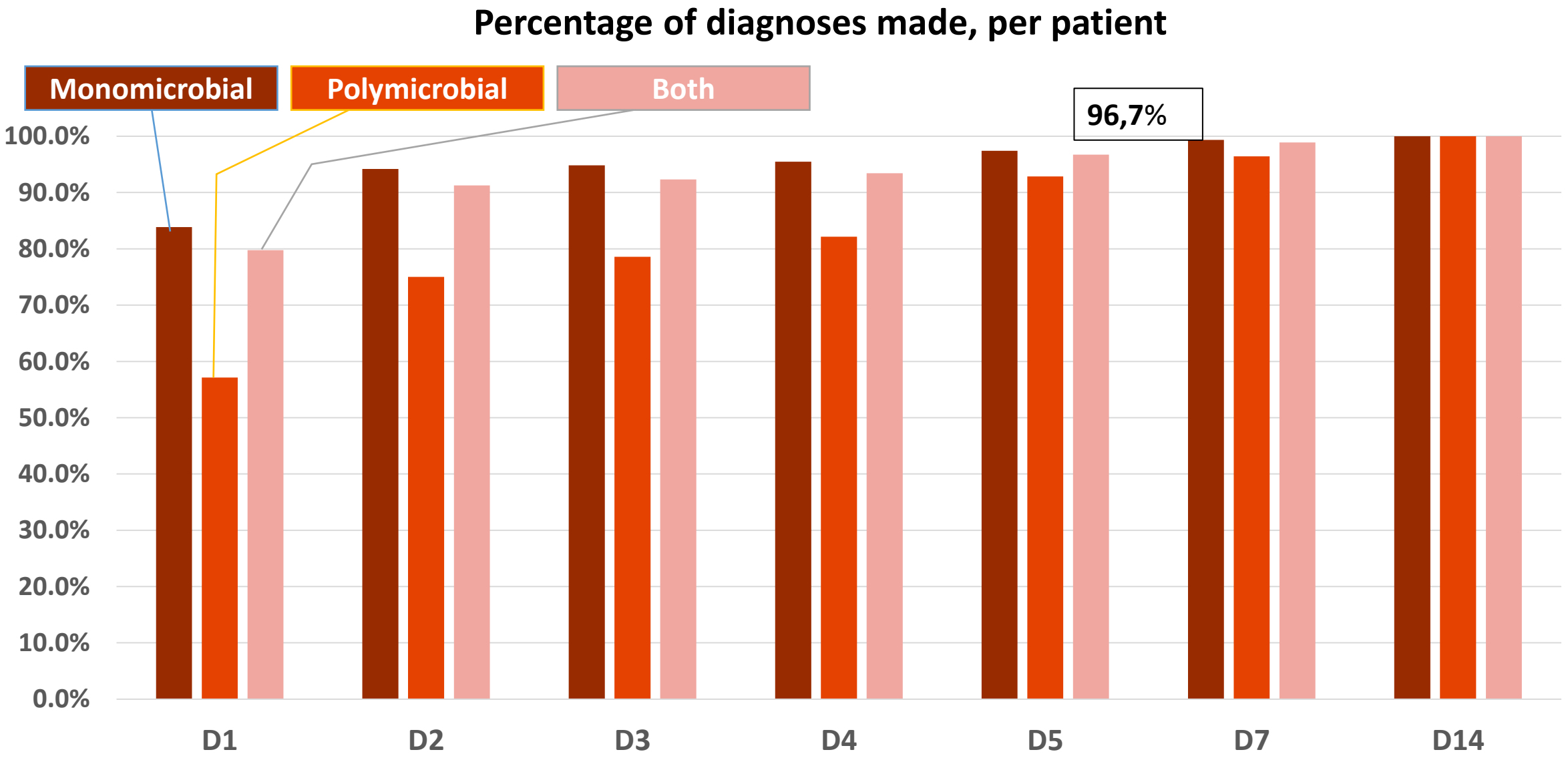
# Question 5 : Quand faire le relai pour l'antibiothérapie définitive ?

