



PAC : actualités 2014

Jean-François BERVAR

Clinique des Maladies Respiratoires
Pôle cardio-vasculaire et pulmonaire

Hôpital Calmette - Lille

Conflits d'intérêts

- Lien d'intérêt éventuel avec la présentation :
 - BayerHealthcare
 - Pfizer
 - AstraZeneca
 - GlaxoSmithKline

PAC 2014

- 565 articles en anglais ou français (Pubmed)
- Dont 480 articles « originaux »
- J'ai 15 minutes...

ANTIBIOTHERAPIE

β -Lactam/macrolide dual therapy versus β -lactam monotherapy for the treatment of community-acquired pneumonia in adults: a systematic review and meta-analysis

Wei Nie†, Bing Li† and Qingyu Xiu*

Department of Respiratory Medicine, Shanghai Changzheng Hospital, Second Military Medical University, Shanghai 200003, China

16 études incluses après recherche

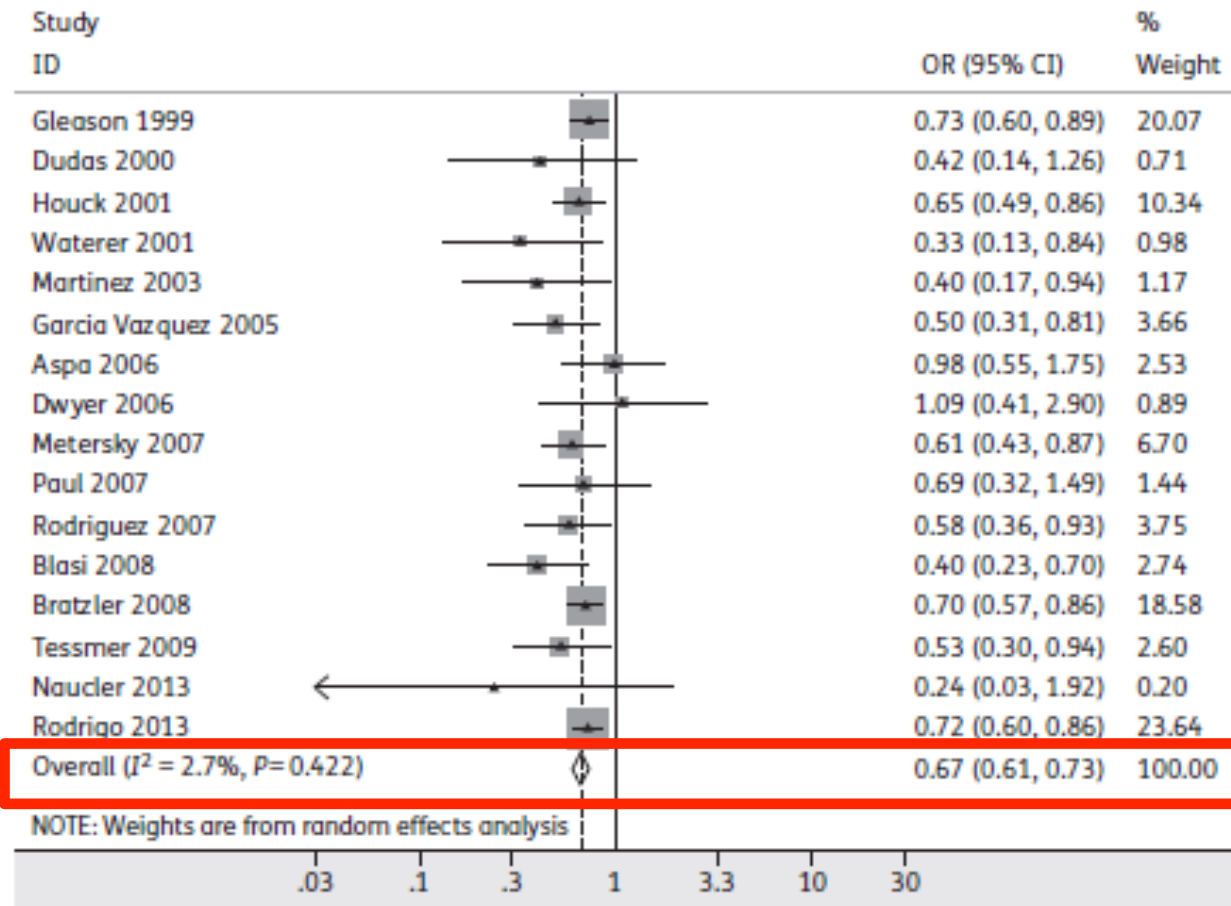
4 prospectives

12 rétrospectives

42942 patients dans ces études

« Salle »

USI/Réanimation



OR=0,67

Figure 2. Comparison of the effects of BLM dual therapy and BL monotherapy on reduction in mortality. The vertical line shows the point of no difference between the two therapies, squares show ORs, the diamond shows the pooled OR for all studies and horizontal lines show the 95% CIs.

