Société de Pneumologie
d'Île-de-France SPIF

Place des traitements courts dans la pneumonie bactérienne : « Shorter is better »

Aurélien DINH

Maladies infectieuses, Hôpital Raymond Poincaré, Garches, APHP

Recommandations

IDSA/ATS guidelines (Mandell *et al.* CID 2007)

Patients with CAP should be treated for a minimum of **5 days**.
The recommended duration for patients with **good clinical response** within the first 2-3 d of therapy is 5 to 7 days total

NICE recommendations (2014)

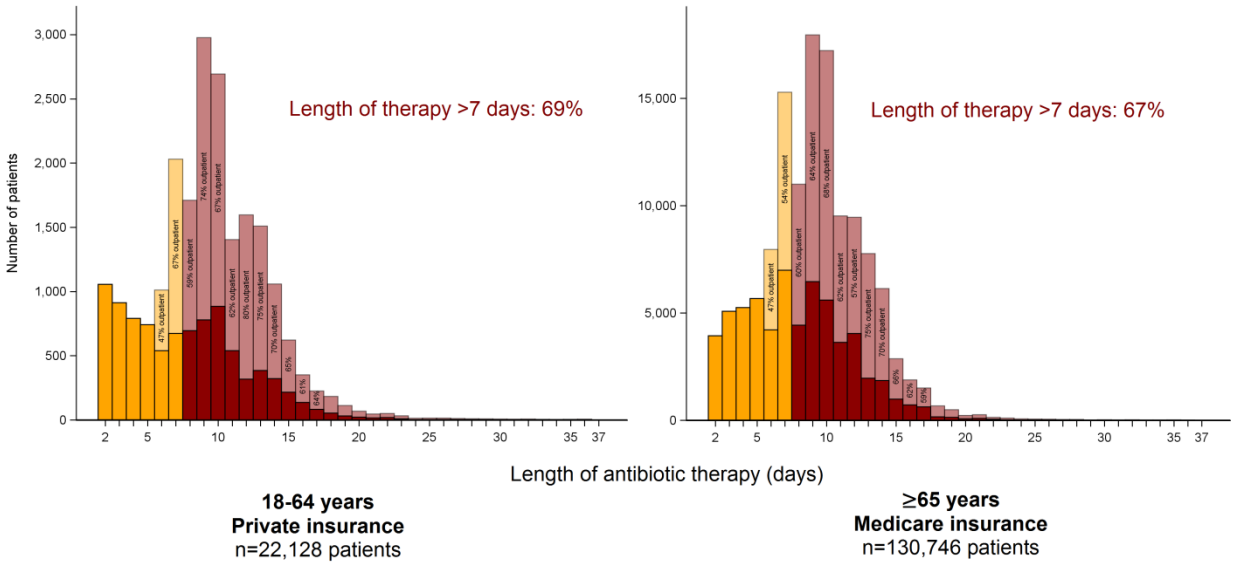
5 day course of antibiotic therapy for patients with low severity CAP;
Consider a **7-10** day course of antibiotic therapy for patients with moderate **and high severity** CAP.

Sur le terrain

Duration of Antibiotic Use Among Adults With Uncomplicated Community-Acquired Pneumonia Requiring Hospitalization in the United States

Sarah H. Yi, Kelly M. Hatfield, James Baggs, Lauri A. Hicks, Arjun Srinivasan, Sujan Reddy, and John A. Jernigan

- Etude rétrospective
- Base de donnée informatique hospitalière (2012-2013)
- PAC simple
- 22 128 patients (2100 hopitaux)
- Durée moyenne 9,5j 70%>7j



Yi *et al*. CID 2017

Are infection specialists recommending short antibiotic treatment durations? An ESCMID international cross-sectional survey

Gabriel Macheda[1], Oliver J. Dyar[2], Amandine Luc[3], Bojana Beovic[4,5], Guillaume Béraud[6–8], Bernard Castan[9], Rémy Gauzit[10], Philippe Lesprit[11], Pierre Tattevin[12], Nathalie Thilly[3,13] and Céline Pulcini[1,13]* on behalf of ESGAP and SPILF

- Enquête internationale
- Interrogatoire (15 situations cliniques)
- 866 participants (experts : infectiologues, EMA, microbiologistes)
- En France 46% ont recommandé une durée courte

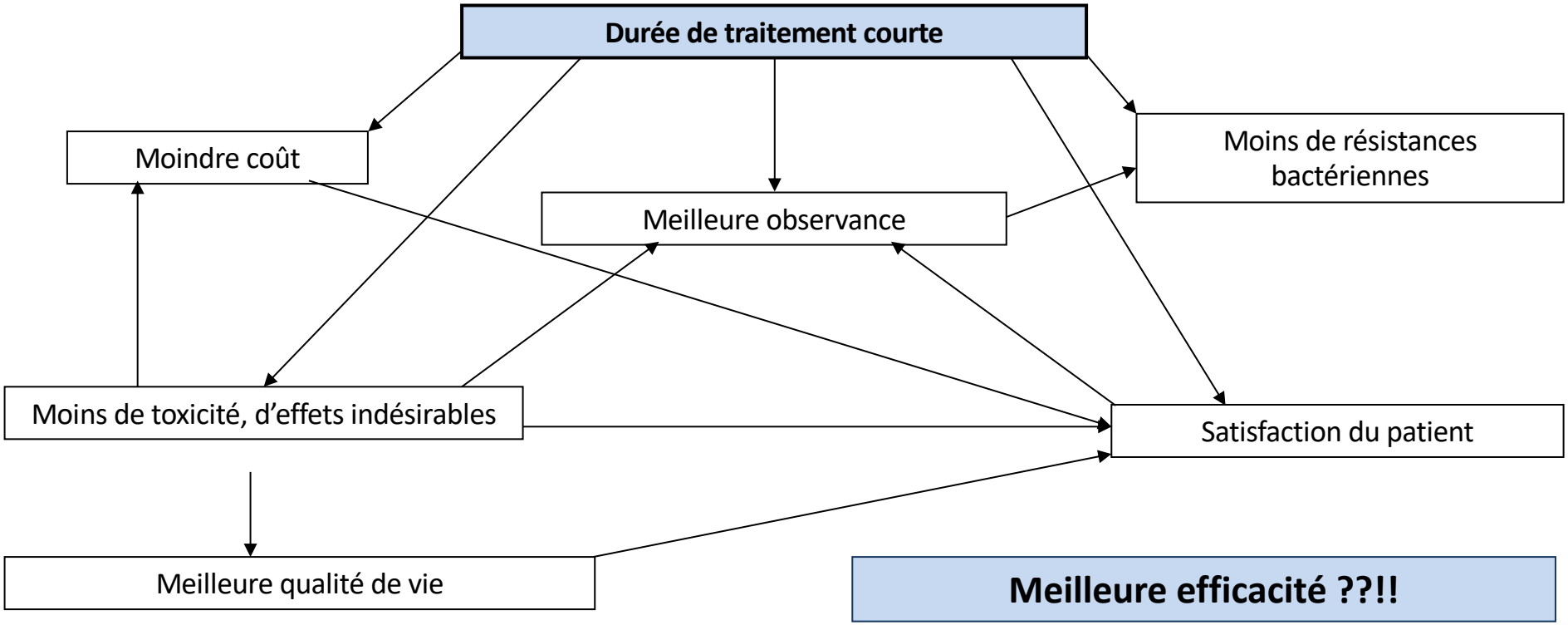
JAC 2018

« We know everything about antibiotics except how much to give »

Maxwell Finland

Et pourtant !

Intérêt d'une durée courte pour une même efficacité !!



