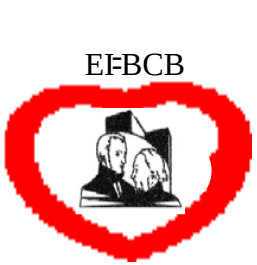

Que reste-t-il de l'antibioprophylaxie de l'endocardite infectieuse à la lumière des dernières recommandations américaines?

Xavier Duval

Hôpital Bichat Claude Bernard, Paris

JNI 2008

Recommandations de prophylaxie

- Expert guidelines & conférences de consensus
  - USA (AHA): 1954, 1965, 1977, 1984, 1990, 1997,
  - GB (BSAC): 1982, 1986, 1990, 1992,
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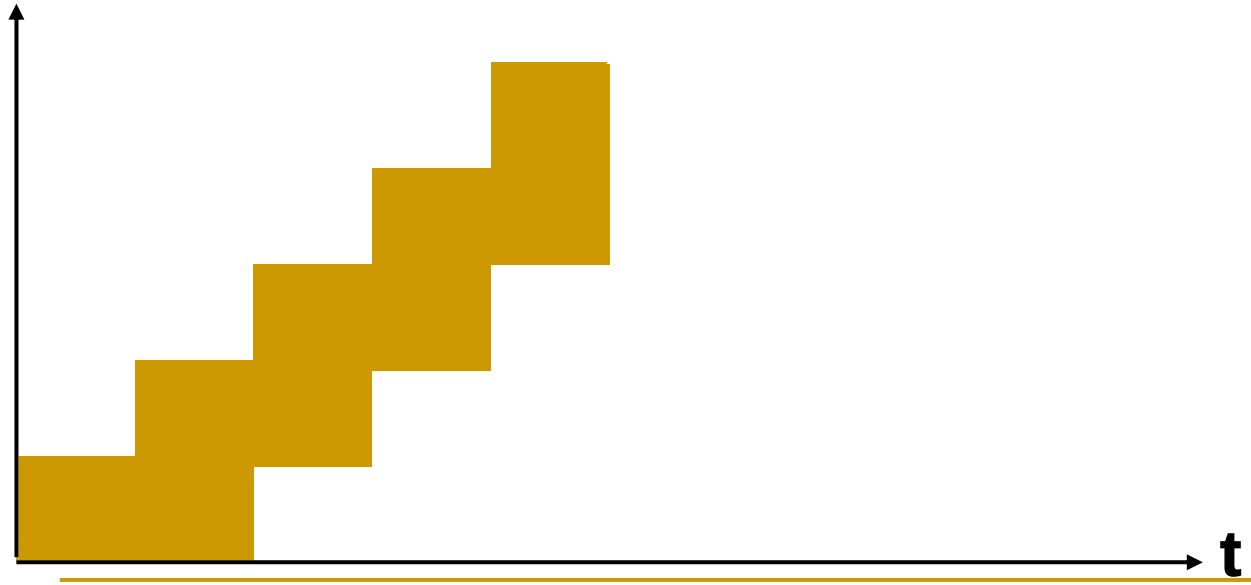
  - ESC : 2004
  - France : 1992,

Tout type de procédure
chez tout patient à risque



X. Duval et al. Lancet Infect Dis 2008

ELSEVIER

Médecine et maladies infectieuses 32 (2002) 587–595

Médecine et maladies infectieuses

www.elsevier.com/locate/medmal

Short text*

Prophylaxis of infective endocarditis

Revision of the march 1992 French consensus conference

French Recommendations 2002

Médecine et maladies infectieuses 2002;32:551-586.