# Cultivation time to positivity



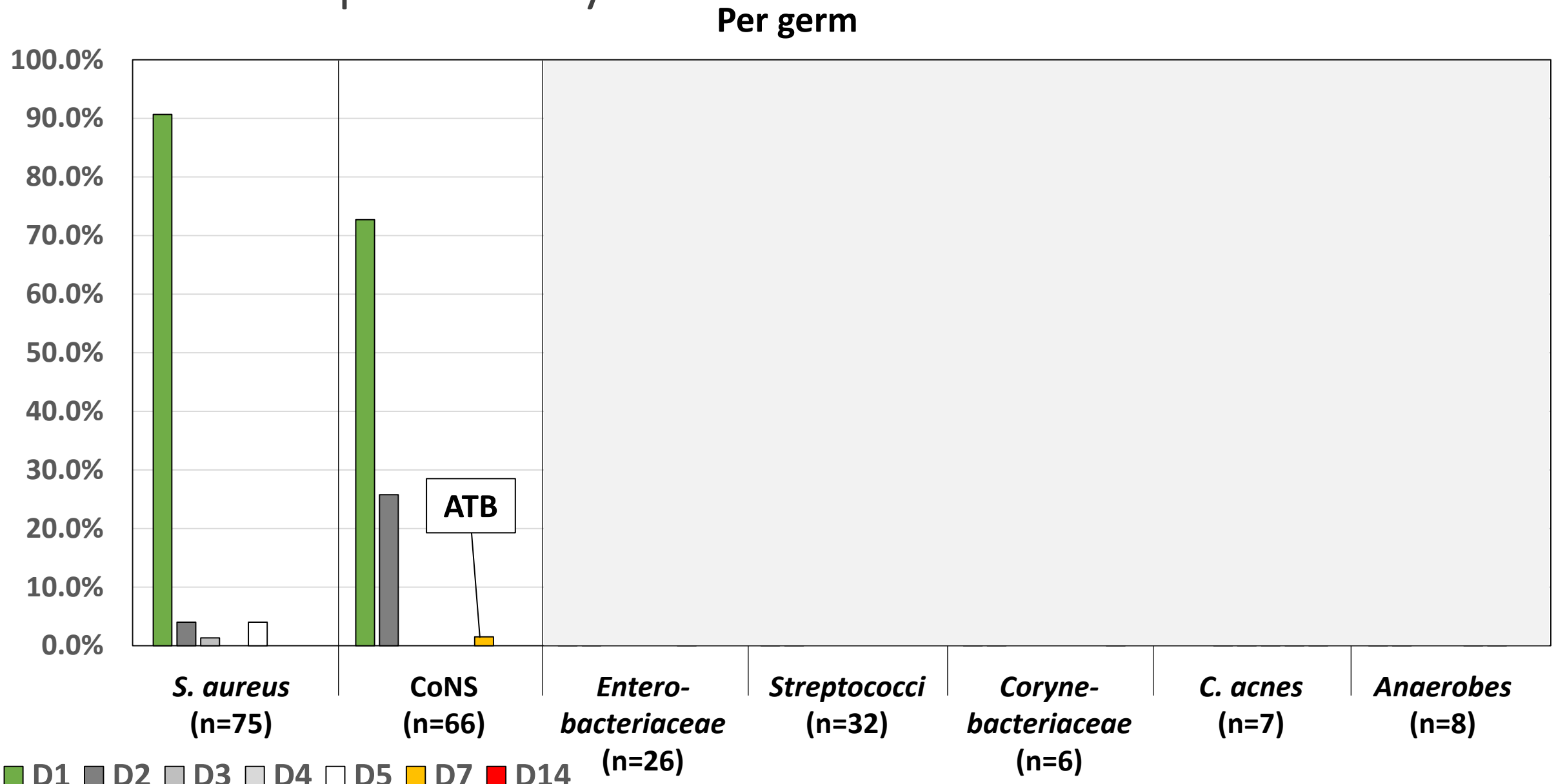

Présentation du Dr DEROCHE ECCMID 2019 – Remerciement Dr BEMER pour les diapositives

