

Les infections liées aux soins en milieu extra-hospitalier



Emergence d'un nouveau concept
B Guery, Lille

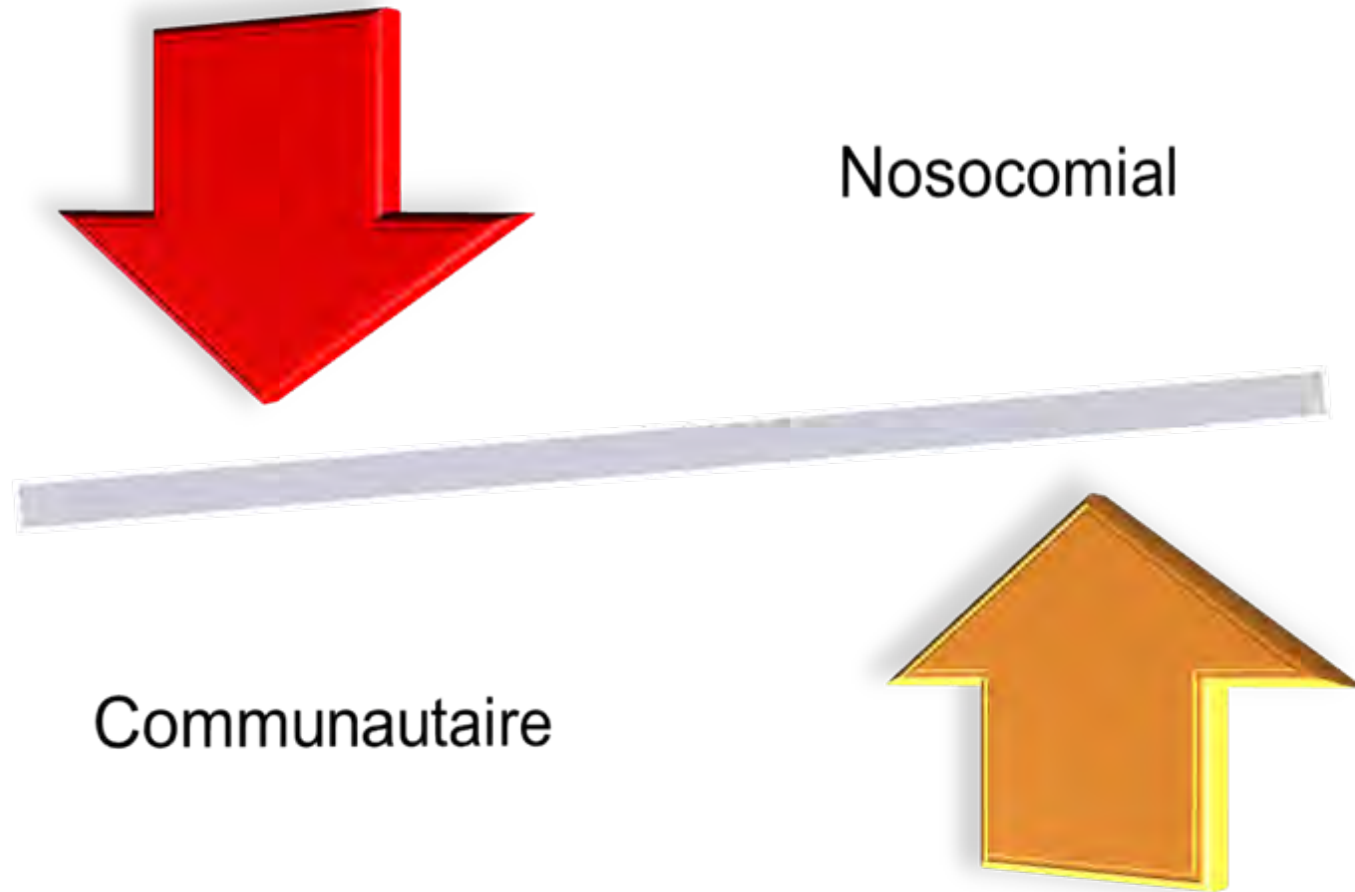
Symposium organisé en partenariat avec

Wyeth

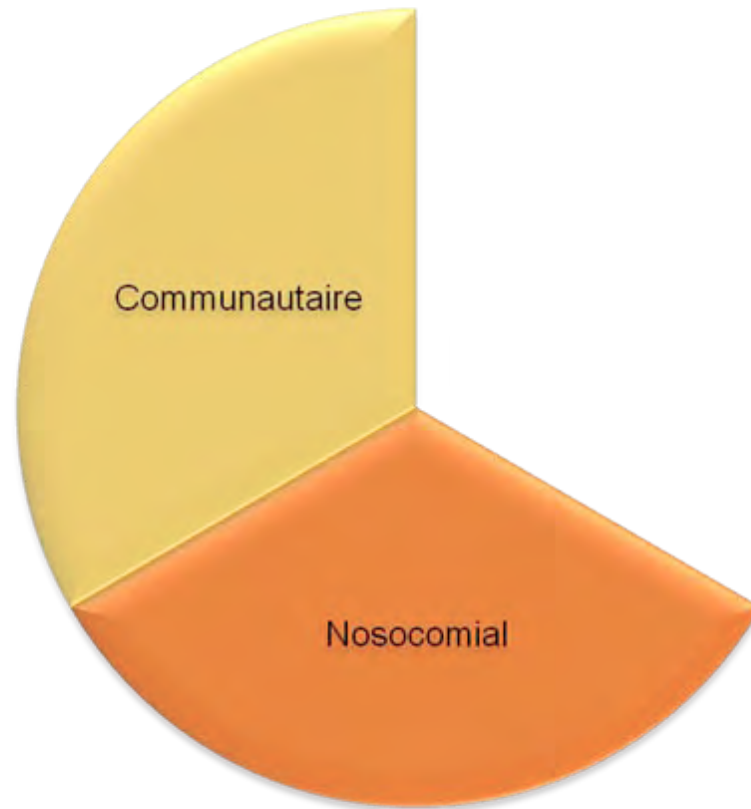
Conflits d'intérêts

- Type d'implication
 - Invitations congrès, Board d'expert, Présentations, EPU, Diaporama, Articles médicaux, Fonds pour la recherche expérimentale
 - Laboratoires: Pfizer, Wyeth, Bioalliance, Gilead, GSK, Aventis, Janssen
- Sponsoring:
 - RTL2, Hell high energy drinks
 - Bières gratuites au Stout (Wazemmes, Lille)

Introduction

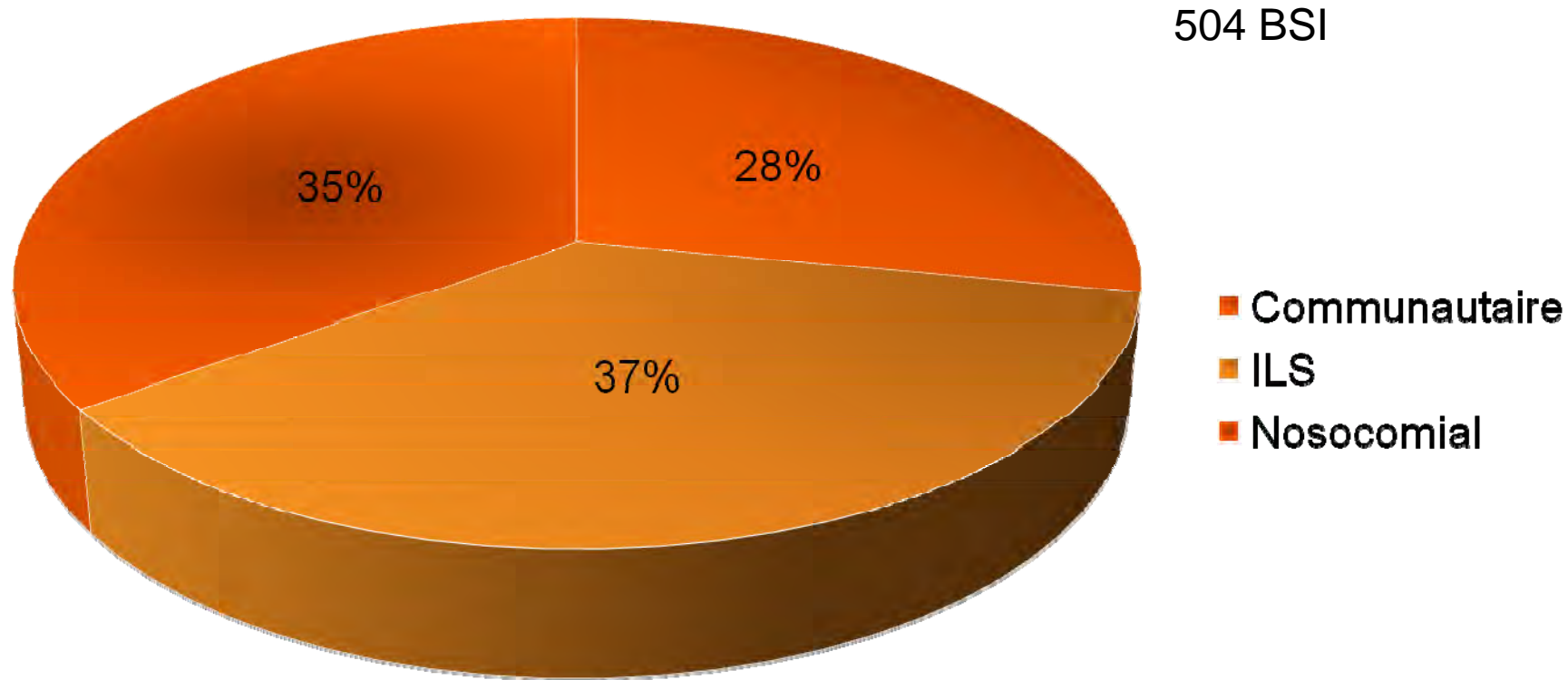


Introduction



Health Care–Associated Bloodstream Infections in Adults: A Reason To Change the Accepted Definition of Community-Acquired Infections