Decrease in Mortality in Severe Community-Acquired Pneumococcal Pneumonia

Impact of Improving Antibiotic Strategies (2000-2013)

*Simone Gattarello, MD; Bárbara Borgatta, MD; Jordi Solé-Violán, MD, PhD; Jordi Vallés, MD, PhD; Loreto Vidaur, MD; Rafael Zaragoza, MD, PhD; Antoni Torres, MD, PhD; and Jordi Rello, MD, PhD; for the Community-Acquired Pneumonia en la Unidad de Cuidados Intensivos II Study Investigators**

Etude cas-contrôle : 2000-2 vs 2008-13

USI ; Pneumopathies sévères à Pneumocoque

80 patients dans chaque groupe

OBJECTIF PRIMAIRE :

Comparer les pratiques de prescription des ATB et la survie

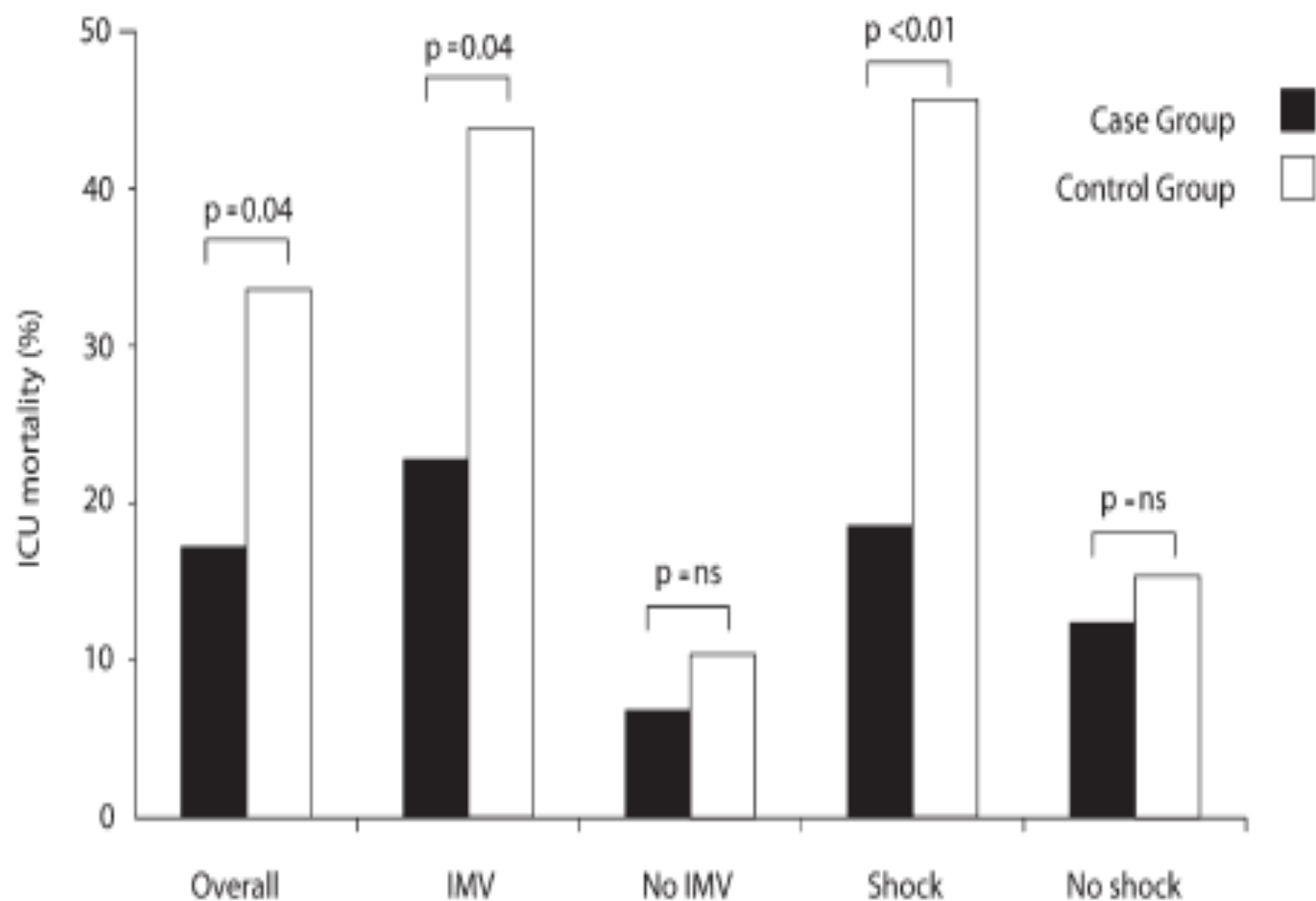


Figure 2 – ICU mortality in the whole population and in different subgroups of patients. IMV = invasive mechanical ventilation.