Heart ONLINE

Prophylaxis of infective endocarditis: French recommendations 2002

N Danchin, X Duval and C Leport

Heart 2005;91;715-718
doi:10.1136/hrt.2003.033183

Constatations

- **Peu ou pas de preuve** de l'efficacité de la prophylaxie.
- Les recommandations de prophylaxie sont **peu respectées**
- Nbre d'EI à Strep. oraux précédées par un geste BD est très faible
- La bactériémie est un **mauvais marqueur de substitution** du risque d'EI après un geste BD (ou survenant spontanément)
- Activités **quotidiennes** sont associées à la survenue de bactériémies d'intensité comparable aux bactériémies **provoquées**
- Il est plus probable que les EI soient associées aux **bactériémies quotidiennes** qu'aux bactériémies provoquées
- Le risque de survenue d'une EI après un geste BD est **très faible**
- Le risque d'effets secondaires mortels en rapport avec la prophylaxie antibiotique pourrait être plus élevé que les risques liés à l'EI
- Assurer une **hygiène BD** de façon très stricte pourrait réduire l'incidence des bactériémies quotidiennes

Concept de bactériémie cumulée

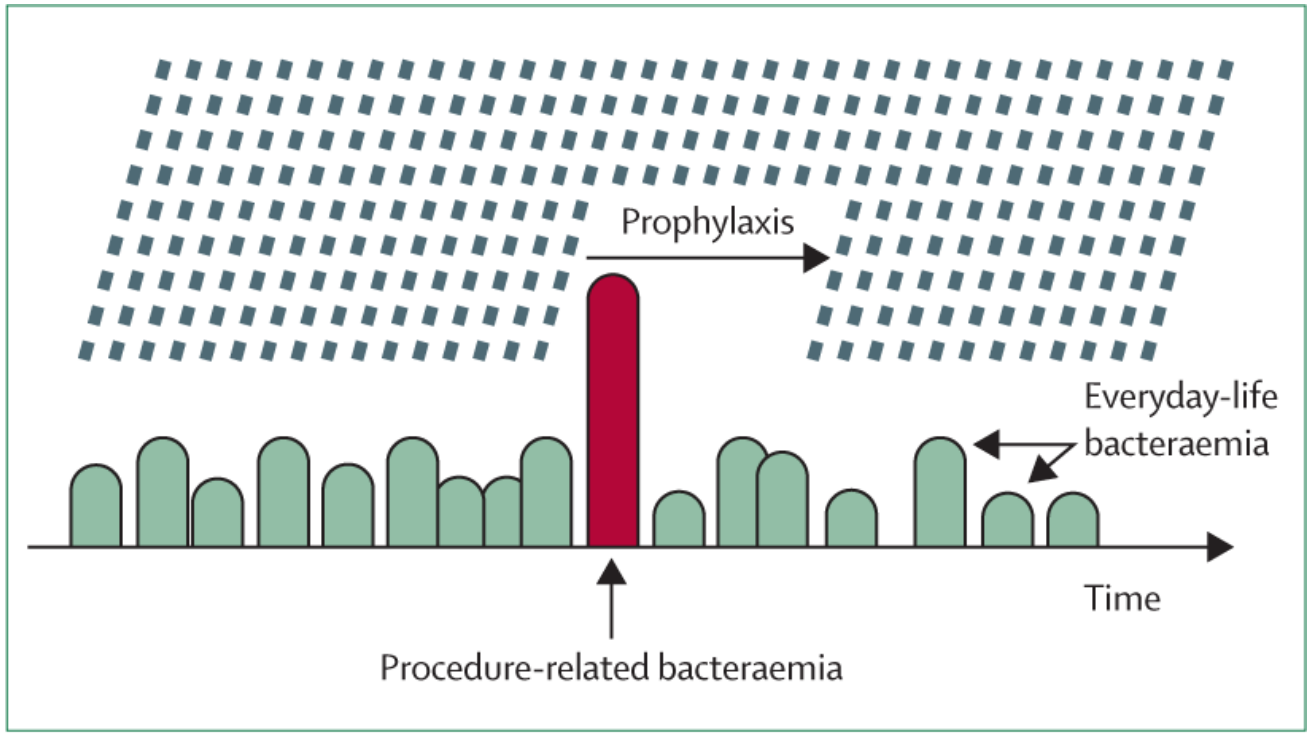


Figure 1: **Current concept of the limited role of antibiotic prophylaxis against everyday versus procedures related bacteraemia**