N. Deborah Friedman, MBBS; Keith S. Kaye, MD, MPH; Jason E. Stout, MD, MHS; Sarah A. McGarry, MD; Sharon L. Trivette, RN; Jane P. Briggs, RN; Wanda Lamm, RN; Connie Clark, RN; Jennifer MacFarquhar, RN; Aaron L. Walton, MD; L. Bartli Keller, MD; and Daniel J. Sexton, MD



504 BSI

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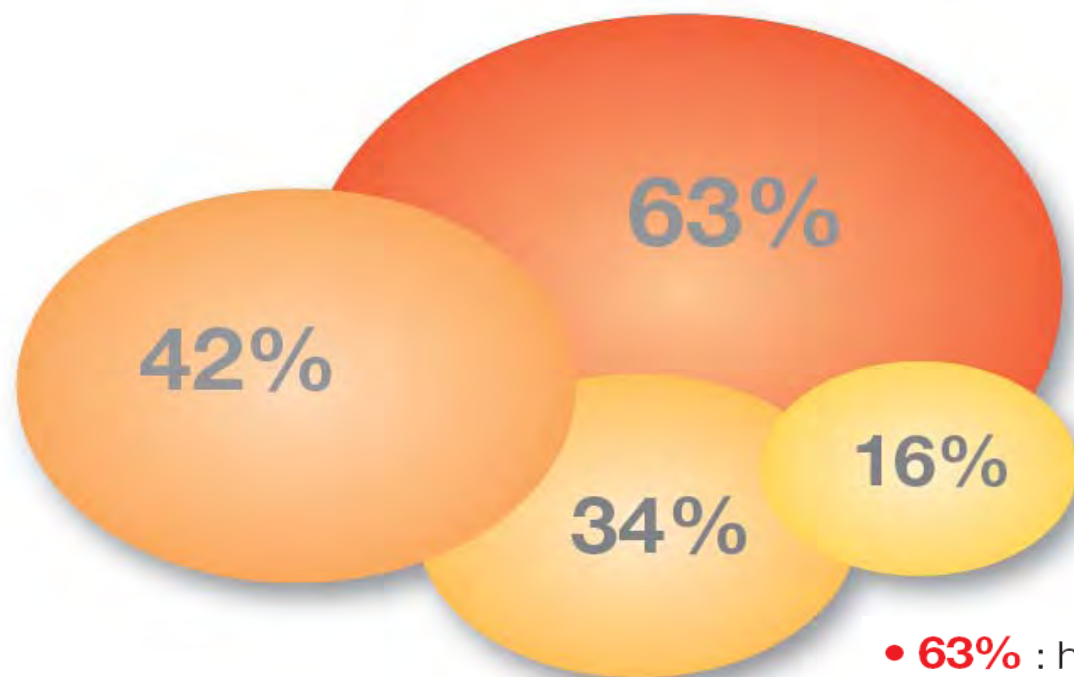
Table 3. Source of Bloodstream Infection, by Epidemiologic Type of Infection*

Source of BSI	Patients with Community- Acquired BSI (n = 125)	Patients with Health Care– Associated BSI (n = 168)	Patients with Nosocomial BSI (n = 151)	P Values		
				Community- Acquired BSI vs. Health Care– Associated BSI	Community- Acquired BSI vs. Nosocomial BSI	Health Care– Associated BSI vs. Nosocomial BSI
	←————— n (%) —————→					
Intravascular device	0	70 (42)	78 (52)	NA	NA	>0.2
Urinary tract infection	58 (46)	29 (17)	27 (18)	<0.001	<0.001	>0.2
Pneumonia	34 (27)	27 (16)	24 (16)	0.10	0.18	>0.2
Gastrointestinal tract infection	5 (4)	28 (17)	20 (13)	0.004	0.056	0.15

* BSI = bloodstream infection; NA = not available.

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- **63%** : hospitalisation dans les 90 jours précédents
- **42%** : traitement intra-veineux à domicile ou dialyse
- **34%** : soins médicalisés à domicile
- **16%** : maison de retraite médicalisée

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Infection survenant chez un patient hospitalisé depuis moins de 48 heures et présentant **un ou plusieurs des critères ci-dessous** :

1. Traitement IV à domicile

Soins de plaies à domicile

Soins à domicile par un professionnel de santé ou un proche

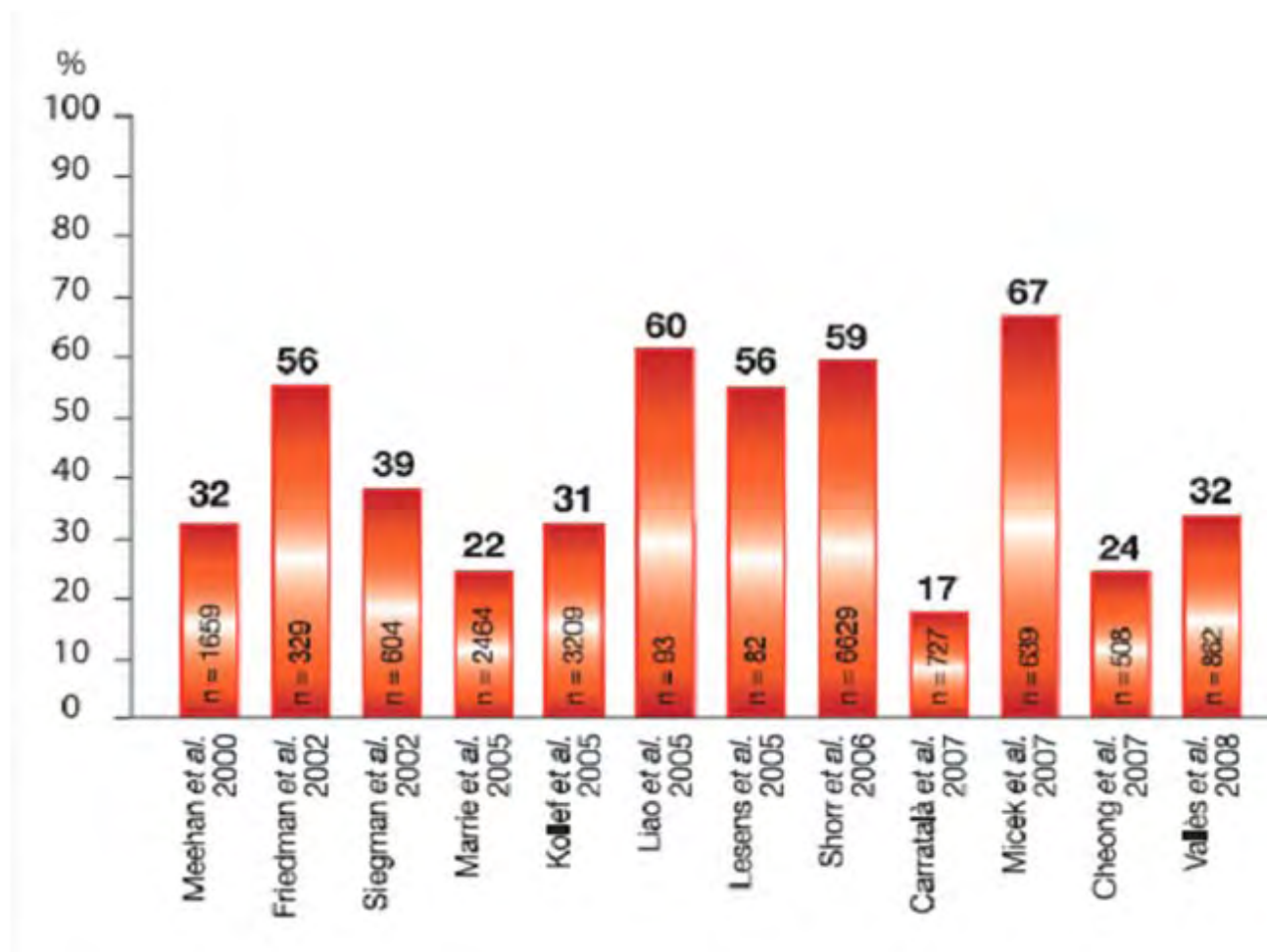
Auto-administration d'un traitement IV à domicile dans les 30 jours précédents