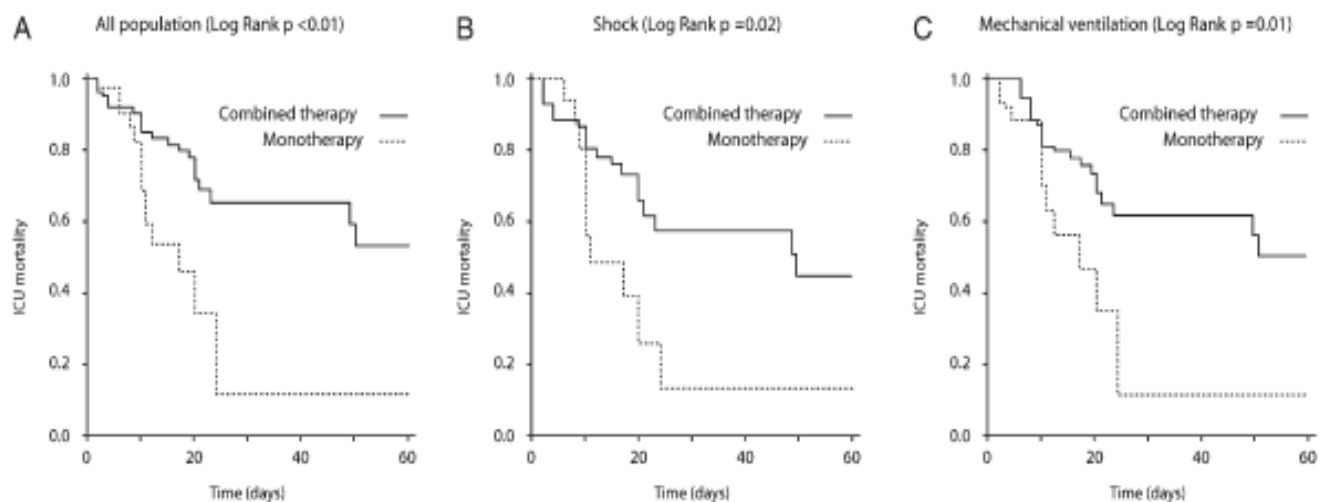


Figure 3 – Kaplan-Meier survival curve stratified for monotherapy vs combined therapy. A, The whole population. B, Patients with shock. C, Patients receiving mechanical ventilation.

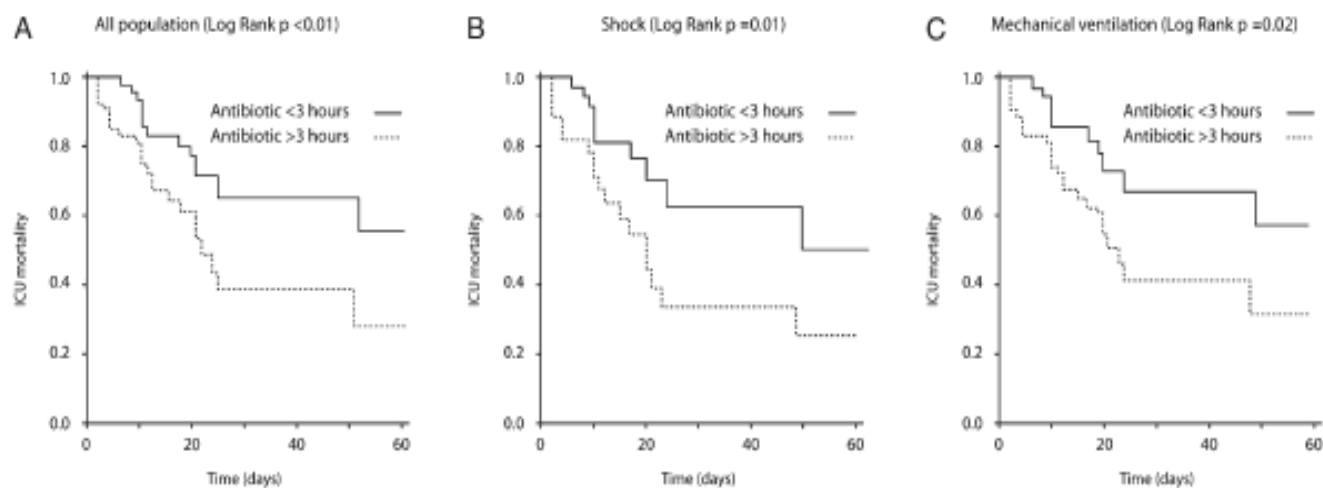


Figure 4 – Kaplan-Meier survival curve stratified for early vs nonearly antibiotic treatment. A, The whole population. B, Patients with shock. C, Patients receiving mechanical ventilation.

