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/ CONGRESO NACIONAL
DE LA SOCIEDAD ESPAÑOLA DE FARMACIA
HOSPITALARIA /



UN PACIENTE, UNA HISTORIA

/ BILBAO DEL
2 AL 5 DE OCTUBRE
DE 2012 /

Estudios sobre enfermedades infecciosas 2012 que pueden tener impacto en la práctica clínica

Bilbao

3 octubre 2012



Santiago Grau Cerrato

Servicio de Farmacia
Hospital del Mar
Barcelona

Cefalosporinas y alergia a penicilinas

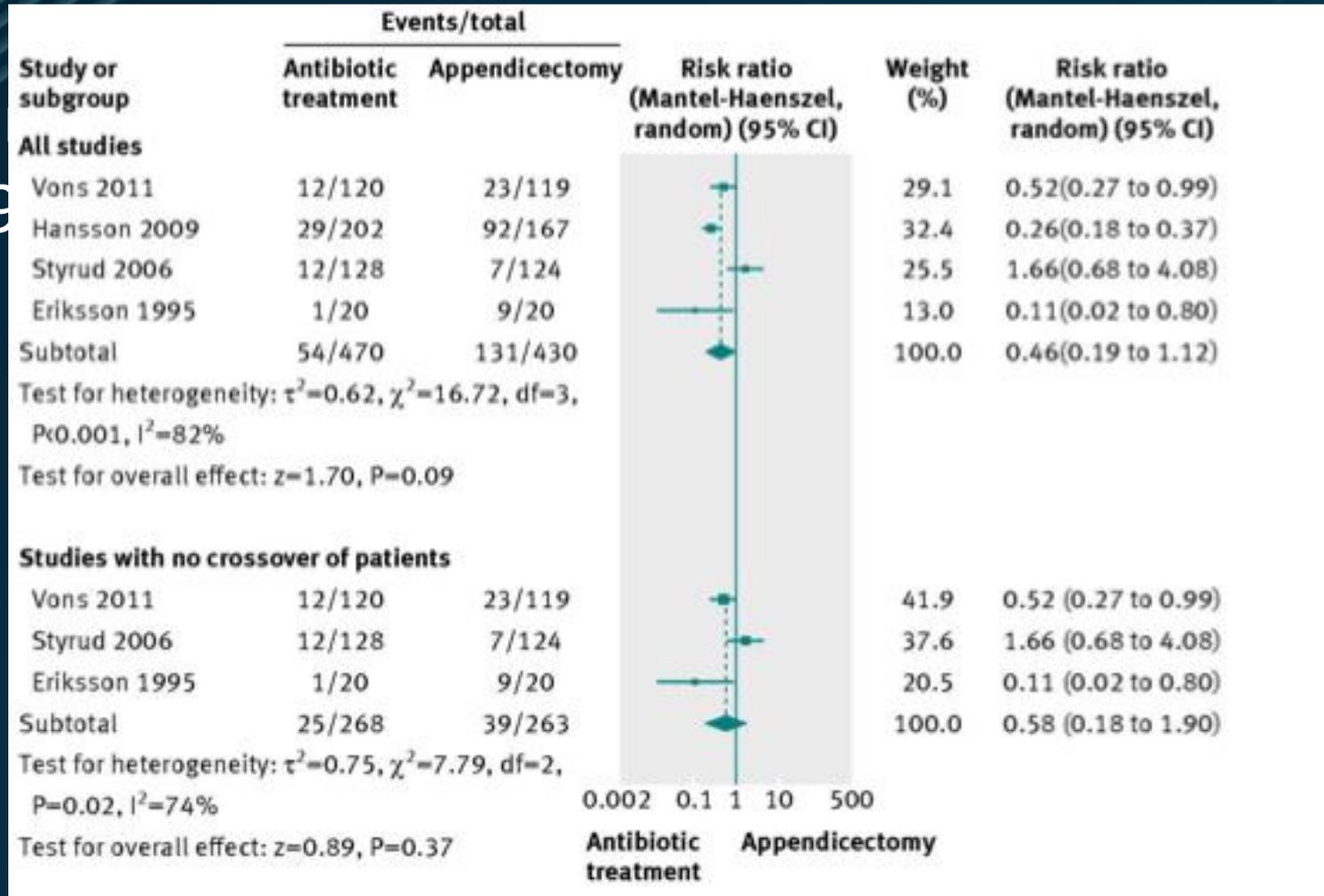
- Revisión de la evidencia sobre relación entre alergia a penicilina y aumento en el riesgo de alergia a cefalosporinas
- Inclusión: 27 artículos
- Hipersensibilidad cruzada sobreestimada
 - En alergia a penicilina confirmada: 2,55%
 - Evitar cefadroxilo, cefaclor, cefalexina y cefradina.
 - Posibilidad cefalosporinas 3a y 4a generación

RESEARCH

Safety and efficacy of antibiotics compared with appendicectomy for treatment of uncomplicated acute appendicitis: meta-analysis of randomised controlled trials

Krishna K Varadhan *research fellow*¹, Keith R Neal *professor*^{1,2}, Dileep N Lobo *professor*¹

Apendicitis: tto ATB vs apendicectomía



Forest plot para riesgo de apendicitis complicada.