2. Hémodialyse ou chimiothérapie IV dans les 30 jours précédents

3. Hospitalisation de plus de 48h dans les 90 jours précédents

4. Resident dans un service de soins longue durée ou HAD

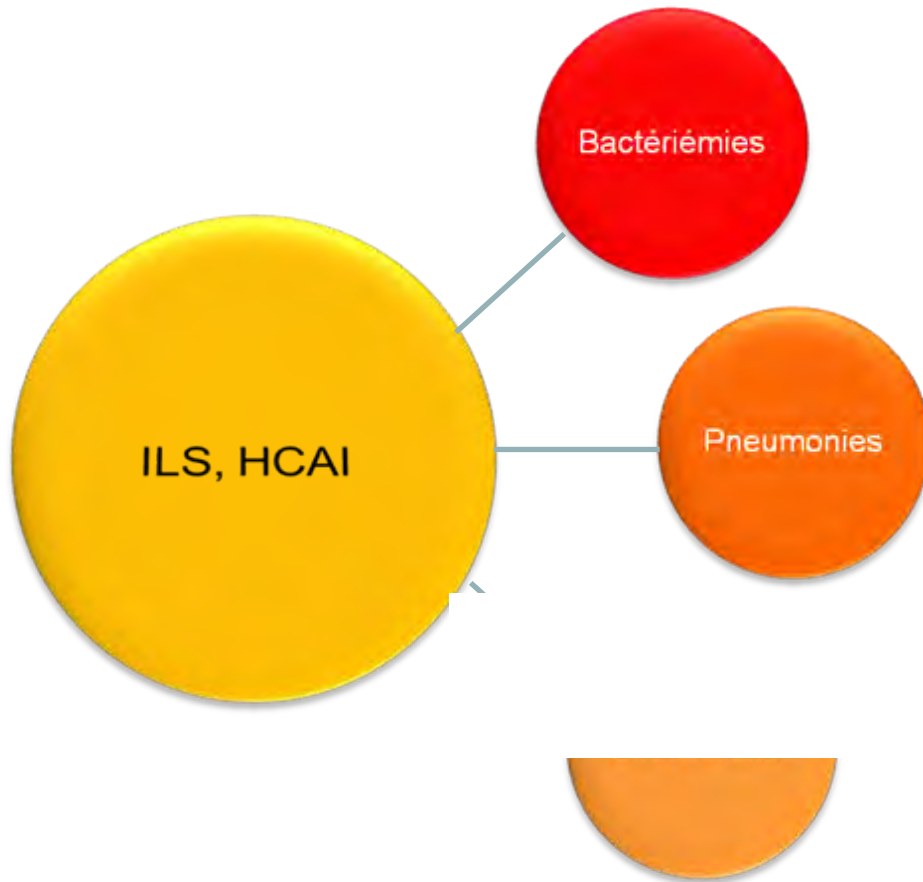
Proportion de HCAI chez les patients hospitalisés pour une infection dite communautaire



Co morbidité

- Les malades répondant à un ou des critères d'infection liée aux soins en milieu extra-hospitalier présentent très fréquemment des co-morbidités. Celles-ci **influencent le pronostic de l'infection.**
 - Insuffisance rénale chronique
 - Diabète
 - Troubles neurologiques, AVC, démence
 - Cancer
 - BPCO
 - VIH
 - Insuffisance cardiaque

Infections liées aux soins, « HCAI »



- Une écologie bactérienne différente
- Une morbi-mortalité plus élevée

n charge

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Communautaire

- *E. coli*
- *S. pneumoniae*

ILS et noso

- *S. aureus*
- Enterocoque

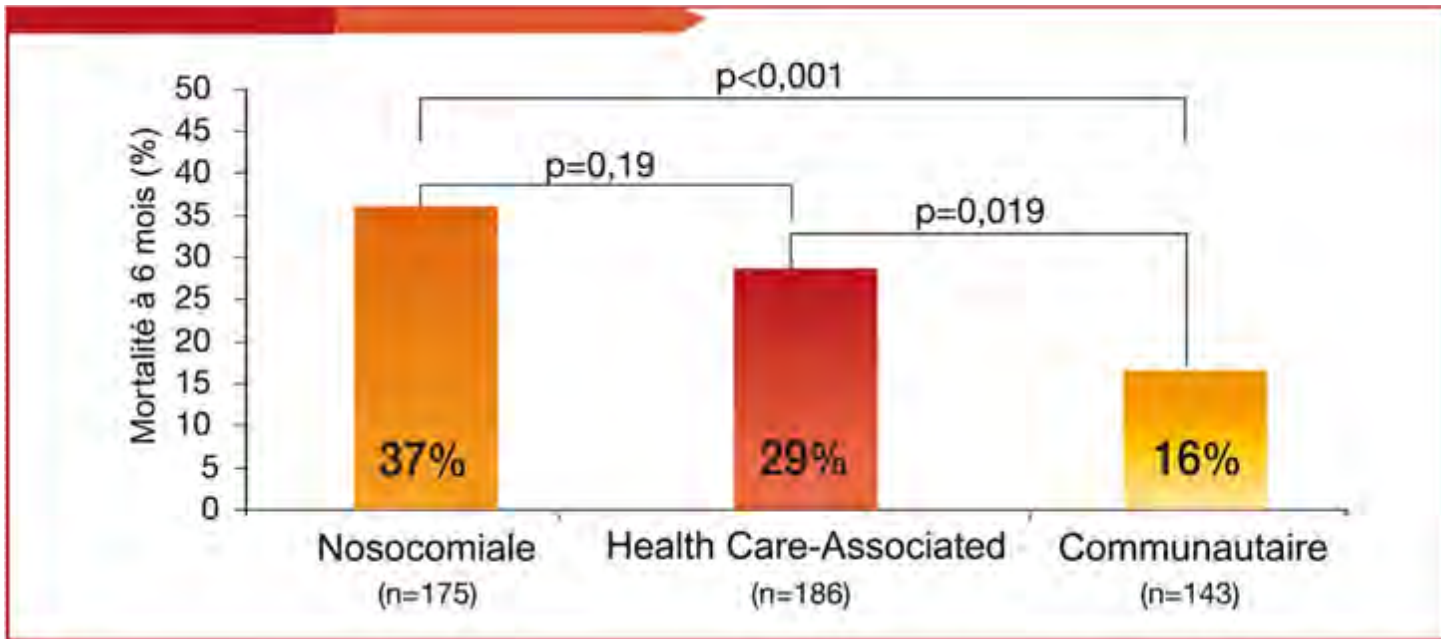
■ 73 SARM/145
Staphylococcus aureus

- 3 communautaire
- 35 HCAI
- 35 nosocomial

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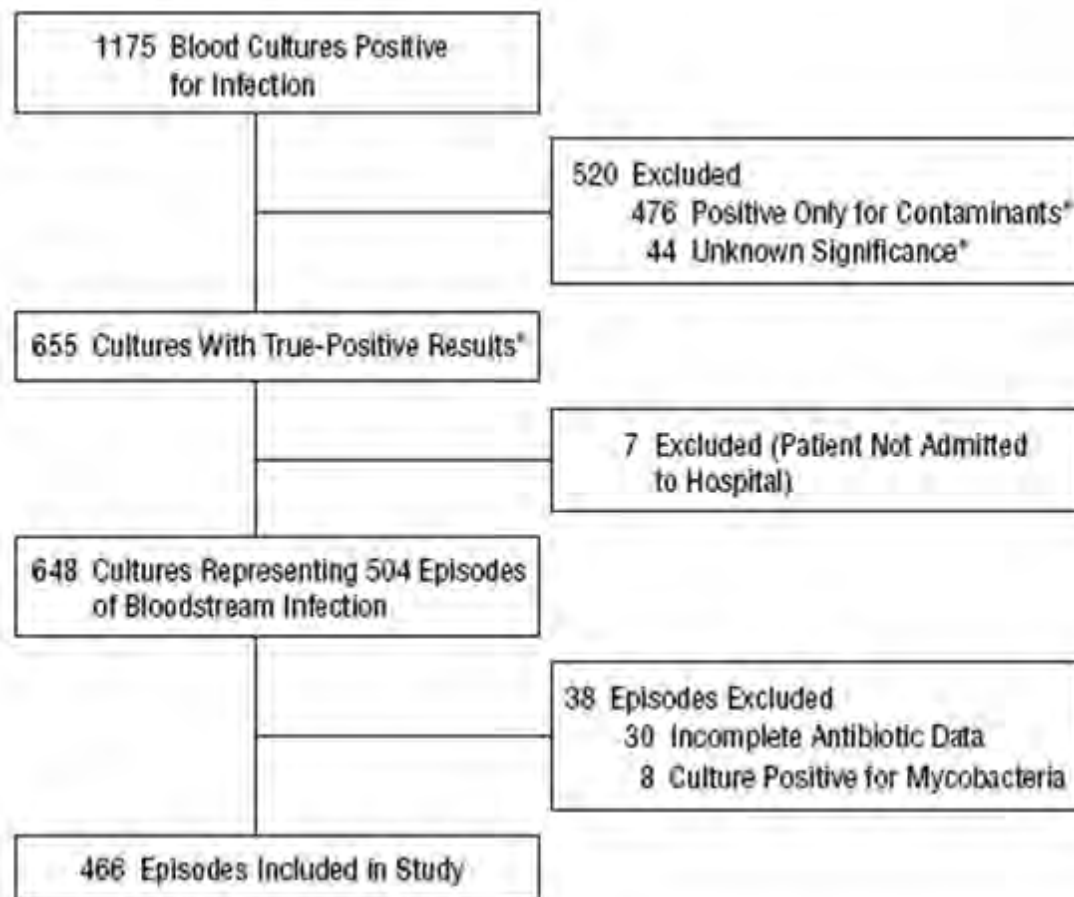
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Taux de mortalité selon les catégories



Risk Factors for Ineffective Therapy in Patients With Bloodstream Infection

Jay R. McDonald, MD; N. Deborah Friedman, MBBS; Jason E. Stout, MD, MHS;
Daniel J. Sexton, MD; Keith S. Kaye, MD, MPH



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Table 2. Microbiological Characteristics of Bloodstream Infections, by Epidemiological Category