# Temps de culture pour positivation



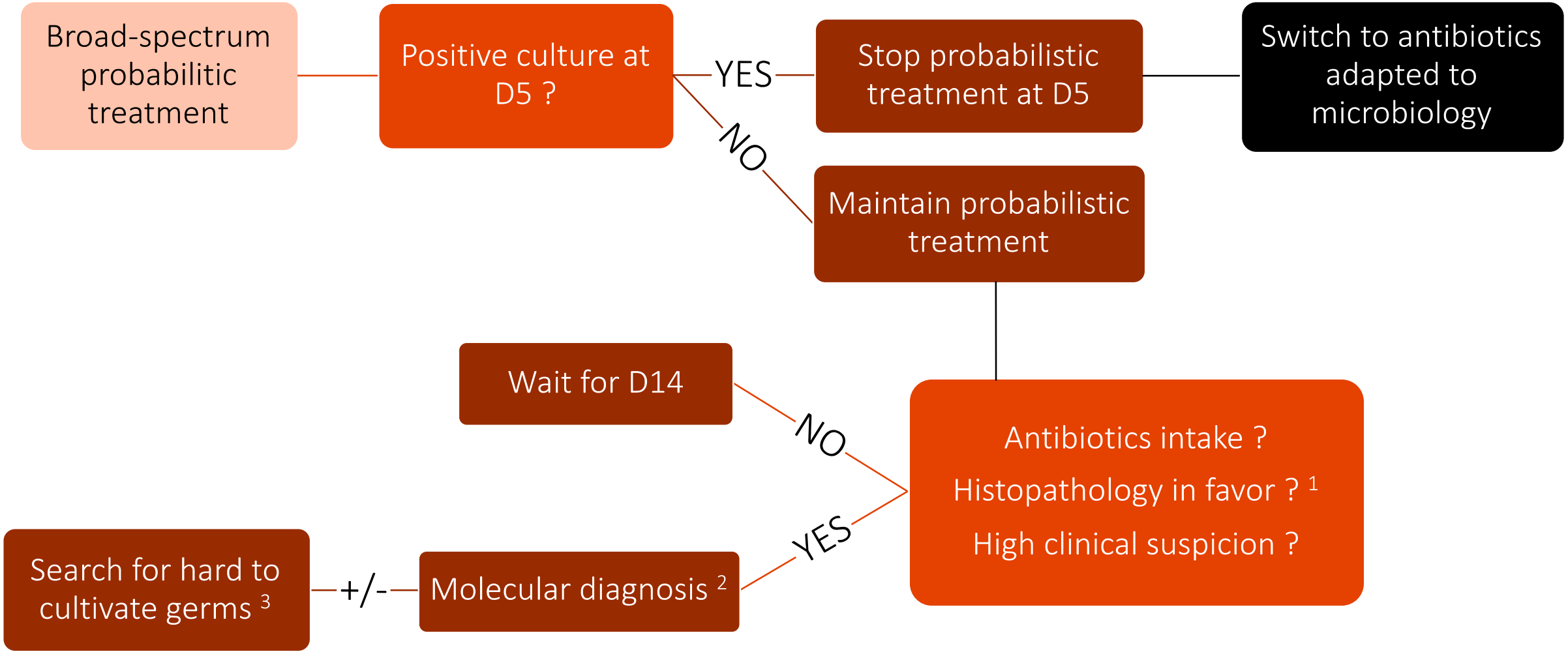

Présentation du Dr DEROCHE ECCMID 2019 – Remerciement Dr BEMER pour les diapositives

# Time to positivity




Présentation du Dr DEROCHE ECCMID 2019 – Remerciement Dr BEMER pour les diapositives

# Discussion




[1] Bémer et al. – JCM – 2018

[2] Bémer et al. – JCM – 2014

[3] Parvizi et al. – J Bone Surg Am - 2014

Présentation du Dr DEROCHE ECCMID 2019 – Remerciement Dr BEMER pour les diapositives

# Take-home messages

Il faut prescrire une ATB probabiliste

Anti CG+ :

DPC - LNZ - VAN

Beta-lactamine : PIP-TAZ ou C3G

L'intérêt du linézolide mais aussi ses préoccupations

Le relai à J5

# Merci de votre attention

# Take-home messages

## Ce qui est certain:

- Il faut prescrire une ATB probabiliste
- Elle doit comprendre un spectre large incluant les cg+ résistants à la méticilline
- BGN : elle doit être adaptée à l'écologie locale

## Ce qui est probable:

- La vancomycine semble associée à plus d'EI et l'association Pip-Taz Van est à éviter
- Le relai per os ne doit pas être fait trop tôt mais J5 semble acceptable
- L'antibioprophylaxie peut être prescrite et ne négative pas les prélèvements