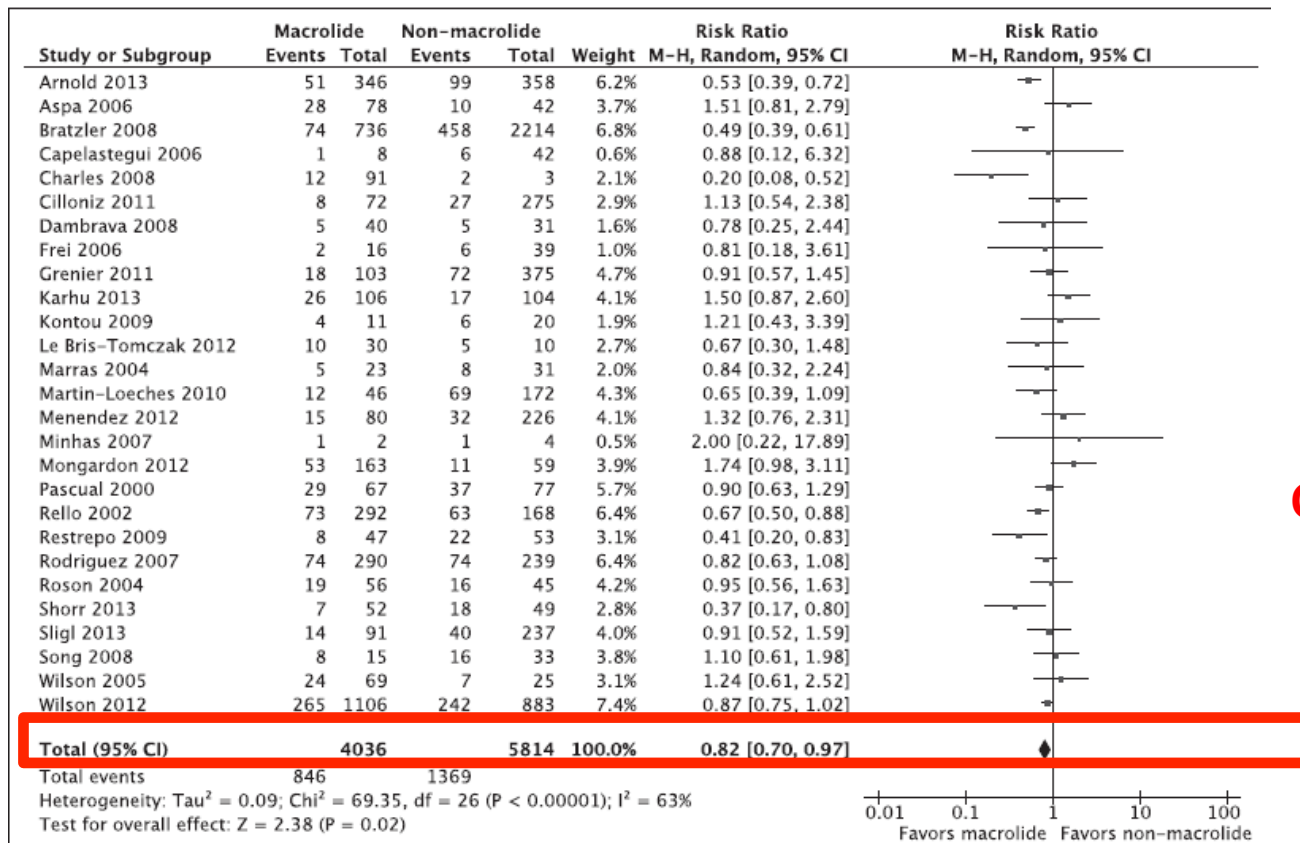
TABLE 7] Multivariate Analysis to Assess Risk Factors for ICU Mortality Due to SCAP

Variable	OR (95% CI)	P Value
Invasive mechanical ventilation	5.23 (1.60-17.17)	<.01
Rapid radiographic spread	2.22 (0.91-5.43)	.81
Acute kidney injury	2.09 (0.76-5.79)	.15
COPD	1.78 (0.72-4.36)	.21
Shock at ICU admission	1.52 (0.52-4.49)	.45
Estimated probability of death	1.00 (0.98-1.03)	.81
AB initiated within 3 h	0.36 (0.15-0.87)	.02
Combined therapy	0.19 (0.07-0.51)	<.01

See Table 3 and 6 legends for expansion of abbreviations.