Characteristic	Study Patients, No. (%)				P Value		
	Total Population	Community-Acquired	Health Care-Acquired	Nosocomial	Community-Acquired vs Health Care-Acquired	Community-Acquired vs Nosocomial	Health Care-Acquired vs Nosocomial
Patients	466 (100)	132 (28.3)	178 (38.2)	156 (33.5)			
Bacterial							
Gram-positive	258 (55.4)	66 (50.0)	100 (56.2)	92 (59.0)	.28	.13	.61
Methicillin-resistant <i>Staphylococcus aureus</i>	61 (13.1)	2 (1.5)	32 (18.0)	27 (17.3)	<.001	<.001	.87
Coagulase-negative <i>Staphylococci</i>	45 (9.7)	4 (3.0)	10 (5.6)	31 (19.9)	.28	<.001	<.001
<i>Streptococcus pneumoniae</i>	35 (7.5)	26 (19.7)	9 (5.1)	0	<.001	<.001	.004
<i>Enterococcus</i>	32 (6.9)	8 (6.1)	12 (6.7)	12 (7.7)	.81	.59	.74
Gram-negative	159 (34.1)	57 (43.2)	59 (33.2)	43 (27.6)	.07	.006	.27
<i>Escherichia coli</i>	66 (14.2)	35 (26.5)	18 (10.1)	13 (8.3)	.001	<.001	.58
<i>Pseudomonas</i>	21 (4.5)	2 (1.5)	12 (6.7)	7 (4.5)	.03	.15	.37
Yeast	14 (3.0)	4 (3.0)	4 (2.3)	6 (3.9)	.67	.70	.39
Polymicrobial	35 (7.5)	5 (3.8)	15 (8.4)	15 (9.6)	.10	.05	.70

Healthcare-associated bloodstream infection: A distinct entity?

Insights from a large U.S. database*

Andrew F. Shorr, MD, MPH; Ying P. Tabak, PhD; Aaron D. Killian, PharmD, BCPS;
Vikas Gupta, PharmD, BCPS; Larry Z. Liu, MD, PhD; Marin H. Kollef, MD

■ 6697 BSI: 55% HCAB

Table 4. Crude mortality, hospital length of stay, and total charge by bloodstream infection (BSI) subgroup

Outcomes	CAB (n = 2524)	HCAB (n = 3705)	HAB (n = 468)
Mortality, n (%)	253 (10.0)	551 (14.9) ^a	70 (15.0) ^b
LOS, days, median	6.0	6.0	10.0
Mean ± sd	7.7 ± 6.6	8.1 ± 7.7	12.8 ± 10.1 ^a
Total charge, \$, median,	15,278	15,288	30,340
Mean ± sd	26,372 ± 33,400	24,939 ± 38,865	58,145 ± 85,491 ^a

CAB, community-acquired BSI; HCAB, healthcare-associated BSI; HAB, hospital-acquired BSI; LOS, length of stay.

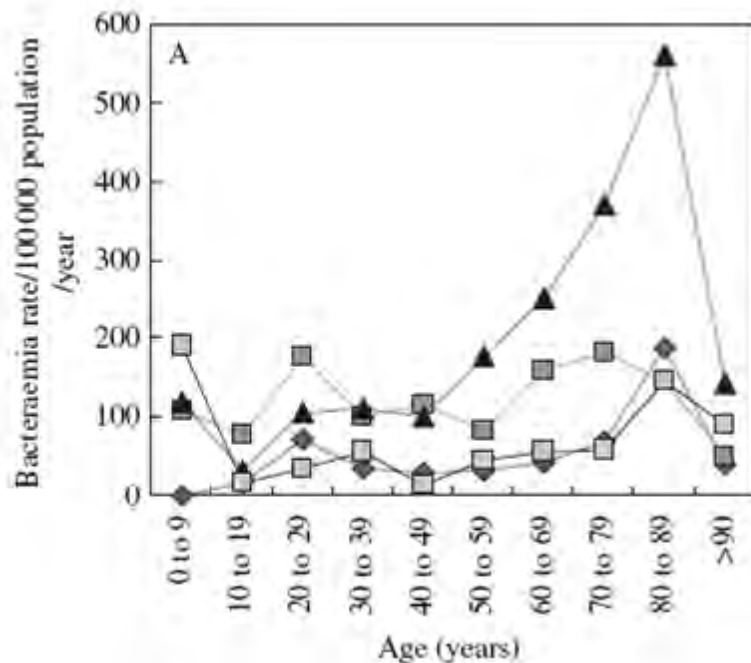
^a $p < .0001$ compared with CAB; ^b $p < .01$ compared with CAB.

- Methicillin-resistant *Staphylococcus aureus*
 - highest crude mortality rate (22.5%)
 - longest mean length of stay (11.1 10.7 days)
 - highest independent mortality risk (odds ratio 2.70).

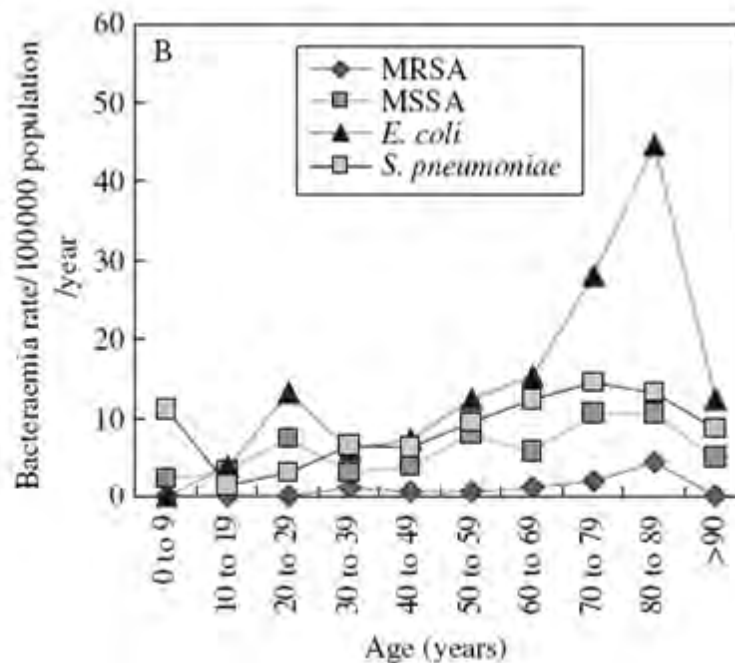
Hospital exposure in a UK population, and its association with bacteraemia

D.H. Wyllie^{a,*}, A.S. Walker^b, T.E.A. Peto^c, D.W. Crook^{a,c}

Hospital exposed

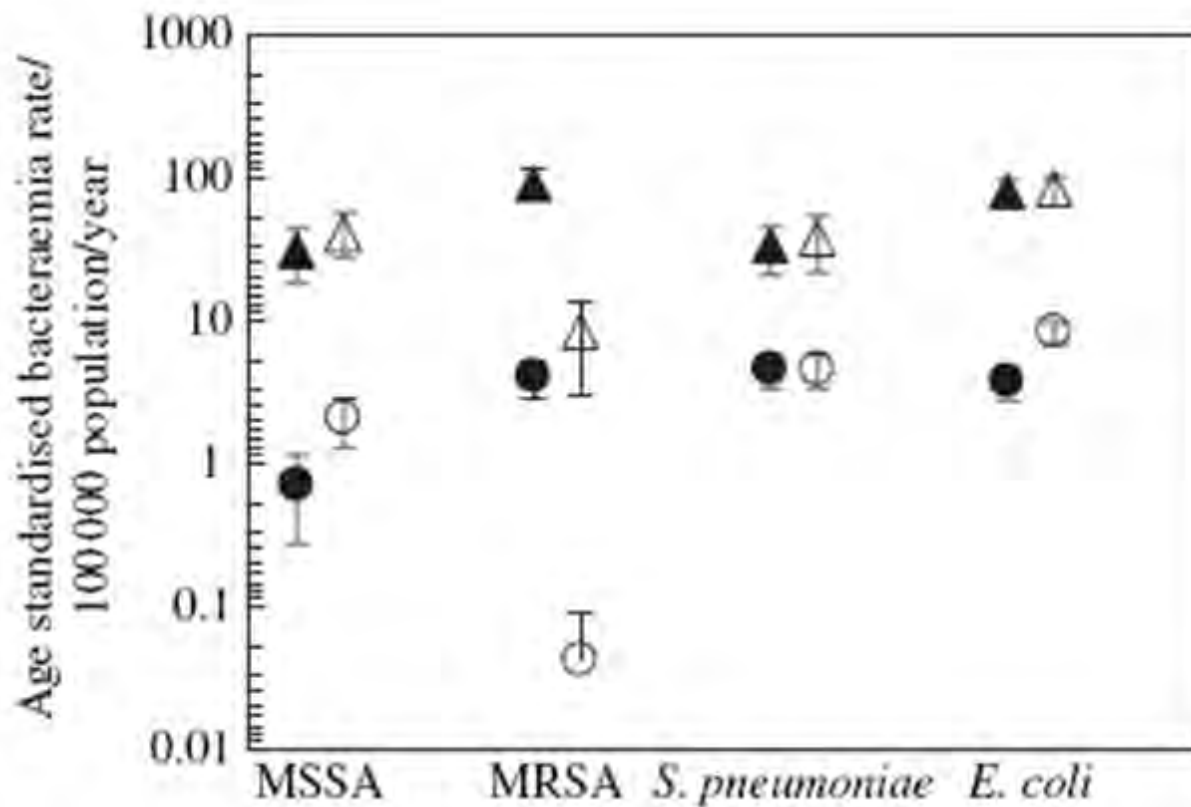


Hospital non exposed



Hospital exposure in a UK population, and its association with bacteraemia

D.H. Wyllie^{a,*}, A.S. Walker^b, T.E.A. Peto^c, D.W. Crook^{a,c}



△ Hospital exposed
○ Hospital non exposed

Black male
White female

HCAP

Définition HCAP ATS 2005

- Hospitalisation supérieure à 48h dans les 90 jours précédant l'infection
- Soins infirmiers à domicile, unités de soins de longue durée,
- Patients ayant reçu dans les 30 jours précédents :
 - Antibiothérapie Intraveineuse
 - Chimiothérapie
 - Séance d'hémodialyse
 - Soins de plaies

