

Best of en maladies infectieuses

ANTIBIOTHERAPIE

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Résistances

Association between Fluoroquinolone Resistance and Mortality in *Escherichia coli* and *Klebsiella pneumoniae* Infections: The Role of Inadequate Empirical Antimicrobial Therapy

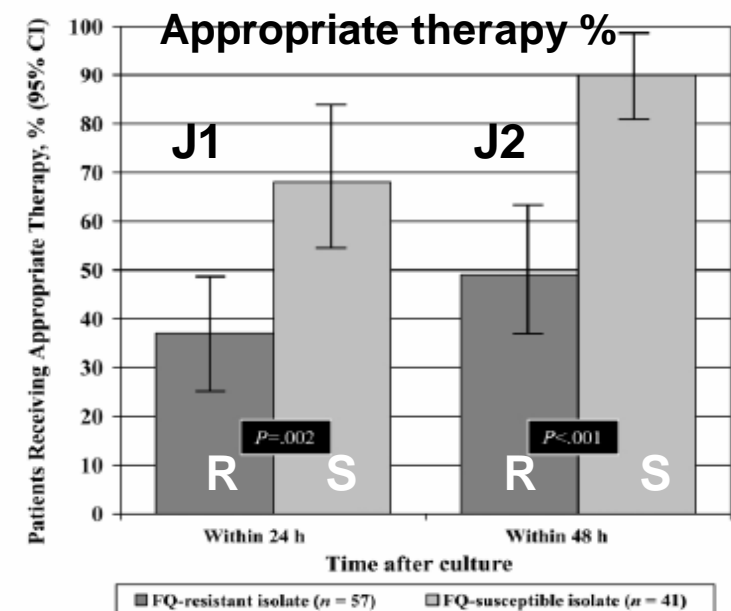
Lautenbach E et al., CID 2005; 41: 923-29

Table 2. Results of a multivariable analysis performed to evaluate the associated with fluoroquinolone (FQ) resistance and mortality in *Escherichia coli* and *Klebsiella pneumoniae* infections.

Variable	Adjusted OR (95% CI)	P
Infection with FQ-resistant isolate	4.41 (1.03–18.81)	.04
Intensive care unit stay at time of infection	5.50 (1.69–17.88)	.005
APACHE II score ^a	1.14 (1.03–1.26)	.008
African-American race	0.41 (0.14–1.27)	.12

NOTE. All variables included in the final multivariable model are shown.

^a OR reflects the odds associated with each 1-point increase in the APACHE II score.



SARM et EVR

Identifying Groups at High Risk for Carriage of Antibiotic-Resistant Bacteria

Jon P. Furuno, PhD; Jessina C. McGregor, PhD; Anthony D. Harris, MD, MPH; Judith A. Johnson, PhD; Jennifer K. Johnson, PhD; Patricia Langenberg, PhD; Richard A. Venezia, PhD; Joseph Finkelstein, MD; David L. Smith, PhD; Sandra M. Strauss, BS, M(ASCP); Eli N. Perencevich, MD, MS

Conclusion: Patients with a self-reported previous admission within 1 year may represent a high-risk group for colonization by methicillin-resistant *Staphylococcus aureus* or vancomycin-resistant enterococci at hospital admission and should be considered for targeted active surveillance culturing.