D'après Li JZ. Am Med J 2007

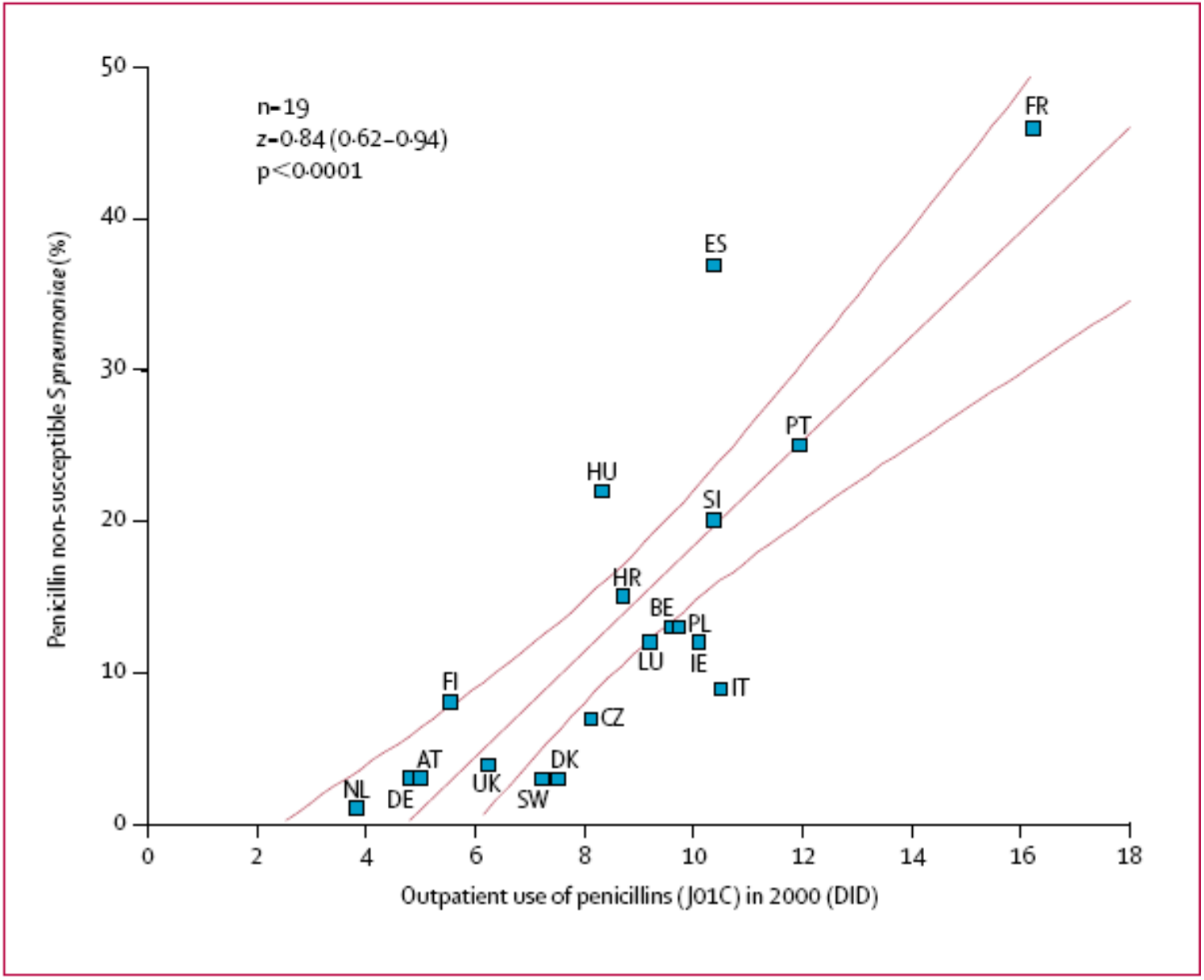


Figure 6: **Correlation between penicillin use and prevalence of penicillin non-susceptible *S pneumoniae***
AT, Austria; BE, Belgium; HR, Croatia; CZ, Czech Republic; DK, Denmark; FI, Finland; FR, France; DE, Germany; HU, Hungary; IE, Ireland; IT, Italy; LU, Luxembourg; NL, The Netherlands; PL, Poland; PT, Portugal; SI, Slovenia; ES, Spain; UK, England only.

H. Goosens
Lancet 2005

FDR de portage de pneumocoque péni R

	OR	95% CI	p
Oral β-lactam during the preceeding 30 d	3.0	1.1-8.3	0.03
Low dosage (below recommendation)	5.9	2.1-16.7	0.002
Drug duration (>5 d)	3.5	1.3-9.8	0.02

Guillemot D, JAMA 1998

Comparison of 8 vs 15 Days of Antibiotic Therapy for Ventilator-Associated Pneumonia in Adults

A Randomized Trial

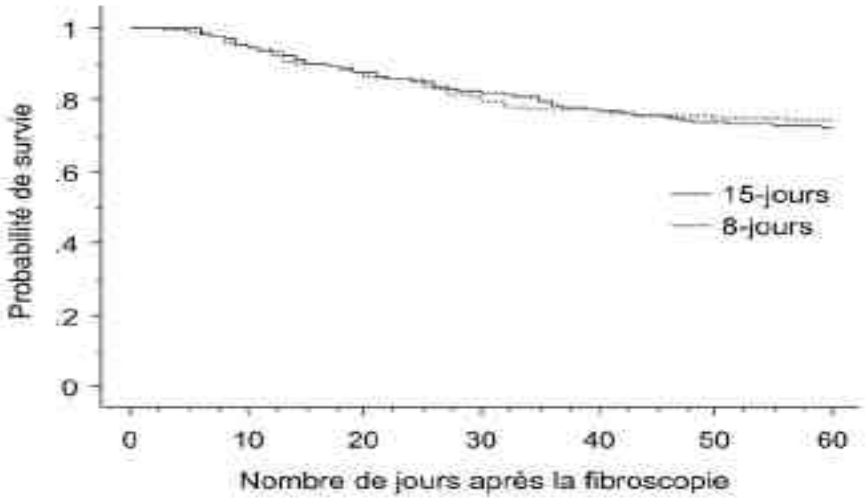


Fig. 2. Probabilité de survie (courbes de Kaplan-Meier) en fonction de la durée de traitement antibiotique (8 vs 15 jours) d'une pneumonie acquise sous ventilation mécanique [16].

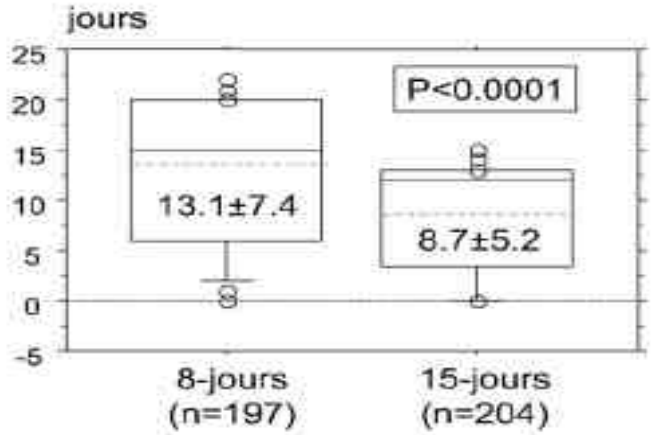


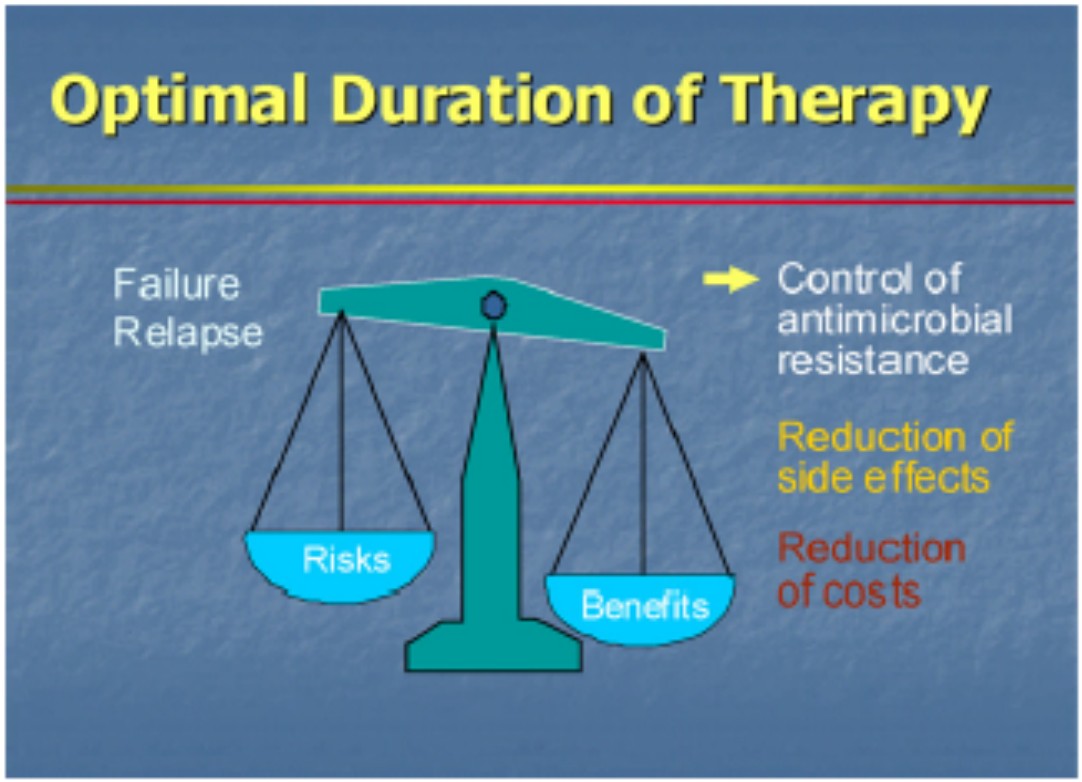
Fig. 3. Nombre de jours vivant sans antibiotique en fonction de la durée de traitement antibiotique d'une pneumonie acquise sous ventilation mécanique (d'après [16]).

