Uso Racional de Antimicrobianos en Pacientes Covid-19

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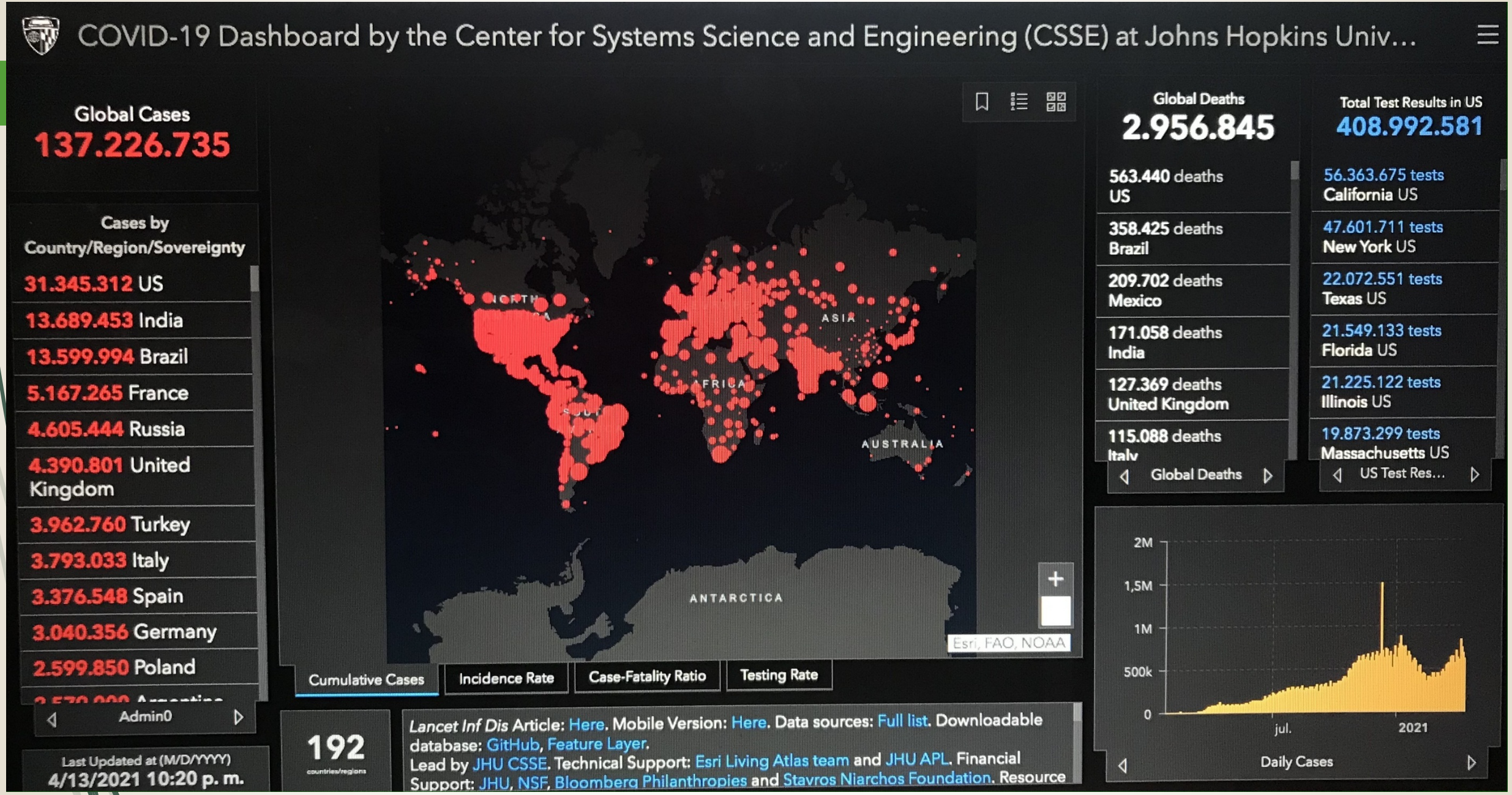