Arch Intern Med. 2006;166:580-585

SARM et EVR

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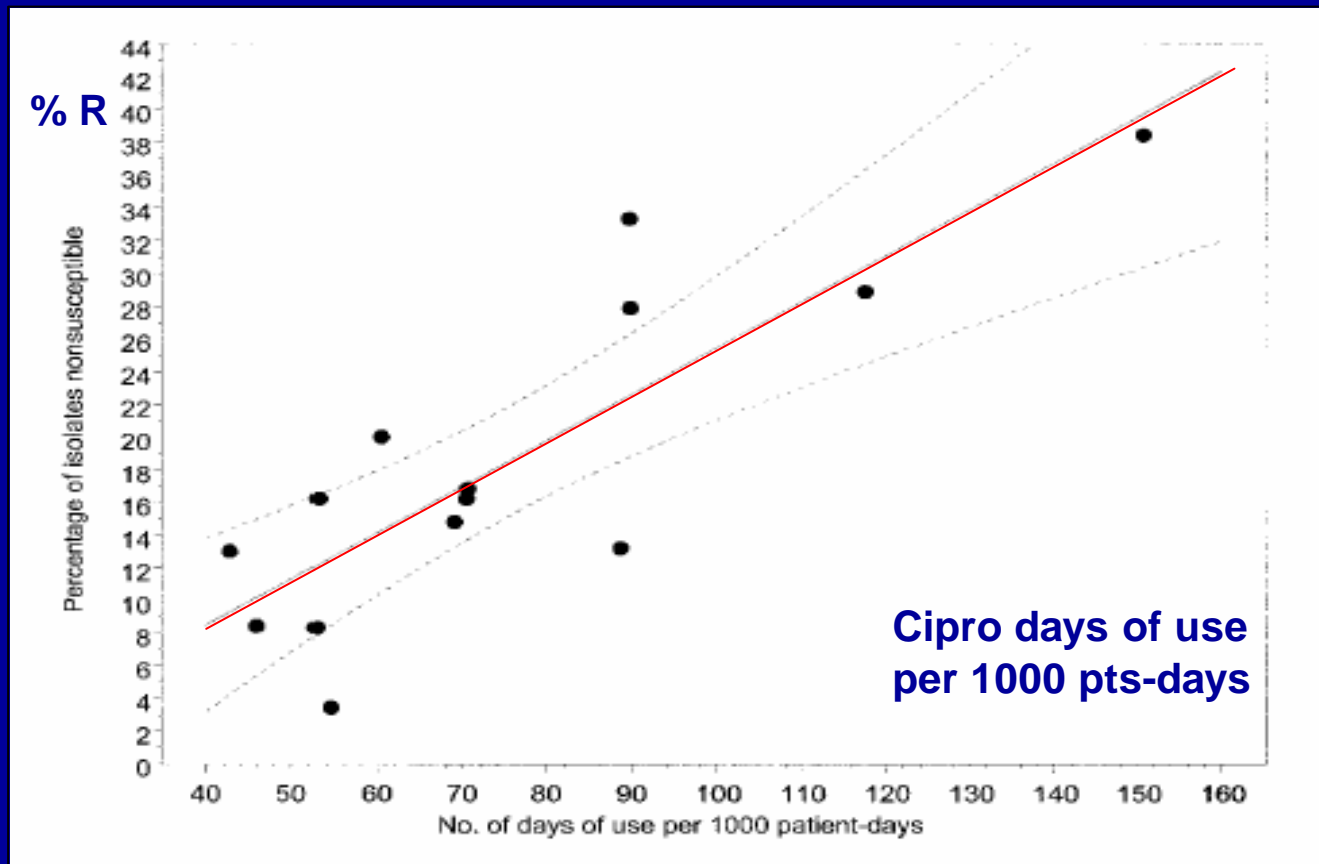
Jon P. Furuno, PhD; Jessina C. McGregor, PhD; Anthony D. Harris, MD, MPH; Judith A. Jernigan, MD, MPH; Jennifer K. Johnson, PhD; Patricia Langenberg, PhD; Richard A. Venezia, MD, MPH; David L. Smith, PhD; Sandra M. Strauss, BS, MCA

Patients with a self-reported previous admission to a hospital in the past year may represent a high-risk group for colonization by methicillin-resistant *Staphylococcus aureus* or vancomycin-resistant enterococci at hospital admission and should be considered for targeted active surveillance culturing.

Arch Intern Med. 2006;166:580-585

Hospital-Level Rates of Fluoroquinolone Use and the Risk of Hospital-Acquired Infection with Ciprofloxacin-Nonsusceptible *Pseudomonas aeruginosa*

Thomas Ray G et al., CID 2005; 41: 441-9

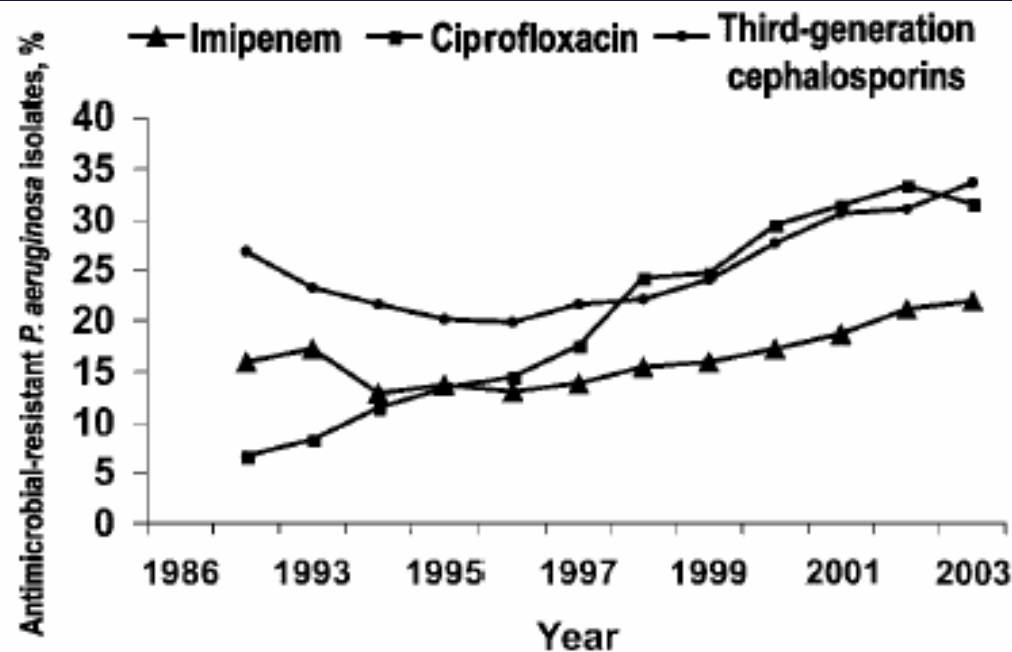


Trends in Antimicrobial Resistance in Health Care–Associated Pathogens and Effect on Treatment

