Pneumonies aiguës communautaires: corticothérapie pour tout le monde?

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Conflits d'intérêts

- Personnels (3 dernières années)
  - AdvanzPharma, Merck, Pfizer
- Financement recherche
  - Merck, Eumedica

sone plus Fludrocortisone
with Septic Shock
ault, C. Brun-Buisson,

Dexamethasone treatment for ion laryngeal oedema:

syndrome: a multicentre, r

D. An

f pos

Vasopressin, Epinep

for In-Hospital Ca

12-

for pre

a random

ne in Hospitalized Patients with Covid-19

THE RECOVERY Collaborative Group*

Intensive Care Med

atory distress

olled trial

Lancet Respir Med 2020

Prehospital high-dose methylprednisolone
in resuscitated out-of-hospital cardiac arrest
patients (STEROHCA): a randomized clinical trial

rest

ud Corticosteroids

ethylprednisolone versus placebo

Corticosteroids in Patients Hospitalized With Community-Acquired Pneumonia: Systematic Review and Individual Patient Data Metaanalysis

Matthias Briel,[1,2,a] Simone M. C. Spoorenberg,[3,a] Dominic Snijders,[4] Antoni Torres,[5] Silvia Fernandez-Serrano,[6] G. Umberto Meduri,[7,8] Albert Gabarrús,[5] Claudine A. Blum,[9,10] Marco Confalonieri,[7] Benjamin Kasenda,[1] Reed A.C. Siemieniuk,[2,11] Wim Boersma,[12] Willem Jan W. Bos,[3,a] Mirjam Christ-Crain,[9,a]; for the Ovidius Study Group, Capisce Study Group, and STEP Study Group[b]

Clinical Infectious Diseases® 2018;66(3):346–54

Table 3. Primary and Secondary Outcomes at 30 days After Randomization Using Random Intercepts for Included Trials

Outcome	Corticosteroid (n = 748)	Placebo (n = 758)	Intention-to-Treat Regression analysis, OR or Coefficient (95% Confidence Interval), *P* Value
Primary			
All-cause mortality, no. (%)	37 (5.0)	45 (5.9)	OR 0.75 (0.46 to 1.21), *P* = .24
Secondary			
Secondary intensive care unit admission, no. (%)[a]	38 (5.6)	43 (6.3)	OR 0.74 (0.45 to 1.21), *P* = .23
Length of hospital stay, days	7.0 (5.0–11.0)	8.0 (5.0–12.0)	−1.15 days (−1.75 to −0.55), *P* < .001
Time to clinical stability, days[b]	3.0 (2.0–5.4)	4.0 (2.5–7.0)	−1.03 days (−1.62 to −0.43), *P* = .001
Intravenous antibiotic treatment, days[c]	4.0 (3.0–6.0)	5.0 (3.0–7.0)	−0.62 days (−1.07 to −0.16), *P* = .01
Early (≤72 hours) treatment failure, no. (%)[d]	40 (5.7)	45 (6.4)	OR 0.84 (0.53 to 1.34), *P* = .47
Late (>72 hours) treatment failure, no. (%)[d]	67 (9.5)	66 (9.3)	OR 0.97 (0.67 to 1.40), *P* = .86
Community-acquired pneumonia–related rehospitalization, no. (%)[e]	33 (5.0)	18 (2.7)	OR 1.85 (1.03 to 3.32), *P* = .04
Nosocomial infections, no. (%)	33 (4.4)	25 (3.3)	OR 1.31 (0.77 to 2.24), *P* = .32
Hyperglycaemia requiring insulin, no. (%)[f]	160 (22.1)	88 (12.0)	OR 2.15 (1.60 to 2.90), *P* < .001
Empyema/complicated parapneumonic effusion, no. (%)	12 (1.6)	14 (1.9)	OR 0.90 (0.41 to 1.96), *P* = .79
Gastrointestinal bleeding, no. (%)	5 (0.7)	5 (0.7)	OR 0.95 (0.27 to 3.33), *P* = .93
Neuropsychiatric complications, no. (%)	6 (0.8)	2 (0.3)	OR 2.98 (0.60 to 14.9), *P* = .18

Hydrocortisone in Severe Community-Acquired Pneumonia

P.-F. Dequin, F. Meziani, J.-P. Quenot, T. Kamel, J.-D. Ricard, J. Badie, J. Reignier, N. Heming, G. Plantefève, B. Souweine, G. Voiriot, G. Colin, J.-P. Frat, J.-P. Mira, N. Barbarot, B. François, G. Louis, S. Gibot, C. Guitton, C. Giacardi, S. Hraiech, S. Vimeux, E. L'Her, H. Faure, J.-E. Herbrecht, C. Bouisse, A. Joret, N. Terzi, A. Gacouin, C. Quentin, M. Jourdain, M. Leclerc, C. Coffre, H. Bourgoin, C. Lengellé, C. Caille-Fénérol, B. Giraudeau, and A. Le Gouge, for the CRICS-TriGGERSep Network*

