# *Staphylococcus aureus* et dispositif invasif: la réalité des bactériémies

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13/10/2020

GIMAP EA 3064, CIRI

Chaire PreVacCI, institut PRESAGE

# Il n’y a pas que les cathéters centraux…

**Table 2. Risk of *Staphylococcus aureus* Bloodstream Infections due to Infected Peripheral Vascular Catheters**

| Study, First Author [Ref] | *Staphylococcus aureus* CR-BSIs due to PVCs | *Staphylococcus aureus* BSIs due to PVCs |
|---|---|---|
| Mylotte [50] | 50% of 28 CR-BSIs | 18% of 79 BSIs |
| Thomas[a] [51] | 50% of 305 CR-BSIs | |
| Kok [52] | 41% of 75 CR-BSIs | 25% of 123 BSIs |
| Bruno [55] | | 35% of 31 BSIs[b] |
| Trinh [53] | 12% of 196 CR-BSIs[c] | |
| Mestre [46] | 64% of 14 CR-BSIs | 28% of 32 BSIs |
| Stuart [56] | | 24% of 583 BSIs |
| Morris [54] | 44% of 121 CR-BSIs | 20% of 261 BSIs |
| Rhodes [57] | | 24% of 151 BSIs[d] |
| Austin[a] [49] | | 7.6% of 445 BSIs |

Mermel. CID 2017

Résultats SPIADI 2019:
13 % des bactériémies sur cathéter liées à des voies veineuses périphériques

# Impact des bactériémies à *Staphylococcus aureus* liées à un cathéter

# Impact

MAJOR ARTICLE

## Risk Factors For Hematogenous Complications of Intravascular Catheter–Associated *Staphylococcus aureus* Bacteremia

**Vance G. Fowler, Jr.,[1,3] Anita Justice,[4] Catrin Moore,[4] Daniel K. Benjamin, Jr.,[2,3] Christopher W. Woods,[1] Steven Campbell,[1] L. Barth Reller,[1] G. Ralph Corey,[1] Nicholas P. J. Day,[4] and Sharon J. Peacock[4]**

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CID 2005

**Table 3. Final multivariable analysis of patient and bacterial characteristics associated with hematogenous complications of intravascular catheter–associated *Staphylococcus aureus* bacteremia.**

| Independent variable | OR (95% CI) | *P* |
|---|---|---|
| Hemodialysis dependence only[a] | 72 (8.2–630) | <.001 |
| Permanent foreign body only[b] | 4.2 (1.1–17) | .04 |
| Both hemodialysis dependence and permanent foreign body[c] | 11 (3.2–38) | <.001 |
| Duration of symptoms before diagnosis[d] | 1.15 (1.06–1.24) | <.001 |
| Methicillin-resistant bacterial isolate | 2.3 (1.1–4.7) | .03 |

324 patients avec une bactériémie à SA liée à un cathéter

- 42 patients avec bactériémie dite compliquée (31 EI, 11 arthrites septiques, 7 spondylodiscites)
- Réalisation d'une échographie cardiaque chez 235 patients (72,5 %), 130 patients ont eu une ETO

# Impact

| Variable | Whole Population | | Mode of Acquisition[a] Community-Acquired Cases | | Healthcare-Associated Cases | | *P* | |
|---|---|---|---|---|---|---|---|---|
| Pacemaker | 26 | (5.2) | 7 | (2.1) | 19 | (15.6) | ... | |
| Other location | 2 | (0.4) | 2 | (0.6) | 0 | (0) | ... | |
| Unknown | 29 | (5.8) | 21 | (6.3) | 6 | (4.9) | ... | |
| Cardiac lesions of IE | | | | | | | | |
| Positive echocardiography | 460 | (92.6) | 307 | (91.6) | 116 | (95.1) | .22 | |
| Vegetation | 435 | (87.5) | 289 | (86.3) | 110 | (90.2) | .27 | |
| Dehiscence | 19/104 | (18.3) | 12/69 | (17.4) | 6/30 | (20.0) | .76 | |
| Severe regurgitation | 194/492 | (39.4) | 149/331 | (45.0) | 30 | (24.6) | <.0001 | 19/1 |
| Cardiac abscess (echo and surgery) | 101 | (20.3) | 71 | (21.2) | 18 | (14.8) | .12 | |
| Microorganisms | | | | | | | <.0001 | |
| Streptococci | 180 | (36.2) | 163 | (48.7) | 9 | (7.4) | <.0001 | |
| Oral streptococci | 93 | (18.7) | 83 | (24.8) | 5 | (4.1) | <.0001 | |
| Group D streptococci | 62 | (12.5) | 57 | (17.0) | 4 | (3.3) | .0001 | |
| Pyogenic streptococci | 25 | (5.0) | 23 | (6.9) | 0 | (0) | .003 | |
| Enterococci | 52 | (10.5) | 36 | (10.7) | 13 | (10.7) | .98 | |
| Other Streptococcaceae | 8 | (1.6) | 7 | (2.1) | 1 | (0.8) | .69 | |
| *Staphylococcus aureus* | 132 | (26.6) | 69 | (20.6) | 40 | (32.8) | .007 | |
| Coagulase-negative staphylococci | 48 | (9.7) | 14 | (4.2) | 32 | (26.2) | <.0001 | |
| Other microorganisms | 42 | (8.5) | 26 | (7.8) | 16 | (13.1) | .08 | |
| ≥2 Microorganisms | 9 | (1.8) | 2 | (0.6) | 4 | (3.3) | .04 | |
| No microorganism identified | 26 | (5.2) | 18 | (5.4) | 7 | (5.7) | .88 | |
| Outcome | | | | | | | | |
| Cardiac surgery | 223 | (44.9) | 165 | (49.3) | 37 | (30.3) | .0003 | |
| In-hospital death | 113 | (22.7) | 68 | (20.3) | 38 | (31.1) | .02 | |