Macrolides and Mortality in Critically Ill Patients With Community-Acquired Pneumonia: A Systematic Review and Meta-Analysis*

Wendy I. Sligl, MD, MSc^{1,2}; Leyla Asadi, MD²; Dean T. Eurich, PhD³; Lisa Tjosvold, MLIS⁴; Thomas J. Marrie, MD⁵; Sumit R. Majumdar, MD, MPH⁶





Contents lists available at [ScienceDirect](#)

American Journal of Infection Control

journal homepage: www.ajicjournal.org

Brief report

Fluoroquinolone- and ceftriaxone-based therapy of community-acquired pneumonia in hospitalized patients: The risk of subsequent isolation of multidrug-resistant organisms

Robert C. Goldstein MD^a, Gregg Husk MD^b, Tomasz Jodlowski PharmD^a,
Donna Mildvan MD^a, David C. Perlman MD^a, Jörg J. Ruhe MD, MPH^{a,*}

Table 1

Comparison of demographic and clinical characteristics between hospitalized CAP patients treated with either moxifloxacin- or ceftriaxone-based therapy: N = 175

Characteristic	Moxifloxacin (n = 41), n (%)	Ceftriaxone (n = 134), n (%)	Odds ratio (95% CI)	P value
Age, y, median (range)	66 (23-98)	66 (18-104)	–	> .2
LOS during current admission (days)	5 (2-22)	5 (2-52)	–	> .2
Total LOS within 90 days, median (days)	5 (2-31)	6 (2-52)	–	> .2
β-lactam allergy	19 (46)	3 (2)	37.71 (10.29-138.20)	< .001
Antibiotics prior to admission	9 (22)	17 (13)	1.94 (0.79-4.75)	.14
Duration of subsequent, oral outpatient therapy, median days (range)	5 (0-12)	5 (0-10)	–	> .2
In-hospital mortality	1 (2)	2 (1)	1.65 (0.15-18.67)	> .2
Underlying comorbidities				
CURB-65 score, median	2	2	–	> .2
Charlson score, median (range)	1 (0-8)	2 (0-10)	–	.15
HIV/AIDS	1 (2)	20 (15)	0.14 (0.02-1.10)	.06
Microbiologic data				
Total number of cultures obtained between 48 hours and 90 days after ZT, median (range)/mean	1 (0-10)/1.76	1 (0-21)/2.25	–	> .2
Subsequent isolation of MDR organisms*	6 (15)	5 (4)	4.42 (1.28-15.35)	.02
Clinical infection (vs colonization) with MDR organism	3 (7)	0	–	.01
Medial time to isolation of MDR organism after ZT, days	4	53	–	.02

CAP, community-acquired pneumonia; LOS, length of stay; MDR, multidrug-resistant; ZT, zero time (defined as the day inpatient antibiotic therapy was started).

*In a subanalysis that excluded all 26 patients who received antibiotics prior to admission as listed above (n = 149), results did not differ significantly from the total cohort (P = .02).

Conséquences...

Table 2

Comparison of demographic and clinical characteristics between hospitalized CAP patients with subsequent isolation of MDR organisms and CAP patients without subsequent isolation of MDR organisms; N = 175

Characteristic	MDR organism (n = 11), No MDR organism (n = 164),		Odds ratio (95% CI)	P value
	n (%)	n (%)		
Age, y, median (range)	71 (23-96)	66 (18-104)	-	> .2
Length of stay during current admission (days)	8 (4-17)	5 (2-52)	-	.001
Antibiotics prior to admission	3 (27)	23 (14)	2.38 (0.57-9.31)	> .2
Antibiotic therapy				
Moxifloxacin therapy	6 (55)	35 (21)	4.42 (1.28-15.35)	.02
Duration of inpatient CEFA or MOX therapy, median days (range)	6 (4-14)	5 (2-17)	-	.006
Any subsequent non-CAP antibiotic use between CAP therapy and 90 days	1 (9)	16 (10)	0.93 (0.11-7.70)	> .2

CAP, community-acquired pneumonia; CEFA, ceftriaxone/azithromycin; MDR, multidrug-resistant; MOX, moxifloxacin.

Durée moy. de séjour : + 3 jours (8j vs 5j)

BPCO, TABAC,...

Clinical Features, Etiology and Outcomes of Community-Acquired Pneumonia in Patients with Chronic Obstructive Pulmonary Disease

Joan Gómez-Junyent¹, Carolina Garcia-Vidal^{1,4*}, Diego Viasus^{1,4}, Pere Millat-Martínez¹, Antonella Simonetti¹, M^a Salud Santos², Carmen Ardanuy³, Jordi Dorca^{2,4}, Jordi Carratalà^{1,4}

Etude observationnelle

Cohorte d'adultes hospitalisés pour PAC entre 1995 et 2011

4121 PAC dont 983 BPCO

VEMS=50%th

57,8% GOLD III et IV

58% sous CSI

14,6% sous OLD

Table 5. Factors associated with mortality in patients with COPD and pneumonia: multivariate analysis.