L. Clifford McDonald

Centers for Disease Control and Prevention, Atlanta, Georgia

CID 2006



← 3rd G°C + fluoroquinolones
← imipenem

Figure 3. Resistance to antimicrobials (imipenem, ciprofloxacin, and third-generation cephalosporins) in *Pseudomonas aeruginosa* isolates recovered from intensive care unit patients (National Nosocomial Infections Surveillance System, unpublished data).

P. aeruginosa
NNIS 1986-2003
ICU patients

Influx of Extended-Spectrum β -Lactamase–Producing Enterobacteriaceae into the Hospital

R. Ben-Ami,¹ M. J. Schwaber,² S. Navon-Venezia,² D. Schwartz,³ M. Giladi,¹ I. Chmelnitsky,² A. Leavitt,² and Y. Carmeli^{1,2}

CID 2006; 42: 925-34

13,7 % des bactériémies-EB à l'admission (< 48 h) = ESBL +

10,8 % de portage fécal sur entrants "tout-venant" en service de médecine

Identification of Methicillin-Resistant *Staphylococcus aureus* Carriage in Less than 1 Hour during a Hospital Surveillance Program

Ann Huletsky,^{1,2} Pierre Lebel,³ François J. Picard,^{1,2} Marthe Bernier,¹ Martin Gagnon,¹ Nathalie Boucher,¹ and Michel G. Bergeron^{1,2}

CID 2005; 40: 976-81

Specificity	98,4 %
PPV	95,3 %
Sensitivity	100 %
NPV	100 %

Nouveaux antibiotiques

Bad Bugs Need Drugs: An Update on the Development Pipeline from the Antimicrobial Availability Task Force of the Infectious Diseases Society of America

Talbot GH et al., Clin Infect Dis, 2006; 42: 657-68

BESOINS

P. aeruginosa
A. baumannii
EB BLSE +

SARM
VREF

Anti-Gram +

Oritavancin
Telavancin
dalbavancin

Anti Gram + et Gram -

Ceftobiprole	céphalo
PIP0903-TAK599	céphalo

Faropenem	penem
Ro 4908463	penem

Cethromycine	ketolide
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Plus d'anti-Gram + que d'anti-Gram -
Produits de niche
Supériorité ?
Tolérance ?

The NEW ENGLAND
JOURNAL of MEDICINE

Daptomycin versus Standard Therapy for Bacteremia
and Endocarditis Caused by *Staphylococcus aureus*

Fowler VG et al., NEJM, 2006; 355: 653-65

"Daptomycin is not inferior to standard therapy for *S. aureus*
bacteremia and right-sided endocarditis"