Journal of Antimicrobial Chemotherapy Advance Access published August 21, 2012

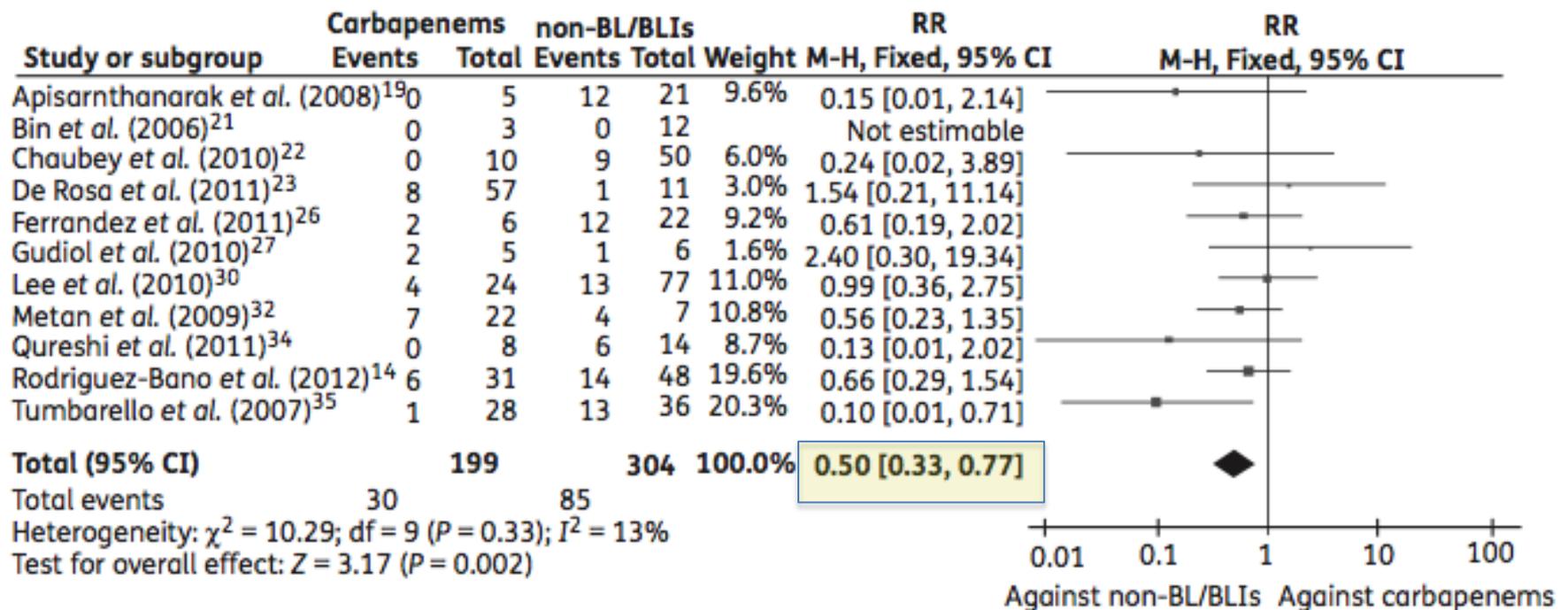
J Antimicrob Chemother
doi:10.1093/jac/dks301

**Journal of
Antimicrobial
Chemotherapy**

Carbapenems versus alternative antibiotics for the treatment of bacteraemia due to Enterobacteriaceae producing extended-spectrum β -lactamases: a systematic review and meta-analysis

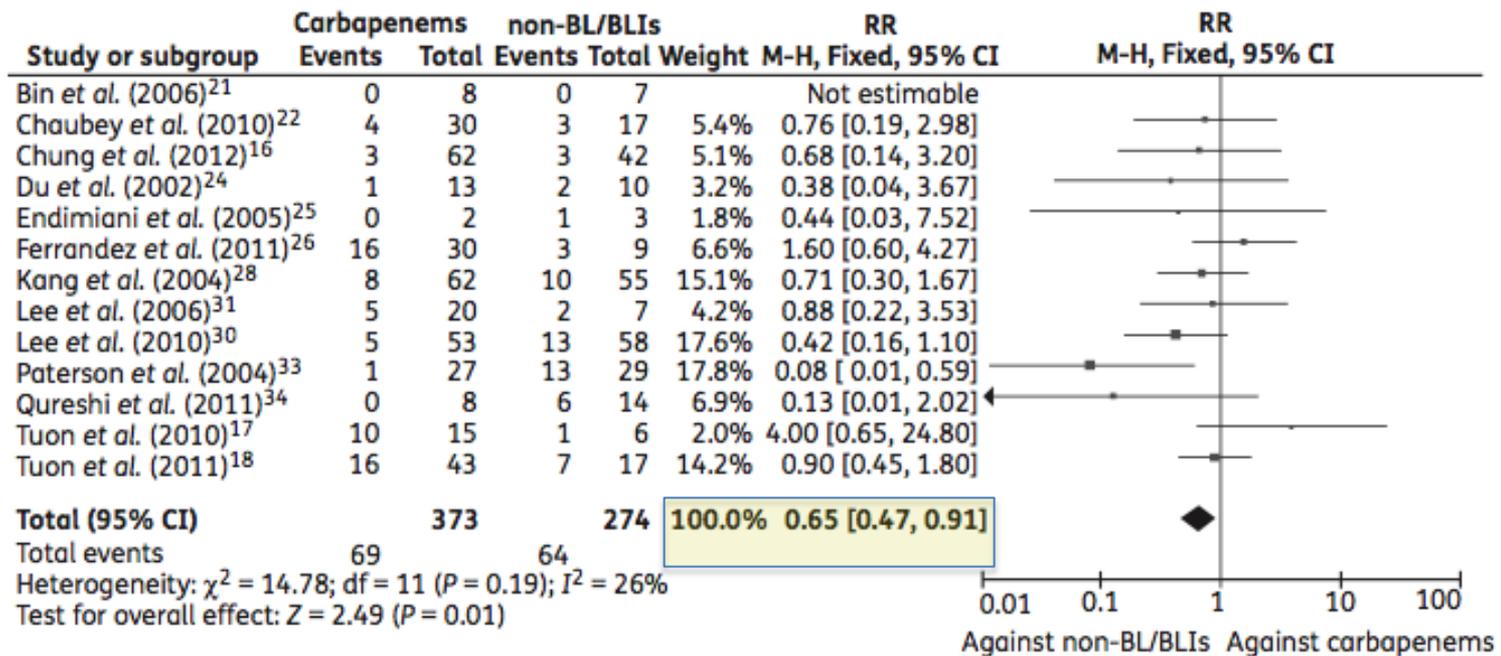
Konstantinos Z. Vardakas^{1,2}, Giannoula S. Tansarli¹, Petros I. Rafailidis^{1,2} and Matthew E. Falagas^{1-3*}