*Staphylococcus aureus:*

- 1er agent en cause dans l'EI en 2008 en France
- Près de la moitié des EI à *SA* sont associées aux soins
- Taux de mortalité intra-hospitalière des EI associées aux soins 31,1 %
- Documentation à *SA* aOR pour la mortalité intra-hospitalière: 2.71 (1.87-3.93)

Selton-Suty *et al.* CID 2012

# Impact

**TABLE 2. Source of infection in patients with healthcare-associated infective endocarditis**

| Medical procedures | *n* (%) |
|---|---|
| *Vascular* | |
| Catheter-related | 61 (48) |
| Haemodialysis | 21 |
| Peripheral vein catheter | 20 |
| Several procedures | 12 |
| Central vein catheter | 8 |
| Implanted cardiac devices | 6 (4.7) |
| Coronary arteriography | 7 (5.5) |
| Cardiovascular surgery | 4 (3.1) |
| Carotid angioplasty | 1 (0.8) |
| Pulmonary stent | 1 (0.8) |
| Total | 80 (63) |
| *Others* | |
| Digestive | 19 (15) |
| Urinary | 18 (14.2) |
| Skin and soft tissue | 5 (3.9) |
| Several procedures | 2 (1.6) |
| Maxillofacial | 1 (0.8) |
| Osteoarticular | 1 (0.8) |
| Non-identified | 1 (0.8) |
| Total | 47 (37) |

1/3 des EI associées à un cathéter sont liées à un cathéter périphérique.

Lomas *et al.* CID 2009

# Impact

*Open Forum Infectious Diseases*

MAJOR ARTICLE

## Risk Factors and Outcomes Associated With Hospital-Onset Peripheral Intravenous Catheter–Associated *Staphylococcus aureus* Bacteremia

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**Table 1. Sources of *Staphylococcus aureus* Bacteremia**

| Source | Total *S. aureus* Bacteremia (n = 205), No. (%) | Hospital-Onset *S. aureus* Bacteremia (n = 45), No. (%) | Community-Onset *S. aureus* Bacteremia (n = 160), No. (%) |
|---|---|---|---|
| Soft tissue/bone | 67 (32.7) | 4 (8.9) | 63 (39.4) |
| PVC | 18 (8.8) | 16 (35.6) | 2 (1.3) |
| CVC or PICC | 14 (6.8) | 7 (15.6) | 7 (4.4) |
| Hemodialysis | 13 (6.3) | 2 (4.4) | 11 (6.9) |
| Pulmonary | 8 (3.9) | 0 (0.0) | 8 (5.0) |
| Endovascular | 7 (3.4) | 1 (2.2) | 6 (3.8) |
| Biliary | 1 (0.5) | 0 (0.0) | 1 (0.6) |
| Urinary | 3 (1.5) | 0 (0.0) | 3 (1.9) |
| Unknown | 74 (36.1) | 15 (33.3) | 59 (36.9) |

Abbreviations: CVC, central intravenous catheter; PICC, peripherally inserted central catheter; PVC, peripheral intravenous catheter.

Incidence: 0,15/1000 jours /cathéter

Durée de traitement ATB: 23,6 jours +/- 11,1

11 thrombose
1 EI
2 localisations secondaires

# Impact

**Table 3** Final predictive model of infective endocarditis and median β Coefficients estimated by Multivariate Logistic Regression Model and Bootstrapping Procedure in the 2008 enrolled *Staphylococcus aureus* bacteremia patients, VIRSTA Study.

| | Multivariate analysis | | | .632 Bootstrap procedure | |
|---|---|---|---|---|---|
| | Odds ratio (95% CI) | p-Value | β | β′ | Weight |
| Cerebral or peripheral emboli | 10.4 (6.0; 17.9) | <0.0001 | 2.33 | 2.37 | 5 |
| Meningitis | 9.6 (3.2; 29.2) | <0.0001 | 2.27 | 2.31 | 5 |
| Permanent intracardiac device or previous IE | 7.3 (4.9; 10.9) | <0.0001 | 1.99 | 2.02 | 4 |
| Pre-existing native valve disease | 3.6 (2.3; 5.7) | | 1.29 | 1.29 | 3 |
| Intravenous drug use | 5.8 (2.8; 11.7) | <0.0001 | 1.75 | 1.77 | 4 |
| Persistent bacteremia | 3.9 (2.8; 5.7) | <0.0001 | 1.38 | 1.40 | 3 |
| Vertebral osteomyelitis | 3.2 (1.2; 8.9) | 0.03 | 1.17 | 1.15 | 2 |
| Community or non nosocomial health care associated acquisition | 2.6 (1.8; 3.7) | <0.0001 | 0.96 | 0.96 | 2 |
| Severe sepsis or shock | 2.0 (1.4; 2.9) | 0.0001 | 0.71 | 0.72 | 1 |
| C-reactive protein >190 mg/L | 1.9 (1.3; 2.7) | 0.0006 | 0.64 | 0.65 | 1 |

CI, Confidence Interval.