QUESTIONS

Open label study
Dapto 6mg/kg
Dg ?
Standard therapy ?
Abt levels ?
AEs

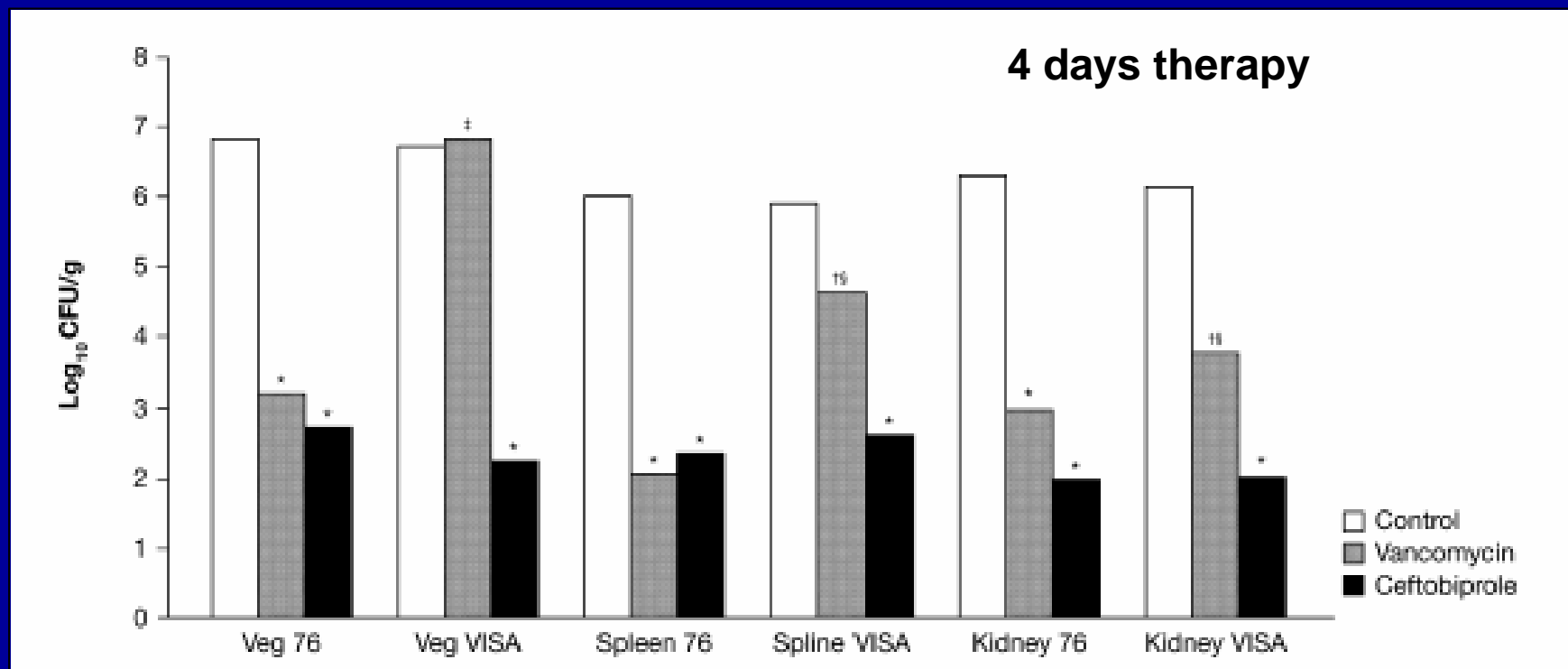
	Dapto	standard therapy
pts	124	122
RS endoc	19	16
MRSA	45	44
Success MITT	53/120	58/115
Success MRSA	44.4%	31.8% *
Success MSSA	44.6%	48.6%
Microb. Failure	19 (6 with [↑] MIC)	11

Ceftobiprole: in-vivo profile of a bactericidal cephalosporin

H. F. Chambers

CMI, 2006; 12 (suppl 2): 17-22

With ref. to Chambers HF, AAC, 2005; 49 : 884-888



Rabbit aortic valve endocarditis model - MRSA 76 or VISA

Mortality

MRSA 76 strain : V = Cef = 50%

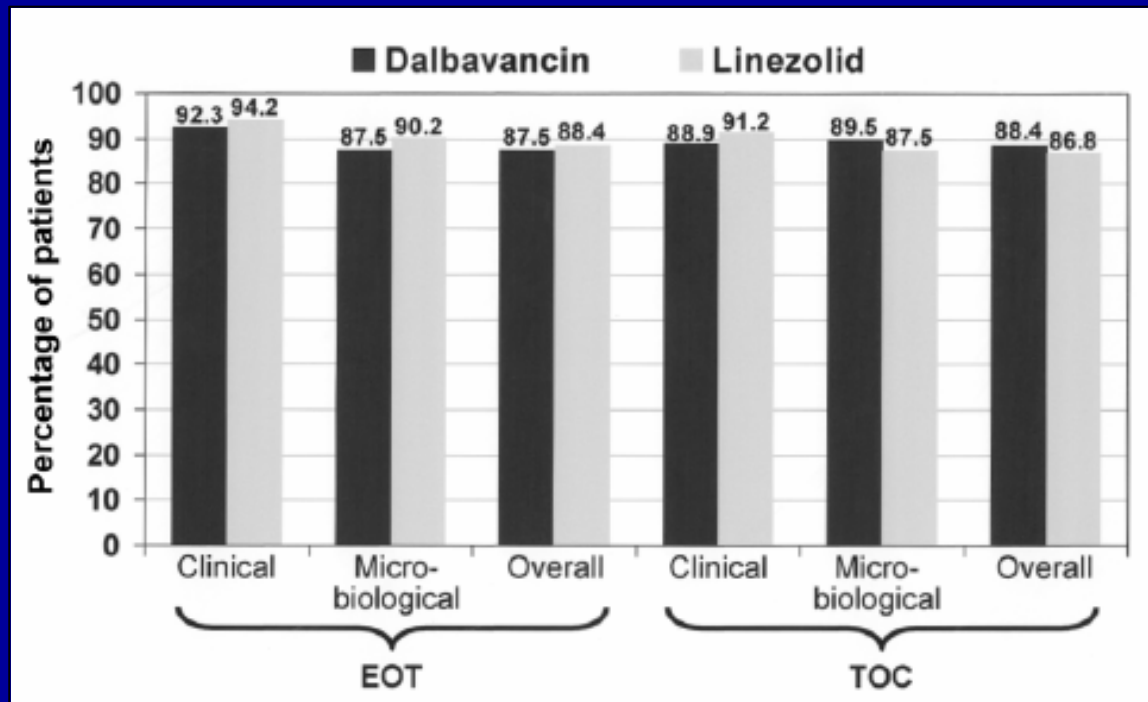
VISA train : V 67% vs Cef 8% (p=0.022)