Carbepenemes en bacteriemia por blees



RR todas las causas de mortalidad tratamiento empírico

Carbapenemes en bacteriemia por blees



RR todas las causas de mortalidad tratamiento dirigido

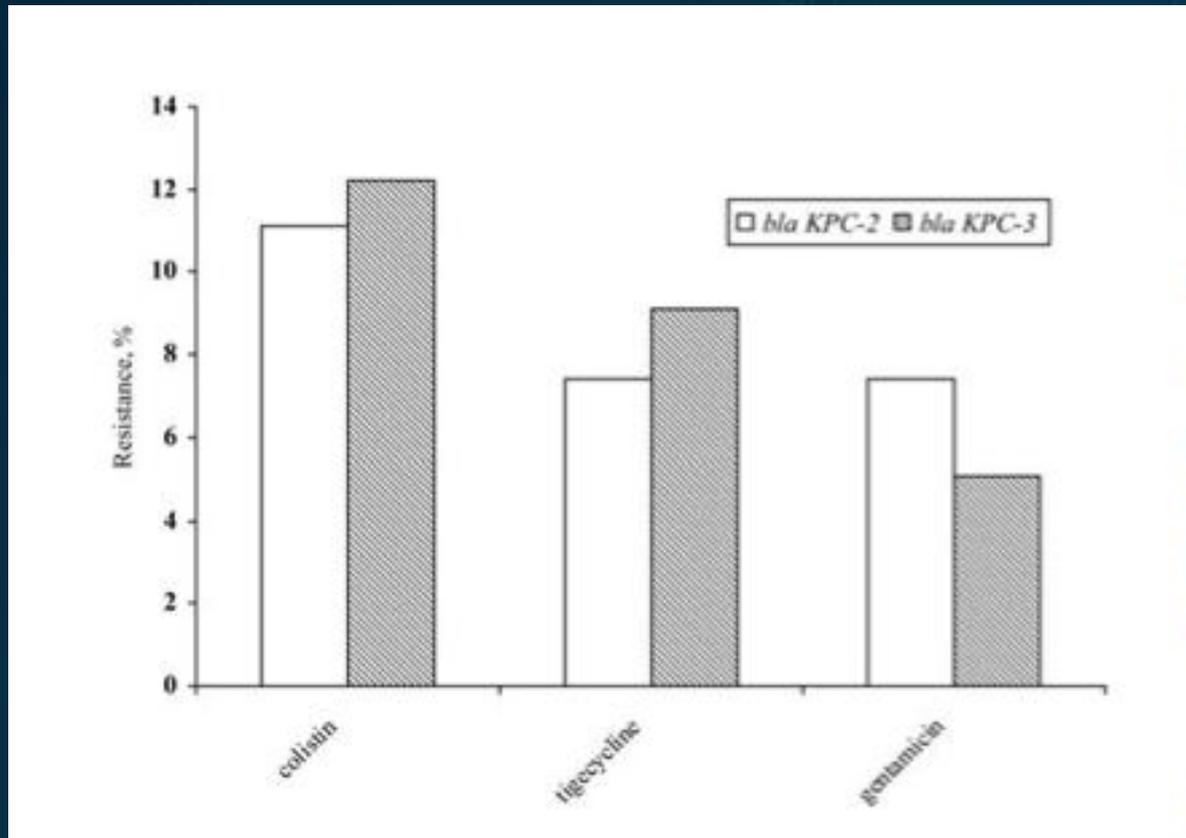
Clinical Infectious Diseases Advance Access published July 25, 2012

MAJOR ARTICLE

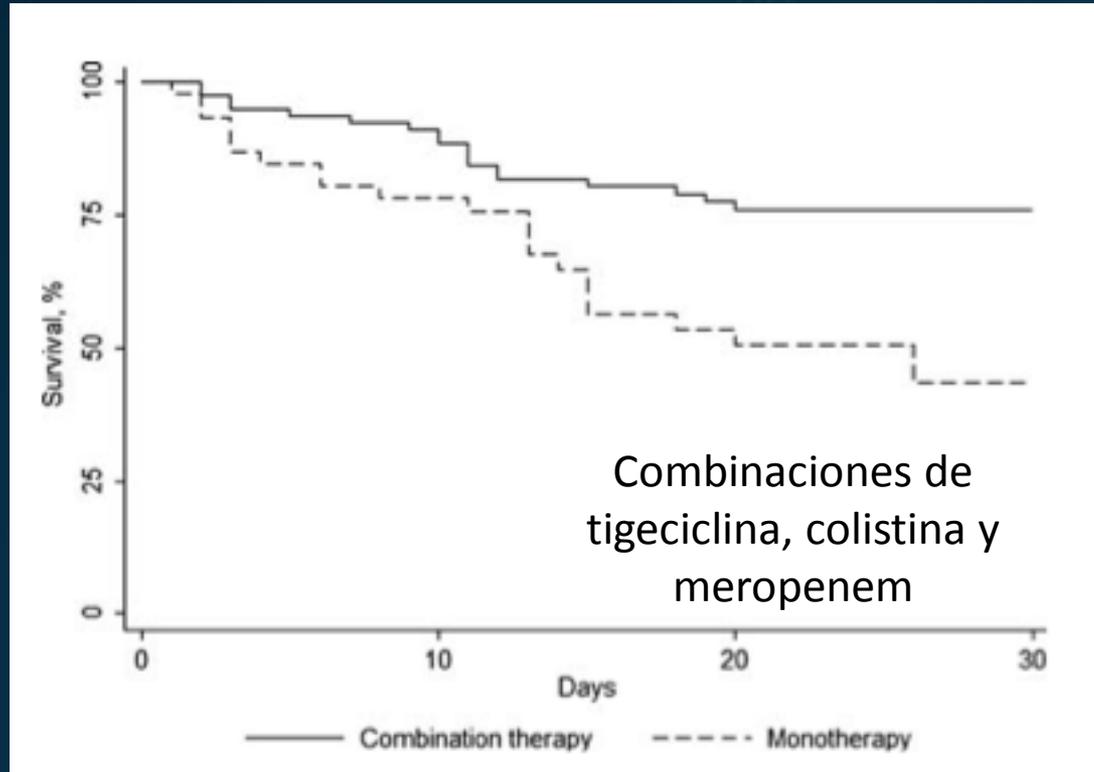
Predictors of Mortality in Bloodstream Infections Caused by *Klebsiella pneumoniae* Carbapenemase–Producing *K. pneumoniae*: Importance of Combination Therapy