Notably, among patients who developed recurrent pulmonary infections, multiresistant pathogens emerged significantly less frequently in those who had received 8 days of antibiotics (42.1% vs 62.3% of recurrent infections; *P*=.04).

J. Chastre *et al.* JAMA 2003

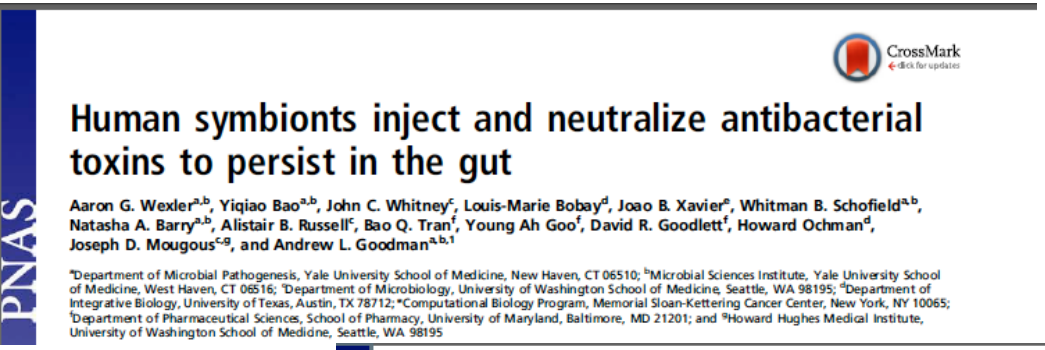
Intérêt individuel/collectif

- Intolérance et EIG = échec et….émergence de résistances
- Balance bénéfice/risque



Rubinstein E. Int J Antimicrob Agents. 2007 Nov;30 Suppl 1:S76-9

Microbiote barrière et risque infectieux



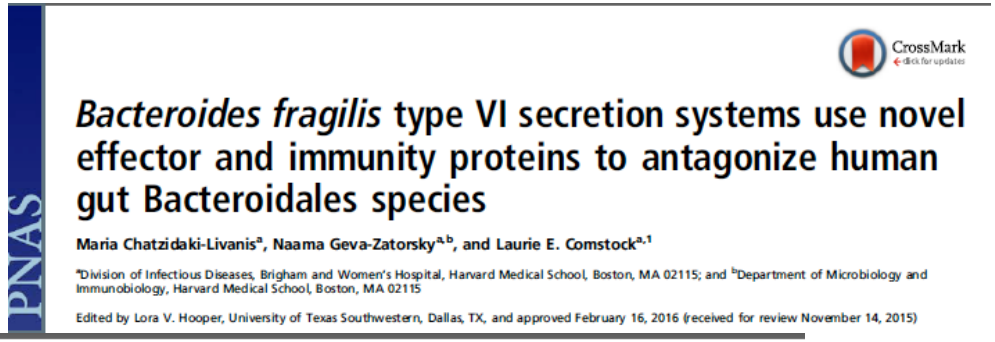
PNAS

CrossMark

Human symbionts inject and neutralize antibacterial toxins to persist in the gut

Aaron G. Wexler[a,b], Yiqiao Bao[a,b], John C. Whitney[c], Louis-Marie Bobay[d], Joao B. Xavier[e], Whitman B. Schofield[a,b], Natasha A. Barry[a,b], Alistair B. Russell[c], Bao Q. Tran[f], Young Ah Goo[f], David R. Goodlett[f], Howard Ochman[d], Joseph D. Mougous[c,g], and Andrew L. Goodman[a,b,1]

[a]Department of Microbial Pathogenesis, Yale University School of Medicine, New Haven, CT 06510; [b]Microbial Sciences Institute, Yale University School of Medicine, West Haven, CT 06516; [c]Department of Microbiology, University of Washington School of Medicine, Seattle, WA 98195; [d]Department of Integrative Biology, University of Texas, Austin, TX 78712; [e]Computational Biology Program, Memorial Sloan-Kettering Cancer Center, New York, NY 10065; [f]Department of Pharmaceutical Sciences, School of Pharmacy, University of Maryland, Baltimore, MD 21201; and [g]Howard Hughes Medical Institute, University of Washington School of Medicine, Seattle, WA 98195



PNAS

CrossMark

Bacteroides fragilis type VI secretion systems use novel effector and immunity proteins to antagonize human gut Bacteroidales species

Maria Chatzidaki-Livanis[a], Naama Geva-Zatorsky[a,b], and Laurie E. Comstock[a,1]

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Edited by Lora V. Hooper, University of Texas Southwestern, Dallas, TX, and approved February 16, 2016 (received for review November 14, 2015)

PNAS

CrossMark

Salmonella Typhimurium utilizes a T6SS-mediated antibacterial weapon to establish in the host gut

Thibault G. Sana[a], Nicolas Flaugnatti[b], Kyler A. Lugo[a], Lilian H. Lam[a], Amanda Jacobson[a], Virginie Baylot[c], Eric Durand[b], Laure Journet[b], Eric Cascales[b], and Denise M. Monack[a,1]

[a]Department of Microbiology and Immunology, Stanford School of Medicine, Stanford University, Stanford, CA 94305; [b]Laboratoire d'Ingénierie des Systèmes Macromoléculaires (UMR7255), Institut de Microbiologie de la Méditerranée, Aix-Marseille Université - CNRS, 13402 Marseille, France; and [c]Division of Oncology, Department of Medicine and Pathology, Stanford School of Medicine, Stanford University, Stanford, CA 94305

Edited by Scott J. Hultgren, Washington University School of Medicine, St. Louis, MO, and approved June 30, 2016 (received for review June 2, 2016)

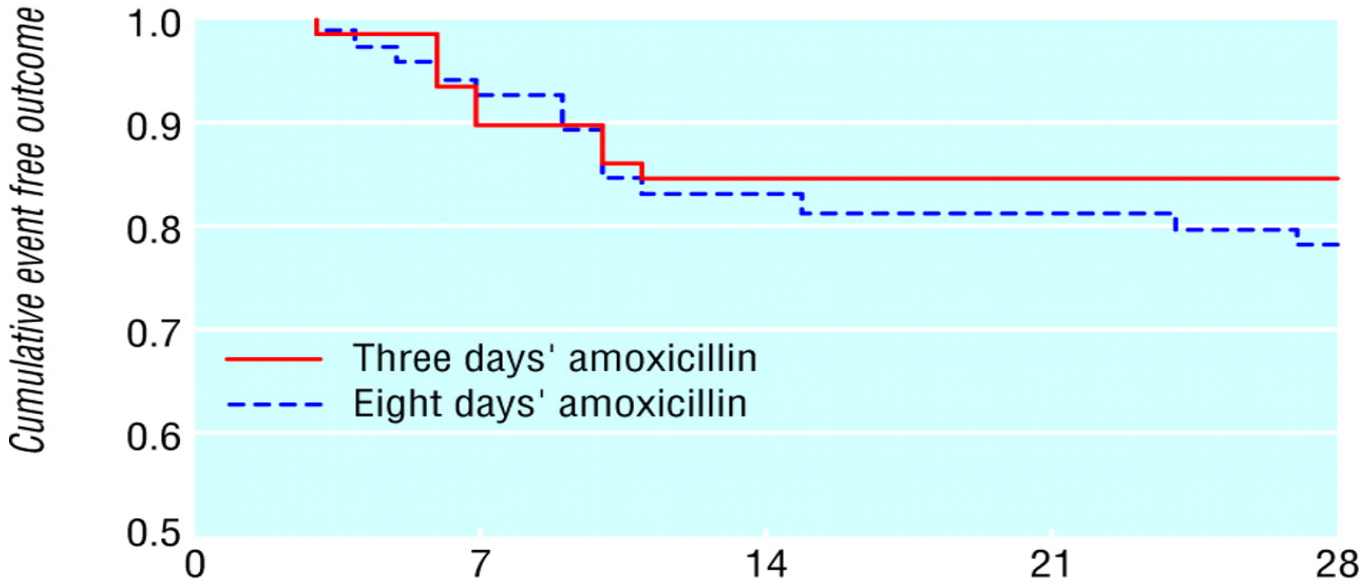
- Effet barrière vis-à-vis des bactéries exogènes "résistance à la colonisation"
  - élimination totale de la souche exogène
  - maintien de la souche exogène en sous-dominance
- La flore digestive stimule l'immunité locale et générale