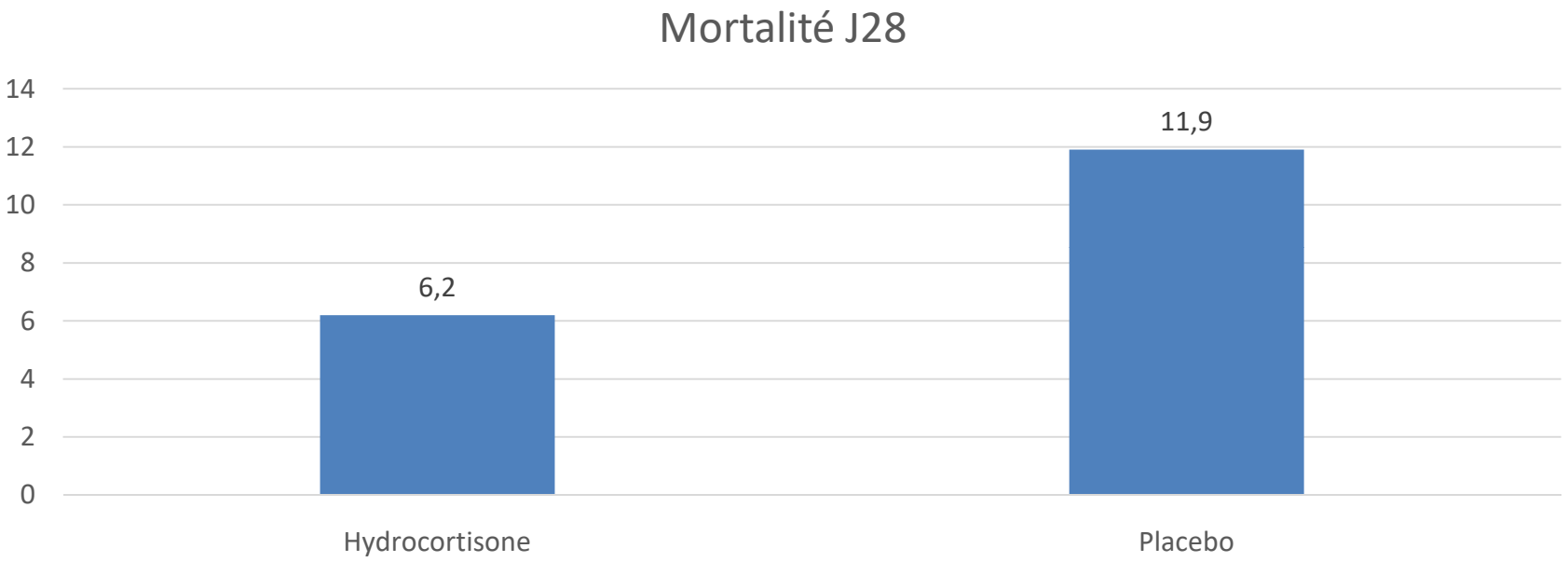
- Patients hospitalisés en réanimation avec une pneumonie sévère
  - Ventilation mécanique
  - Oxygène à haut débit ou masque avec PaO2/FiO2 <300 mmHg
  - Score de Fine >130
- Randomisés pour recevoir hydrocortisone 200 mg/j pendant 8 à 14 j
- Exclusion des pneumonies virales

N Engl J Med 2023;388:1931-41.

Hydrocortisone in Severe Community-Acquired Pneumonia

P.-F. Dequin, F. Meziani, J.-P. Quenot,

N Engl J Med 2023;388:1931-41.



N = 400

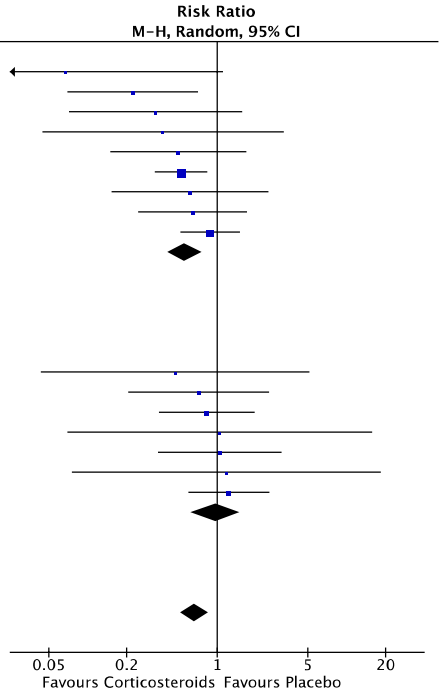
N = 395

Efficacy and Safety of Corticosteroid Therapy for Community-Acquired Pneumonia: A Meta-Analysis and Meta-Regression of Randomized, Controlled Trials

Felix Bergmann,[1,2] Lena Pracher,[1] Rebecca Sawodny,[1] Amelie Blaschke,[1] Georg Gelbenegger,[1] Christine Radtke,[1,2] Markus Zeitlinger,[1] and Anselm Jorda[1]