Mario Tumbarello,¹ Pierluigi Viale,² Claudio Viscoli,³ Enrico Maria Treccarichi,¹ Fabio Tumietto,² Anna Marchese,⁴ Teresa Spanu,⁵ Simone Ambretti,⁶ Francesca Ginocchio,³ Francesco Cristini,² Angela Raffaella Losito,¹ Sara Tedeschi,² Roberto Cauda,¹ and Matteo Bassetti^{3,7}

Resistencias a colistina, tigeciclina y gentamicina



Impacto de la asociación antibiótica en la mortalidad



P=0.002

Clinical Infectious Diseases Advance Access published July 5, 2012

MAJOR ARTICLE

Does the Piperacillin Minimum Inhibitory Concentration for *Pseudomonas aeruginosa* Influence Clinical Outcomes of Children With Pseudomonal Bacteremia?

Pranita D. Tamma,¹ Alison E. Turnbull,² Aaron M. Milstone,^{1,2} Alice J. Hsu,³ Karen C. Carroll,⁴ and Sara E. Cosgrove^{2,5}

Clinical and Laboratory Standards Institute (CLSI)

- Cambios en el valor de la CIM para la consideración de sensibilidad en *P aeruginosa*:

Desde ≤ 64 mcg/mL a ≤ 16 mcg/mL

	Antes de la revisión	Después de la revisión	Cambio en el %
Sensible	225	163	- 27,6%
Intermedia	No definido	62	
Resistente	7	7	

Mortalidad a los 30 días

- 9% vs 24% (OR:3,21; IC95%:1,26-8,16)

Piperacilina/tazobactam tiene un mal comportamiento frente a cepas con sensibilidad intermedia (32-64 mcg/mL)



Impact of Cefepime Therapy on Mortality among Patients with Bloodstream Infections Caused by Extended-Spectrum- β -Lactamase-Producing *Klebsiella pneumoniae* and *Escherichia coli*

Teena Chopra,^a Dror Marchaim,^a Jennifer Veltman,^a Paul Johnson,^a Jing J. Zhao,^b Ryan Tansek,^a Dania Hatahet,^a Khawar Chaudhry,^a Jason M. Pogue,^b Hiro Rahbar,^a Ting-Yi Chen,^a Thientu Truong,^a Victor Rodriguez,^a Joseph Ellsworth,^a Luigino Bernabela,^a Ashish Bhargava,^a Adnan Yousuf,^a George Alangaden,^a and Keith S. Kaye^a

- Se observó una tendencia a una mayor mortalidad en los pacientes tratados con cefepime (OR: 1,66; IC 95%:0,71-3,87)
- Se observó una tendencia a una menor mortalidad con el tratamiento con carbapenémicos (OR. 0,61; IC95%:0,26-1,50).

MAJOR ARTICLE

Impact of Treatment Strategy on Outcomes in Patients with Candidemia and Other Forms of Invasive Candidiasis: A Patient-Level Quantitative Review of Randomized Trials

David R. Andes,¹ Nasia Safdar,¹ John W. Baddley,² Geoffrey Playford,⁶ Annette C. Reboli,³ John H. Rex,⁴ Jack D. Sobel,⁵ Peter G. Pappas,² and Bart Jan Kullberg⁷ for the Mycoses Study Group^a

Clinical Infectious Diseases 2012;54(8):1110–22

Organisms ^a	Factor	Mortality			Factor	Success		
		P	OR	95% CI		P	OR	95% CI
All organisms (n = 978)	Age	.02	1.01	1.00–1.02	APACHE II	.0001	0.94	.93–.96
	APACHE II score	.0001	1.11	1.08–1.14	Echinocandin	.01	2.33	1.27–4.35
	Immunosuppressive therapy	.001	1.69	1.18–2.44	CVC removed	.001	1.69	1.23–2.33
	<i>Candida tropicalis</i>	.01	1.64	1.11–2.39	Study	NS		
	Echinocandin	.02	0.65	.45–.94				
	CVC removed	.0001	0.50	.35–.72				



Efficacy of Ertapenem for Treatment of Bloodstream Infections Caused by Extended-Spectrum- β -Lactamase-Producing *Enterobacteriaceae*

Vicki L. Collins,^a Dror Marchaim,^a Jason M. Pogue,^b Judy Moshos,^a Suchitha Bheemreddy,^a Bharath Sunkara,^a Alex Shallal,^a Neelu Chugh,^a Sara Eiseler,^a Pragati Bhargava,^a Christopher Blunden,^a Paul R. Lephart,^c Babar Irfan Memon,^a Kayoko Hayakawa,^a Odaliz Abreu-Lanfranco,^a Teena Chopra,^a L. Silvia Munoz-Price,^d Yehuda Carmeli,^e and Keith S. Kaye^a

Análisis multivariado

- Ertapenem NO se asoció con un mayor riesgo de mortalidad cuando se comparó frente a imipenem-meropenem
(OR:0,51; IC95%:0,17-1,55; p=0.23)

J Antimicrob Chemother 2012; **67**: 255–268
doi:10.1093/jac/dkr466 Advance Access publication 16 November 2011