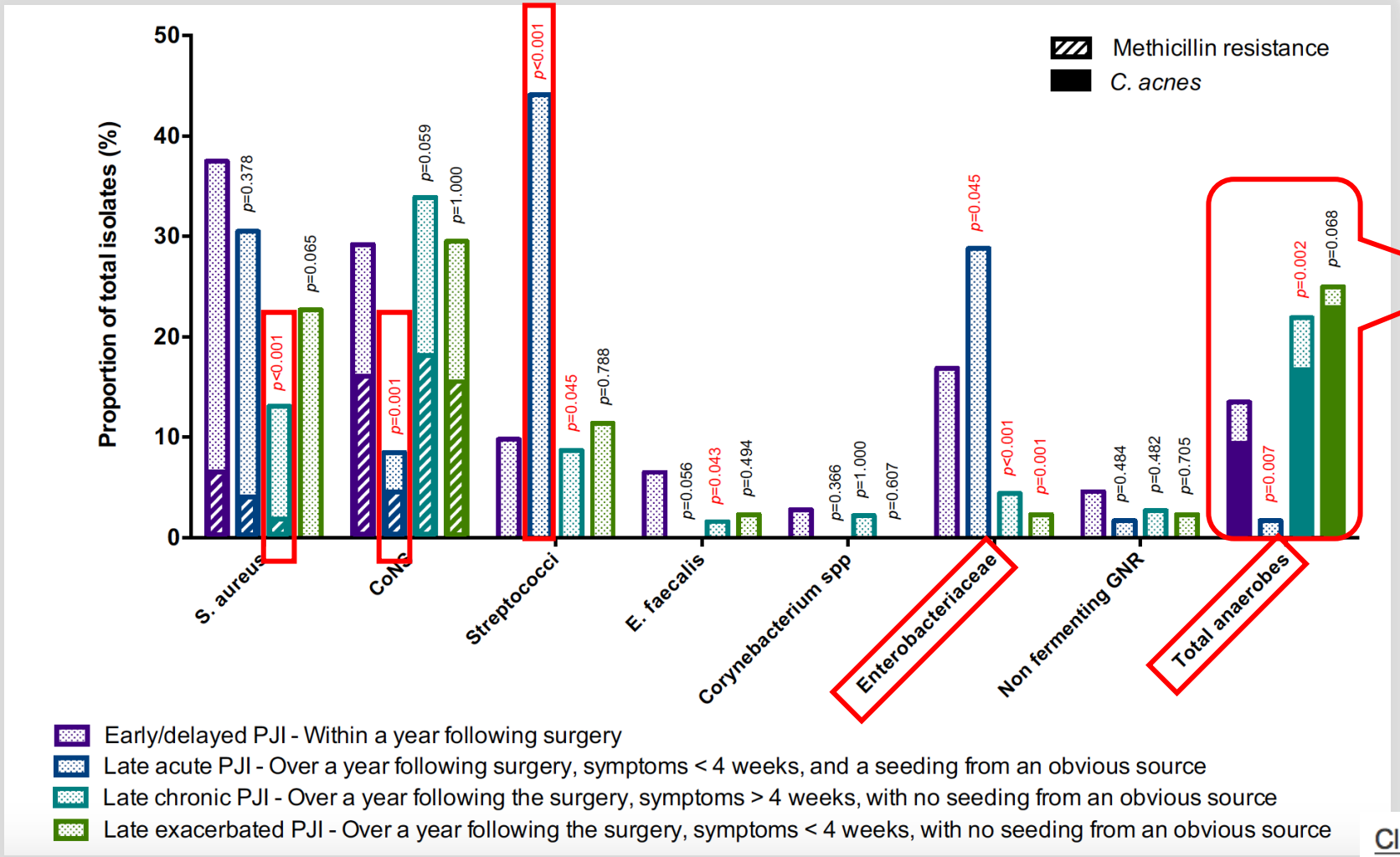
## Ce qui reste à discuter:

- Le choix de l'anti C+ : Linezolide ou Daptomycine?
- Le choix de la bétalactamine : Pip-Taz ou ceftriaxone ou Cefepime?
- La place des nouvelles béta-lactamines en probabiliste (Ceftaroline/Ceftobiprole)?