Clinical Infectious Diseases® 2023;77(12):1704–13

Study or Subgroup	Corticosteroids Events	Total	Placebo Events	Total	Weight	Risk Ratio M-H, Random, 95% CI
18.1.1 Severe CAP						
Confalonieri et al (2005)	0	23	7	23	0.7%	0.07 [0.00, 1.10]
Nafae et al (2013)	4	60	6	20	4.3%	0.22 [0.07, 0.71]
Sabry et al (2011)	2	40	6	40	2.5%	0.33 [0.07, 1.55]
Marik et al (1993)	1	14	3	16	1.3%	0.38 [0.04, 3.26]
El-Ghamrawy et al (2006)	3	17	6	17	4.0%	0.50 [0.15, 1.68]
Dequin et al (2023)	25	400	47	395	26.9%	0.53 [0.33, 0.84]
Wittermans et al (2021)	3	77	5	79	3.0%	0.62 [0.15, 2.49]
Torres et al (2015)	6	61	9	59	6.2%	0.64 [0.24, 1.70]
Meduri et al (2022)	23	111	20	85	20.8%	0.88 [0.52, 1.49]
Subtotal (95% CI)		**803**		**734**	**69.6%**	**0.56 [0.41, 0.76]**
Total events	67		109			
Heterogeneity: $Tau^2 = 0.01$; $Chi^2 = 8.35$, df = 8 (P = 0.40); $I^2 = 4\%$						
Test for overall effect: Z = 3.69 (P = 0.0002)						
18.1.2 Less severe CAP						
Wittermans et al (2021)	1	126	2	119	1.0%	0.47 [0.04, 5.14]
McHardy et al (1972)	3	40	9	86	3.7%	0.72 [0.20, 2.51]
Meijvis et al (2011)	9	151	11	153	8.0%	0.83 [0.35, 1.94]
Fernández-Serrano et al (2011)	1	22	1	23	0.8%	1.05 [0.07, 15.70]
Snijders et al (2010)	6	104	6	109	4.8%	1.05 [0.35, 3.15]
Wagner et al (1956)	1	52	1	61	0.8%	1.17 [0.08, 18.30]
Blum et al (2015)	16	392	13	392	11.3%	1.23 [0.60, 2.52]
Subtotal (95% CI)		**887**		**943**	**30.4%**	**0.97 [0.63, 1.51]**
Total events	37		43			
Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 1.17$, df = 6 (P = 0.98); $I^2 = 0\%$						
Test for overall effect: Z = 0.12 (P = 0.91)						
Total (95% CI)		**1690**		**1677**	**100.0%**	**0.67 [0.53, 0.85]**
Total events	104		152			
Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 13.50$, df = 15 (P = 0.56); $I^2 = 0\%$						
Test for overall effect: Z = 3.26 (P = 0.001)						
Test for subgroup differences: $Chi^2 = 4.07$, df = 1 (P = 0.04), $I^2 = 75.4\%$						

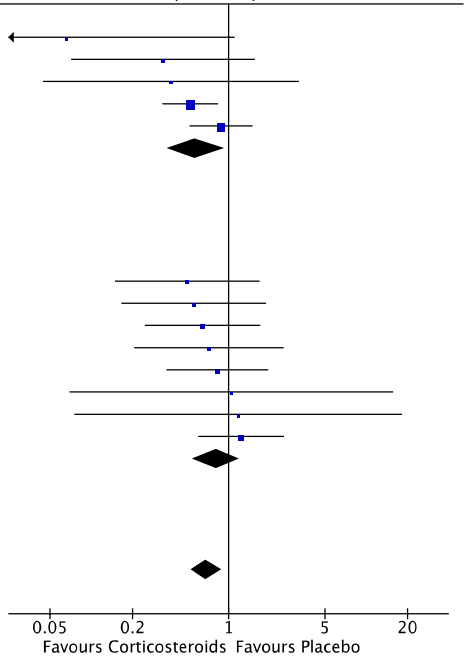


Efficacy and Safety of Corticosteroid Therapy for Community-Acquired Pneumonia: A Meta-Analysis and Meta-Regression of Randomized, Controlled Trials

Felix Bergmann,[1,2] Lena Pracher,[1] Rebecca Sawodny,[1] Amelie Blaschke,[1] Georg Gelbenegger,[1] Christine Radtke,[1,2] Markus Zeitlinger,[1] and Anselm Jorda[1]