Adapted from P. Moreillon

X. Duval et al. Lancet Infect Dis 2008

Estimated Risk of Endocarditis in Adults with Predisposing Cardiac Conditions Undergoing Dental Procedures With or Without Antibiotic Prophylaxis

Xavier Duval,[1] F. Alla,[2] B. Hoen,[3] F. Danielou,[2] S. Larrieu,[4] F. Delahaye,[5] C. Leport,[1] and S. Briançon[2]

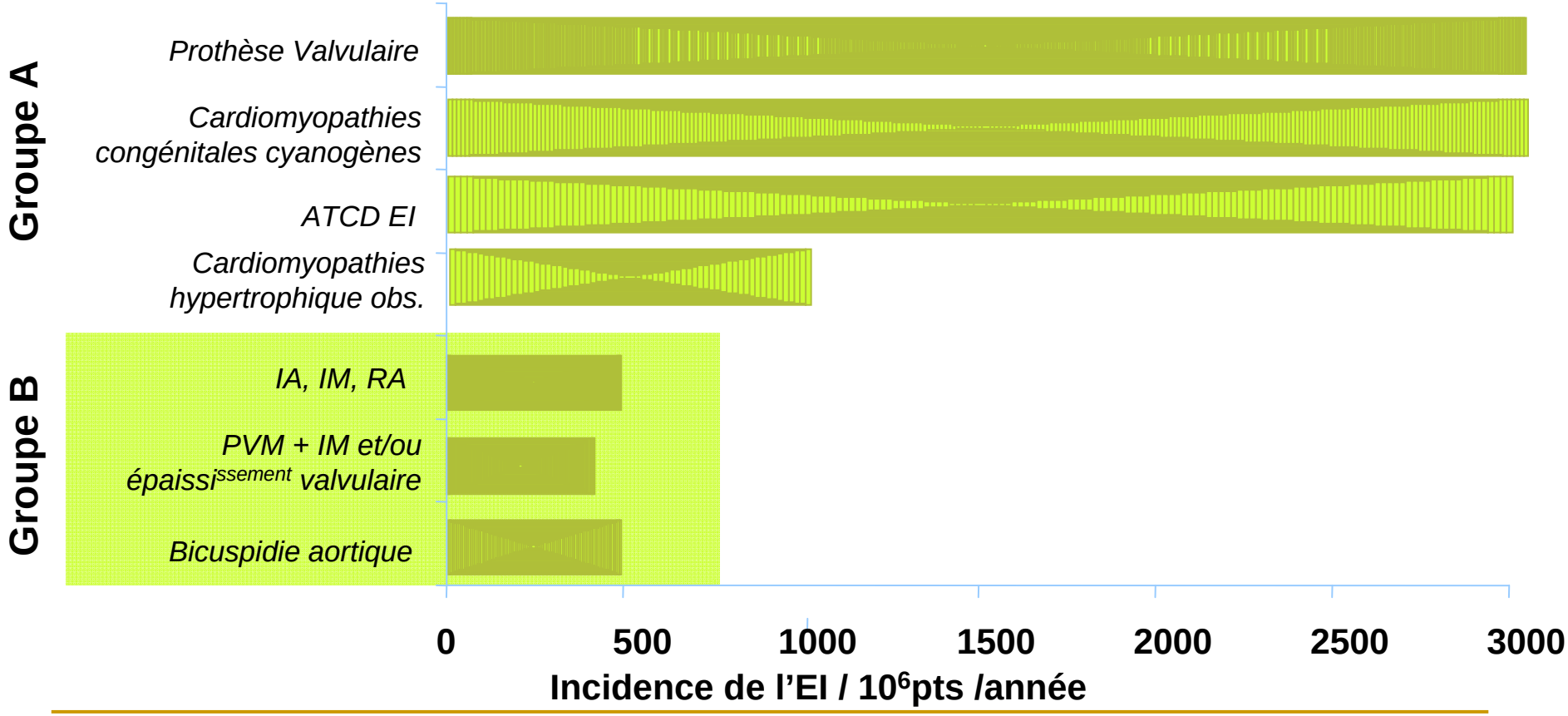
Clinical Infectious Diseases 2006; 42:e102–7