Research

BMJ

Effectiveness of discontinuing antibiotic treatment after three days versus eight days in mild to moderate-severe community acquired pneumonia: randomised, double blind study

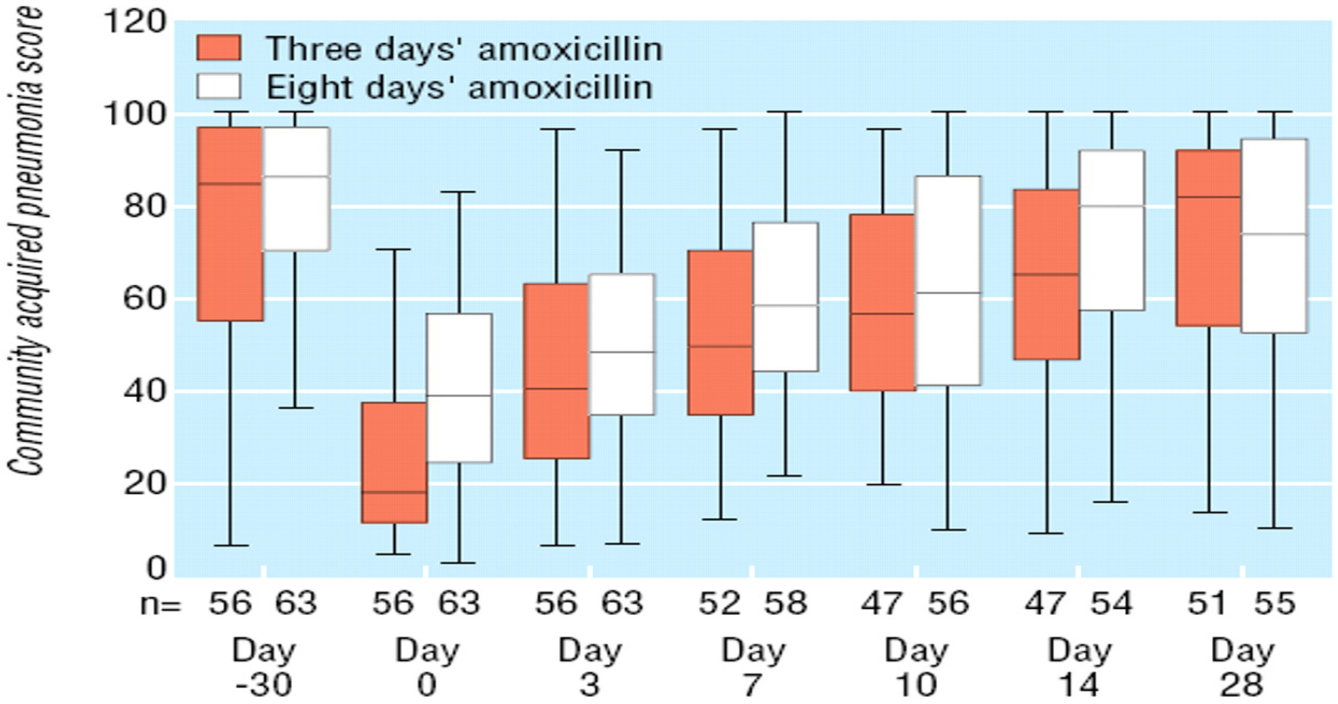
Rachida el Moussaoui, Corianne A J M de Borgie, Peterhans van den Broek, Willem N Hustinx, Paul Bresser, Guido E L van den Berk, Jan-Werner Poley, Bob van den Berg, Frans H Krouwels, Marc J M Bonten, Carla Weenink, Patrick M M Bossuyt, Peter Speelman, Brent C Opmeer, Jan M Prins



El Moussaoui et al. BMJ 2006

Principe

- Diminuer l'inoculum jusqu'au niveau où l'immunité peut contrôler l'infection (*vs*. « stériliser »)



RCT
PAC non sévère
3 vs 8j de peni A

BMJ

R. El Moussaoui, BMJ 2006

28th ECCMID Madrid, Spain 21 – 24 April 2018

Effectiveness of three days of beta-lactam antibiotics for hospitalized community-acquired pneumonia: a randomized non-inferiority double-blind trial

A.Dinh[1], J. Ropers[1] B. Davido[1], C. Duran[1], L. Deconinck[1], M. Matt[1], O. Senard[1], A. Lagrange[2], V. De Lastours[3], F. Bouchand[4], V. Delcey[5], D. Benhamou[6], V. Vitrat[7], P. Rouselot, M.-C. Dombret[8], B. Renaud[9], Y.-E. Claessens[10], J. Labarère[11], J.-P. Bedos[12], Ph Aegerter[13], A.-C. Crémieux[14], The PTC Study group

Données disponibles avril 2018

Analyses toujours en cours

Toutes les analyses n'ont pu être réalisées

Seul critère principal : Guérison à J15

Hôpitaux Universitaires Paris Ile-de-France Ouest
RAYMOND POINCARÉ • BERCK
AMBROISE PARÉ • SAINTE PÉRINE

UNIVERSITÉ DE VERSAILLES ST-QUENTIN-EN-YVELINES

CHV

Hypothèse de l'étude

Une antibiothérapie de 3 jours est suffisante

- chez les patients avec une PAC modérément sévère
- répondant favorablement après 3 jours de C3G ou amoxicilline-ac clav. (Halm *et al.* NEJM 2002)

Méthode

- Étude multicentrique (20 centres)
- contrôlée, randomisée vs placebo (en double aveugle)
- de non infériorité
- sur 2 groupes parallèles
- évaluant 2 durées de TT : **3 j vs 8 j**

Critères d'inclusion

- > 18 ans
- Ayant consulté en urgence 3 jrs avant

J0

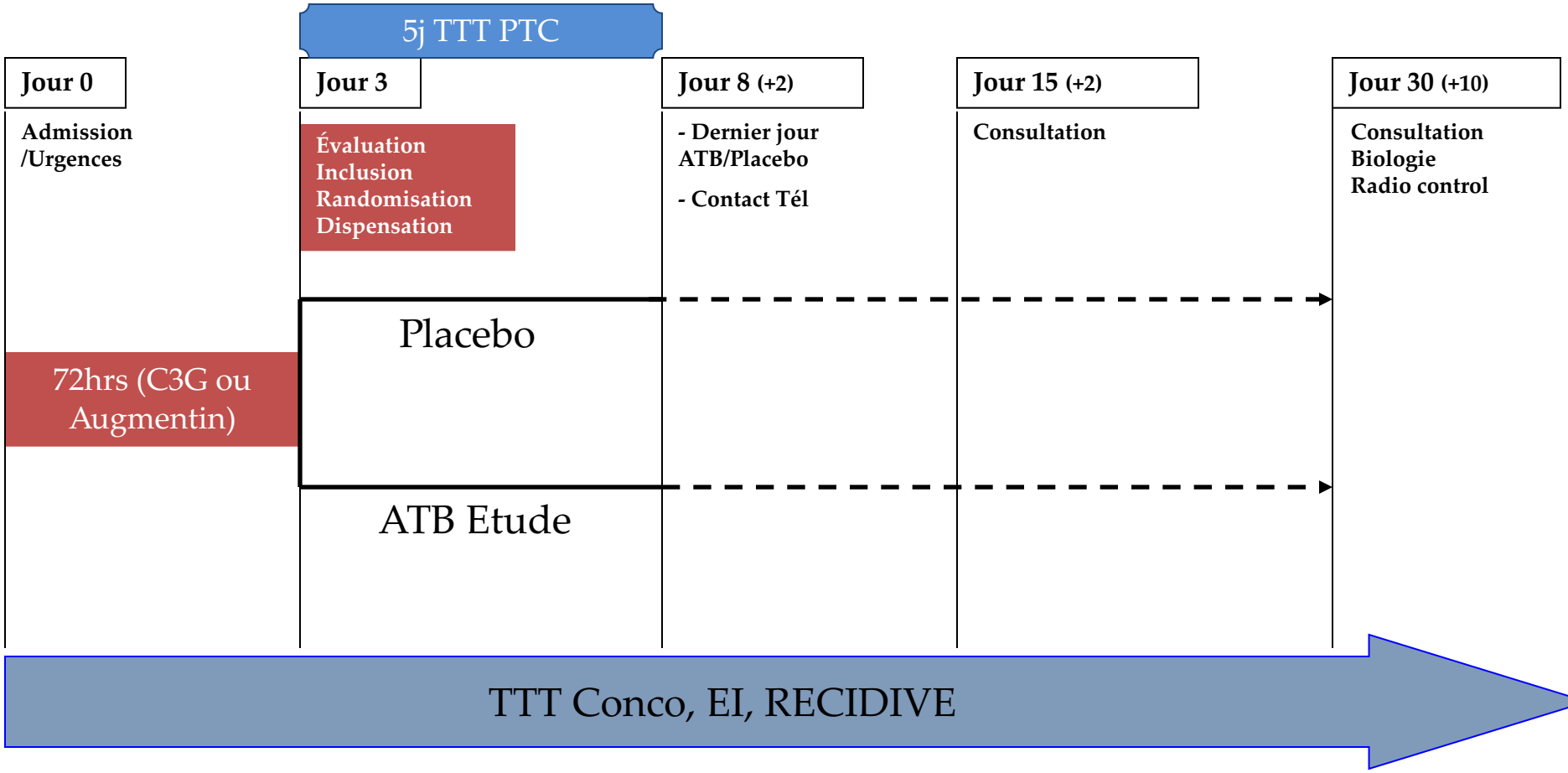
- Admis pour PAC
  - 1 des signes: dyspnée, toux, exp. muco-pur., foyer de crépitants
  - + T°C > 38
  - + Nouvel infiltrat à la RX