Clinical Infectious Diseases® 2023;77(12):1704–13

Study or Subgroup	Corticosteroids Events	Total	Placebo Events	Total	Weight	Risk Ratio M-H, Random, 95% CI
17.1.1 ICU						
Confalonieri et al (2005)	0	23	7	23	0.8%	0.07 [0.00, 1.10]
Sabry et al (2011)	2	40	6	40	2.7%	0.33 [0.07, 1.55]
Marik et al (1993)	1	14	3	16	1.4%	0.38 [0.04, 3.26]
Dequin et al (2023)	25	400	47	395	29.6%	0.53 [0.33, 0.84]
Meduri et al (2022)	23	111	20	85	22.9%	0.88 [0.52, 1.49]
Subtotal (95% CI)		**588**		**559**	**57.4%**	**0.57 [0.35, 0.93]**
Total events	51		83			
Heterogeneity: $Tau^2 = 0.08$; $Chi^2 = 5.65$, df = 4 (P = 0.23); $I^2 = 29\%$						
Test for overall effect: Z = 2.24 (P = 0.03)						
17.1.2 Non-ICU						
El-Ghamrawy et al (2006)	3	17	6	17	4.4%	0.50 [0.15, 1.68]
Wittermans et al (2021)	4	203	7	198	4.4%	0.56 [0.17, 1.87]
Torres et al (2015)	6	61	9	59	6.8%	0.64 [0.24, 1.70]
McHardy et al (1972)	3	40	9	86	4.1%	0.72 [0.20, 2.51]
Meijvis et al (2011)	9	151	11	153	8.8%	0.83 [0.35, 1.94]
Fernández-Serrano et al (2011)	1	22	1	23	0.9%	1.05 [0.07, 15.70]
Wagner et al (1956)	1	52	1	61	0.8%	1.17 [0.08, 18.30]
Blum et al (2015)	16	392	13	393	12.4%	1.23 [0.60, 2.53]
Subtotal (95% CI)		**938**		**990**	**42.6%**	**0.81 [0.55, 1.20]**
Total events	43		57			
Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 2.65$, df = 7 (P = 0.92); $I^2 = 0\%$						
Test for overall effect: Z = 1.04 (P = 0.30)						
Total (95% CI)		**1526**		**1549**	**100.0%**	**0.69 [0.53, 0.89]**
Total events	94		140			
Heterogeneity: $Tau^2 = 0.00$; $Chi^2 = 9.40$, df = 12 (P = 0.67); $I^2 = 0\%$						
Test for overall effect: Z = 2.89 (P = 0.004)						
Test for subgroup differences: $Chi^2 = 1.21$, df = 1 (P = 0.27), $I^2 = 17.1\%$						



Hydrocortisone in Severe Community-Acquired Pneumonia

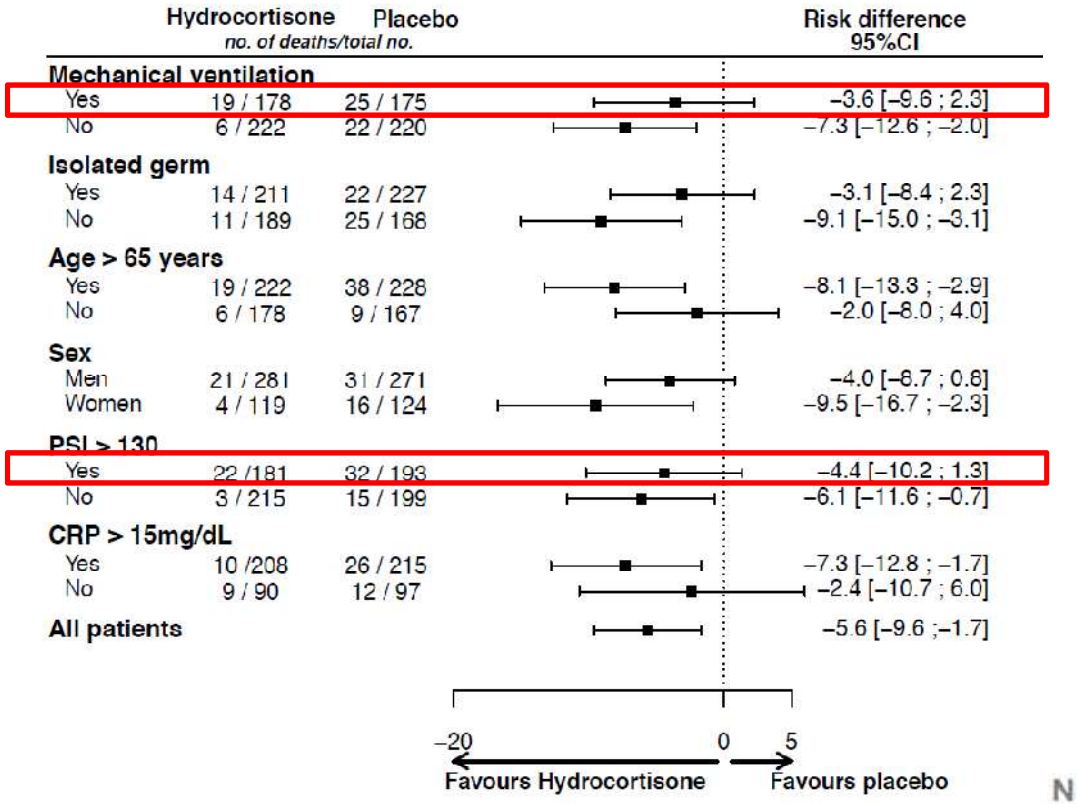
P.-F. Dequin, F. Meziani, J.-P. Quenot,

N Engl J Med 2023;388:1931-41.