Results. After standardization, extrapolation of results to the age-equivalent general population (39 millions subjects) indicated the following: first, 3.3% (95% confidence interval [CI], 2.6%–4%) of the subjects had PCC, 2.7 million (95% CI, 2.3–3.2 million) of whom had undergone at least 1 at-risk dental procedures within the survey year, and the procedures were unprotected in 62% of cases; second, 37 (95% CI, 18–68; 2.7%) of the 1370 annual IE cases in France were possibly related to unprotected procedures. Thus, the risks of developing IE were estimated to be 1 in 46,000 for unprotected procedures (1 in 10,700 and 1 in 54,300 for subjects with prosthetic and native valve PCC, respectively) and 1 in 150,000 for protected procedures.

At most 1 /10 700 at-risk procedures could be responsible for **ONE** IE

X. Duval et al. Clin Infect Dis 2007

Cardiopathies à risque d'EI



EI France 2002

- **Risk of IE ⇒ Risk from IE**

Déterminants de la mortalité intra hospitalière et EI (Chu US)

- 267 EI certaines et possibles avec écho + évaluation clinique dans les 7 premiers jours
- Mortalité hospitalière 19% (20% cert, 16% poss)

TABLE 2. Independent Variables Associated With In-Hospital Death

Variable	OR	95% CI	*P*
Male gender	0.58	0.28–1.13	0.110
Diabetes mellitus	2.48	1.24–4.96	0.010
S aureus organism	2.06	1.01–4.20	0.046
APACHE II score at admission	1.07	1.01–1.12	0.021
Embolic event	2.79	1.15–6.80	0.024

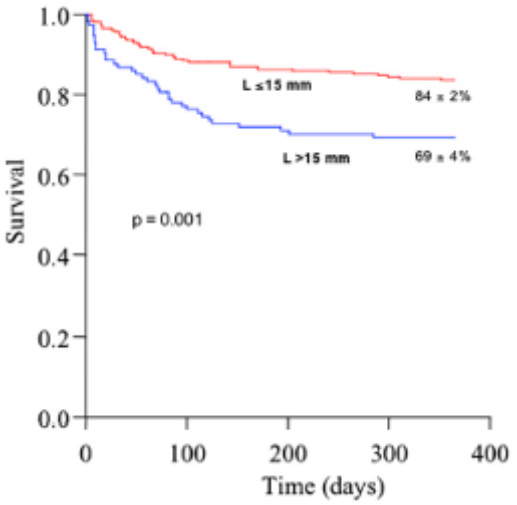
- Données écho précoces, stade insuff card non prédictives

Déterminants mortalité à 1 an et EI (Europe)

- 384 EI certaines consécutives, ETO systématiques
- Mortalité à 1 an: 20.6%

TABLE 5. Predictors of 1-Year Mortality (Cox Multivariable Analysis)

	Adjusted RR	95% CI	*P*
Age	1.02	1.01–1.04	0.007
Female sex	1.6	1.01–2.58	0.048
Comorbidity index >2	1.6	0.92–2.64	0.1
Serum creatinine >2 mg/L	1.9	1.16–3.23	0.01
Prosthetic valve	1.6	0.99–2.68	0.053
S aureus IE	2	1.19–3.24	0.001
Moderate or severe CHF	1.6	1.02–1.54	0.04
Vegetation length >15 mm	1.8	1.10–2.82	0.02