**Journal of
Antimicrobial
Chemotherapy**

Fosfomycin: evaluation of the published evidence on the emergence of antimicrobial resistance in Gram-negative pathogens

Drosos E. Karageorgopoulos¹, Rui Wang², Xu-hong Yu³ and Matthew E. Falagas^{1,4,5*}

Emergencia de resistencias fosfomicina

- Pocos estudios
- Mayor posibilidad en *P aeruginosa* que en *E coli*
- Baja posibilidad en el tratamiento de ITUs

**Emergence of resistance to fosfomycin
used as adjunct therapy in KPC
Klebsiella pneumoniae bacteraemia:
report of three cases**

**Drosos E. Karageorgopoulos¹, Vivi Miriagou²,
Leonidas S. Tzouvelekis³, Kalliopi Spyridopoulou¹
and George L. Daikos^{1*}**

Guías clínicas

Morbidity and Mortality Weekly Report

Update to CDC's *Sexually Transmitted Diseases Treatment Guidelines, 2010*: Oral Cephalosporins No Longer a Recommended Treatment for Gonococcal Infections

MMWR / August 10, 2012 / Vol. 61 / No. 31

Guías clínicas

2012 Infectious Diseases Society of America Clinical Practice Guideline for the Diagnosis and Treatment of Diabetic Foot Infections^a

Benjamin A. Lipsky,¹ Anthony R. Berendt,² Paul B. Cornia,³ James C. Pile,⁴ Edgar J. G. Peters,⁵ David G. Armstrong,⁶
H. Gunner Deery,⁷ John M. Embil,⁸ Warren S. Joseph,⁹ Adolf W. Karchmer,¹⁰ Michael S. Pinzur,¹¹ and Eric Senneville¹²

Clinical Infectious Diseases 2012;54(12):1679–84

Guías clínicas

Clinical Infectious Diseases Advance Access published March 20, 2012

IDSA GUIDELINES

IDSA Clinical Practice Guideline for Acute Bacterial Rhinosinusitis in Children and Adults

**Anthony W. Chow,¹ Michael S. Benninger,² Itzhak Brook,³ Jan L. Brozek,^{4,5} Ellie J. C. Goldstein,^{6,7} Lauri A. Hicks,⁸
George A. Pankey,⁹ Mitchel Seleznick,¹⁰ Gregory Volturo,¹¹ Ellen R. Wald,¹² and Thomas M. File Jr^{13,14}**

Guías clínicas

Clinical Infectious Diseases Advance Access published September 9, 2012

IDSA GUIDELINES

Clinical Practice Guideline for the Diagnosis and Management of Group A Streptococcal Pharyngitis: 2012 Update by the Infectious Diseases Society of America^a

Stanford T. Shulman,¹ Alan L. Bisno,² Herbert W. Clegg,³ Michael A. Gerber,⁴ Edward L. Kaplan,⁵ Grace Lee,⁶ Judith M. Martin,⁷ and Chris Van Beneden⁸

Guías clínicas

Drug, Route	Dose or Dosage	Duration or Quantity	Recommendation Strength, Quality ^a
For individuals without penicillin allergy			
Penicillin V, oral	Children: 250 mg twice daily or 3 times daily; adolescents and adults: 250 mg 4 times daily or 500 mg twice daily	10 d	Strong, high
Amoxicillin, oral	50 mg/kg once daily (max = 1000 mg); alternate: 25 mg/kg (max = 500 mg) twice daily	10 d	Strong, high
Benzathine penicillin G, intramuscular	<27 kg: 600 000 U; ≥27 kg: 1 200 000 U	1 dose	Strong, high
For individuals with penicillin allergy			
Cephalexin, ^b oral	20 mg/kg/dose twice daily (max = 500 mg/dose)	10 d	Strong, high
Cefadroxil, ^b oral	30 mg/kg once daily (max = 1 g)	10 d	Strong, high
Clindamycin, oral	7 mg/kg/dose 3 times daily (max = 300 mg/dose)	10 d	Strong, moderate
Azithromycin, ^c oral	12 mg/kg once daily (max = 500 mg)	5 d	Strong, moderate
Clarithromycin, ^c oral	7.5 mg/kg/dose twice daily (max = 250 mg/dose)	10 d	Strong, moderate

Published Ahead of Print on September 17, 2012 as 10.1200/JCO.2012.42.7161
The latest version is at <http://jco.ascopubs.org/cgi/doi/10.1200/JCO.2012.42.7161>

JOURNAL OF CLINICAL ONCOLOGY

SPECIAL ARTICLE

Guideline for the Management of Fever and Neutropenia in Children With Cancer and/or Undergoing Hematopoietic Stem-Cell Transplantation

Thomas Lehrnbecher, Robert Phillips, Sarah Alexander, Frank Alvaro, Fabianne Carlesse, Brian Fisher, Hana Hakim, Maria Santolaya, Elio Castagnola, Bonnie L. Davis, L. Lee Dupuis, Faith Gibson, Andreas H. Groll, Aditya Gaur, Ajay Gupta, Rejin Kebudi, Sérgio Petrilli, William J. Steinbach, Milena Villarroel, Theoklis Zaoutis, and Lillian Sung

Antimicrobial Agents
and Chemotherapy

**Influence of Multidrug Resistance and
Appropriate Empirical Therapy on the
30-Day Mortality Rate of *Pseudomonas
aeruginosa* Bacteremia**

Laura Morata, Nazaret Cobos-Trigueros, José A. Martínez,
Álex Soriano, Manel Almela, Francesc Marco, Holguer
Sterzik, Raquel Núñez, Cristina Hernández and José Mensa
Antimicrob. Agents Chemother. 2012, 56(9):4833. DOI:
10.1128/AAC.00750-12.
Published Ahead of Print 2 July 2012.