Tubiana et al. Journal of infection 2016

# Impact

*Clinical Infectious Diseases*

MAJOR ARTICLE

## Acute Myocardial Infarction and Community-acquired *Staphylococcus aureus* Bloodstream Infection: An Observational Cohort Study

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Août 2020

**Table 2. Multivariable Logistic Regression for Myocardial Infarction During 7-Day Risk Period Following Index Culture**

| Variable | Odds Ratio | 95% Confidence Interval | | *P* |
|---|---|---|---|---|
| CA-SABSI | 5.0 | 3.3 | 7.5 | <.0001 |
| Male | 1.0 | .7 | 1.5 | .90 |
| Age group: reference, 20–44 years | | | | |
| 45–64 | 9.2 | 3.3 | 38.2 | <.01 |
| 65–79 | 10.4 | 5.3 | 58.9 | <.0001 |
| Over 80 | 19.2 | 6.5 | 81.6 | <.0001 |
| Socioeconomic status: reference, IRSAD 1–2, lowest | | | | |
| IRSAD 3–4 | .7 | .4 | 1.2 | .20 |
| IRSAD 5–6 | .6 | .3 | 1.0 | .05 |
| IRSAD 7–8 | .6 | .4 | 1.0 | <.05 |
| IRSAD 9–10, highest | .5 | .2 | 1.0 | .08 |

# Impact

**TABLE I. Characteristics of the patients who developed intravascular catheter-related infections (mean and SD for continuous variables, number and percentage for categorical variables)**

| Characteristics (*n*, %) | |
|---|---|
| Age | 47 ± 22 years |
| Sex ratio (M/F) | 2.1/1 |
| Charlson Score at admission | 1 (±1.9) |
| Presence of risk factors for infection[a] | 29 patients (41) |
| Category on hospital admission | |
| Medicine | 34 (48) |
| Surgery | 21 (30) |
| Intensive care unit | 7 (10) |
| Others (rehabilitation, obstetrics, psychiatry…) | 9 (13) |
| Type of catheter | |
| Peripheral venous catheter | 42 (59) |
| Central venous catheter | 26 (37) |
| Other[b] | 3 (4) |
| Bacteraemia | 49 (69) |
| Peripheral venous catheter | 31 (74) |
| Central venous catheter | 18 (70) |

[a]Septic shock, multiple organ failure, polytrauma, immunocompromised patient, cancer, major surgery, diabetes requiring insulin therapy, low birth weight (<1500 g), parenteral nutrition, prosthesis, blood transfusions.
[b]Umbilical catheters.

Coût moyen pour les assurances:
18 153€ (écart-type 39 956, 0 à 231 700)

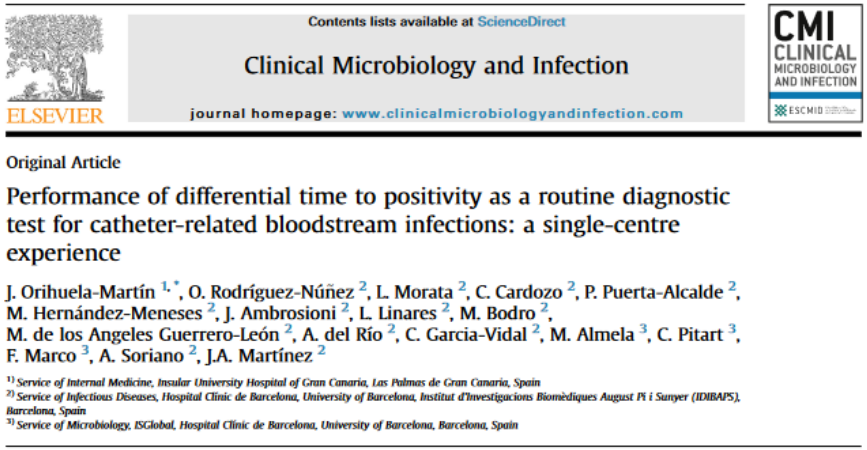
72 % de ces infections étaient évitables

- Retrait tardif du dispositif
- Dispositif laissé en place malgré des signes locaux d'infection

Gagneux-Brunon *et al*. CMI 2014

# Prise en charge

# Prise en charge diagnostique



Contents lists available at ScienceDirect

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journal homepage: www.clinicalmicrobiologyandinfection.com

Original Article

Performance of differential time to positivity as a routine diagnostic test for catheter-related bloodstream infections: a single-centre experience

J. Orihuela-Martín [1,*], O. Rodríguez-Núñez [2], L. Morata [2], C. Cardozo [2], P. Puerta-Alcalde [2], M. Hernández-Meneses [2], J. Ambrosioni [2], L. Linares [2], M. Bodro [2], M. de los Angeles Guerrero-León [2], A. del Río [2], C. Garcia-Vidal [2], M. Almela [3], C. Pitart [3], F. Marco [3], A. Soriano [2], J.A. Martínez [2]