Variable	OR	95% confidence interval	p value
>65 years old	1.374	0.454–4.157	0.573
Chronic oral steroids	2.454	0.816–7.380	0.110
Chronic renal disease	2.211	0.573–8.531	0.249
Dementia	1.887	0.439–8.113	0.394
Multilobar pneumonia	2.883	1.299–6.399	0.009
Bacteremia	0.529	0.160–1.756	0.298
Septic shock	2.574	0.886–7.476	0.082
<i>Pseudomonas aeruginosa</i> pneumonia	19.091	4.326–84.256	<0.001
Inappropriate empirical treatment	2.334	0.711–7.657	0.162
Cardiac complications	2.594	0.824–8.172	0.103
High-risk PSI classes	10.316	1.691–62.946	0.011
Metabolic complications	1.349	0.243–7.500	0.732
Nosocomial infection	0.484	0.067–3.486	0.471
Pneumococcal vaccine	0.232	0.072–0.754	0.015

COPD, chronic obstructive pulmonary disease; OR: odds ratio; PSI, pneumonia severity index.

doi:10.1371/journal.pone.0105854.t005

Tobacco Smoking Increases the Risk for Death From Pneumococcal Pneumonia

Salvador Bello, MD; Rosario Menéndez, MD; Antoni Torres, MD, FCCP; Soledad Reyes, MD; Rafael Zalacain, MD; Alberto Capelastegui, MD; Javier Aspa, MD; Luis Borderías, MD; Juan J. Martín-Villasclaras, MD; Immaculada Alfageme, MD; Felipe Rodríguez de Castro, MD; Jordi Rello, MD; Luis Molinos, MD; and Juan Ruiz-Manzano, MD

TABLE 1] Positive Microbiologic Test for *Streptococcus pneumoniae* Identification

Test	Study Group				P Value
	Active Smokers (n = 204)	Nonsmokers (n = 387)	Exsmokers (n = 301)	Total (N = 892)	
Blood culture	51/155 (32.9)	70/271 (25.83)	41/196 (20.92)	162/622 (26.05)	.039
Sputum	76/98 (77.55)	115/137 (83.94)	98/128 (76.56)	289/363 (79.61)	.276
Urine antigen	173/201 (86.07)	334/372 (89.78)	262/297 (88.22)	769/870 (88.39)	.413
Bronchial aspirate	14/17 (82.35)	11/14 (78.57)	10/14 (71.43)	35/45 (77.78)	.764
BAL	4/5 (80)	6/7 (85.71)	2/3 (66.67)	12/15 (80)	...
Pleural fluid	20/26 (76.92)	25/33 (75.76)	18/20 (90)	63/79 (79.75)	.416
Protected brushing	1/2 (50)	2/3 (66.67)	2/2 (100)	5/7 (71.43)	...

Data given as patient No./total No. (%).

TABLE 3] Demographic and Clinical Data of 892 Patients with Pneumococcal CAP, Comparing Active Smokers With Noncurrent Smokers^a

Characteristic	Current Smokers	Noncurrent Smokers	P Value	OR (95% CI)
Demographics, toxins, and vaccines				
Age ^b	51 (24)	74 (20)	<.001	...
Male sex	149/204 (73.0)	415/688 (60.3)	.001	1.78 (1.26-2.52)
Alcohol	63/190 (33.2)	64/650 (9.8)	<.001	4.54 (3.05-6.76)
Nursing home	4/204 (1.9)	43/688 (6.2)	.016	0.3 (0.11-0.85)
Pneumococcal vaccine	10/180 (5.6)	69/585 (11.8)	.016	0.44 (0.22-0.87)
Influenza vaccine	49/181 (27.1)	327/595 (54.9)	<.001	0.30 (0.21-0.44)
Comorbid conditions				
Diabetes	43/204 (21.1)	146/687 (21.2)	.958	...
Chronic liver disease	24/204 (11.8)	28/684 (4.1)	<.001	3.12 (1.77-5.52)
Cardiac failure	11/204 (5.4)	90/685 (13.1)	.002	0.38 (0.19-0.72)
Chronic renal failure	5/204 (2.5)	41/686 (5.9)	.046	0.39 (0.15-1.01)
Neoplasia < 1 y	9/204 (4.4)	32/688 (4.6)	.886	...
Cardiovascular disease	10/204 (4.9)	76/688 (11.0)	.009	0.41 (0.21-0.82)
COPD	43/199 (21.6)	148/671 (22.1)	.893	...
Asthma	2/110 (1.8)	31/385 (8.0)	.021	0.21 (0.05-0.89)
Corticosteroid therapy < 20 mg/d	3/201 (1.5)	21/684 (3.1)	.226	...
Initial severity and treatment				
Antibiotic adherence	168/204 (82.3)	546/685 (79.7)	.404	...
First antibiotic dose given ≤ 6 h	164/199 (82.4)	525/661 (79.4)	.355	...
CURB-65 score ≥ 2	116/204 (56.9)	581/688 (84.4)	<.001	0.24 (0.17-0.34)
Sepsis	151/204 (74.0)	507/688 (73.7)	.926	...
Severe sepsis	82/204 (40.2)	280/688 (40.7)	.898	...
Pneumococcal bacteremia	51/155 (32.9)	111/467 (23.8)	.025	1.57 (1.06-2.34)