Characteristic	Hydrocortisone (N=400)	Placebo (N=395)
Type of respiratory support — no. (%)		
Mechanical ventilation	178 (44.5)	175 (44.3)
Invasive	92 (23.0)	85 (21.5)
Noninvasive	86 (21.5)	90 (22.8)
High-flow nasal cannula	169 (42.2)	162 (41.0)
Nonrebreathing mask	53 (13.2)	58 (14.7)
Median SOFA score (IQR)§	4 (3–6)	4 (3–6)
Treatment with vasopressors — no. (%)	41 (10.2)	51 (12.9)

Hydrocortisone in Severe Community-Acquired Pneumonia

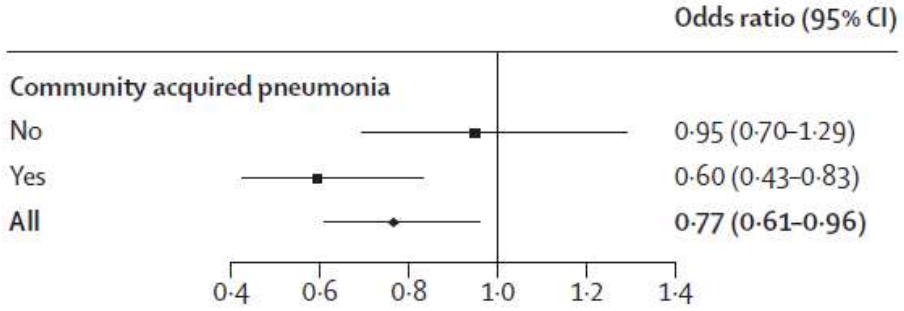
P.-F. Dequin, F. Meziani, J.-P. Quenot,



N Engl J Med 2023;388:1931-41.

Hydrocortisone plus fludrocortisone for community acquired pneumonia-related septic shock: a subgroup analysis of the APROCCHSS phase 3 randomised trial

*Nicholas Heming, Alain Renault, Emmanuelle Kuperminc, Christian Brun-Buisson, Bruno Megarbane, Jean-Pierre Quenot, Shidasp Siami, Alain Cariou, Xavier Forceville, Carole Schwebel, Marc Leone, Jean-Francois Timsit, Benoît Misset, Mohamed Ali Benali, Gwenhael Colin, Bertrand Souweine, Karim Asehnoune, Emmanuelle Mercier, Loïc Chimot, Claire Charpentier, Bruno François, Thierry Boulain, Frank Petitpas, Jean Michel Constantin, Gilles Dhonneur, François Baudin, Alain Combes, Julien Bohé, Jean-François Loriferne, Fabrice Cook, Michel Slama, Olivier Leroy, Gilles Capellier, Auguste Dargent, Tarik Hissem, Rania Bounab, Virginie Maxime, Pierre Moine, Eric Bellissant, Djillali Annane for the APROCCHSS investigators and CRICS-TRIGGERSEP network**