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| | AUC-ROC |
|---|---|
| *Staphyloccus aureus* | 0.65 |
| Staphylocoques à coagulase négative | 0.62 |
| Entérobactéries | 0.65 |
| *Pseudomonas aeruginosa* | 0.84 |

CMI 2020

Le délai de pousse entre hémocultures sur cathéter central et les hémocultures périphériques prédit mal les bactériémies liées à un cathéter à *Staphylococcus aureus.*

ORIGINAL ARTICLE

Check for updates

# Impact on mortality of adherence to evidence-based interventions in patients with catheter-related bloodstream infection due to methicillin-sensitive *Staphylococcus aureus*

Alejandra Morales-Cartagena[a]†, Mario Fernández-Ruiz[a], Antonio Lalueza[a], Jaime Lora-Tamayo[a], Rafael San Juan[a], Francisco López-Medrano[a], Julia Origüen[a], Fernando Chaves[b] and José María Aguado[a]

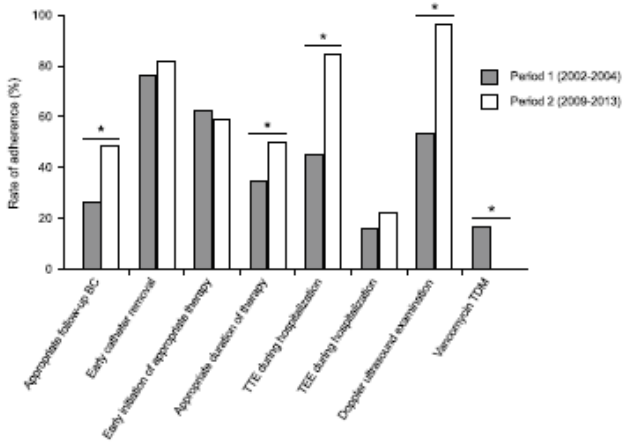
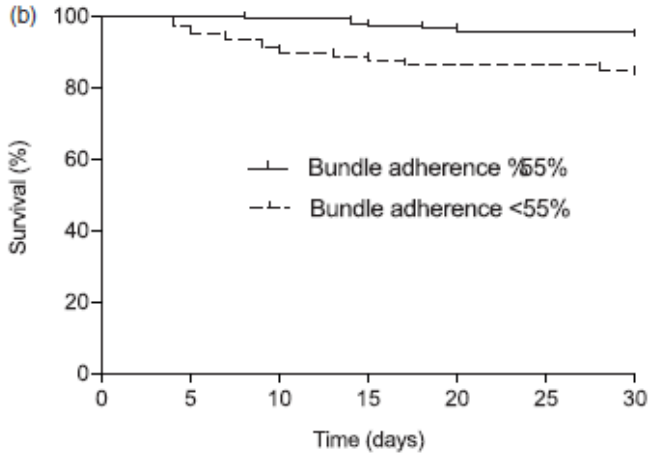



**Figure 2.** Adherence to diagnostic and therapeutic recommendations in both study periods. BC: blood culture; TDM: therapeutic drug monitoring; TEE: transoesophageal echocardiography; TTE: transthoracic echocardiography; *$p$ value $< .05$.

Stratégies:

- Retrait du cathéter en cause
- Traitement antibiotique approprié précoce dans les 24 heures
- Contrôle des hémocultures
- Réalisation de l'échographie cardiaque
- Durée de traitement antibiotique adaptée



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Journal of Antimicrobial Chemotherapy

## Moving beyond unsolicited consultation: additional impact of a structured intervention on mortality in *Staphylococcus aureus* bacteraemia

**María Teresa Pérez-Rodríguez[1]*, Adrián Sousa[1], Luis Eduardo López-Cortés[2], Lucía Martínez-Lamas[3], Nuria Val[1], Aida Baroja[1], Andrés Nodar[1], Francisco Vasallo[3], Maximiliano Álvarez-Fernández[3], Manuel Crespo[1] and Jesús Rodríguez-Baño[2]**

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Recommandations écrites dès l'hémoculture positive:

- Hémocultures de contrôle
- Céfazoline ou Pénicilline M dans les 24 h
- ETO si bactériémie compliquée ou persistante
- Contrôle de la source de l'infection
- Monitoring des taux de vancomycine
- **Consultation systématique par un infectiologue**

**Table 3.** Comparison of compliance of quality-of-care indicators and outcomes among the three groups of patients (no-BP, BP and i-BP)