HCAP

Health Care–Associated Pneumonia Requiring Hospital Admission

Epidemiology, Antibiotic Therapy, and Clinical Outcomes

Joni Carratalá, MD, PhD; Analia Myllyniemi, MD; Nerea Fernández-Sabé, MD, PhD; Cristina Suárez, MD; Joni Dorva, MD, PhD; Ricard Verdaguer, MD; Frederic Marrero, MD, PhD; Francesc Gudiol, MD, PhD

Arch Intern Med. 2007;167(13):1393-1399

Epidemiology and Outcomes of Health-care–Associated Pneumonia*

Results From a Large US Database of Culture-Positive Pneumonia

Mark H. Kollef, MD, FCCP; Andrew Shorr, MD, MPH, FCCP; Yang F. Tsalik, PhD; Vilma Gajjala, PharmD, BCPS; Loren Z. Liu, MD, PhD (and); R. S. Johannes, MD, MS

(CHEST 2005; 128:3854–3862)

Health Care-Associated Pneumonia and Community-Acquired Pneumonia: a Single-Center Experience¹

Scott T. Micek,¹ Katherine E. Kollef,² Richard M. Reichley,² Nareg Roubinian,² and Martin H. Kollef^{2*}

¹Department of Pharmacy, Barnes-Jewish Hospital, St. Louis, Missouri; ²Pulmonary and Critical Care Division, Washington University School of Medicine, St. Louis, Missouri; and IBC Health Care, Center for Health Care Quality and Effectiveness, St. Louis, Missouri

ANTIMICROBIAL AGENTS AND CHEMOTHERAPY, Oct. 2007, p. 3568–3573

- Etude prospective
- 126/727 HCAP

- Rétrospective
- 4543 pneumonies, >20% HCAP

- Rétrospective
- 639 pneumonies, 67% HCAP

Health Care–Associated Pneumonia Requiring Hospital Admission

Epidemiology, Antibiotic Therapy, and Clinical Outcomes

Jordi Carratalá, MD, PhD; Analia Mylchreth, MD; Nària Fernández-Sabé, MD, PhD; Cristina Suárez, MD; Jordi Dorca, MD, PhD; Ricard Verdagué, MD; Frederic Mantres, MD, PhD; Francesc Gudiol, MD, PhD

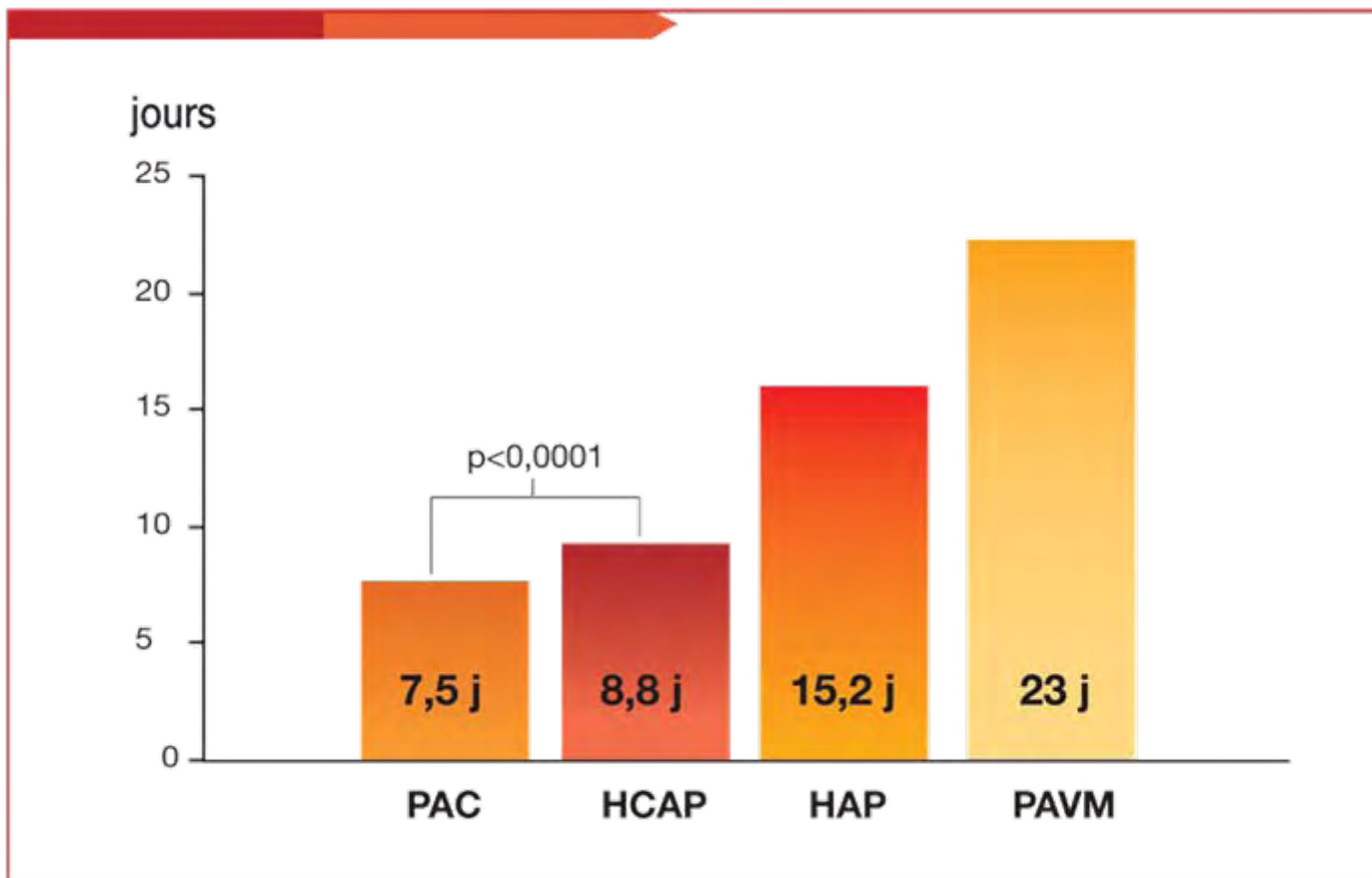
	HCAP (%) n=126	PAC (%) n=601	
Age	69,5 ans	63,7 ans	p<0,001
BPCO	37,3	25,1	p=0,005
Insuffisance cardiaque	35,7	26,8	p=0,04
Maladie cérébrovasculaire	30,1	11,8	p<0,001
Cancer	15,1	4,7	p<0,001
Corticostéroïdes au long cours	11,9	4,2	p=0,002
Vaccination <i>H.Influenzae</i>	51,6	38,6	p=0,001
Vaccination Pneumocoque	24,6	17	p=0,02
Antibiothérapie préalable	28,6	4,8	p<0,001
Troubles de la conscience	19,8	10,6	p=0,004
Classe PSI faible risque	32,5	51,2	p<0,001
Classe PSI fort risque	67,5	48,8	

Epidemiology and Outcomes of Health-care-Associated Pneumonia*

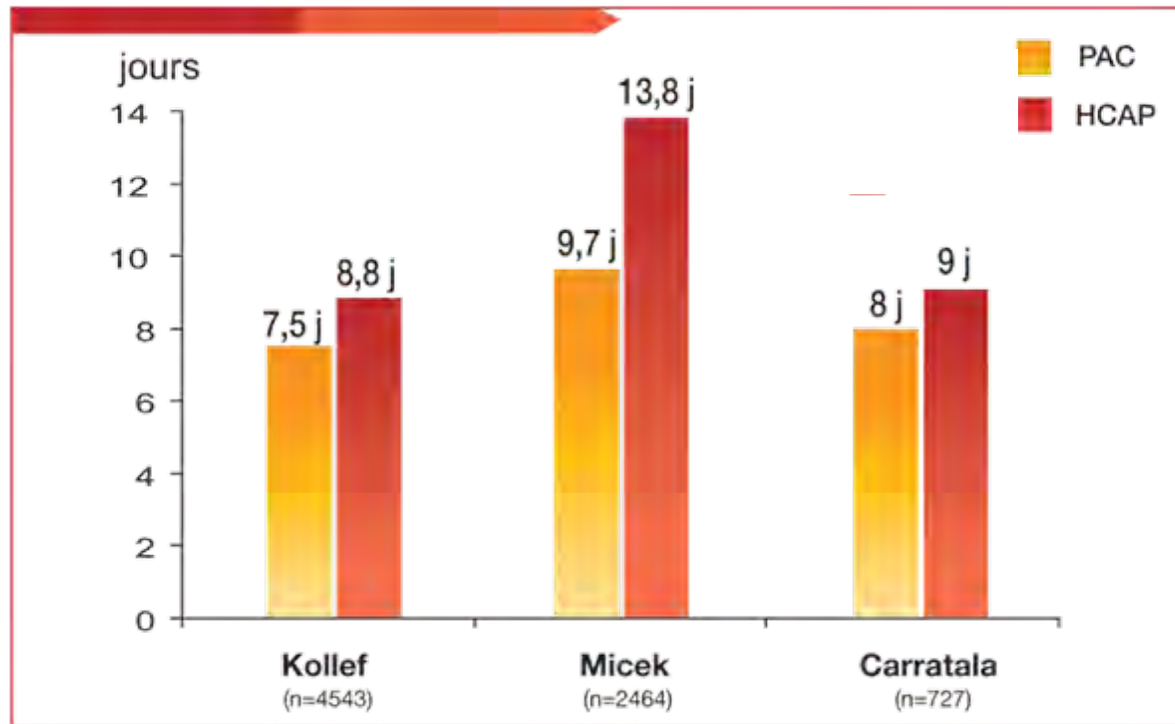
Results From a Large US Database of Culture-Positive Pneumonia