# Microbiologic epidemiology depending on time to occurrence of prosthetic joint infection: a prospective cohort study

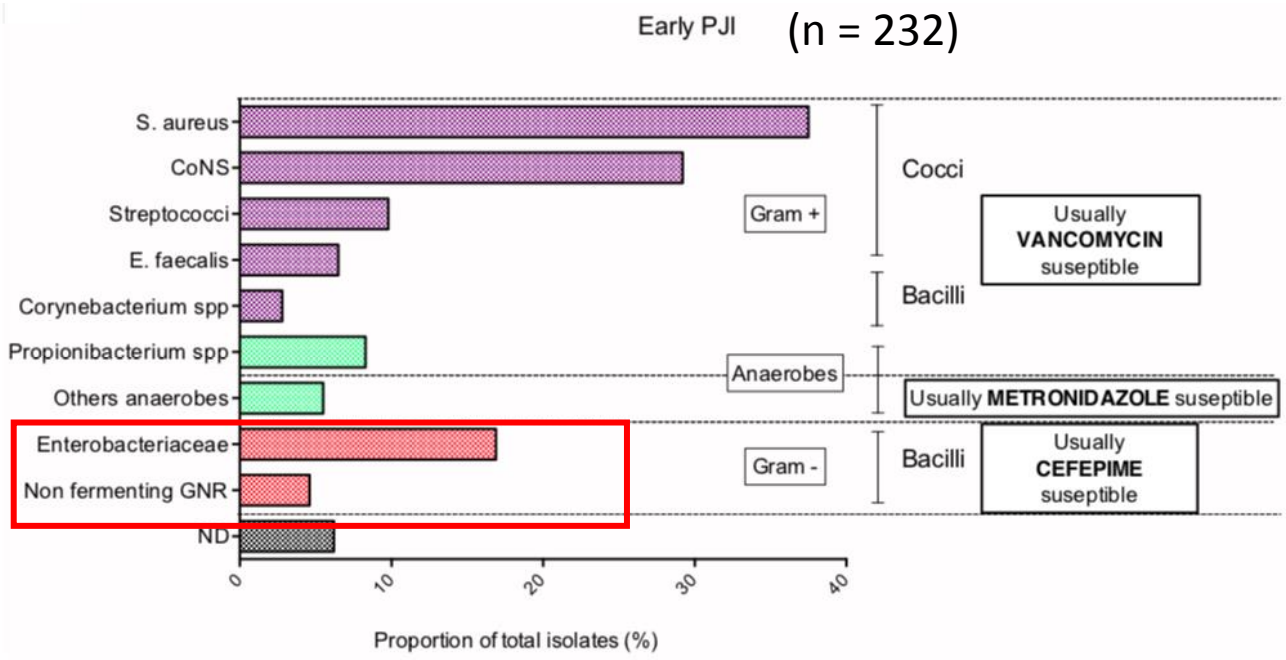
C. Triffault-Fillit [1, 2, *], T. Ferry [1, 2, 7], F. Laurent [1, 3, 7], P. Pradat [4], C. Dupieux [1, 3, 7], A. Conrad [1, 2, 7], A. Becker [1, 2], S. Lustig [1, 5, 7], M.H. Fessy [1, 6, 7], C. Chidiac [1, 2, 7], F. Valour [1, 2, 7] for the Lyon BJI Study Group[8]

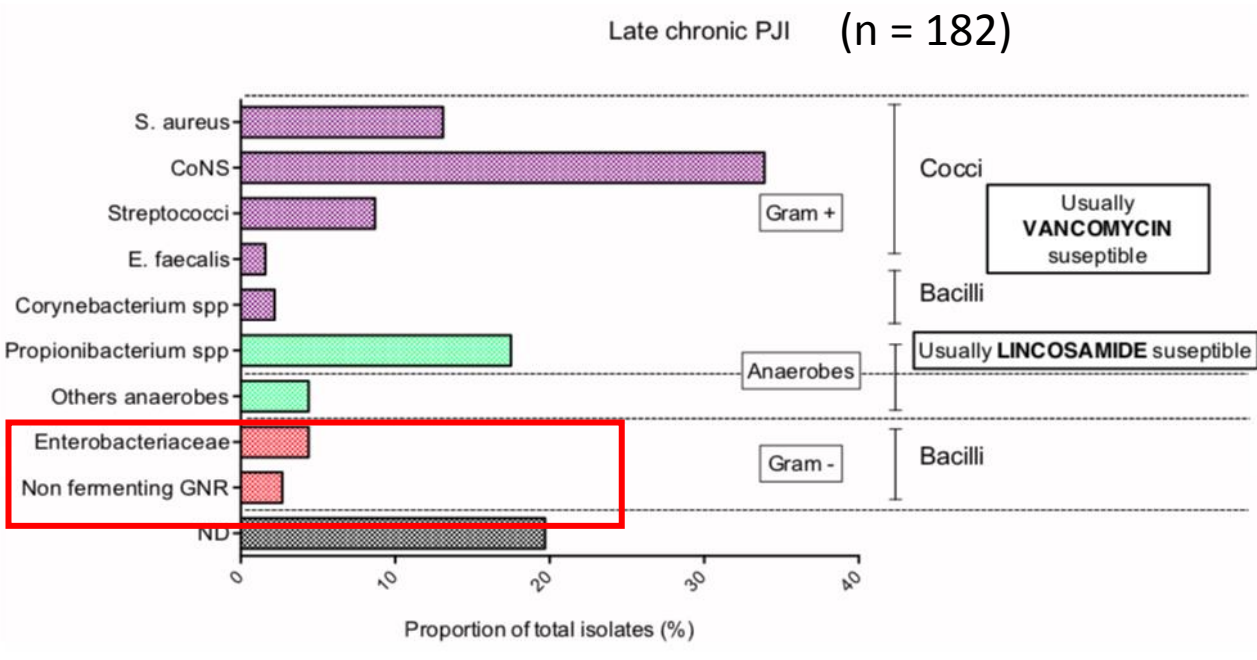
CMI CLINICAL MICROBIOLOGY AND INFECTION
ESCMID