| | No-BP ($n = 107$) | BP ($n = 81$) | i-BP ($n = 83$) | RR no-BP versus BP (95% CI) | *P* | RR BP versus i-BP (95% CI) | *P* |
|---|---|---|---|---|---|---|---|
| Follow-up blood culture, *n* (%) | 13 (12) | 63 (78) | 75 (90) | 5.15 (3.33–8) | <0.001 | 1.77 (0.97–3.21) | 0.033 |
| Source control, *n* (%)[a] | 33/53 (62) | 33/41 (81) | 41/49 (84) | 1.75 (0.93–3.30) | 0.070 | 1.11 (0.65–1.88) | 0.785 |
| Transoesophageal echocardiography, *n* (%)[b] | 19/34 (56) | 24/29 (83) | 34/40 (85) | 2.23 (0.99–5.00) | 0.031 | 1.08 (0.60–1.92) | 1 |
| Treatment, *n* (%) | | | | | | | |
| early cloxacillin/cefazolin use in MSSA | 29/74 (39) | 47/64 (73) | 65/71 (92) | 2.26 (1.45–3.51) | <0.001 | 2.23 (1.10–4.50) | 0.006 |
| monitoring of vancomycin levels | 14/29 (48) | 1/7 (14) | 10/12 (83) | 0.23 (0.03–1.74) | 0.200 | 3.64 (1.08–12.20) | 0.006 |
| appropriate treatment duration[c] | 58/91 (64) | 66/74 (89) | 76/80 (95) | 2.72 (1.43–5.18) | <0.001 | 1.61 (0.71–3.62) | 0.233 |
| >75% bundle compliance, *n* (%) | 21 (20) | 55 (68) | 75 (90) | 3.12 (2.16–4.48) | <0.001 | 2.45 (1.31–4.57) | <0.001 |
| Clinical cure, *n* (%) | 84 (79) | 70 (86) | 77 (93) | 1.40 (0.84–2.35) | 0.184 | 1.48 (0.77–2.87) | 0.208 |
| Recurrence, *n* (%) | 3 (3) | 3 (4) | 6 (7) | 1.21 (0.53–3.01) | 0.693 | 1.29 (0.79–2.11) | 0.498 |
| Mortality, *n* (%) | | | | | | | |
| 14 day | 19 (18) | 6 (7) | 2 (2) | 0.52 (0.25–1.07) | 0.050 | 0.48 (0.11–1.62) | 0.167 |
| 30 day | 21 (20) | 10 (12) | 4 (5) | 0.71 (0.42–1.22) | 0.234 | 0.55 (0.26–1.27) | 0.102 |

| Variable | 14 day mortality, *n/N* (%)[a] | RR (95% CI) | *P* | 30 day mortality, *n/N* (%)[a] | RR (95% CI) | *P* |
|---|---|---|---|---|---|---|
| Age | | 3.4 (1.33–8.77) | 0.007 | | 3.11 (1.41–6.85) | 0.003 |
| <70 years | 5/118 (4) | | | 7/118 (6) | | |
| ≥70 years | 22/152 (14) | | | 28/152 (18) | | |
| Charlson index | | 1.36 (0.66–2.79) | 0.408 | | 1.28 (0.68–2.38) | 0.458 |
| ≤2 | 15/170 (9) | | | 20/170 (12) | | |
| >2 | 12/100 (12) | | | 15/100 (15) | | |
| Heart failure | | 4.52 (2.28–9.01) | <0.001 | | 3.25 (1.79–5.88) | <0.001 |
| no | 14/224 (6) | | | 21/224 (9) | | |
| yes | 13/46 (28) | | | 14/46 (30) | | |
| ICU | | 2.01 (0.91–4.44) | 0.093 | | 1.99 (1.01–3.92) | 0.071 |
| no | 20/230 (9) | | | 26/230 (11) | | |
| yes | 7/40 (18) | | | 9/40 (23) | | |
| Source of infection | | | | | | |
| pneumonia | 4/25 (16) | 1.70 (0.64–4.54) | 0.293 | 7/25 (28) | 2.45 (1.19–5.03) | 0.028 |
| endocarditis | 4/25 (16) | 1.70 (0.64–4.54) | 0.293 | 4/25 (16) | 1.26 (0.49–3.29) | 0.545 |
| catheter | 3/81 (4) | 0.29 (0.09–0.94) | 0.026 | 3/81 (4) | 0.22 (0.07–0.69) | 0.003 |
| unknown | 10/61 (16) | 2.02 (0.97–4.17) | 0.086 | 13/61 (21) | 2.02 (1.09–3.77) | 0.049 |
| Persistent bacteraemia | | 4.81 (1.57–14.7) | 0.009 | | 3.5 (1.37–8.93) | 0.013 |
| no | 5/124 (4) | | | 8/124 (6) | | |
| yes | 6/31 (19) | | | 7/31 (23) | | |
| MRSA infection | | 3.61 (1.8–7.25) | 0.001 | | 3.55 (1.95–6.45) | <0.001 |
| no | 13/208 (6) | | | 17/208 (8) | | |
| yes | 14/62 (23) | | | 18/62 (29) | | |
| >75% bundle compliance | | 0.28 (0.12–0.64) | 0.002 | | 0.32 (0.16–0.64) | 0.001 |
| no | 20/120 (17) | | | 25/120 (21) | | |
| yes | 7/150 (5) | | | 10/150 (7) | | |

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ORIGINAL ARTICLE

# Increased overall survival after introduction of structured bedside consultation in *Staphylococcus aureus* bacteraemia

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ORIGINAL ARTICLE — INFECTIOUS DISEASES

# Impact of routine bedside infectious disease consultation on clinical management and outcome of *Staphylococcus aureus* bacteraemia in adults