Randomized, Double-Blind Comparison of Once-Weekly Dalbavancin versus Twice-Daily Linezolid Therapy for the Treatment of Complicated Skin and Skin Structure Infections

Jauregui LE et al., CID, 2005; 41: 1407-15

Dalbavancin 1000 mg IV J1-J8 vs Linezolid 600 mg X 2/d IV or oral, 14 days

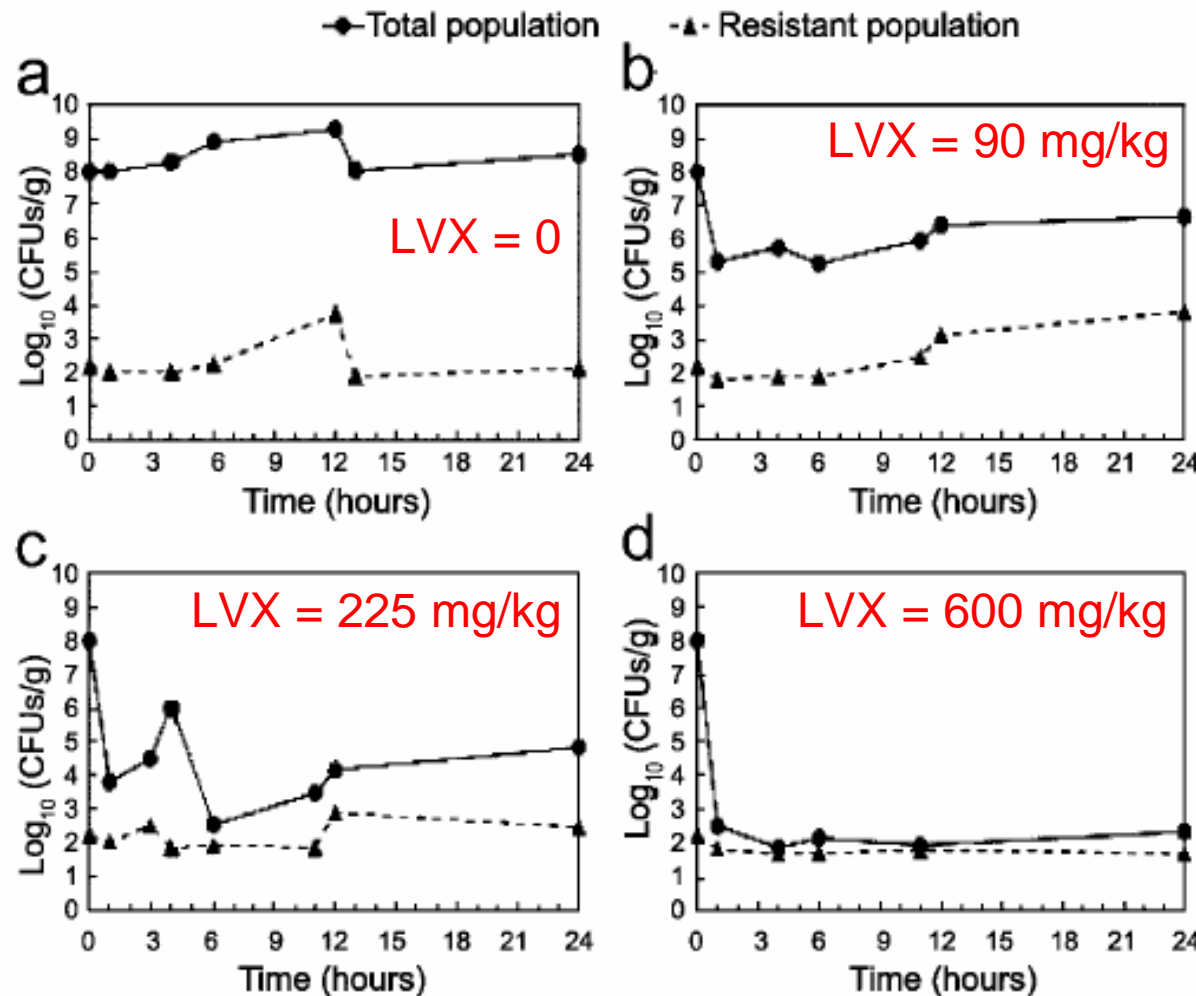
	DAL	LNZ
ITT	571	283
TOC/ce	434	226
TOC/me	277	152
SA	318	174
MRSA	57%	56%



**Bonnes pratiques
optimisation pharmacodynamique
guidelines
interventions...**

The Crisis of Resistance: Identifying Drug Exposures to Suppress Amplification of Resistant Mutant Subpopulations

Drusano GL et al., CID 2006; 42: 525-32



Mouse thigh model
P. aeruginosa
Levofloxacin

1) Inoculum-dependent probability of emergence of R

2) Conc^o-dependent probability of emergence of R

High-Dose Vancomycin Therapy for Methicillin-Resistant *Staphylococcus aureus* Infections