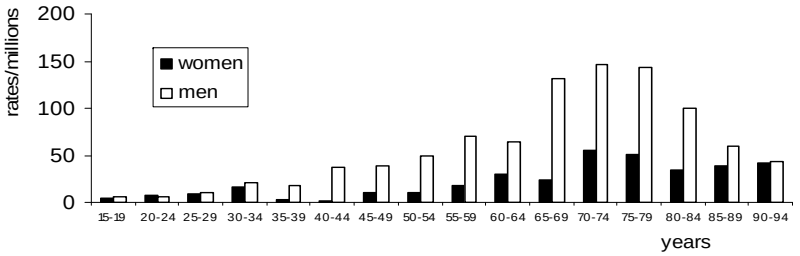
Thuny et al. Circulation 2005

Déterminants de la mortalité intra hospitalière et EI (France EI 1999)

Table 2 Multivariable association between characteristics of the patients and in-hospital death

Variables	OR	95% CI
Age (60–70 vs. <60 years)	1.56	0.81–3.03
Age (70–80 vs. <60 years)	2.21	1.20–4.09
Age (>80 vs. <60 years)	1.64	0.62–4.35
Gender (female vs. male)	1.44	0.85–2.42
Mitral location (yes vs. no)	2.37	1.39–4.06
Aortic location (yes vs. no)	2.23	1.26–3.95
S. aureus (yes vs. no)	2.59	1.41–4.74
Insulin-DM (yes vs. no)	4.69	1.77–12.44
History of heart failure (yes vs. no)	2.47	1.34–4.55
Embolic event (yes vs. no)	1.29	0.77–2.15
Serum creatinine >180 μmol/L (yes vs. no)	1.76	1.02–3.03
History of immunodepression (yes vs. no)	3.08	1.44–6.60

Hosmer and Lemeshow goodness-of-fit test non significant, and accuracy of classification (*c*-index = 0.756).



X. Duval et al. Eur Heart J 2007

Recommandations de prophylaxie

- Expe
  - US
  - GE
  - Su
  - ES
  - Fra

Table 3 Factors that may help in choosing whether antibiotic prophylaxis will be prescribed when prophylaxis is optional

Arguments for prescription
Age >65 years
Associated conditions
Cardiac, renal, respiratory, and hepatic insufficiency
Diabetes mellitus
Acquired, constitutional or therapeutic (corticosteroids, immunosuppressive agents) immunodepression
Oral or dental condition
Inadequate oral or especially dental hygiene
Procedure
Important bleeding (intensity, duration)
Technically difficult procedure (prolonged procedure)
Patient's opinion after receiving information
Arguments against prescription
Allergy to several antibiotics
Patient's opinion after receiving information

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Journal of Antimicrobial Chemotherapy (2006) **57**, 1035–1042
doi:10.1093/jac/dkl121
Advance Access publication 19 April 2006

JAC

Guidelines for the prevention of endocarditis: report of the Working Party of the British Society for Antimicrobial Chemotherapy

F. K. Gould[1]*, T. S. J. Elliott[2], J. Foweraker[3], M. Fulford[4], J. D. Perry[1], G. J. Roberts[5], J. A. T. Sandoe[6] and R. W. Watkin[7]

[1]Department of Microbiology, Freeman Hospital, Newcastle upon Tyne, UK; [2]Department of Microbiology, Queen Elizabeth Hospital, Birmingham, UK; [3]Department of Microbiology, Papworth Hospital, Cambridge, UK; [4]Postgraduate Dental Department, University of Bristol, Bristol, UK; [5]King's College Dental Institute, London, UK; [6]Department of Medical Microbiology, Leeds Teaching Hospitals NHS Trust, Leeds, UK; [7]Department of Cardiology, Queen Elizabeth Hospital, Birmingham, UK

High-risk cardiac factors requiring antibiotic prophylaxis

Previous infective endocarditis

Cardiac valve replacement surgery, i.e. mechanical or biological prosthetic valves