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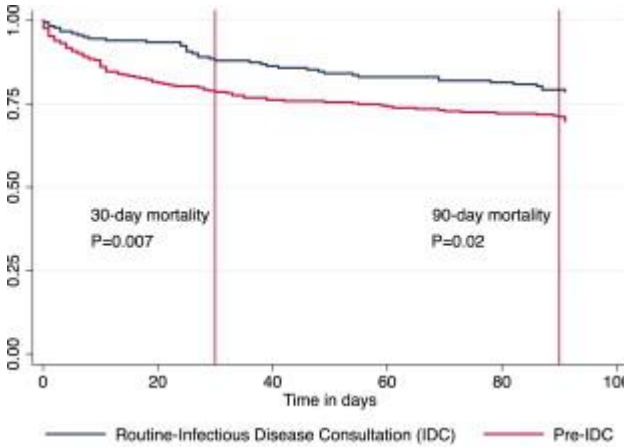
CMI 2015

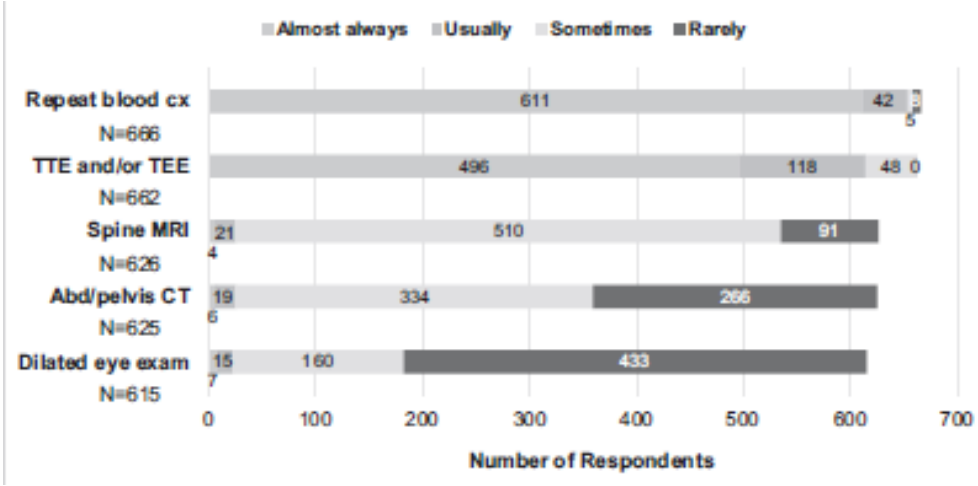


*Clinical Infectious Diseases*

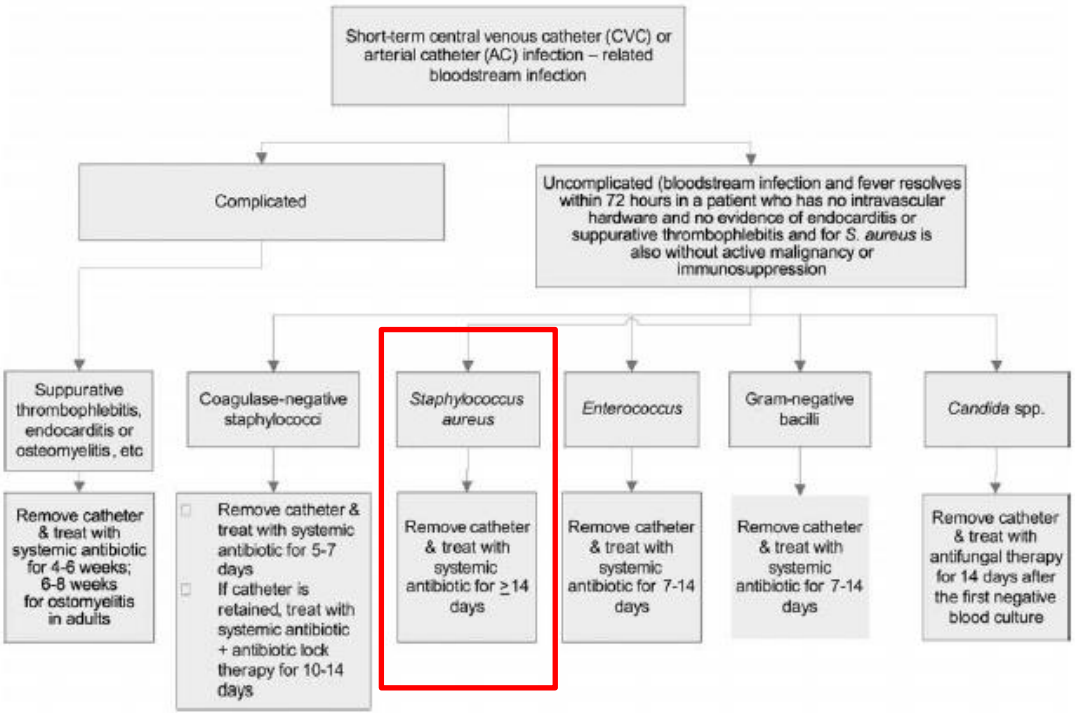
BRIEF REPORT

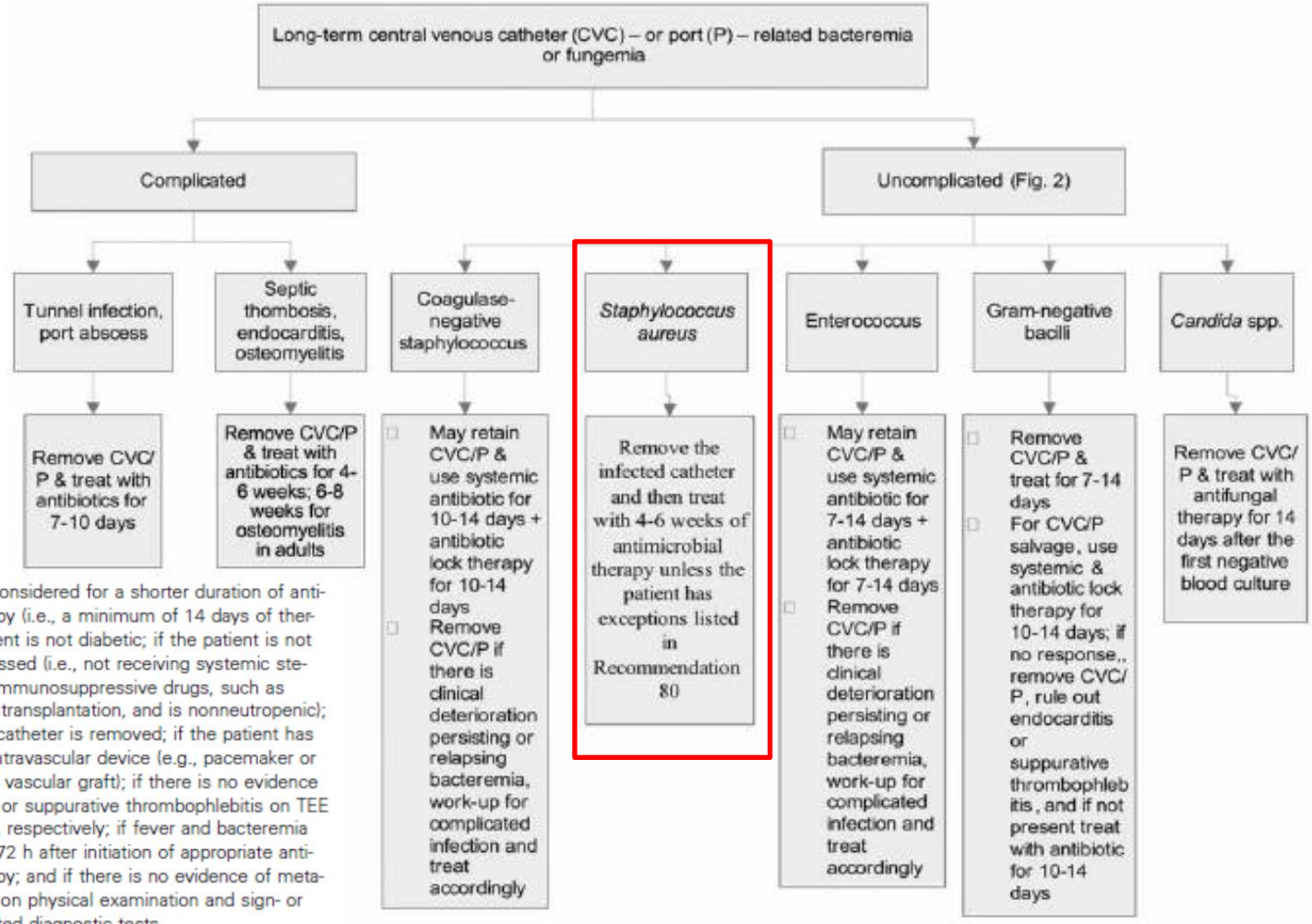
# Clinical Practice Variation Among Adult Infectious Disease Physicians in the Management of *Staphylococcus aureus* Bacteremia

Catherine Liu,[1,2] Luke Strnad,[3,4] Susan E. Beekmann,[5,6] Philip M. Polgreen,[5,6] and Henry F. Chambers[7]



# Clinical Practice Guidelines for the Diagnosis and Management of Intravascular Catheter-Related Infection: 2009 Update by the Infectious Diseases Society of America






Patients can be considered for a shorter duration of antimicrobial therapy (i.e., a minimum of 14 days of therapy) if the patient is not diabetic; if the patient is not immunosuppressed (i.e., not receiving systemic steroids or other immunosuppressive drugs, such as those used for transplantation, and is nonneutropenic); if the infected catheter is removed; if the patient has no prosthetic intravascular device (e.g., pacemaker or recently placed vascular graft); if there is no evidence of endocarditis or suppurative thrombophlebitis on TEE and ultrasound, respectively; if fever and bacteremia resolve within 72 h after initiation of appropriate antimicrobial therapy; and if there is no evidence of metastatic infection on physical examination and sign- or symptom-directed diagnostic tests


Bactériémie liée à un cathéter à SA=

1. retrait du cathéter,
2. antibiothérapie d'au minimum 14 jours,
3. Réalisation d'échographie cardiaque
4. Risque de thrombose