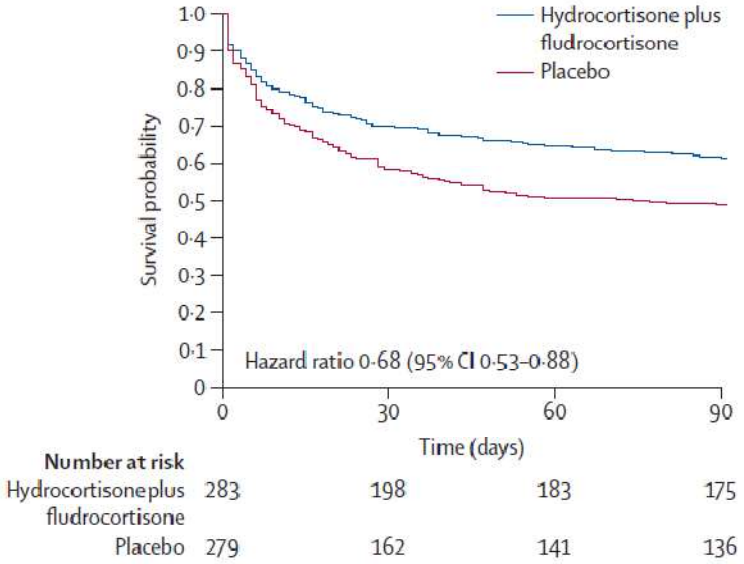


Choc septique avec 2 défaillances d'organe

=

Score SOFA 3 ou 4 pour l'organe considéré

Lancet Respir Med 2024; 12: 366–74



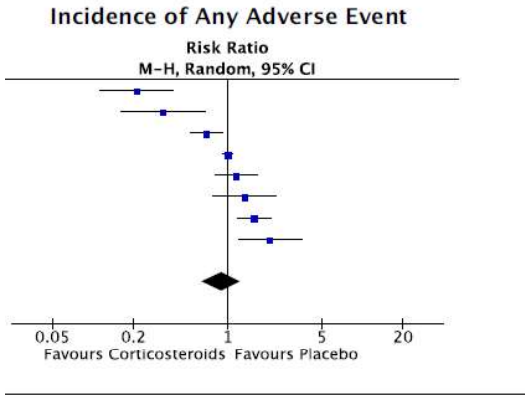
En résumé

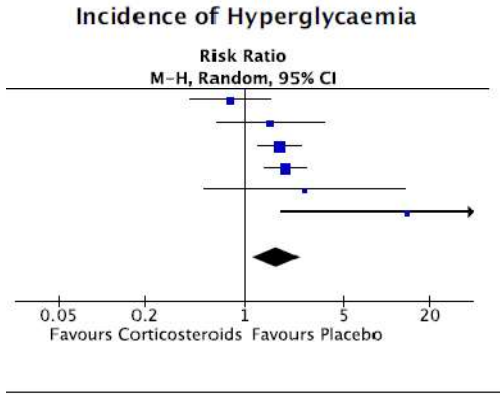
- Oui si malade hospitalisé en réanimation (PAC sévères)
  - Il reste (peut-être) un point d'interrogation chez les malades ventilés n'ayant pas les critères d'APPROCHSS (choc septique avec 2 défaillances d'organes)
- Probablement non si malade non grave

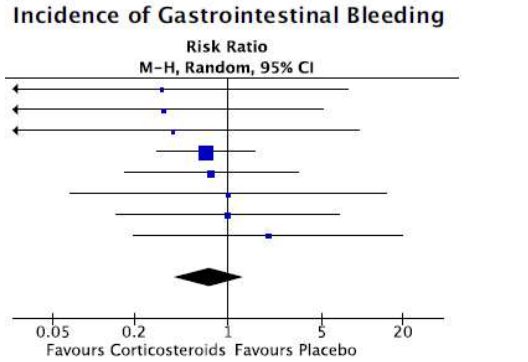
Efficacy and Safety of Corticosteroid Therapy for Community-Acquired Pneumonia: A Meta-Analysis and Meta-Regression of Randomized, Controlled Trials

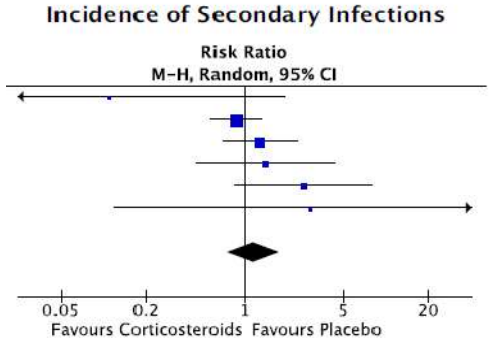
Felix Bergmann,[1,2] Lena Pracher,[1] Rebecca Sawodny,[1] Amelie Blaschke,[1] Georg Gelbenegger,[1] Christine Radtke,[1,2] Markus Zeitlinger,[1] and Anselm Jorda[1]

Clinical Infectious Diseases® 2023;77(12):1704–13









Corticoïdes et pneumonies virales

Une idée de génie!

- Réduit l'inflammation… donc les lésions pulmonaires
- Immunomodulateur
- Ça marche dans le Covid (enfin pas tout le temps)… alors pourquoi pas dans les autres viroses?

Quelle drôle d'idée!

- Ce sont des immunosuppresseurs
- L'immunité est la seule défense réellement efficace contre les virus

Prolonged viral shedding in pandemic influenza A(H1N1): clinical significance and viral load analysis in hospitalized patients

TABLE 1. Comparison of hospitalized patients with pandemic influenza A(H1N1) who presented prolonged viral shedding (PVS) and those who did not

	Patients with PVS, *N* = 16 (25%)	Patients without PVS, *N* = 48 (75%)	p	OR (95% CI)	p
Risk groups					
ICU	11 (68.8)	16 (33.3)	**0.02**		
Immunocompromised	8 (50)	13 (27.1)	0.12	5.15 (1.2-22.2)	**0.03**
Treatment					
Days of illness at initiation of treatment (median, IQR)	2.5, 0–5	2, 0–4	0.48		
Oseltamivir 75 mg/12 h	7 (43.8)	35 (72.9)	0.06		
Oseltamivir 150 mg/12 h	**10 (62.5)**	**13 (27.1)**	**0.016**		
Antibiotic treatment	16 (100)	40 (83.3)	0.18		
Corticosteroids	**8 (50)**	**10 (20.8)**	**0.05**		
Inotropic support	3 (18.8)	2 (4.2)	0.09		
Oxygen supplementation	8 (50)	14 (29.2)	0.14		
Mechanical ventilation	**8 (50)**	**6 (12.5)**	**0.004**	11.7 (2.5-54.4)	**0.002**

Clin Microbiol Infect 2011; **17:** 1160–1165

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Use of early corticosteroid therapy on ICU admission in patients affected by severe pandemic (H1N1)v influenza A infection