Surgically constructed systemic or pulmonary shunt or conduit

Dental procedures requiring antibiotic prophylaxis

All dental procedures involving dento-gingival manipulation

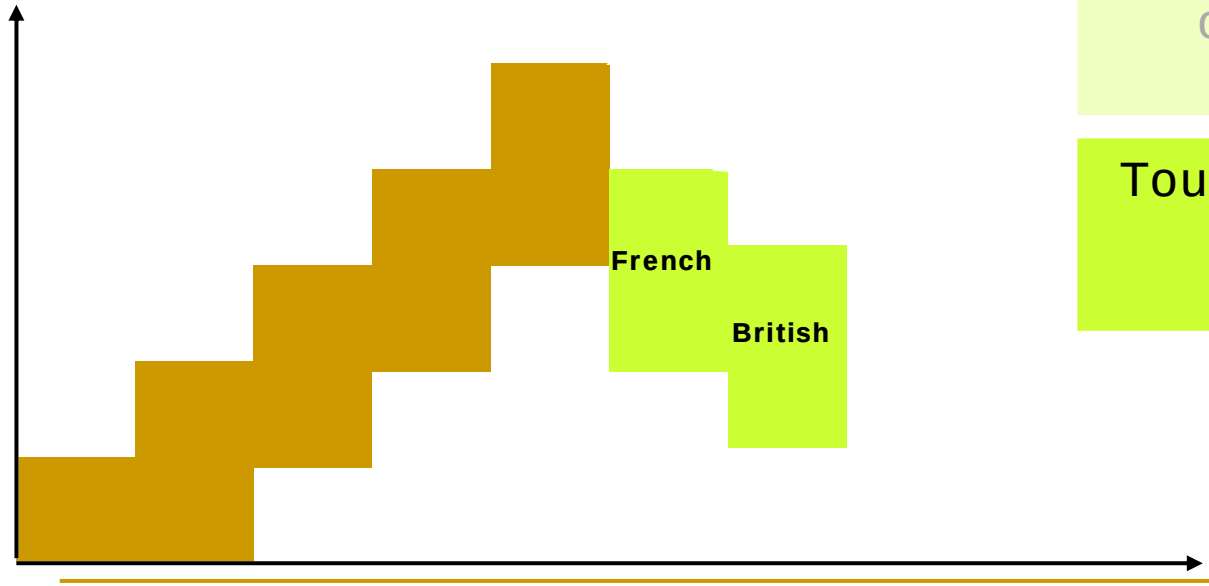
Recommandations de prophylaxie

- Expert guidelines & conférences de consensus
  - USA (AHA): 1954, 1965, 1977, 1984, 1990, 1997,
  - GB (BSAC): 1982, 1986, 1990, 1992, **2006**
  - Suisse : 1984, 2000
  - ESC : 2004
  - France : 1992, 2002

Tout type de procédure
chez tout patient à risque

Tout type de procédure,
optionnelle chez les pts
à risque intermédiaire

Tout type de **procédures BD**
chez tout patient
à **haut risque**



N. Danchin et al *Heart* 2005/ Gould et al. *JAC* 2006 / Wilson et al. *Circulation* 2007 / X. Duval et al Heart 2008

Circulation
JOURNAL OF THE AMERICAN HEART ASSOCIATION

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Prevention of Infective Endocarditis. Guidelines From the American Heart Association. A Guideline From the American Heart Association Rheumatic Fever, Endocarditis, and Kawasaki Disease Committee, Council on Cardiovascular Disease in the Young, and the Council on Clinical Cardiology, Council on Cardiovascular Surgery and Anesthesia, and the Quality of Care and Outcomes Research Interdisciplinary Working Group

Walter Wilson, Kathryn A. Taubert, Michael Gewitz, Peter B. Lockhart, Larry M. Baddour, Matthew Levison, Ann Bolger, Christopher H. Cabell, Masato Takahashi, Robert S. Baltimore, Jane W. Newburger, Brian L. Strom, Lloyd Y. Tani, Michael Gerber, Robert O. Bonow, Thomas Pallasch, Stanford T. Shulman, Anne H. Rowley, Jane C. Burns, Patricia Ferrieri, Timothy Gardner, David Goff and David T. Durack