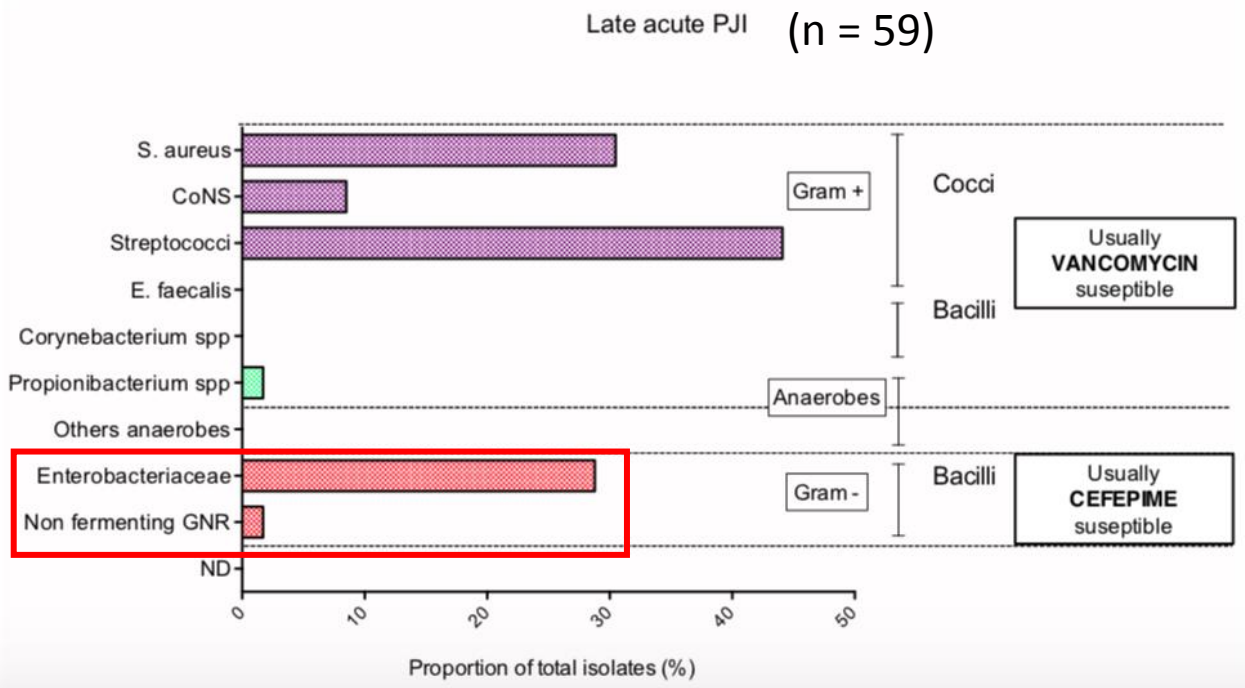


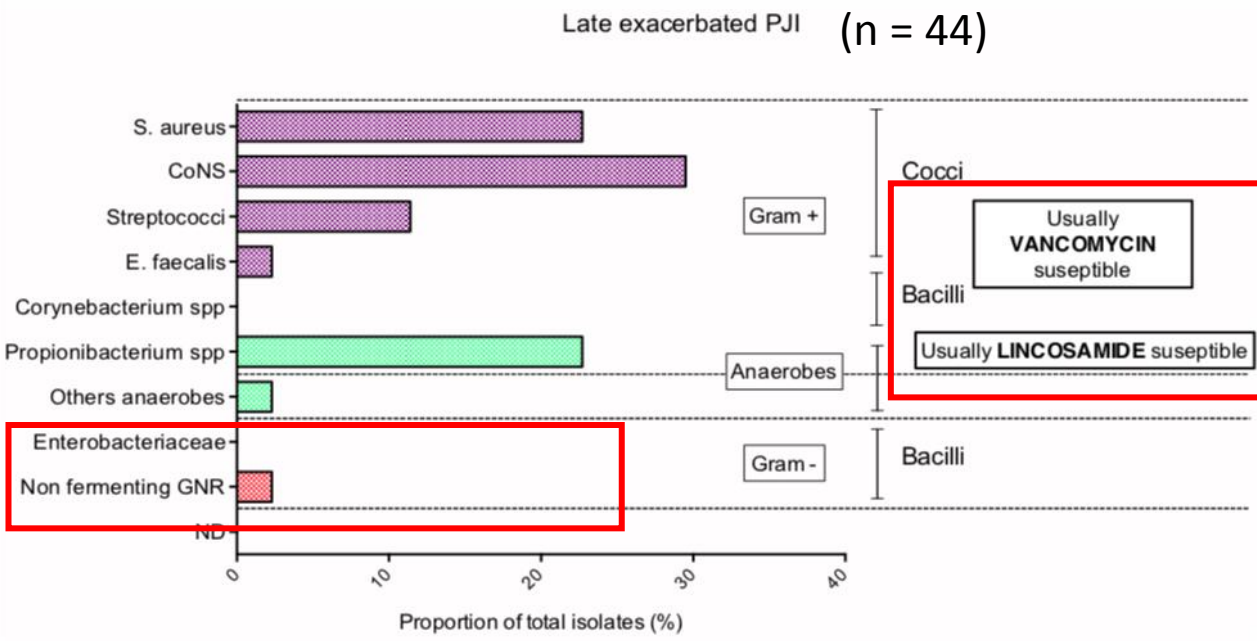

Prévalence des anaérobies (n . 40; 21.9%);
32 (80.0%) C. acnes) plus élevée dans les PJI tardives (p <0.001)

Clin Microbiol Infect. 2019 Mar;25(3):353-358.