# Anticoagulation

**Table 4. Analysis of the Predictors Associated With Therapy Success vs Failure**

| | Univariate Analysis | | | Multivariate Analysis | |
|---|---|---|---|---|---|
| Characteristic | Success (n = 76) | Failure (n = 51) | *P* Value | OR (95% CI) | *P* Value |
| Age, median (range), y | 54 (4–80) | 56 (7–88) | .19 | | |
| Male sex | 53 (70) | 28 (55) | .09 | | |
| Race/ethnicity | | | .002 | | |
| White | 47 (62) | 17 (33) | | | |
| African American | 10 (13) | 5 (10) | | | |
| Hispanic | 8 (11) | 8 (16) | | | |
| Other | 11 (14) | 21 (41) | | | |
| Type of cancer | | | .019 | | |
| Hematological malignancy | 33 (43) | 33 (65) | | | |
| Solid tumor | 43 (57) | 18 (35) | | | |
| Steroids within 30 d of bacteremia | 18 (24) | 24 (47) | .006 | | |
| *S. aureus* methicillin susceptibility | | | .004 | | |
| MRSA | 28 (37) | 32 (63) | | | |
| MSSA | 48 (63) | 19 (37) | | | |
| Neutropenia (ANC <500 cells/μL) at bacteremia | 9 (12) | 20 (39) | <.001 | | |
| Platelet count <50 at bacteremia | 14 (18) | 24 (47) | <.001 | | |
| Required ICU admission | 10 (13) | 17 (33) | .006 | 2.74 (1.08–6.99) | .034 |
| Catheter removal/exchange within 2 d of bacteremia | 53 (70) | 26 (51) | .033 | | |
| Deep-seated infections before or during IV antibiotic therapy | 10 (13) | 11 (22) | .21 | | |
| Time between bacteremia and imaging test, median (range), d | 3 (–4 to 45) | 4 (–4 to 34) | .07 | | |
| Type of thrombosis | | | .63 | | |
| Deep veins | 65 (86) | 42 (82) | | | |
| Superficial veins | 11 (14) | 9 (18) | | | |
| Anticoagulation | 62 (82) | 25 (49) | <.001 | 0.24 (0.11–0.54) | <.001 |

15 à 24 % des bactériémies sur cathéter liées à SA sont compliquées de thrombose veineuse

Dib et al OID 2018

# Populations particulières

frontiers in Pediatrics

ORIGINAL RESEARCH
published: 25 January 2019
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# Salvage Strategy for Long-Term Central Venous Catheter-Associated *Staphylococcus aureus* Infections in Children

*Fanny Alby-Laurent[1], Cécile Lambe[2], Agnès Ferroni[3], Nadège Salvi[4], David Lebeaux[3], Morgane Le Goudz[1], Martin Castella[5], Florence Moulin[1], Xavier Nassif[3], Olivier Lortholary[3], Martin Chalumeau[1] and Julie Toubiana[1,2]**

META-ANALYSIS www.jasn.org

# Systematic Review and Meta-Analysis on Management of Hemodialysis Catheter-Related Bacteremia

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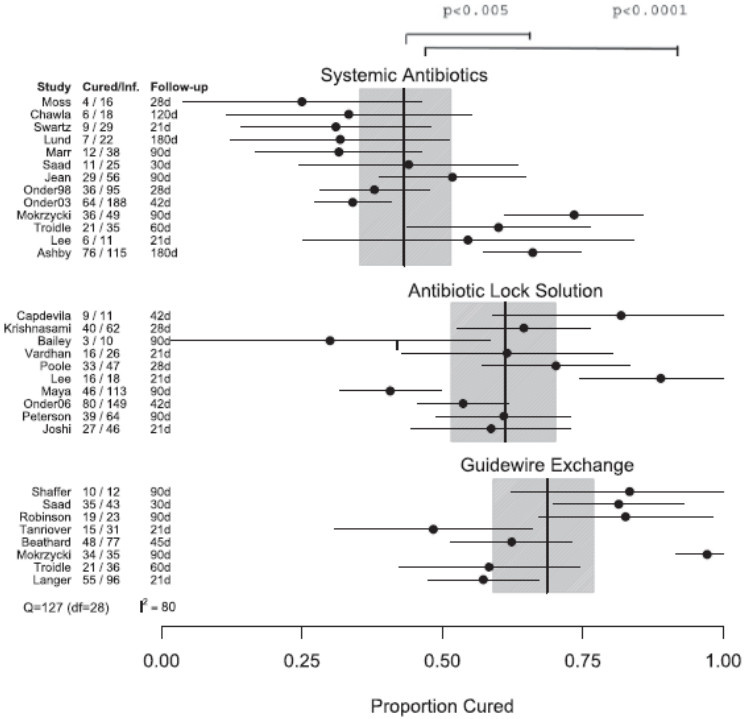
Taux d'échec supérieur avec les infections à SA

32% d'échec de la stratégie de sauvetage



# En conclusion

- Les bactériémies liées à un cathéter à *Staphylococcus aureus* entraînent:
  - des complications majeures: infection de prothèse, EI, thromboses septiques
  - impliquent des examens complémentaires
  - impliquent un traitement antibiotique prolongée (3 à 6 semaines)
  - la perte du cathéter
  - ont un coût majeur
  - peuvent être évitables
- La prise en charge standardisée et l'avis infectiologique en améliorent le pronostic.