Mortalidad 30 días en bacteriemia por *P aeruginosa*

TABLE 4 Multivariate analysis of risk factors associated with 30-day mortality in *P. aeruginosa* bacteremia

Factor	OR (95% CI)	P value
Mortalidad: NoMDR: 19,9% MDR: 32,3% P=0,0001		
Intermediate (15–30%)	2.47 (1.410–4.326)	0.002
High (>30%)	7.27 (4.092–12.928)	<0.0001
Empirical antibiotic therapy		
Non-MDR with appropriate agent	(Used as reference)	
Non-MDR with inappropriate agent	2.18 (1.215–3.899)	0.009
MDR and inappropriate agent	4.09 (2.156–7.778)	<0.0001
MDR and appropriate agent	2.25 (0.930–5.436)	

50% amikacina



Persistence of Transferable Extended-Spectrum- β -Lactamase Resistance in the Absence of Antibiotic Pressure

Jennifer L. Cottell, Mark A. Webber, and Laura J. V. Piddock

- Persistencia del plásmido PCT que lleva el gen *bla*_{CTX-M-14} a pesar de desaparición de la presión antibiótica.
- PCT y PCT2 persistieron durante 70 generaciones en ausencia de presión antibiótica.



Multicenter Study of Voriconazole Pharmacokinetics and Therapeutic Drug Monitoring

Michael J. Dolton,^a John E. Ray,^b Sharon C.-A. Chen,^c Kingsley Ng,^d Lisa G. Pont,^a and Andrew J. McLachlan^{a,e}

Factores asociados a cambios en la concentración de voriconazol

TABLE 3 Factors associated with a significant change in voriconazole concentration identified from multiple linear regression analysis^a

Model term	Coefficient	95% Confidence interval		P value
		Lower	Upper	
Oral administration ^b	-1.348	-1.741	-0.955	<0.01
Age (yr) ^c	0.026	0.017	0.036	<0.01
Weight (kg)	-0.028	-0.038	-0.018	<0.01
Daily dose (mg)	0.005	0.003	0.006	<0.01
Concomitant medication				
CYP2C19 inducer ^d	-2.367	-3.181	-1.553	<0.01
Prednisone/prednisolone	-1.012	-1.346	-0.678	<0.01
Methylprednisolone	-1.833	-2.445	-1.221	<0.01
Dexamethasone	-1.245	-1.991	-0.500	<0.01
Omeprazole	1.141	0.575	1.706	<0.01
Pantoprazole	0.685	0.330	1.041	<0.01
Esomeprazole	1.009	0.192	1.826	<0.05
Rabeprazole	1.414	0.800	2.028	<0.01

^a $R^2 = 0.24$; $n = 736$ concentration measurements.

^b Compared to intravenous administration.

^c Age at time of first voriconazole concentration measurement.

^d Phenytoin or rifampin.

Antimicrobial Agents
and Chemotherapy

**Development of Anti-Infectives Using
Phage Display: Biological Agents against
Bacteria, Viruses, and Parasites**

Johnny X. Huang, Sharon L. Bishop-Hurley and Matthew A. Cooper

Antimicrob. Agents Chemother. 2012, 56(9):4569. DOI:
10.1128/AAC.00567-12.

Published Ahead of Print 4 June 2012.

Uso potencial de los fagos

Target ^a	Library ^b	Potential application
Molecular targets		
TEM-1 β -lactamase	BLIP library	Novel antimicrobial candidates
RAP	12-mer peptide library	Anti- <i>S. aureus</i>
SEB	12-mer peptide library	Anti- <i>S. aureus</i>
<i>S. aureus</i> SdrC	12-mer peptide library	Anti- <i>S. aureus</i>
<i>P. aeruginosa</i> MurA	C7C cyclic peptide, 12-mer peptide library	Anti- <i>P. aeruginosa</i>
<i>P. aeruginosa</i> MurC	C7C cyclic peptide, 12-mer peptide library	Anti- <i>P. aeruginosa</i>
<i>P. aeruginosa</i> MurE and MurF	12-mer peptide library	Anti- <i>P. aeruginosa</i>
<i>P. aeruginosa</i> FtsA and FtsZ	C7C cyclic peptide, 12-mer peptide library	Anti- <i>P. aeruginosa</i>
<i>H. pylori</i> urease holoenzyme	25-mer peptide, 6-mer peptide library, scFv library	Anti- <i>H. pylori</i>
<i>H. pylori</i> surface protein	scFv library	Anti- <i>H. pylori</i>
Bacterial membrane model	T7 phage system, 12-mer peptide library	Antibiotic design
LPS/lipid A	scFv libraries, peptide libraries	Anti-Gram-negative bacterial agents

Journal of Antimicrobial Chemotherapy Advance Access published May 30, 2012

**Journal of
Antimicrobial
Chemotherapy**

J Antimicrob Chemother
doi:10.1093/jac/dks189

Invasive fungal breakthrough infections, fungal colonization and emergence of resistant strains in high-risk patients receiving antifungal prophylaxis with posaconazole: real-life data from a single-centre institutional retrospective observational study

Jutta Auberger^{1,2*}, Cornelia Lass-Flörl³, Maria Aigner³, Johannes Clausen^{1,2}, Günther Gastl² and David Nachbaur²

Infecciones de brecha

- Incidencia del 13% de IFIs de brecha en pacientes del alto riesgo recibiendo profilaxis con posaconazol
- No especies de *Aspergillus*, predominando mucormicosis.