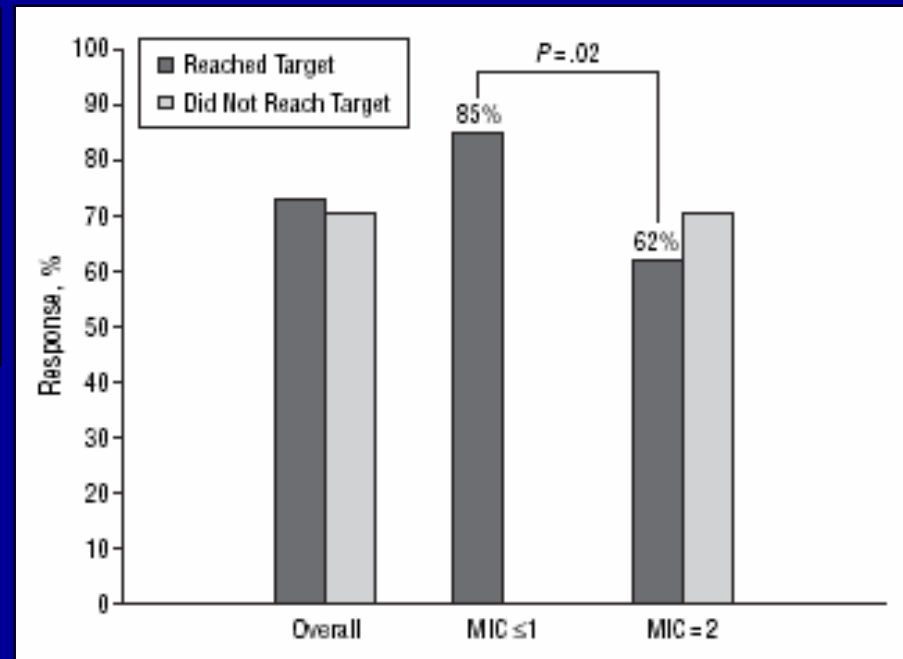
Efficacy and Toxicity

Levita K. Hidayat, PharmD; Donald I. Hsu, PharmD; Ryan Quist, PhD;
Kimberly A. Shriner, MD; Annie Wong-Beringer, PharmD

Hidayat LK et al. Arch Intern Med 2006; 166:2138-44

Conclusions: High prevalence of clinical MRSA strains with elevated vancomycin MIC (2 µg/mL) requires aggressive empirical vancomycin dosing to achieve a trough greater than 15 µg/mL. Combination or alternative therapy should be considered for invasive infections caused by these strains.

Drug monitoring
AEs
Therapy according to MICs



Final response according to target trough

Antibiotic Prescription for Community-Acquired Pneumonia in the Intensive Care Unit: Impact of Adherence to Infectious Diseases Society of America Guidelines on Survival

M. Bodi,¹ A. Rodriguez,¹ J. Solé-Violán,² M. C. Gilavert,¹ J. Garnacho,³ J. Blanquer,⁴ J. Jimenez,³ M. V. de la Torre,⁵ J. M. Sirvent,⁷ J. Almirall,⁸ A. Doblas,¹⁰ J. R. Badía,⁹ F. Garcia,¹¹ A. Mendia,¹² R. Jordá,¹³ F. Bobillo,¹⁴ J. Vallés,¹⁶ M. J. Broch,⁵ N. Carrasco,¹⁷ M. A. Herranz,¹⁵ and J. Rello,¹ for the Community-Acquired Pneumonia Intensive Care Units (CAPUCI) Study Investigators⁹

CID 2005, 41 : 1709-16

**Etude prospective, 15 mois, 33 hôpitaux
529 pts avec PAC sévère, APACHE II = 18.9
Mortalité en réanimation = 27.9 %**

Predicted effects on antibiotic use following the introduction of British or North American guidelines for community-acquired pneumonia in The Netherlands