TABLE 5] Multivariate Regression Analyses for 30-d Mortality in Pneumococcal CAP Concerning Current Smokers in the Whole Population and After Excluding Exsmokers or Nonsmokers

Characteristic	Current vs Exsmokers and Nonsmokers		Current vs Exsmokers		Current vs Nonsmokers	
	OR (95% CI)	<i>P</i> Value	OR (95% CI)	<i>P</i> Value	OR (95% CI)	<i>P</i> Value
Current smokers	5.0 (1.8-13.5)	.001	3.9 (1.2-12.3)	.021	4.0 (1.3-12.6)	.015
Age	1.06 (1.02-1.10)	.001	1.03 (0.99-1.08)	.13	1.06 (1.02-1.10)	.002
Influenza vaccine	0.31 (0.12-0.85)	.02	0.6 (0.1-2.4)	.5	0.20 (0.06-0.69)	.01
Liver disease	4.5 (1.4-14.5)	.01	6.1 (1.7-21.5)	.005	4.9 (1.3-18.5)	.01
CURB-65 score ≥ 2	5.9 (0.7-50.2)	.1	6.7 (0.7-57.9)	.08	5.8 (0.6-50.7)	.1
Severe sepsis	2.3 (1.09-4.95)	.02	1.3 (0.4-3.6)	.57	3.7 (1.4-9.4)	.006
Antibiotic adherence	0.6 (0.29-1.41)	.27	0.88 (0.3-2.55)	.8	0.81 (0.3-2.14)	.66
First antibiotic dose given ≤ 6 h	0.62 (0.24-1.5)	.29	0.56 (0.16-1.9)	.37	0.59 (0.19-1.80)	.35

See Table 2 legend for expansion of abbreviations.

OR = 5

VIRUS...

Lower Respiratory Tract Virus Findings in Mechanically Ventilated Patients With Severe Community-Acquired Pneumonia

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Cohorte de PAC sévères en réanimation Sepsis sévère

Juin 2008 à Mai 2012

49 patients sous VM

Prélèvements :

HC

Ag urine : SP et L. pneumophila

Sérologie x 2 : Ch. et M. pneumoniae

Ecouvillon nasopharyngé, LBA

PCR multiplex + PCR spécifique

Table 2. Baseline Characteristics of 49 Patients With Severe Community-Acquired Pneumonia

Variable	Pure Bacterial Group (n = 21)	Bacterial-Viral Group (n = 19)	Probably Pure Viral Group (n = 5)	No Etiology Group (n = 4)	P Value ^a
Age, y	53 (49–58)	55 (44–65)	48 (44–57)	62 (46–72)	>.9
Male sex	10 (48)	8 (42)	2 (40)	1 (25)	.76
BMI	24 (22–32)	26 (24–29)	29 (28–29)	30 (27–31)	.9
Comorbidity	15 (71)	13 (68)	4 (80)	4 (100)	>.9
Smoking	9 (45)	9 (47)	3 (60)	1 (25)	>.9
Alcoholism	3 (14)	5 (26)	0 (0)	0 (0)	.44
Duration of symptoms before pneumonia diagnosis, d	2 (0–4)	3 (1–4)	2 (0–2)	4 (1–5)	.81
Antibiotics before hospital admission	7 (33)	7 (37)	3 (60)	1 (25)	>.9
Antibiotics before blood cultures	6 (29)	8 (42)	2 (40)	1 (25)	.51
Chest radiography diffuse infiltration	15 (71)	13 (68)	4 (80)	4 (100)	>.9
Septic shock on admission	10 (48)	8 (42)	2 (40)	1 (25)	.76
Acute kidney injury	7 (35)	2 (11)	0 (0)	1 (25)	.13
Time on mechanical ventilation, h	110 (47–153)	102 (45–134)	130 (91–147)	37 (26–50)	.66
Time on noradrenaline infusion, h	45 (30–96)	85 (56–118)	74 (73–151)	39 (25–51)	.48
PF ratio at ICU admission	128 (90–225)	113 (75–188)	135 (105–300)	135 (113–158)	.37
PF ratio ^b	120 (75–143)	98 (68–143)	90 (83–98)	135 (113–158)	.89

Values are presented as No. (%) or median (25th–75th percentile).

Abbreviations: BMI, body mass index; ICU, intensive care unit; PF, PaO₂/FiO₂ (mmHg).

^a Comparison between bacterial-only and mixed infection groups.

^b Lowest PF ratio during the first ICU day.