COVID-19 Dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins Univ…
Global Cases
137.226.735
Cases by Country/Region/Sovereignty
31.345.312 US
13.689.453 India
13.599.994 Brazil
5.167.265 France
4.605.444 Russia
4.390.801 United Kingdom
3.962.760 Turkey
3.793.033 Italy
3.376.548 Spain
3.040.356 Germany
2.599.850 Poland
Admin0
Last Updated at (M/D/YYYY)
4/13/2021 10:20 p. m.
192
countries/regions
ASIA
AFRICA
AUSTRALIA
ANTARCTICA
Esri, FAO, NOAA
Cumulative Cases
Incidence Rate
Case-Fatality Ratio
Testing Rate
Lancet Inf Dis Article: Here. Mobile Version: Here. Data sources: Full list. Downloadable database: GitHub, Feature Layer.
Lead by JHU CSSE. Technical Support: Esri Living Atlas team and JHU APL. Financial Support: JHU, NSF, Bloomberg Philanthropies and Stavros Niarchos Foundation. Resource
Global Deaths
2.956.845
563.440 deaths US
358.425 deaths Brazil
209.702 deaths Mexico
171.058 deaths India
127.369 deaths United Kingdom
115.088 deaths Italy
Global Deaths
Total Test Results in US
408.992.581
56.363.675 tests California US
47.601.711 tests New York US
22.072.551 tests Texas US
21.549.133 tests Florida US
21.225.122 tests Illinois US
19.873.299 tests Massachusetts US
US Test Res…
2M
1,5M
1M
500k
0
jul.
2021
Daily Cases