J. J. Oosterheert¹, M. J. M. Bonten^{1,2,3}, M. M. E. Schneider¹ and I. M. Hoepelman^{1,2}

Clin Microbiol Infect 2005; 11: 992–998

Evaluation prospective de 248 pts avec un dg de pneumonie communautaire

PAC : sévère - modérée - légère

Evaluation et classification selon la sévérité

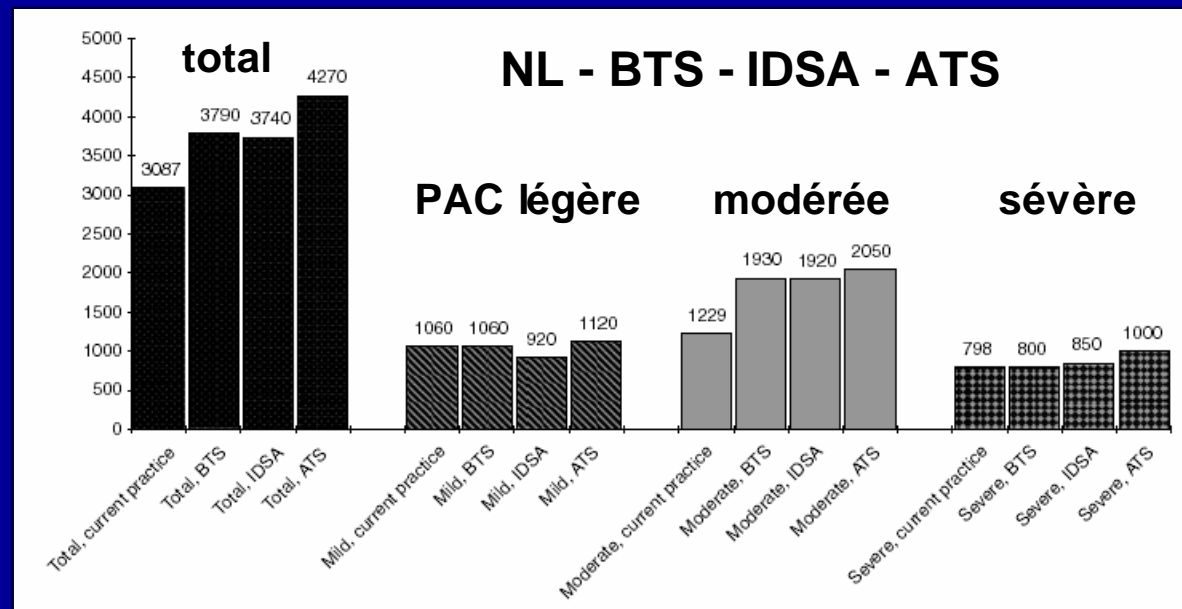
Dg microbio non fait 46% - *S. pneumoniae* 20%

Monothérapie BL 62% - Association BL + macrolide 23%

DDJ

BTS + 21%
IDSA + 23%
ATS + 38%

**PAC modérée :
 + 1750-3500 K€**



Fluoroquinolone Use and Methicillin-Resistant *Staphylococcus aureus* Isolation Rates in Hospitalized Patients: A Quasi Experimental Study

Charbonneau et al., CID 2006; 42: 778-84

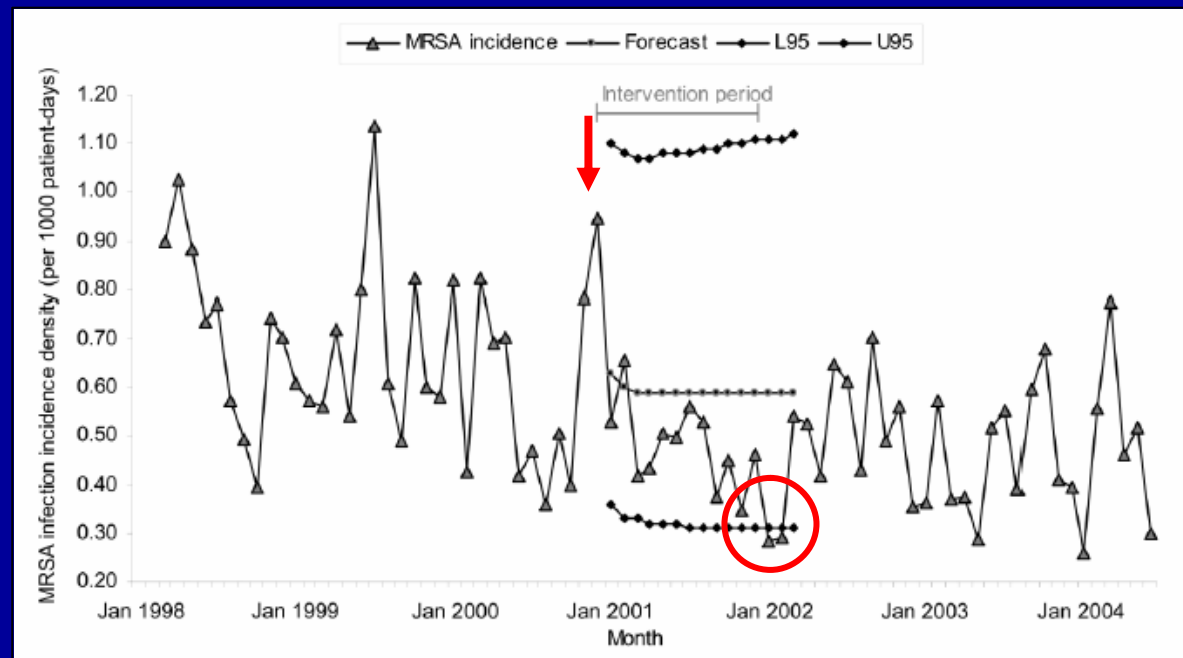
Jan 2001 - jan 2002
 1 an "FQ free" au CHU de Caen
 3 CHU de comparaison

FQ DDJ :10

Prévalence du SARM :		
	97- 00	2001
Caen	36.0%	32.3%
3 CHU	36.2%	36.8%

Suivi mensuel :

- taux de SARM (tous isolats)
- Densité d'incidence des IN à SARM



Reduction of Urinary Tract Infection and Antibiotic Use after Surgery: A Controlled, Prospective, Before-After Intervention Study

François Stéphan,^{1,2,a} Hugo Sax,² Maud Wachsmuth,^{1,2} Pierre Hoffmeyer,³ François Clergue,¹ and Didier Pittet²

CID 2006; 42: 1544-51

L'usage des antibiotiques n'est pas tout !