Circulation published online Apr 19, 2007;

TABLE 2. Primary Reasons for Revision of the IE Prophylaxis Guidelines

IE is much more likely to result from frequent exposure to random bacteremias associated with daily activities than from bacteremia caused by a dental, GI tract, or GU tract procedure.
Prophylaxis may prevent an exceedingly small number of cases of IE, if any, in individuals who undergo a dental, GI tract, or GU tract procedure.
The risk of antibiotic-associated adverse events exceeds the benefit, if any, from prophylactic antibiotic therapy.
Maintenance of optimal oral health and hygiene may reduce the incidence of bacteremia from daily activities and is more important than prophylactic antibiotics for a dental procedure to reduce the risk of IE.

Recommandations de prophylaxie

- Expert guidelines & conférences de consensus
  - USA (AHA): 1954, 1965, 1977, 1984, 1990, 1997, **2007**
  - GB (BSAC): 1982, 1986, 1990, 1992, 2006
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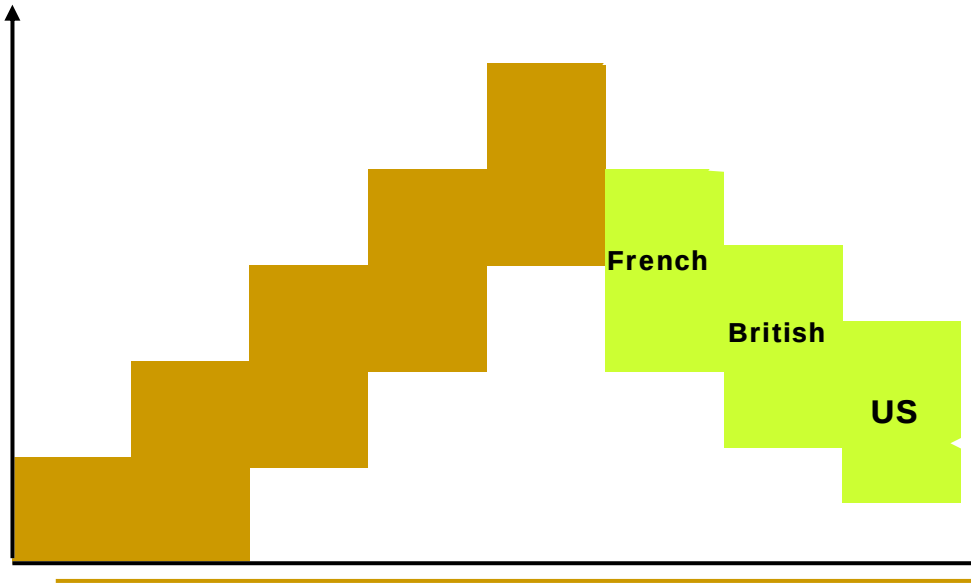

Tout type de procédure
chez tout patient à risque

Tout type de procédure,
optionnelle chez les pts
à risque intermédiaire

Tout type de procédures BD
chez tout patient
à haut risque

Quasiment uniquement
procédure dentaire
chez tout patient **à haut risque**

Danchin. *Heart* 2005/ Gould. *JAC* 2006 / Wilson. *Circulation* 2007 / X. Duval Lancet Infect Dis 2008 / X. Duval Heart 2008