Infección SARS-CoV-2

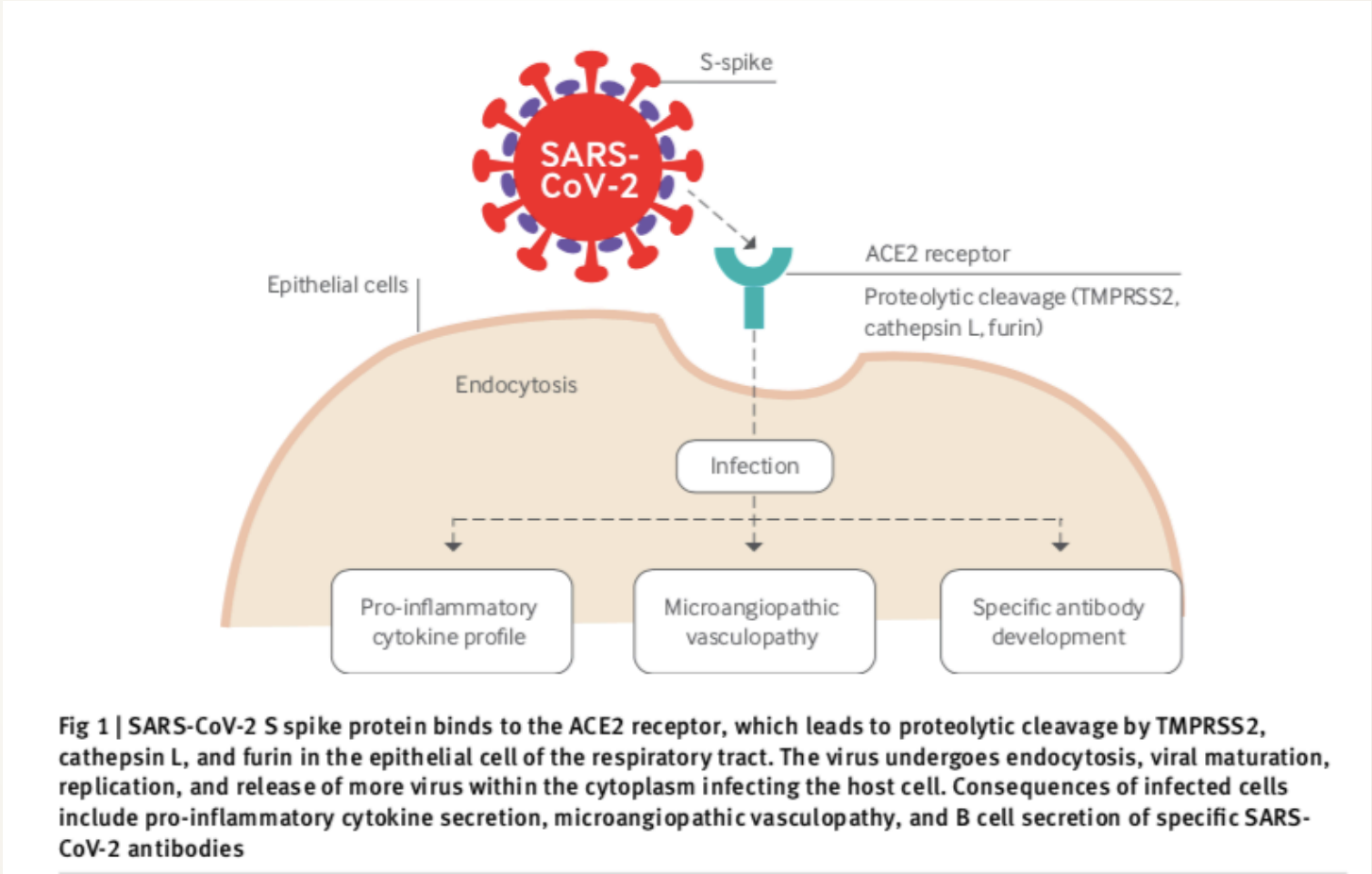
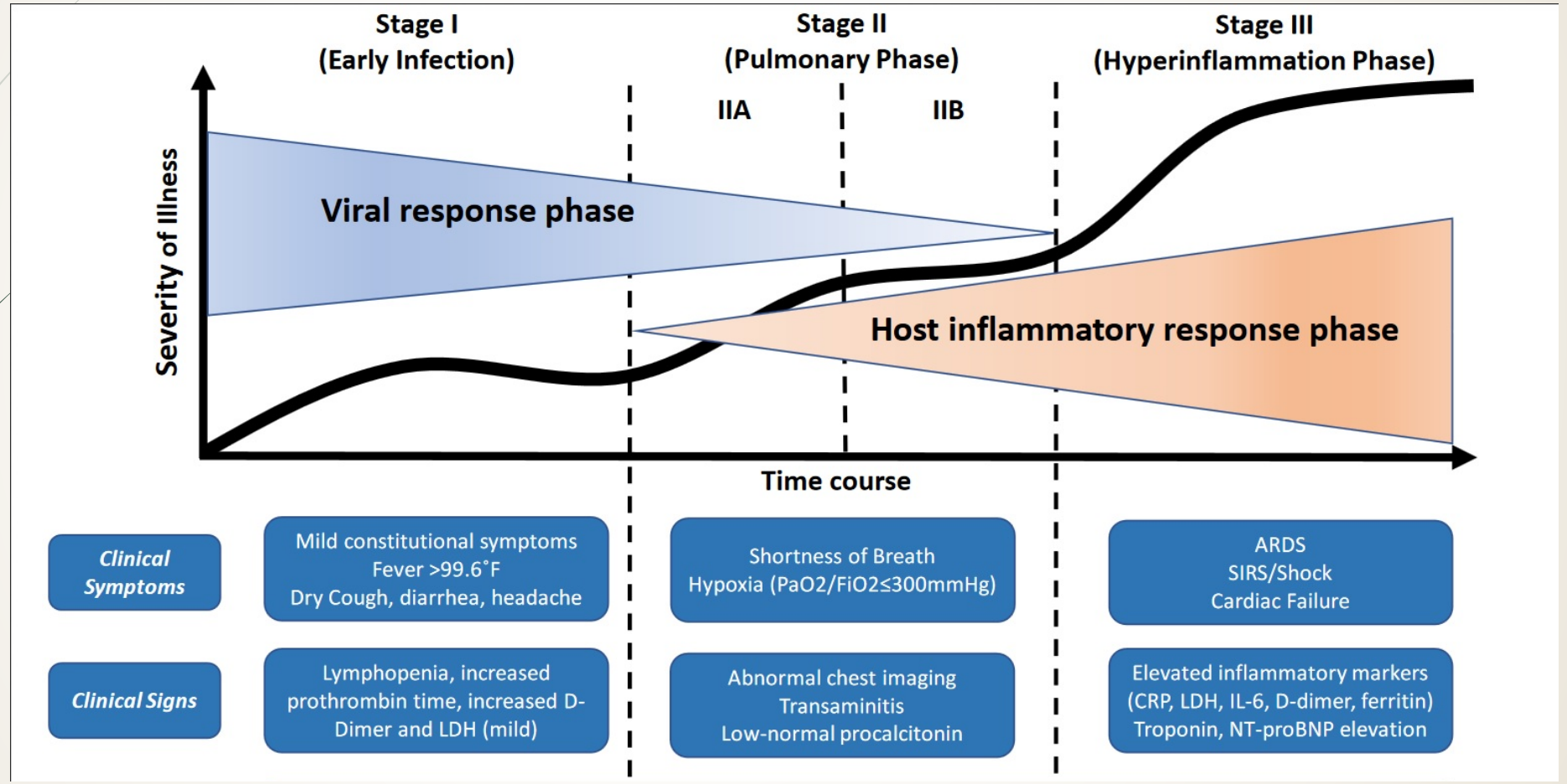