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Ying F. Yehok, PhD, Vikas Gupta, PhD, BCPS, Larry Z. Liu, MD, PhD, and
R. S. Johannes, MD, MS

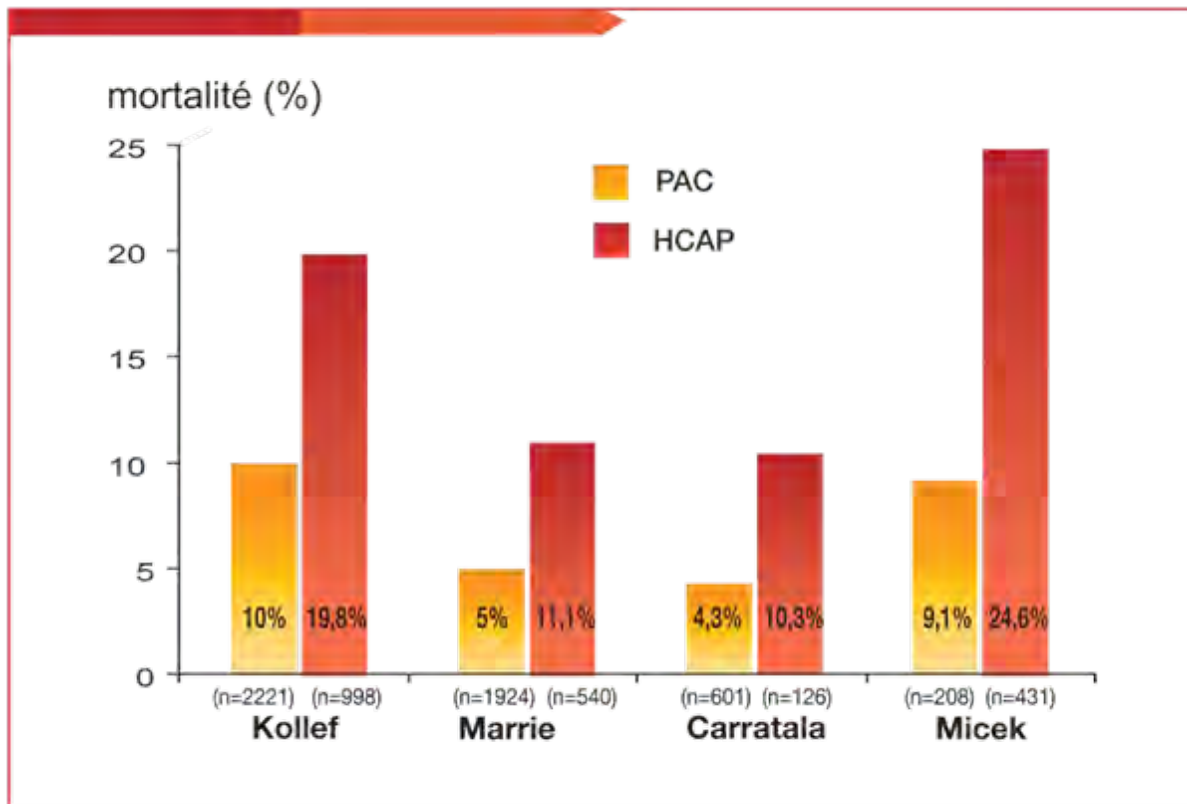
Durée moyenne de séjour



HCAP, DMS



HCAP mortalité



HCAP

- Les patients sont plus **âgés** et ont plus souvent des **co-morbidités**.
- Le **score PSI/Fine** est plus élevé dans les HCAP
- Il est observé une augmentation significative du ***Staphylococcus aureus*** et des bacilles à Gram **négatifs**
- Une antibiothérapie **inappropriée**, plus fréquente, pourrait avoir une influence sur **l'augmentation de la mortalité** dans cette population

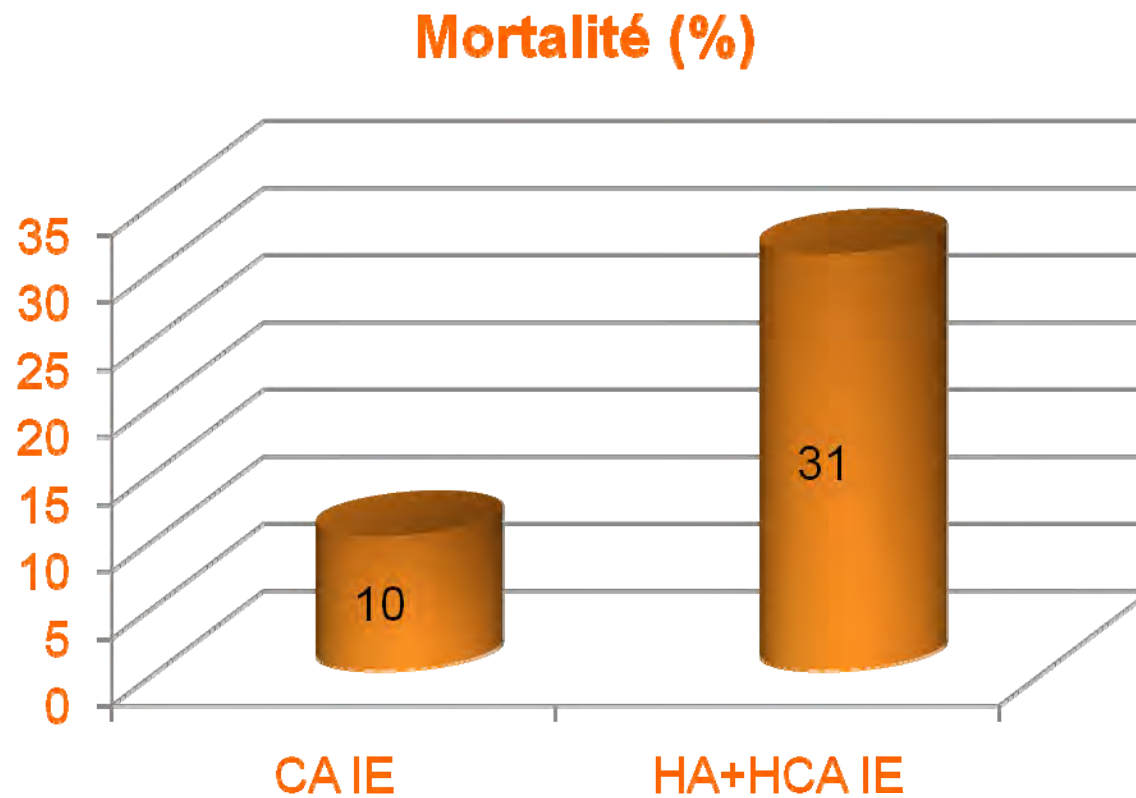
Healthcare associated infective endocarditis: A distinct entity

YARDENA SIEGMAN-IGRA¹, BELLA KOIFMAN², REUVEN PORAT³, DALIT PORAT¹
& MICHAEL GILADI¹

Microorganism	Hospital acquired	Healthcare associated	Community acquired	p-value ^a	Total
No. of isolates/episodes	16/14	53/52	64/59		133/125
IE pathogens typically acquired in the community	4 (25%)	12 (23%)	50 (78%)	<0.0001	66 (50%)
Viridans streptococci	1 (6%)	7 (13%)	15 (23%)		23 (17%)
Streptococcus bovis ^b	1 (6%)	2 (4%)	12 (19%)	0.006 ^c	15 (11%)
Staphylococcus aureus, MS	2 (12%)	1 (2%)	16 (25%)	0.001	19 (14%)
Beta haemolytic streptococci ^d		2 (4%)	4 (6%)		6 (4.5%)
HACEK			3 (5%)		3 (2%)
IE pathogens usually associated with hospital acquisition	12 (75%)	41 (77%)	14 (22%)	<0.0001	67 (50%)
Enterococcus spp. ^e	5 (31%)	22 (41%)	10 (16%)	0.004	37 (28%)
Staphylococcus aureus, MR	4 (25%)	5 (9%)	0	0.02	9 (7%)
Staphylococcus, coagulase- negative	2 (12%)	11 (21%)	2 (3%)	0.006	15 (11%)
Gram-negative bacilli ^f	1 (6%)	1 (2%)	0		2 (1.5%)
Other ^g		2 (4%)	2 (3%)		4 (3%)

Healthcare associated infective endocarditis: A distinct entity

YARDENA SIEGMAN-IGRA¹, BELLA KOIFMAN², REUVEN PORAT³, DALIT PORAT¹
& MICHAEL GILADI¹



Health Care–Associated Native Valve Endocarditis: Importance of Non-nosocomial Acquisition

Natividad Benito, MD, PhD; José M. Miró, MD, PhD; Elisa de Lazzari, MS; Christopher H. Cabell, MD, MHS; Ana del Rio, MD, PhD; Javier Aitchoas, MD; Patrick Commerford, MD; Francois Delahaye, MD, MPH; Stefan Dragulescu, MD, PhD; Helen Glamarellou, MD, PhD; Gilbert Habib, MD; Adeeba Kamaruzaman, MBBS; A. Sampath Kumar, MD; Francisco M. Hacinovich, MD; Fredy Suter, MD; Christophe Tribouilloy, MD, PhD; Krishnan Venugopal, MD, DM; Asuncion Moreno, MD, PhD; Vance G. Fowler Jr., MD, MHS; and the ICE-PCS (International Collaboration on Endocarditis Prospective Cohort Study) Investigators*

Complication or Outcome	All Patients With NVE, n/n (%)		P Value
	Community-Associated	Health Care–Associated	
Surgery	543/1063 (51)	225/555 (41)	<0.001
Complications			
Heart failure	354/1047 (34)	197/539 (37)	0.28
Non-CNS systemic embolization	253/1038 (24)	115/542 (21)	0.159
Stroke	182/1045 (17)	109/542 (20)	0.188
Persistent bacteremia	41/1034 (4)	98/542 (18)	<0.001
Intracardiac abscess	134/1038 (13)	63/539 (12)	0.49
New conduction abnormality	85/1035 (8)	42/535 (8)	0.80
In-hospital death	143/1065 (13)	138/557 (25)	<0.001

CNS = central nervous system; NVE = native valve endocarditis.