NHS
National Institute for
Health and Clinical Excellence

Prophylaxis against infective endocarditis

Implementing NICE guidance

2008

NICE clinical guideline 64

Clinical Guideline Implementation Tools

Recommandations de prophylaxie

Expert guidelines & conférences de consensus

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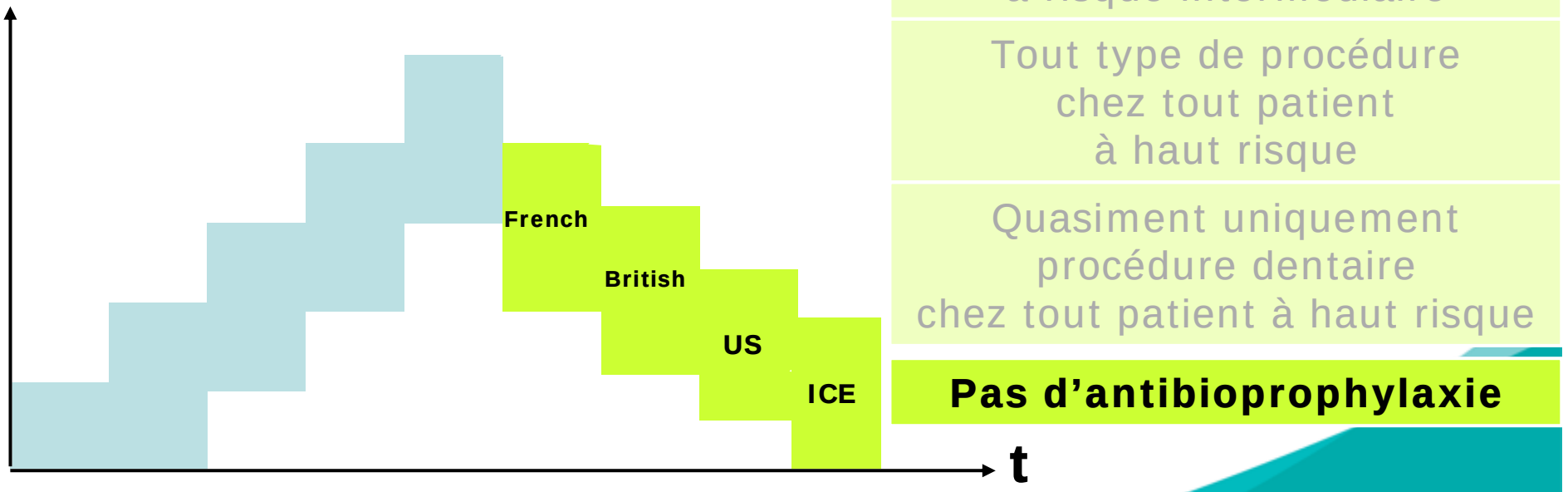
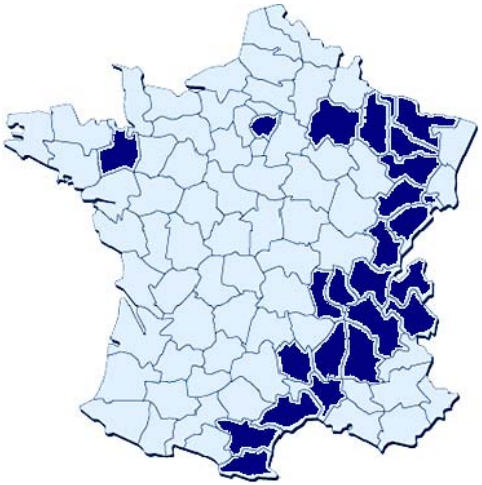


Danchin. *Heart* 2005/ Gould. *JAC* 2006 / Wilson. *Circulation* 2007 / X. Duval Lancet Infect Dis 2008 / X. Duval Heart 2008

EI 2008

Régions concernées :

Franche-Comté, Ille et Vilaine, Languedoc-Roussillon, Lorraine, Marne, Paris et Petite couronne, Rhône-Alpes.



Signalements : 1er décembre 2007 - 30 mars 2009

Protocole et renseignements pratiques sur www.endocardite.fr

Etude VIRSTA
PHRC 2008

- Etude prospective multicentrique nationale des facteurs liés à l'hôte, à l'environnement et au micro-organisme dans les bactériémies et EI à *Staphylococcus aureus*.

Dr Vincent Le Moing