Et en ville... ?

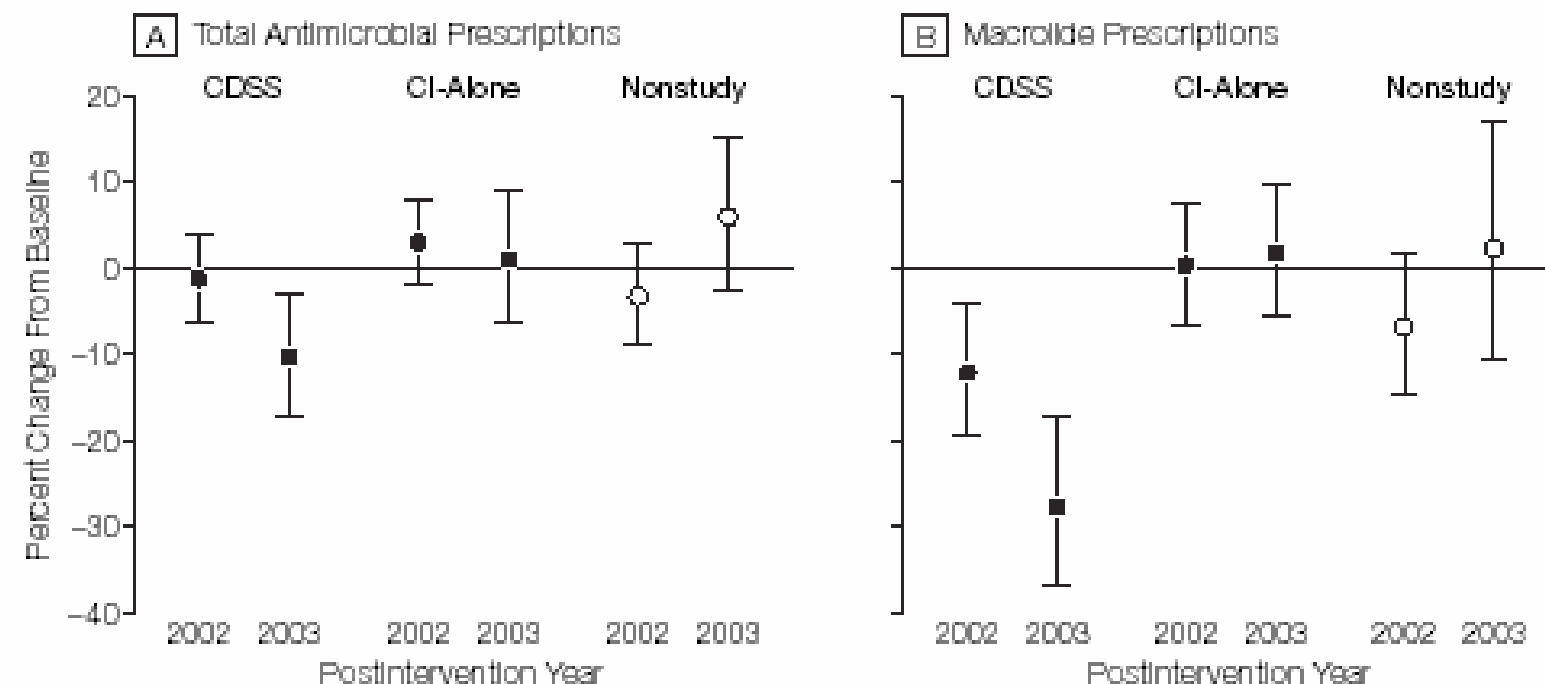
Clinical Decision Support and Appropriateness of Antimicrobial Prescribing

A Randomized Trial

Samore MH, JAMA, 2005; 294 : 2305-14

Infections respiratoires en médecine communautaire
400 000 Habitants - 334 médecins - 13081 infections

Figure 1. Relative Change in Prescribing Rates in Clinical Decision Support System (CDSS), Community Intervention Alone (CI-Along), and Nonstudy Communities



Clinical Decision Support and Appropriateness of Antimicrobial Prescribing

A Randomized Trial

Samore MH, JAMA, 2005; 294 : 2305-14

Figure 2. Relative Change in Prescribing Antimicrobial Agent for Visits in the "Never Indicated" Category