Health Care–Associated Native Valve Endocarditis: Importance of Non-nosocomial Acquisition

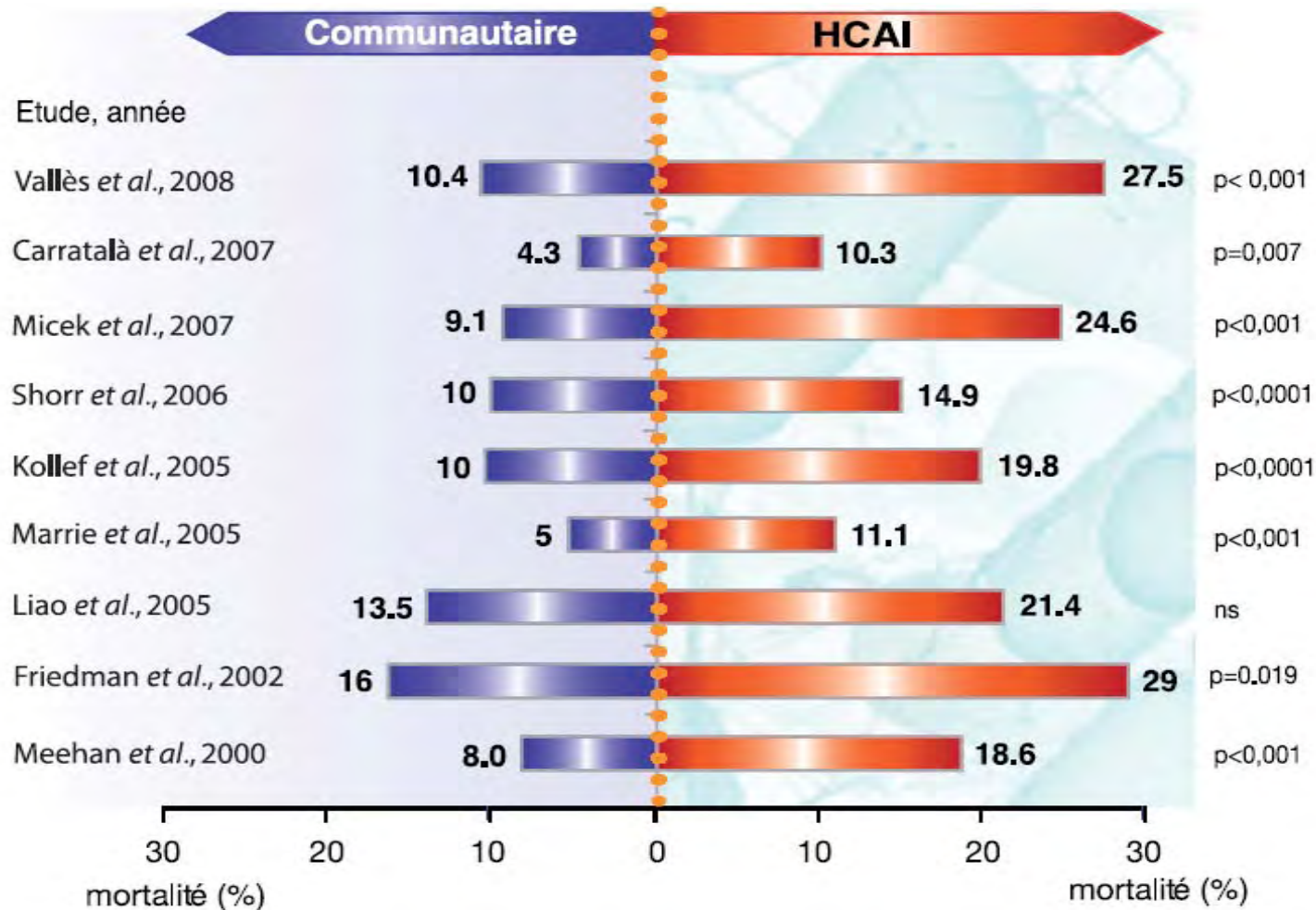
Natividad Benito, MD, PhD; José M. Miró, MD, PhD; Elisa de Lazzari, MS; Christopher H. Cabell, MD, MHS; Ana del Río, MD, PhD; Javier Aitchoas, MD; Patrick Commerford, MD; Francois Delahaye, MD, MPH; Stefan Dragulescu, MD, PhD; Helen Giamarellou, MD, PhD; Gilbert Habib, MD; Adeeba Kamaruzaman, MBBS; A. Sampath Kumar, MD; Francisco M. Hacinovich, MD; Fredy Suter, MD; Christophe Tribouilloy, MD, PhD; Krishnan Venugopal, MD, DM; Asuncion Moreno, MD, PhD; Vance G. Fowler Jr., MD, MHS; and the ICE-PCS (International Collaboration on Endocarditis Prospective Cohort Study) Investigators*

Table 5. Multivariate Risk Factors for Death in Patients With Native Valve Endocarditis*

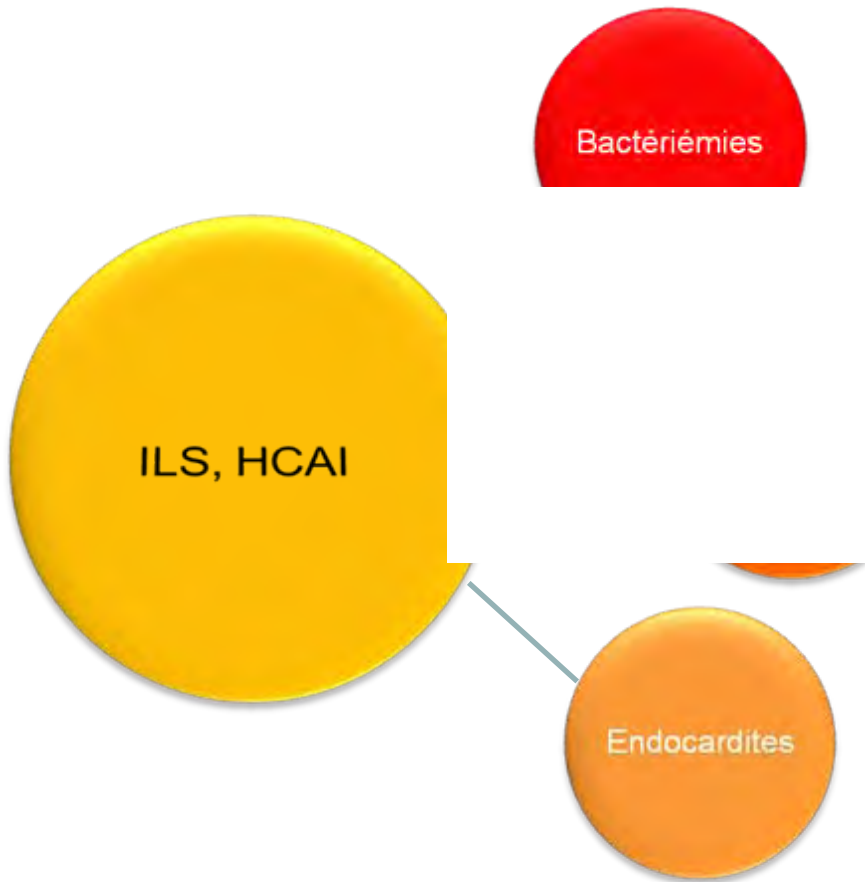
Risk Factor	Adjusted Incidence Risk Ratio (95% CI)	P Value
Acquisition of infection		
Community	1.00 (reference)	
Health care–associated	1.28 (1.02–1.59)	0.030
Age (≥ 60 y)	1.52 (1.27–1.82)	<0.001
Male sex	1.03 (0.80–1.32)	0.82
Diabetes	1.55 (1.11–2.17)	0.011
Cancer	0.97 (0.69–1.36)	0.86
Immunosuppressive therapy	1.25 (0.98–1.61)	0.075
<i>Staphylococcus aureus</i>	1.59 (1.27–2.00)	<0.001
Paravalvular abscess	1.47 (1.09–1.98)	0.012
Surgery	0.68 (0.55–0.85)	0.001
Stroke	2.00 (1.57–2.55)	<0.001
Heart failure	2.46 (1.97–3.07)	<0.001
New conduction abnormality	1.52 (1.02–2.25)	0.040

- Cohorte prospective dans 64 hôpitaux espagnols
 - 370 patients
 - Acquisition
 - Nosocomiale 202 cas (55%)
 - Liée aux soins 139 cas (38%)
 - Communautaire 3 cas
 - Incertain 26 cas (7%)
- “outpatients with previous healthcare contact represent a very important reservoir of MRSA, and community isolates are emerging.”