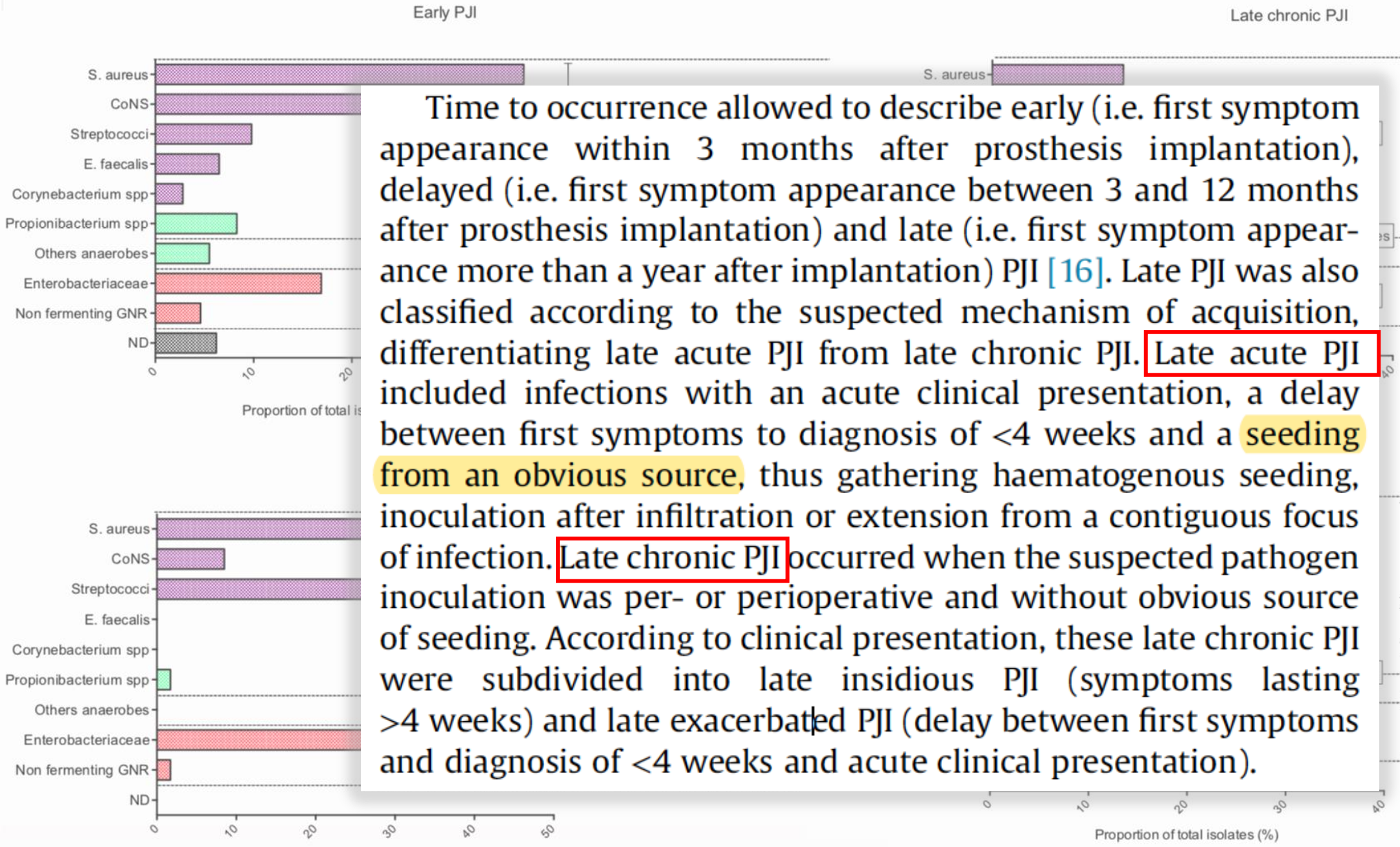


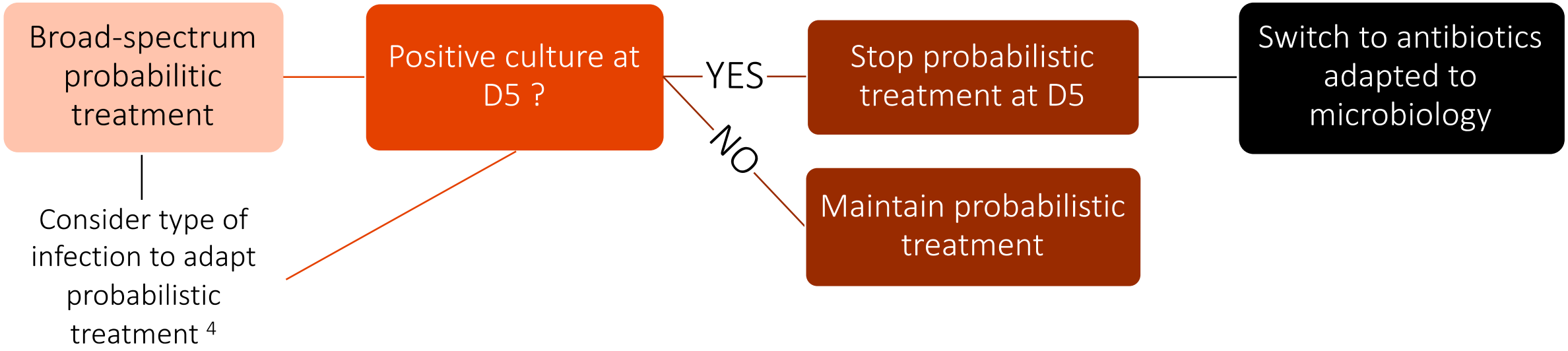

Clin Microbiol Infect. 2019 Mar;25(3):353-358.




Time to occurrence allowed to describe early (i.e. first symptom appearance within 3 months after prosthesis implantation), delayed (i.e. first symptom appearance between 3 and 12 months after prosthesis implantation) and late (i.e. first symptom appearance more than a year after implantation) PJI [16]. Late PJI was also classified according to the suspected mechanism of acquisition, differentiating late acute PJI from late chronic PJI. Late acute PJI included infections with an acute clinical presentation, a delay between first symptoms to diagnosis of <4 weeks and a seeding from an obvious source, thus gathering haematogenous seeding, inoculation after infiltration or extension from a contiguous focus of infection. Late chronic PJI occurred when the suspected pathogen inoculation was per- or perioperative and without obvious source of seeding. According to clinical presentation, these late chronic PJI were subdivided into late insidious PJI (symptoms lasting >4 weeks) and late exacerbated PJI (delay between first symptoms and diagnosis of <4 weeks and acute clinical presentation).

Clin Microbiol Infect. 2019 Mar;25(3):353-358.