J3

- Ayant répondu à 3 jrs de TT par C3G ou amox-clav.
  - T°C ≤ 37,8
  - + Critères de stabilité IDSA (FC < 100/min et **FR** < 24c/min)
  - + SaO2 ≥ 90% (mode oxygénation normale préalable PAC)
  - + Pa Systolique ≥ 90 mmHg

- Ayant donné son consentement
- Apte à prendre un traitement oral

Schéma de l'étude

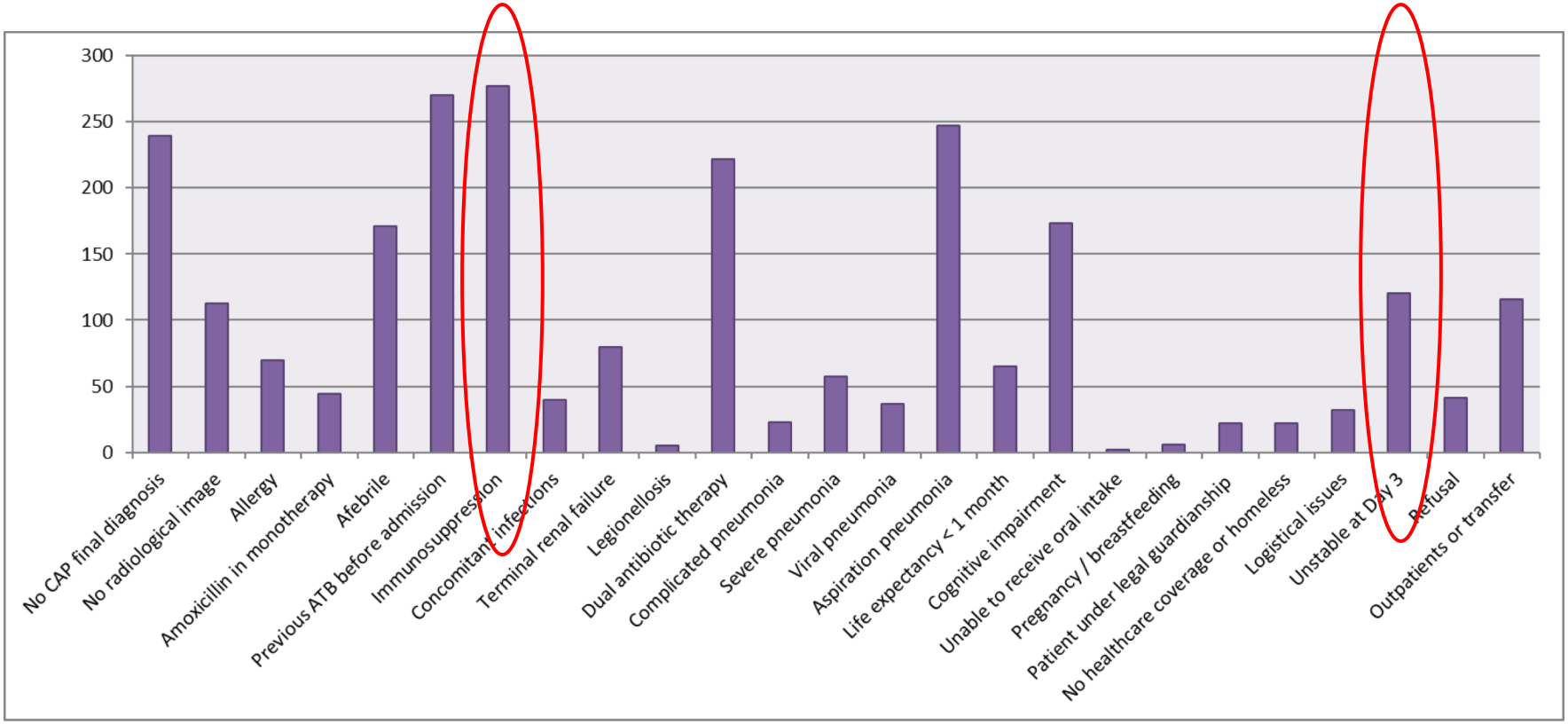


Critère de jugement principal

La **guérison** est définie à J15 par l'association de :

- Apyrexie (température corporelle < 37,8°C)
- Disparition ou amélioration (qui pourra être évaluée par le CAP score) des signes cliniques suivants s'ils étaient initialement présents :
  - dyspnée,
  - toux,
  - expectorations muco-purulentes,
  - foyer de crépitants
- Sans antibiothérapie additionnelle depuis J3

Screening


300
250
200
150
100
50
0
No CAP final diagnosis
No radiological image
Allergy
Amoxicillin in monotherapy
Afebrile
Previous ATB before admission
Immunosuppression
Concomitant infections
Terminal renal failure
Legionellosis
Dual antibiotic therapy
Complicated pneumonia
Severe pneumonia
Viral pneumonia
Aspiration pneumonia
Life expectancy < 1 month
Cognitive impairment
Unable to receive oral intake
Pregnancy / breastfeeding
Patient under legal guardianship
No healthcare coverage or homeless
Logistical issues
Unstable at Day 3
Refusal
Outpatients or transfer

Population (1ère inclusion 22 Décembre 2013 - Dernière inclusion 2 Février 2018)

	3 jours de traitement	8 jours de traitement
N patients	157	153
Hommes (n, %)	91 (58.0)	96 (62.7)
Age (médiane, IQR)	73.00 [54.00, 85.00]	74.00 [58.00, 83.00]
Comorbidités (n, %)		
Institutionnalisé	8 (5.1)	2 (1.3)
Néoplasie	2 (1.3)	4 (2.6)
Pathologie hépatique	5 (3.2)	2 (1.3)
Insuffisance cardiaque	31 (19.7)	33 (21.6)
Maladie vasculaire cérébrale	13 (8.3)	10 (6.5)
Insuffisance rénale	15 (9.6)	11 (7.2)
Insuffisance coronarienne	25 (16.1)	20 (13.1)
Diabète	24 (15.4)	34 (22.2)
BPCO	31 (20.0)	42 (27.5)
Tabagisme actif	31 (20.3)	25 (17.2)
Vaccin grippe (< 1 an)	21 (18.4)	19 (18.3)
Vaccin pneumocoque (< 5 ans)	5 (4.6)	8 (8.2)
GIR	6.00 [6.00, 6.00]	6.00 [6.00, 6.00]

Admission (J0)

	3 jours de traitement	8 jours de traitement
N patients	157	153
Signes cliniques à J0 (n, %)		
Dyspnée	85 (54.1)	88 (57.5)
Toux	130 (82.8)	122 (79.7)
Expectorations muco-purulentes	62 (39.5)	58 (37.9)
Crépitants	124 (79.5)	114 (74.5)
Score de Glasgow (médiane, IQR)	15.00 [15.00, 15.00]	15.00 [15.00, 15.00]
Confusion	16 (10.3)	11 (7.2)
PSI Score (médiane, IQR)	81.00 [57.00, 106.00]	84.00 [58.00, 104.00]
Premier symptôme (n, %)		
Dyspnée	63 (40.4)	35 (23.0)
Crépitants	53 (34.0)	4 (2.6)
Toux	130 (83.9)	62 (40.8)

Admission (J0)