Etude de mortalité



Infections liées aux soins, « HCAI »



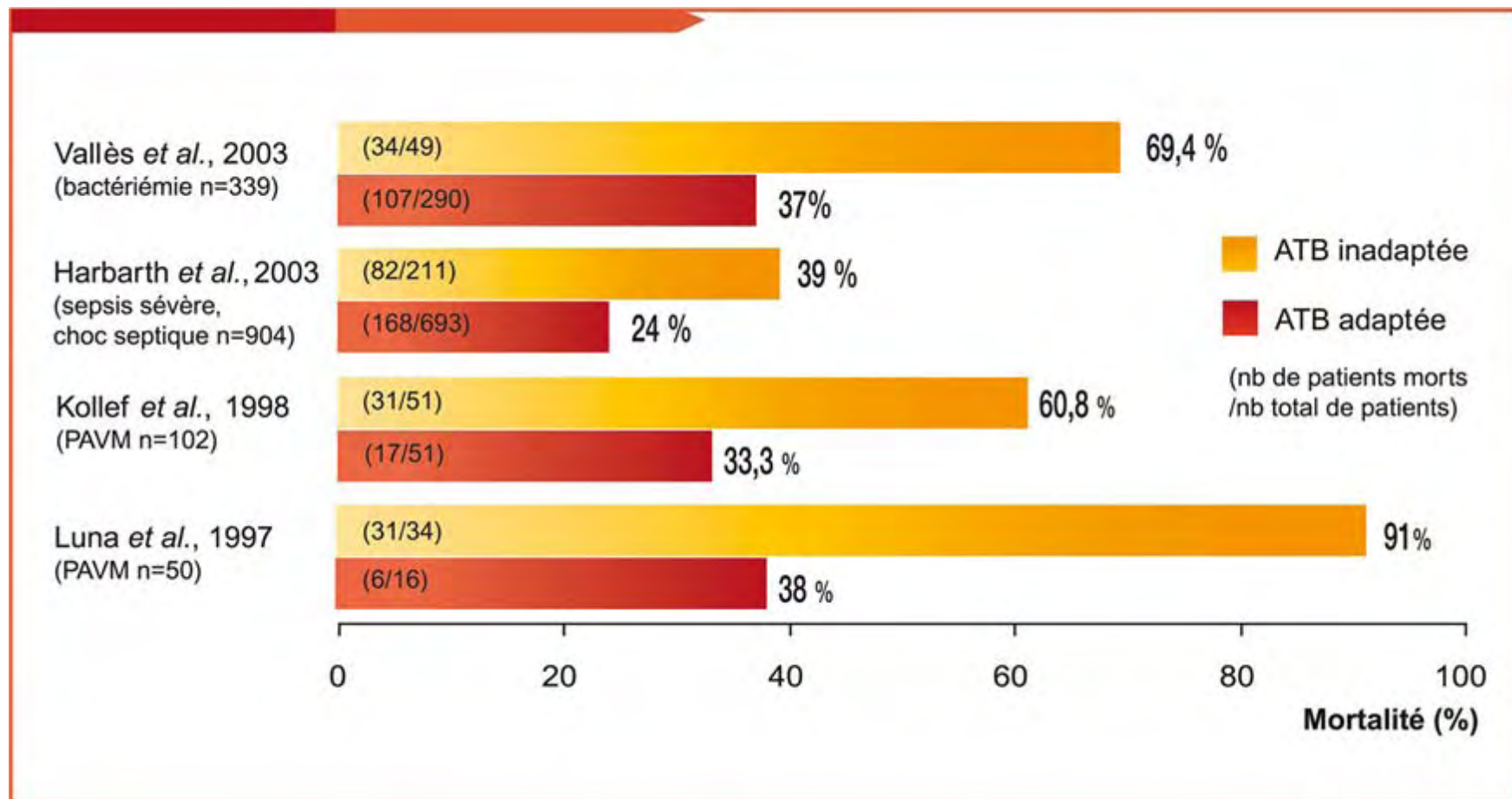
le bactérienne

mortalité plus

- Une prise en charge différente

Risques d'une antibiothérapie inadaptée

Taux de mortalité selon que l'antibiothérapie soit adaptée ou inadaptée



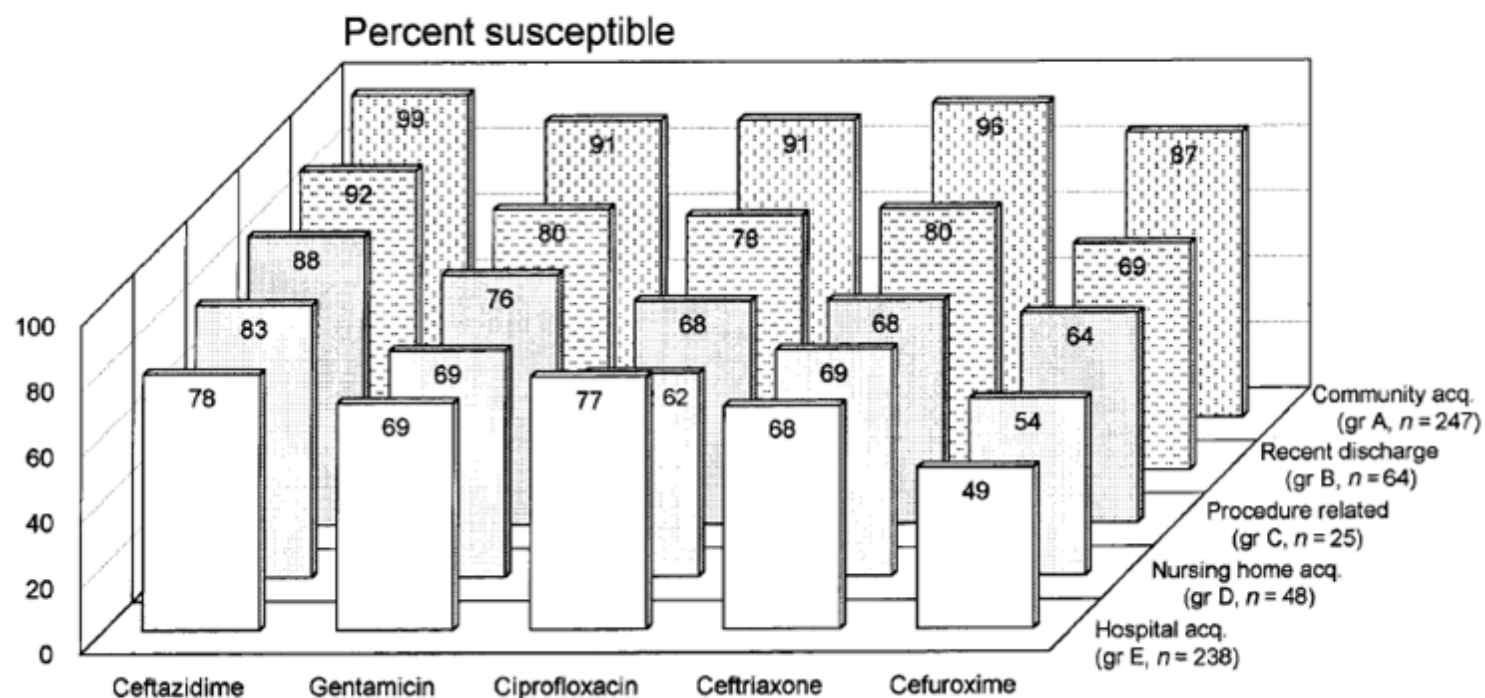
Reappraisal of Community-Acquired Bacteremia: A Proposal of a New Classification for the Spectrum of Acquisition of Bacteremia

Yardena Siegman-Igra,¹ Boaz Fourer,¹ Ruth Orni-Wasserlauf,¹ Yoav Golan,¹ Aliza Noy,¹ David Schwartz,²
and Michael Giladi^{1,2}

Bacteremic group and circumstance of acquisition	No. (%) of bacteremias
A, true community-acquired infection	370 (61)
B, infection in patients recently discharged from the hos- pital (within 2–30 days of current admission)	110 (18)
C, procedure-related infection	
C1, invasive procedure performed before admission ^a	9 (1.5)
C2, invasive procedure performed after admission ^a	18 (3)
C3, central intravascular lines placed for home therapy (excluding those placed for dialysis) ^b	6 (1)
C4, central intravascular lines placed for hemodialysis therapy	14 (2.5)
C5, long-term dialysis (not associated with placement of intravascular lines) ^c	9 (1.5)
Total for group C	56 (9)
D, nursing home-acquired infection	68 (11)
Total	604 (100)

Reappraisal of Community-Acquired Bacteremia: A Proposal of a New Classification for the Spectrum of Acquisition of Bacteremia

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Conclusion

- ILS/HCAI est une nouvelle entité
- Caractéristiques particulières
 - Patients sont plus âgés et présentent des co-morbidités.
 - Hospitalisation récente et/ou des soins médicaux extra-hospitaliers.
- Microbiologie différente des infections communautaires.
- Mortalité est significativement plus importante.
 - Rôle probable d'une antibiothérapie inappropriée