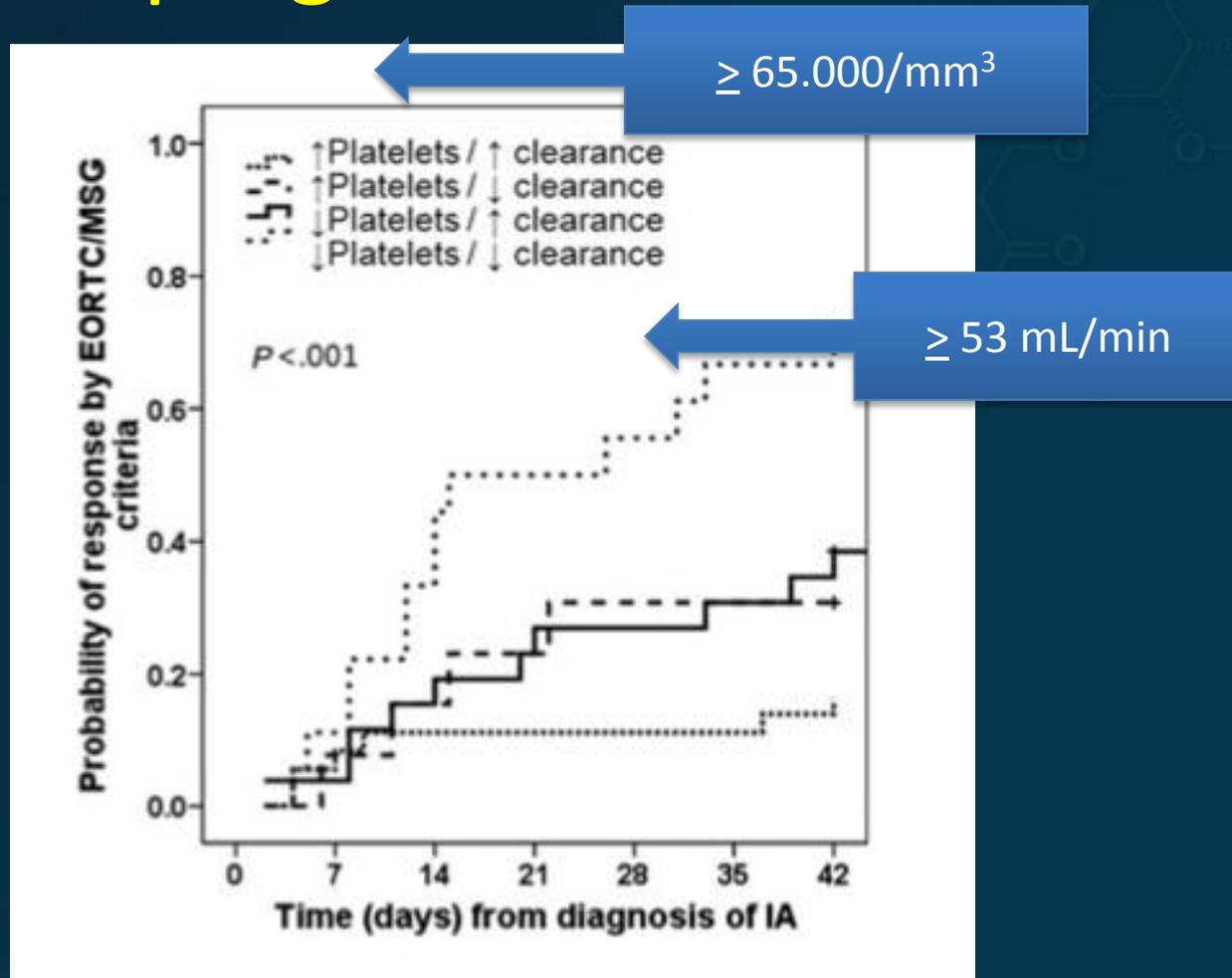
Clinical Infectious Diseases Advance Access published April 27, 2012

MAJOR ARTICLE

Baseline Platelet Count and Creatinine Clearance Rate Predict the Outcome of Neutropenia-Related Invasive Aspergillosis

Simone Aranha Nouér,^{1,3} Marcio Nucci,^{2,3} Naveen Sanath Kumar,³ Monica Graziutti,³ Alejandro Restrepo,³ and Elias Anaissie³

Factores predictores resultado aspergilosis invasora



arándanos



REVIEW ARTICLE

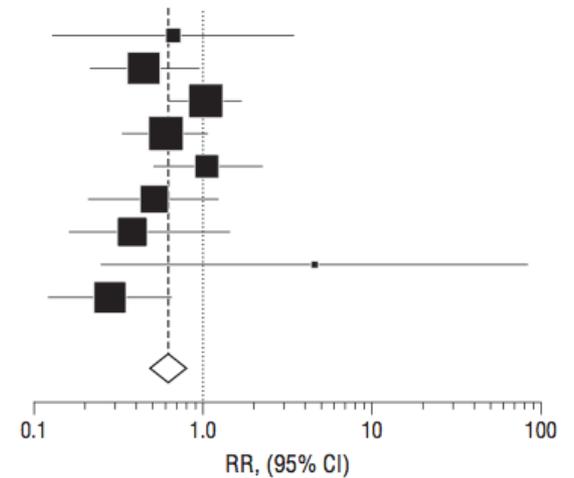
Cranberry-Containing Products for Prevention of Urinary Tract Infections in Susceptible Populations

A Systematic Review and Meta-analysis of Randomized Controlled Trials

Chih-Hung Wang, MD; Cheng-Chung Fang, MD; Nai-Chuan Chen, MD; Sot Shih-Hung Liu, MD; Ping-Hsun Yu, MD;
Tao-Yu Wu, MD; Wei-Ting Chen, MD; Chien-Chang Lee, MD, MSc; Shyr-Chyr Chen, MD, MBA

Arch Intern Med. 2012;172(13):988-996

Study	Cranberry		Control		RR (95% CI)	W(fixed), %
	No. of Events	Total No.	No. of Events	Total No.		
Schlager et al, ¹⁷ 1999	2	15	3	15	0.67 (0.13-3.44)	2.5
Kontiokari et al, ¹⁸ 2001	8	50	18	50	0.44 (0.21-0.93)	14.8
McGuinness et al, ¹⁹ 2002	21	62	24	73	1.03 (0.64-1.66)	18.1
Stothers et al, ²⁰ 2002	19	100	16	50	0.59 (0.34-1.05)	17.5
Waites et al, ²¹ 2004	10	26	8	22	1.06 (0.51-2.21)	7.1
McMurdo et al, ²² 2005	7	187	14	189	0.51 (0.21-1.22)	11.4
Hess et al, ²³ 2008	6	47	16	47	0.38 (0.16-0.87)	13.2
Wing et al, ²⁴ 2008	4	125	0	63	4.55 (0.25-83.27)	0.5
Ferrara et al, ²⁵ 2009	5	27	18	27	0.28 (0.12-0.64)	14.8
Fixed-effect model	639		536		0.62 (0.49-0.80)	100
Heterogeneity: $I^2=43\%$, $P=.08$						