- **26 virus détectés**
 - 21 (85%) d' un prélèvement bronchique
 - 5 (19%) de l' écouvillon nasal
- **Principales espèces :**
 - Rhinovirus : 58%
 - Adénovirus : 15%

Table 3. Comparison of Admission Parameters and Outcome Data Among Patients With Severe Community-Acquired Pneumonia

Parameter	Pure Bacterial Group (n = 21)	Bacterial-Viral Group (n = 19)	Probably Pure Viral Group (n = 5)	No Etiology Group (n = 4)	<i>P</i> Value ^a
CRP, admission, mg/L	206 (144–338)	229 (180–323)	152 (120–154)	195 (56–314)	.77
CRP, mg/L, peak	299 (213–350)	356 (294–416)	152 (120–192)	234 (149–314)	.05
PCT, admission, µg/L	14.3 (2.7–63.5)	20.1 (5.4–40.2)	1.4 (1.0–1.4)	11.0 (1.1–37.0)	.21
PCT, µg/L, peak	14.3 (3.1–63.5)	24.3 (6.2–40.4)	1.7 (1.6–1.7)	11.0 (1.1–37.0)	.68
WBC count, × 10 ⁹ /L	7.6 (4.6–11.2)	7.0 (3.8–12.3)	13.5 (13.1–17.7)	16.2 (9.4–22.8)	.66
Platelets, × 10 ⁹ /L	171 (148–235)	171 (110–238)	262 (220–417)	255 (222–266)	.7
ICU stay, d	8 (5–11)	7 (5–9)	10 (8–14)	4 (4–5)	.26
Hospital stay, d	17 (12–25)	14 (11–17)	21 (20–39)	11 (10–13)	.02
ICU mortality	0 (0)	3 (15.8)	0 (0)	0 (0)	.1
28-day mortality	1 (5)	4 (21)	0 (0)	0 (0)	.17
Hospital mortality	2 (10)	4 (21)	0 (0)	0 (0)	.4

Values are presented as No. (%) or median (25th–75th percentile).

Abbreviations: CRP, C-reactive protein; ICU, intensive care unit; PCT, procalcitonin; WBC, white blood cell.

^a Comparison between bacterial-only infection and bacterial-viral infection groups.

**POUR UN SUIVI
PNEUMOLOGIQUE...**

Outcome of Recommendations for Radiographic Follow-Up of Pneumonia on Outpatient Chest Radiography

Brent P. Little¹
Matthew D. Gilman²
Kathryn L. Humphrey²
Tarik K. Alkasab²
Fiona K. Gibbons³
Jo-Anne O. Shepard²
Carol C. Wu²

OBJECTIVE. Follow-up chest radiographs are frequently recommended by radiologists to document the clearing of radiographically suspected pneumonia. However, the clinical utility of follow-up radiography is not well understood. The purpose of this study was to examine the incidence of important pulmonary pathology revealed during follow-up imaging of suspected pneumonia on outpatient chest radiography.

MATERIALS AND METHODS. Reports of 29,138 outpatient chest radiography examinations performed at an academic medical center in 2008 were searched to identify cases in which the radiologist recommended follow-up chest radiography for presumed community-acquired pneumonia ($n = 618$). Descriptions of index radiographic abnormalities were recorded. Reports of follow-up imaging (radiography and CT) performed during the period from January 2008 to January 2010 were reviewed to assess the outcome of the index abnormality. Clinical history, demographics, microbiology, and pathology reports were reviewed and recorded.

TABLE 1: Characteristics of Patient Populations

Characteristic	All Patients With Recommendations for Follow-Up Radiography (n = 805)	Patients With Follow-Up Imaging (n = 618)	Patients With No Follow-Up Imaging (n = 187)	p (Follow-Up vs No Follow-Up)
Mean age (median) (y)	61 (62)	63 (64)	54 (55)	< 0.0001
Sex (M:F)	381:424	285:333	96:91	0.21
History of cancer	201 (25)	169 (27)	32 (17)	0.005
Current smoker	125 (16)	99 (16)	26 (14)	0.73
Documented COPD	127 (16)	114 (18)	13 (7)	< 0.0001
Diabetes	108 (13)	89 (14)	19 (10)	0.14
Undergoing chemotherapy	25 (3)	23 (3.7)	2 (1)	0.089
Known HIV	14 (2)	12 (1.9)	2 (1)	0.54
Preoperative examination	36 (4)	22 (4)	14 (7)	0.041

Note—Except where indicated otherwise, data in parentheses are percentages. Bold text indicates significant difference. COPD = chronic obstructive pulmonary disease.

TABLE 4: Important Diagnoses Other Than Pneumonia Corresponding With Radiographic Abnormality

Diagnosis	No of Patients
Malignancy	9
Non-small cell lung cancer	6
Large B cell lymphoma	1
Important benign diagnoses	23
Tuberculosis/atypical mycobacterial infection	6
Eosinophilic or organizing pneumonia	5
Fungal infection	5
Round atelectasis	3
Abscess	1
Alveolar hemorrhage	1
<i>Pneumocystis</i> pneumonia	1
Septic emboli	1

**Nouveau
Diagnostic significatif
5,2% des patients**