# Discussion




[4] *Triffault-Fillit et al. – CMI – 2019*

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

[64.7%] of 17 vs 46 [56.8%] of 81; $P = .74$). Empiric post-operative intravenous antibiotic therapy was administered for a mean duration of 7.20 ± 4.93 days and was concordant with our algorithm in 65 patients (66.3%). Antibiotic regimens for

IDSA
Infectious Diseases Society of America

# Early onset prosthetic hip and knee joint infection: treatment and outcomes in Victoria, Australia

T.N. Peel [a,b,*], A.C. Cheng [c,d], P.F.M. Choong [a,e], K.L. Buising [b]

THE JOURNAL OF Hospital Infection

- Cohorte de 147 patients (10 hôpitaux en Australie)

was 4 days (IQR: 1–8). A single causative agent was isolated from intraoperative specimens in 56% of cases, two or more micro-organisms were isolated in 37% of cases and 7% of cases were culture negative (six prosthetic hip infections and four prosthetic knee infections). *Staphylococcus aureus* was the most frequent isolate (53%), of which approximately half were meticillin resistant. Coagulase-negative staphylococci were the next most frequent (21%). *Enterococcus* species and Gram-negative bacilli were particularly associated with poly-microbial infections and were isolated in 40% and 69% of polymicrobial infections respectively.