Paramètres biologiques (médiane, IQR)	3 jours de traitement	8 jours de traitement
Hématocrite (%)	37.95 [36.00, 41.40]	38.80 [35.30, 42.35]
Hémoglobine (g/dL)	12.80 [11.90, 13.90]	13.10 [11.90, 14.30]
Leucocytes (G/L)	11.50 [8.05, 15.95]	11.78 [8.79, 15.30]
PNN (G/L)	9.71 [6.57, 14.22]	9.70 [6.90, 13.30]
Plaquettes (G/L)	212.00 [167.00, 271.50]	216.00 [166.75, 274.00]
Urée (mmol/L)	6.70 [4.80, 8.80]	5.90 [4.70, 8.30]
Sodium (mmol/L)	137.0 [135.00, 139.00]	138.00 [135.00, 140.50]
Glucose (mmol/L)	6.2 [5.40, 7.00]	6.20 [5.35, 7.75]
Créatinine (µmol/L)	78.00 [65.00, 100.00]	79.00 [63.00, 97.00]
Albumine (g/dL)	3.30 [3.00, 25.90]	3.40 [3.00, 4.00]
C-reactive protein (mg/L)	135.50 [58.50, 235.00]	108.00 [48.25, 212.00]
Procalcitonine (µg/L)	0.60 [0.20, 2.25]	0.20 [0.10, 0.65]

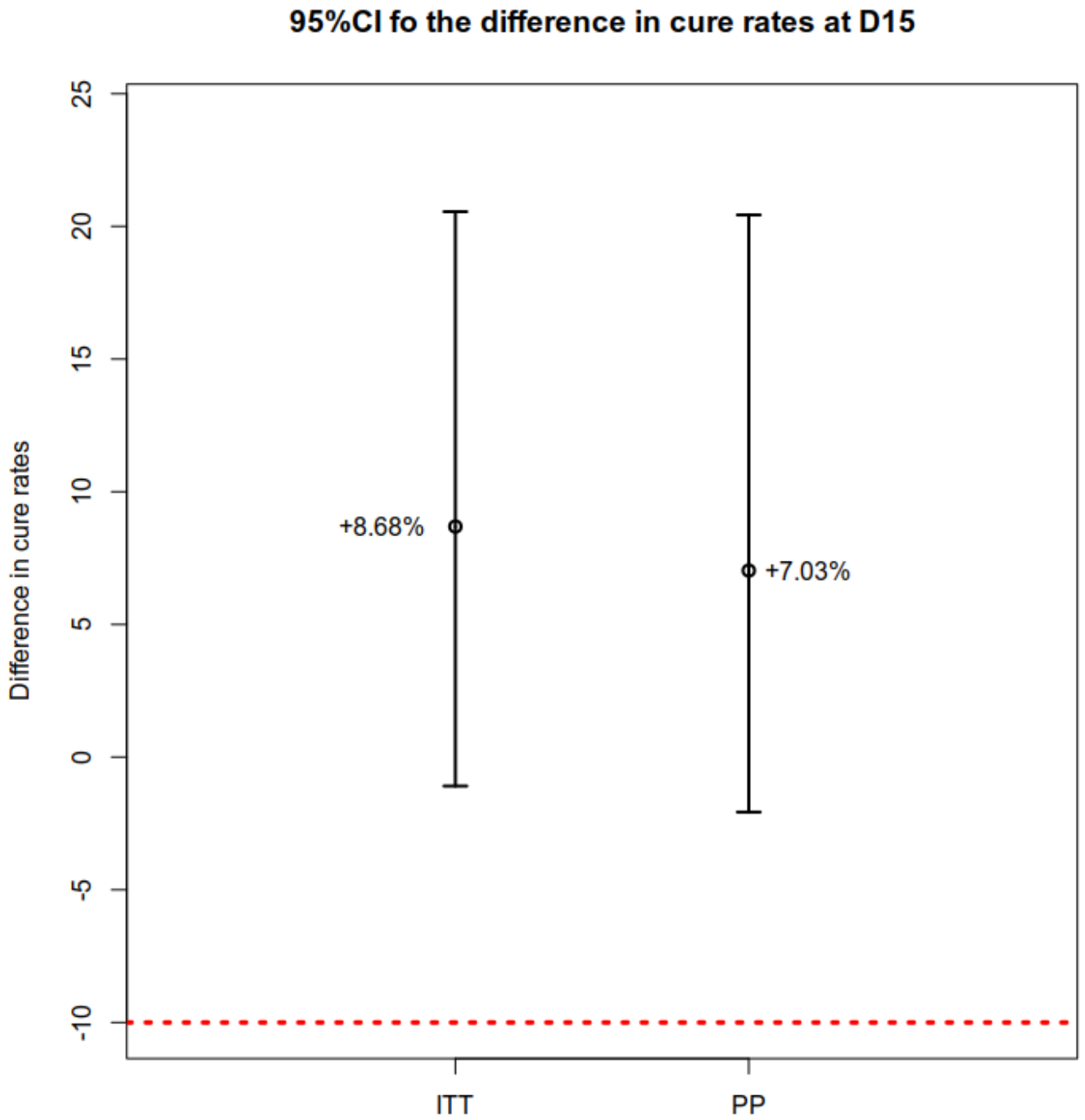
Outcome à J15

	3 jours de traitement	8 jours de traitement	95% CI
Analyse ITT, n	156	152	
Guérison à J15	109 (69.9%)	93 (61.2%)	[-1.09%; 20.55%]
Analyse PP, n	136	131	
Guérison à J15	103 (75.7%)	90 (68.7%)	[-2.07%; 20.43%]

Non inferiorité démontrée !
Une durée de 3 jours n'est pas inférieure à un durée de 8 jours de traitement

En faveur
de 3 jours

En faveur
de 8 jours



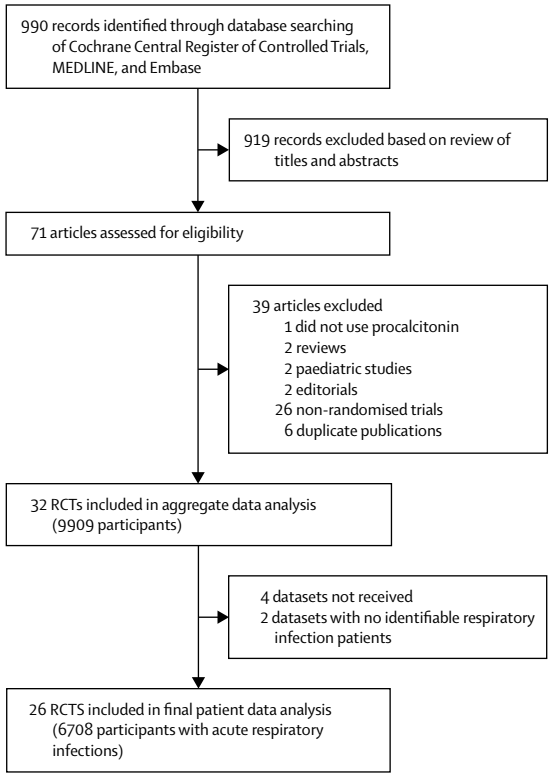
Vers une durée individualisée ?

Inventer des critères d’arrêt ?

PCT ?

Effect of procalcitonin-guided antibiotic treatment on mortality in acute respiratory infections: a patient level meta-analysis

Philipp Schuetz, Yannick Wirz*, Ramon Sager*, Mirjam Christ-Crain, Daiana Stolz, Michael Tamm, Lila Bouadma, Charles E Luyt, Michel Wolff, Jean Chastre, Florence Tubach, Kristina B Kristoffersen, Olaf Burkhardt, Tobias Welte, Stefan Schroeder, Vandack Nobre, Long Wei, Heiner C Bucher, Djillali Annane, Konrad Reinhart, Ann R Falsey, Angela Branche, Pierre Damas, Maarten Nijsten, Dylan W de Lange, Rodrigo O Deliberato, Carolina F Oliveira, Vera Maravić-Stojković, Alessia Verduri, Bianca Beghé, Bin Cao, Yahya Shehabi, Jens-Ulrik S Jensen, Caspar Corti, Jos A H van Oers, Albertus Beishuizen, Armand R J Girbes, Evelien de Jong, Matthias Briel*, Beat Mueller*



Schuetz *et al.* Lancet 2017

	Control (n=3372)	Procalcitonin group (n=3336)
Age, years	61·2 (18·4)	60·7 (18·8)
Sex		
Men	1910 (57%)	1898 (57%)
Women	1462 (43%)	1438 (43%)
Clinical setting		
Primary care	501 (15%)	507 (15%)
Emergency department	1638 (49%)	1615 (48%)
ICU	1233 (37%)	1214 (36%)
Primary diagnosis		
Total upper acute respiratory infection	280 (8%)	292 (9%)
Common cold	156 (5%)	149 (4%)
Rhino-sinusitis, otitis	67 (2%)	73 (2%)
Pharyngitis, tonsillitis	46 (1%)	61 (2%)
Total lower acute respiratory infection	3092 (92%)	3044 (91%)
Community-acquired pneumonia	1468 (44%)	1442 (43%)
Hospital-acquired pneumonia	262 (8%)	243 (7%)
Ventilator-associated pneumonia	186 (6%)	194 (6%)
Acute bronchitis	287 (9%)	257 (8%)
Exacerbation of COPD	631 (19%)	621 (19%)
Exacerbation of asthma	127 (4%)	143 (4%)
Other lower acute respiratory infection	131 (4%)	144 (4%)
Procalcitonin dose on enrolment		
Data available	2590 (77%)	3171 (95%)
<0·1 µg/L	921 (36%)	981 (31%)
0·1–0·25 µg/L	521 (20%)	608 (19%)
>0·25–0·5 µg/L	308 (12%)	383 (12%)
>0·5–2·0 µg/L	358 (14%)	520 (16%)
>2·0 µg/L	482 (19%)	679 (21%)

Data are mean (SD) or n (%). ICU=intensive care unit. COPD=chronic obstructive pulmonary disease.