I. Martin-Loeches
T. Lisboa
A. Rhodes
R. P. Moreno
E. Silva
C. Sprung
J. D. Chiche
D. Barahona
M. Villabon
C. Balasini
R. M. Pearse
R. Matos
J. Rello

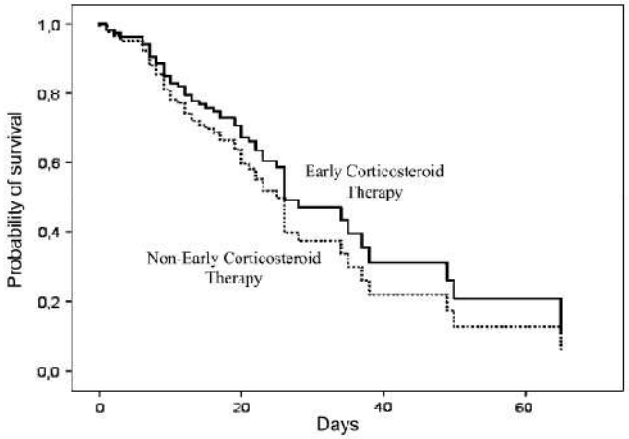


Fig. 1 Survival graph for patients with severe pandemic (H1N1)v influenza A infection with or without early corticosteroid therapy on ICU admission (censored at 60 days)

- 220 grippes graves, dont 126 qui ont reçu des corticoïdes précocement (>30 mg prednisone)
- En analyse multivariée, utilisation corticoïdes associés à un risque plus élevé de pneumonies acquises à l'hôpital (OR 2.2, IC 95% 1.0-4.8)

Intensive Care Med (2011) 37:272–283

Invasive pulmonary aspergillosis is a frequent complication of critically ill H1N1 patients: a retrospective study

Joost Wauters
Ingrid Baar
Philippe Meersseman
Wouter Meersseman
Karolien Dams
Rudi De Paep
Katrien Lagrou
Alexander Wilmer
Philippe Jorens
Greet Hermans

Intensive Care Med (2012) 38:1761–1768

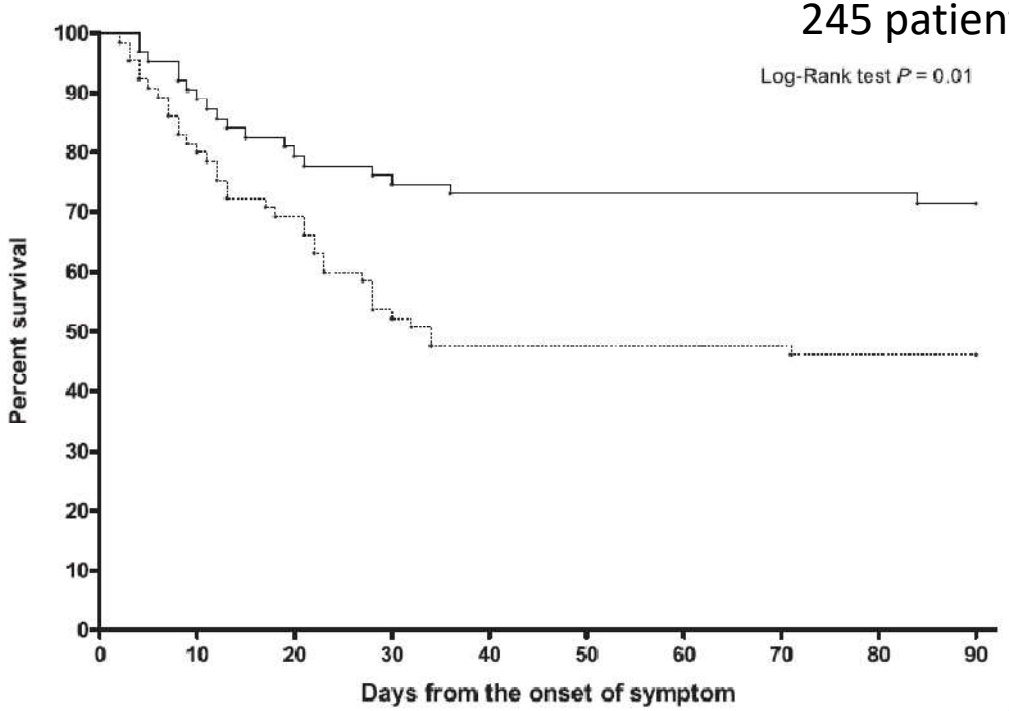
	All patients ($n = 40$)	IPA ($n = 9$)	No IPA ($n = 31$)	p
Studied risk factors				
CS 7 days before ICU, n (%)[a]	14/40 (35)	7/9 (78)	7/31 (23)	0.002*
Cumulative dose CS 7 days before ICU (mg)	0 (0–543)	800 (360–2635)	0 (0–0)	0.005*

Corticosteroid Treatment in Critically Ill Patients with Pandemic Influenza A/H1N1 2009 Infection