Comment

Minimum antimicrobial treatment for acute pyelonephritis



www.thelancet.com Published online June 21, 2012 [http://dx.doi.org/10.1016/S0140-6736\(12\)60770-3](http://dx.doi.org/10.1016/S0140-6736(12)60770-3)

Pielonefritis: 7 días = 14 días

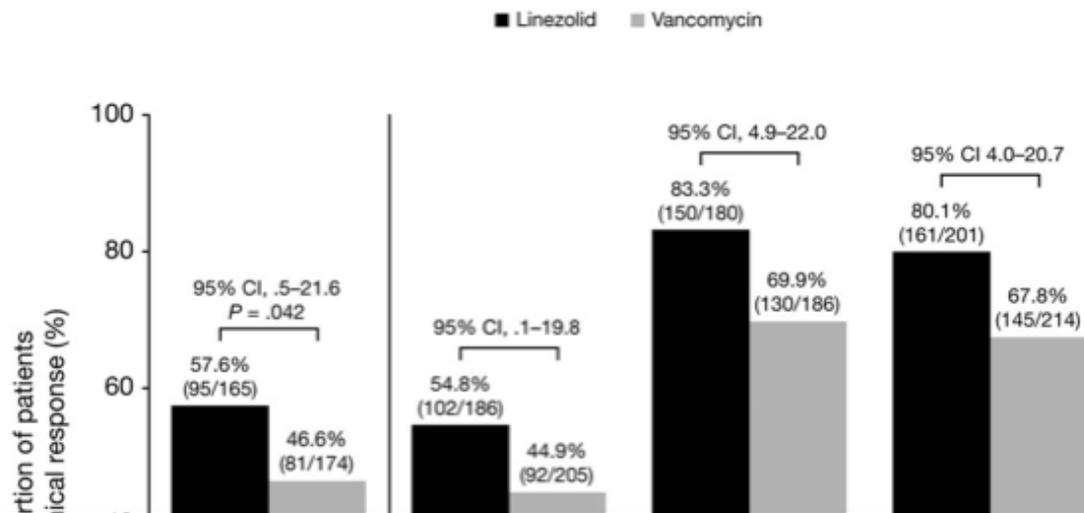


Clinical Infectious Diseases Advance Access published January 12, 2012

MAJOR ARTICLE

Linezolid in Methicillin-Resistant *Staphylococcus aureus* Nosocomial Pneumonia: A Randomized, Controlled Study

Richard G. Wunderink,¹ Michael S. Niederman,² Marin H. Kollef,³ Andrew F. Shorr,⁴ Mark J. Kunkel,⁵ Alice Baruch,^{5,a} William T. McGee,⁶ Arlene Reisman,⁵ and Jean Chastre⁷



Mortalidad: 15,7% linezolid frente a 17% vancomicina.
 Nefrotoxicidad: 8,4% linezolid frente a 18,2% vancomicina.

PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Respiratory Tract Illnesses During the First Year of Life: Effect of Dog and Cat Contacts

Eija Bergroth, Sami Remes, Juha Pekkanen, Timo Kauppila, Gisela Büchele and Leea Keski-Nisula

Pediatrics 2012;130;211; originally published online July 9, 2012;

TABLE 6 Multivariate Results of the Association Between Animal Contacts and Overall Healthiness, Fever, and Antibiotic Usage Based on Collection of Cross-sectional Data of Average Animal Contacts During the Study

Dog or Cat Contact	Healthy				Fever				Antibiotics			
	<i>N</i>	<i>n</i> (%)	aOR (95% CI) ^a	<i>P</i>	<i>N</i>	<i>n</i> (%)	aOR (95% CI) ^a	<i>P</i>	<i>N</i>	<i>n</i> (%)	aOR (95% CI) ^a	<i>P</i>
Dog contacts at 1 y age												
No dog or dog not inside	10 798	6878 (63.7)	1		10 361	447 (4.3)	1		10 798	468 (4.3)	1	
Dog temporarily inside	1278	953 (74.6)	1.46 (1.07–2.00)	0.02	1269	57 (4.5)	1.04 (0.70–1.53)	.86	1278	14 (1.1)	0.28 (0.14–0.59)	.001
Dog often inside	1391	1132 (81.4)	2.08 (1.44–3.00)	<0.001	1390	53 (3.8)	0.84 (0.62–1.14)	.27	1391	36 (2.6)	0.61 (0.28–1.35)	.61
Dog mostly inside	3113	2229 (71.6)	1.34 (1.05–1.70)	0.02	3066	102 (3.3)	0.86 (0.65–1.14)	.29	3113	93 (3.0)	0.74 (0.51–1.08)	.12
Cat contacts at 1 y age												
No cat or cat not inside	12 643	8278 (65.5)	1		12 191	500 (4.1)	1		12 643	511 (4.0)	1	
Cat temporarily inside	884	726 (82.1)	1.64 (1.12–2.39)	0.01	884	32 (3.6)	0.83 (0.53–1.28)	.39	884	12 (1.4)	0.37 (0.18–0.76)	.007
Cat often inside	1734	1239 (71.5)	1.04 (0.79–1.37)	0.79	1705	77 (4.5)	1.08 (0.79–1.47)	.64	1734	45 (2.6)	0.67 (0.39–1.14)	.14
Cat mostly inside	1451	1039 (71.6)	1.15 (0.85–1.58)	0.37	1438	59 (4.1)	1.06 (0.76–1.49)	.72	1451	49 (3.4)	0.93 (0.51–1.70)	.82