Résultats

	Control (n=3372)	Procalcitonin group (n=3336)	Adjusted OR (95% CI)*, p value	$p_{interaction}$
Overall				
30-day mortality	336 (10%)	286 (9%)	0·83 (0·7 to 0·99), p=0·037	..
Treatment failure	841 (25%)	768 (23%)	0·90 (0·80 to 1·01), p=0·068	..
Length of ICU stay, days	13·3 (16·0)	13·7 (17·2)	0·39 (–0·81 to 1·58), p=0·524	..
Length of hospital stay, days	13·7 (20·6)	13·4 (18·4)	–0·19 (–0·96 to 0·58), p=0·626	..
Antibiotic-related side-effects	336/1521 (22%)	247/1513 (16%)	0·68 (0·57 to 0·82), p<0·0001	..

	Control (n=3372)	Procalcitonin group (n=3336)	Adjusted OR or difference (95% CI), p value*	$p_{interaction}$
Overall				
Initiation of antibiotics	2894 (86%)	2351 (70%)	0·27 (0·24 to 0·32), p<0·0001	..
Duration of antibiotics, days†	9·4 (6·2)	8·0 (6·5)	–1·83 (–2·15 to –1·5), p<0·0001	..
Total exposure of antibiotics, days‡	8·1 (6·6)	5·7 (6·6)	–2·43 (–2·71 to –2·15), p<0·0001	..

Schuetz *et al.* Lancet 2017

ORIGINAL ARTICLE

Procalcitonin-Guided Use of Antibiotics for Lower Respiratory Tract Infection

D.T. Huang, D.M. Yealy, M.R. Filbin, A.M. Brown, C.-C.H. Chang, Y. Doi, M.W. Donnino, J. Fine, M.J. Fine, M.A. Fischer, J.M. Holst, P.C. Hou, J.A. Kellum, F. Khan, M.C. Kurz, S. Lotfipour, F. LoVecchio, O.M. Peck-Palmer, F. Pike, H. Prunty, R.L. Sherwin, L. Southerland, T. Terndrup, L.A. Weissfeld, J. Yabes, and D.C. Angus, for the ProACT Investigators*

- Objectif effet utilisation PCT pour ATB des infections respiratoires vs PEC comparer prise en charge habituelle
- RCT PCT rendu vs non rendu aux cliniciens pour patient avec suspicion infection respiratoire au SAU (14 hôpitaux)

Outcome	Procalcitonin (N=826)	Usual Care (N=830)	Difference (95% or 99.86% CI)†
Patients with final diagnosis of community-acquired pneumonia			
No. of patients	167	161	
Antibiotic-days by day 30	7.8±7.0	7.2±6.0	0.7 (–1.7 to 3.1)
Received any antibiotics by day 30 — estimated no./total no. (%)¶	148/167 (88.6)	154/161 (95.9)	–7.3 (–16.8 to 2.2)
Antibiotic prescription in ED — estimated no./total no. (%)¶‖	120/167 (71.9)	123/161 (76.3)	–4.4 (–19.9 to 11.0)
Antibiotic-days during hospital stay	3.9±3.0	4.1±3.1	–0.2 (–1.5 to 1.1)
Hospital length of stay — days	5.8±4.9	5.9±4.2	–0.1 (–1.2 to 1.1)

Criteria for Clinical Stability

Temperature ≤100°F
Heart rate ≤100 beats/min
Respiratory rate ≤24 beats/min
Systolic blood pressure ≥90 mmHg
Arterial oxygen saturation ≥90% or Po_2 ≥60 mmHg on room air
Ability to maintain oral intake
Normal mental status

JAMA Internal Medicine | Original Investigation | LESS IS MORE

Duration of Antibiotic Treatment in Community-Acquired Pneumonia
A Multicenter Randomized Clinical Trial

Ane Uranga, MD; Pedro P. España, MD; Amaia Bilbao, MSc, PhD; Jose María Quintana, MD, PhD; Ignacio Arriaga, MD; Maider Intxausti, MD; Jose Luis Lobo, MD, PhD; Laura Tomás, MD; Jesus Camino, MD; Juan Nuñez, MD; Alberto Capelastegui, MD, PhD

Essai de non infériorité

Multicentrique (4 hôpitaux)
2012-2013

312 patients

Randomisation à J5
- Arrêt à 48h d'obtention des critères de stabilité
- Arrêt selon clinicien en charge

Objectif :
- Guérison clinique J10 et J30
- QdV CAP J5 et J10 (questionnaire 18 items : 0-90)

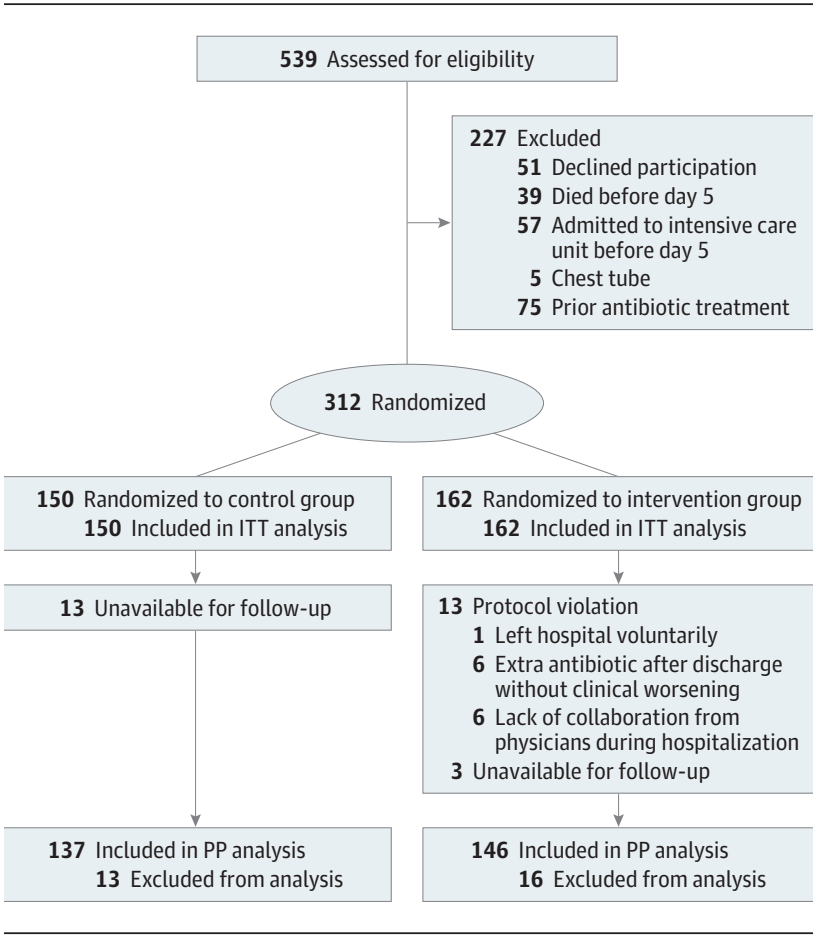


Table 1. Baseline Characteristics of Study Participants[a]

Characteristic	Control Group (n = 150)	Intervention Group (n = 162)
Age, mean (SD), y	66.2 (17.9)	64.7 (18.7)
Sex		
Male	95 (63.3)	101 (62.3)
Female	55 (36.7)	61 (37.7)
Tobacco		
Current smoker	32 (21.3)	36 (22.6)
Never smoker	68 (45.3)	71 (44.7)
Former smoker	50 (33.3)	52 (32.7)
Alcohol consumption (yes)	24 (16.1)	17 (10.5)
Comorbidities		
Liver disease	4 (2.7)	4 (2.5)
Heart disease	38 (25.3)	39 (24.1)
Congestive heart failure	14 (9.3)	12 (7.4)
Cerebrovascular disease	16 (10.7)	9 (5.6)
Renal disease	12 (8.0)	12 (7.4)
COPD	21 (14)	27 (16.7)
Diabetes	25 (16.7)	21 (13.0)
Charlson Comorbidity Index, median (IQR)	1 (0-2)	1 (0-2)
Charlson Comorbidity Index, categorized		
0	61 (40.7)	70 (43.2)
1	37 (24.7)	47 (29.0)
>1	52 (34.7)	45 (27.8)
Katz Index, mean (SD)[b]	0.6 (1.6)	0.4 (1.3)
PSI class		
I-III	89 (59.3)	102 (63.0)
IV-V	61 (40.7)	60 (37.0)
PSI score, mean (SD)	83.7 (33.7)	81.8 (33.8)

Eligibility

Patients ≥ 18 years old, hospitalized with a diagnosis of CAP. Pneumonia is defined as pulmonary infiltrate on chest X-ray not seen previously plus at least one symptom compatible with pneumonia such as cough, fever, dyspnea, and/or chest pain.