Fig 1 | SARS-CoV-2 S spike protein binds to the ACE2 receptor, which leads to proteolytic cleavage by TMPRSS2, cathepsin L, and furin in the epithelial cell of the respiratory tract. The virus undergoes endocytosis, viral maturation, replication, and release of more virus within the cytoplasm infecting the host cell. Consequences of infected cells include pro-inflammatory cytokine secretion, microangiopathic vasculopathy, and B cell secretion of specific SARS-CoV-2 antibodies

Attaway A et al. Severe covid-19 pneumonia: pathogenesis and clinical management. *BMJ* 2021;372:n436. http://dx.doi.org/10.1136/bmj.n436

COVID-19


Stage I
(Early Infection)
Stage II
(Pulmonary Phase)
IIA
IIB
Stage III
(Hyperinflammation Phase)
Severity of Illness
Viral response phase
Host inflammatory response phase
Time course
Clinical Symptoms
Mild constitutional symptoms
Fever >99.6˚F
Dry Cough, diarrhea, headache
Shortness of Breath
Hypoxia (PaO2/FiO2≤300mmHg)
ARDS
SIRS/Shock
Cardiac Failure
Clinical Signs
Lymphopenia, increased prothrombin time, increased D-Dimer and LDH (mild)
Abnormal chest imaging
Transaminitis
Low-normal procalcitonin
Elevated inflammatory markers
(CRP, LDH, IL-6, D-dimer, ferritin)
Troponin, NT-proBNP elevation

COVID-19: tratamiento

Table 2 | Therapeutic considerations for acute covid-19 by clinical syndrome/disease severity

Clinical scenario	Pharmacologic interventions
Hospitalized for mild to moderate covid-19 (not hypoxemic)	• Supportive care • No clear benefit for remdesivir or convalescent plasma • Steroids have no demonstrated benefit and may cause harm
Hospitalized for severe covid-19, but not critical (hypoxemic needing low flow supplemental oxygen)	• Supportive care • Corticosteroids (dexamethasone 6 mg/day × 10 days or until discharge or an equivalent dose of hydrocortisone or methylprednisolone) • May consider remdesivir • May benefit from use of tocilizumab.
Hospitalized for covid-19 and critically ill (needing HFNC, NIV, IMV, or ECMO)	• Supportive care • Corticosteroids (dexamethasone 6 mg/day × 10 days or until discharge or an equivalent dose of hydrocortisone or methylprednisolone) • May consider remdesivir • May benefit from use of tocilizumab.