Analytic Strategy Using Propensity Scores

Sung-Han Kim[1], Sang-Bum Hong[2], Sung-Choel Yun[3], Won-Il Choi[4], Jong-Joon Ahn[5], Young Joo Lee[6], Heung-Bum Lee[7], Chae-Man Lim[2], and Younsuck Koh[2]; for the Korean Society of Critical Care Medicine H1N1 Collaborative*

245 patients avec pneumonie grippale



Sans corticoïdes

Avec corticoïdes

Am J Respir Crit Care Med Vol 183. pp 1207–1214, 2011

Early Corticosteroids in Severe Influenza A/H1N1 Pneumonia and Acute Respiratory Distress Syndrome

Christian Brun-Buisson[1,2,3], Jean-Christophe M. Richard[4], Alain Mercat[5], Anne C. M. Thiébaut[3,6], and Laurent Brochard[1,2,7], for the REVA-SRLF A/H1N1v 2009 Registry Group*

TABLE 5. COX REGRESSION ANALYSIS OF SURVIVAL IN 208 PATIENTS WITH ADULT RESPIRATORY DISTRESS SYNDROMEASSOCIATED WITH INFLUENZA A/H1N1V 2009 INFECTION

Variable	aHR	95% CI	*P* Value
Immunodepression	2.17	1.15–4.09	0.02
SAPS 3 score > 50	2.80	1.38–5.66	0.004
Vasopressors*	1.98	0.90–4.32	0.09
Corticosteroid therapy†	2.59	1.42–4.73	0.002

Am J Respir Crit Care Med Vol 183. pp 1200–1206, 2011

Clinical Practice Guidelines by the Infectious Diseases Society of America: 2018 Update on Diagnosis, Treatment, Chemoprophylaxis, and Institutional Outbreak Management of Seasonal Influenza[a]

Timothy M. Uyeki,[1] Henry H. Bernstein,[2] John S. Bradley,[3,4] Janet A. Englund,[5] Thomas M. File Jr,[6] Alicia M. Fry,[1] Stefan Gravenstein,[7] Frederick G. Hayden,[8] Scott A. Harper,[9] Jon Mark Hirshon,[10] Michael G. Ison,[11] B. Lynn Johnston,[12] Shandra L. Knight,[13] Allison McGeer,[14] Laura E. Riley,[15] Cameron R. Wolfe,[16] Paul E. Alexander,[17,18] and Andrew T. Pavia[19]

Should Adjunctive Therapy Be Administered to Patients With Suspected or Confirmed Influenza?

Recommendations

30. Clinicians should not administer corticosteroid adjunctive therapy for the treatment of adults or children with suspected or confirmed seasonal influenza, influenza-associated pneumonia, respiratory failure, or ARDS, unless clinically indicated for other reasons *(A-III)*.

Asthme, BPCO, choc septique

Clinical Infectious Diseases® 2019;68(6):e1–47

Diagnosis and Treatment of Adults with Community-acquired Pneumonia

An Official Clinical Practice Guideline of the American Thoracic Society and Infectious Diseases Society of America

Question 12: In the Inpatient Setting, Should Adults with CAP Be Treated with Corticosteroids?

Recommendation. We recommend not routinely using corticosteroids in adults with nonsevere CAP (strong recommendation, high quality of evidence).

We suggest not routinely using corticosteroids in adults with severe CAP (conditional recommendation, moderate quality of evidence).

We suggest not routinely using corticosteroids in adults with severe influenza pneumonia (conditional recommendation, low quality of evidence).

We endorse the Surviving Sepsis Campaign recommendations on the use of corticosteroids in patients with CAP and refractory septic shock (169).

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What's new with glucocorticoids in severe community-acquired pneumonia?

Pierre-François Dequin[1,2,3*], Julio A. Ramirez[4,5] and Grant Waterer[6,7,8]

[13, 14]. Given these data and available recommendations [1, 2], patients with influenza should not be given steroids unless there is some other indication. Good-quality trials are still needed in this field [14].

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Conclusion

- Corticoïdes pour tout le monde?
  - Non chez les malades non hospitalisés en réanimation
  - Malades hospitalisés en réanimation
    - Oui chez les patients sans VM invasive
    - Oui chez les patients ayant les critères d'APPROCHSS (choc septique avec 2 défaillances d'organes), ventilés ou non
    - Chez les patients ayant une VM invasive sans critères d'APPROCHSS ?
    - Rapport bénéfice/risque est plus en faveur de l'utilisation des corticoïdes

Conclusion

- Non chez les malades ayant une pneumonie virale (hors COVID-19)
- Chez les malades ayant pneumonie virale (grippe) avec choc septique sur co-infection bactérienne?
  - Discuter balance bénéfice/risque

Conclusion

- Quel glucocorticoïde utiliser ?
- Hydrocortisone
  - 200 mg/j
  - IVSE (CAPE-COD)
  - Durant 8 jours si évolution favorable
  - Sinon 14 jours

Merci !!

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