ATB :

- 80% des patients traités par FQ

- 10% beta lactamines +ML

Outcome

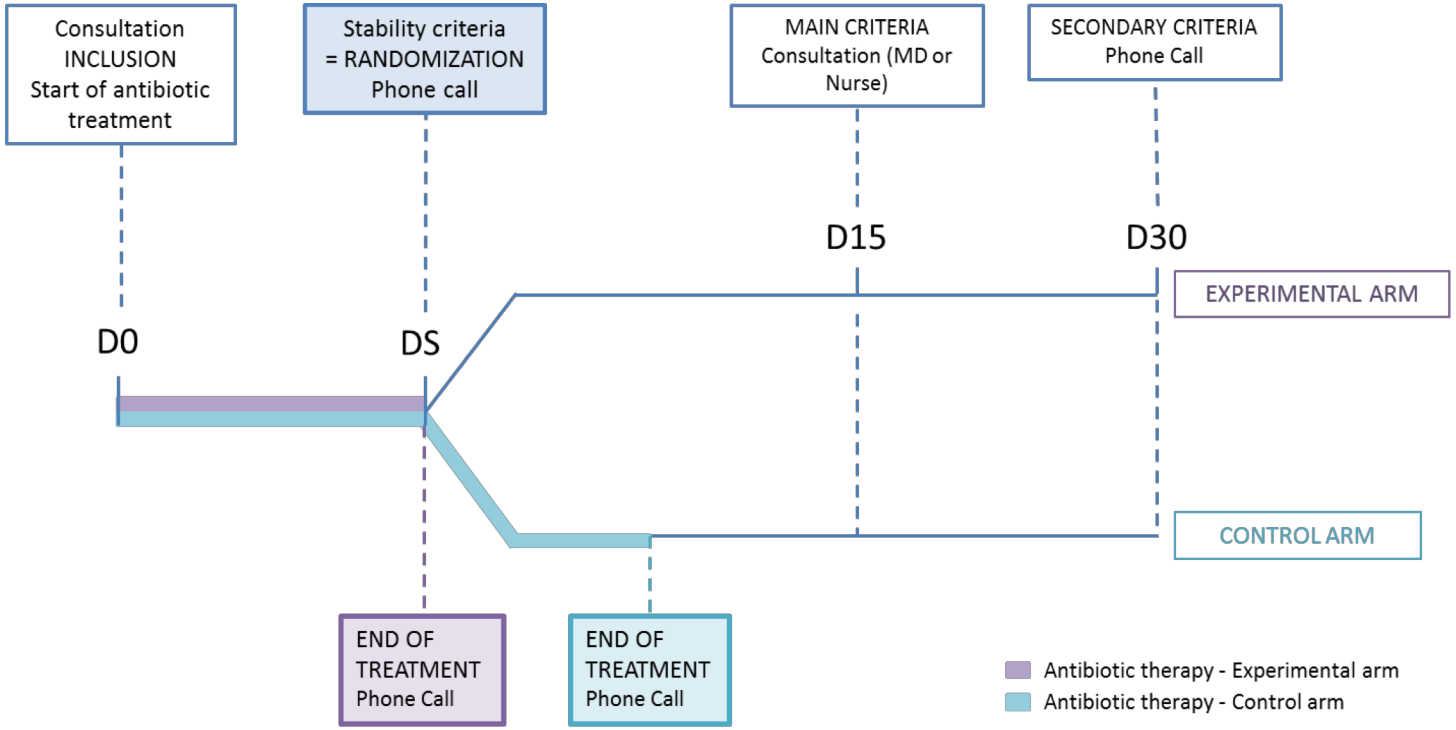
Table 2. Results for the Primary Study Outcomes

Outcome	Control Group	Intervention Group	*P* Value
Intent-to-Treat Analysis			
Total No. of participants	150	162	
Clinical success, No. (%)[a]			
At day 10	71 (48.6)	90 (56.3)	.18
At day 30	132 (88.6)	147 (91.9)	.33
CAP symptom questionnaire score, mean (SD)[b]			
At day 5	24.7 (11.4)	27.2 (12.5)	.10
At day 10	18.6 (9.0)	17.9 (7.6)	.69
Per-Protocol Analysis			
Total No. of participants	137	146	
Clinical success, No. (%)[a]			
At day 10	67 (50.4)	86 (59.7)	.12
At day 30	126 (92.7)	136 (94.4)	.54
CAP symptom questionnaire score, mean (SD)[b]			
At day 5	24.3 (11.4)	26.6 (12.1)	.16
At day 10	18.1 (8.5)	17.6 (7.4)	.81

AIR

Antibiothérapie des Infections Respiratoires

PHRC 2016



Allez jusqu'au bout du traitement ?

thebmj

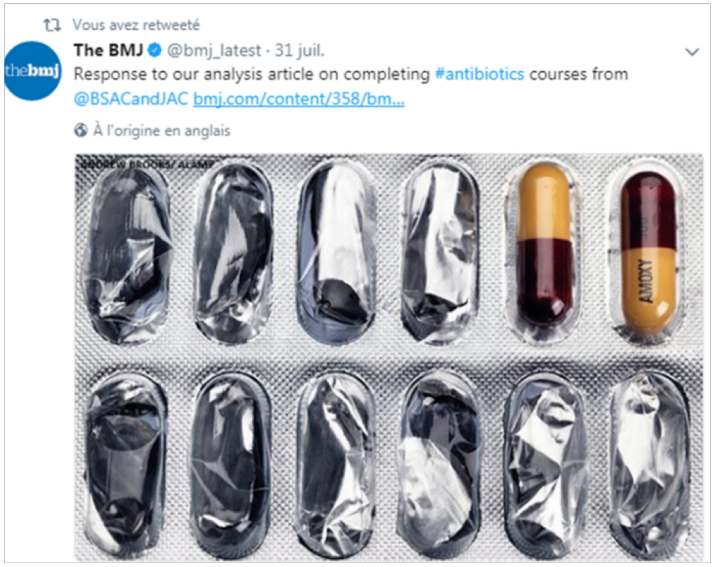
BMJ 2017;358:j3418 doi: 10.1136/bmj.j3418 (Published 2017 July 26) Page 1 of 5

ANALYSIS

The antibiotic course has had its day

With little evidence that failing to complete a prescribed antibiotic course contributes to antibiotic resistance, it's time for policy makers, educators, and doctors to drop this message, argue **Martin Llewelyn and colleagues**

Martin J Llewelyn *professor of infectious diseases*[1 2], Jennifer M Fitzpatrick *specialist registrar in infection*[2], Elizabeth Darwin *project manager*[3], SarahTonkin-Crine *health psychologist*[4], Cliff Gorton *retired building surveyor*[5], John Paul *consultant in microbiology*[6], Tim E A Peto *professor of infectious diseases*[7], Lucy Yardley *professor of health psychology*[8], Susan Hopkins *consultant in infectious diseases and microbiology*[9], Ann Sarah Walker *professor of medical statistics and epidemiology*[3]



resistance. For example, in materials supporting Antibiotic Awareness Week 2016 WHO advised patients to "always complete the full prescription, even if you feel better, because stopping treatment early promotes the growth of drug-resistant bacteria."[4] Similar advice appears in national campaigns in

Changement de paradigme !!

Conclusions

- Quand peut on arrêter un traitement antibiotique ?

Infection respiratoire : quand/dés que « ça va mieux »

« Less is more»

Robert Browning

More or less…

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  - Jacques Ropers, Philippe Aegerter, Idir Ghout (biostatistics)
- Independent committee
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  - Agnès Lefort
  - Raphaël Porcher
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MERCI DE VOTRE ATTENTION