Attaway A et al. Severe covid-19 pneumonia: pathogenesis and clinical management. *BMJ* 2021;372:n436. http://dx.doi.org/10.1136/bmj.n436

COVID-19: Secuelas

Table 3 | Post-acute covid-19 complications by system

System	Complications
Physical impairment	• Seen in up to 80% after any critical illness and includes loss of muscle mass, neuromuscular weakness, fatigue, dyspnea, decreased exercise tolerance, joint contractures, and sexual dysfunction.[190-192] • Substantial muscle wasting and neuromuscular weakness are common following non-covid ARDS and can last for months or years,[193] with major risk factors being corticosteroid use and intensive care unit length of stay[194] • Recent study from Italy of covid-19 patients with more than half reporting 3+ persistent symptoms, including fatigue (53%), dyspnea (43%), joint pain (27%), and reductions in quality of life (44%)[195]
Mental health impairment	• For non-covid patients who were in intensive care unit, these include anxiety, depression, or post-traumatic stress disorder (PTSD) in 8% to 57% of cases[196-198] • Can also occur in family members of patients who were in intensive care units (known as PICS-family) • Unique to covid-19 which increase the risk for mental health impairment include social isolation, loneliness, the stigma of the disease, limited hospital visitation policy, and the psychological effect of the pandemic itself[199] • In a study of 402 survivors of covid-19, a significant number of patients reported PTSD (28%), depression (31%), anxiety (42%), obsessive-compulsive symptomatology (20%), and insomnia (40%)[200]
Pulmonary impairment	• Persistent pulmonary symptoms are common after covid-19[195] • In a 3 month follow-up study in China of covid-19 patients (n=55), 71% had radiologic abnormalities including interstitial thickening and fibrosis, and 25% had impaired diffusing capacity for carbon monoxide at three months following discharge[201] • An observational study from China of 51 covid-19 patients showed that 45% had abnormal computed tomography scans four weeks after discharge[202]
Cardiac impairment	• Evidence for long term sequelae from covid-19 has been noted, including evidence of myocardial inflammation on magnetic resonance imaging 12-92 days following infection[203 204]
Neurologic impairment	• While the occurrence of stroke due to covid-19 is relatively rare, other conditions including impairment of consciousness, encephalitis, seizure, encephalopathy, and "brain fog" have been reported 2-3 months after initial illness onset[205-207] • Cognitive impairment is typically seen in 30-80% of patients who were in intensive care and includes memory loss as well as difficulty with concentration, comprehension, and critical thinking[208]

Attaway A et al. Severe covid-19 pneumonia: pathogenesis and clinical management. *BMJ* 2021;372:n436. http://dx.doi.org/10.1136/bmj.n436

Consumo antimicrobianos en Covid-19

Clinical Microbiology and Infection 27 (2021) 520–531

Contents lists available at ScienceDirect

Clinical Microbiology and Infection

journal homepage: www.clinicalmicrobiologyandinfection.com

Systematic review

Antibiotic prescribing in patients with COVID-19: rapid review and meta-analysis

Bradley J. Langford [1,2,*], Miranda So [3,4,5], Sumit Raybardhan [6], Valerie Leung [1,7], Jean-Paul R. Soucy [8], Duncan Westwood [9], Nick Daneman [1,4,9,10], Derek R. MacFadden [11]

154 estudios, con más de 30.000 pacientes
Todos con SARS-CoV-2 confirmados
Incluye adultos y niños
74.6% recibió antibióticos
Coinfección estimada: 8,6%

Systematic review

Antibiotic prescribing in patients with COVID-19: rapid review and meta-analysis

Bradley J. Langford [1, 2, *], Miranda So [3, 4, 5], Sumit Raybardhan [6], Valerie Leung [1, 7], Jean-Paul R. Soucy [8], Duncan Westwood [9], Nick Daneman [1, 4, 9, 10], Derek R. MacFadden [11]

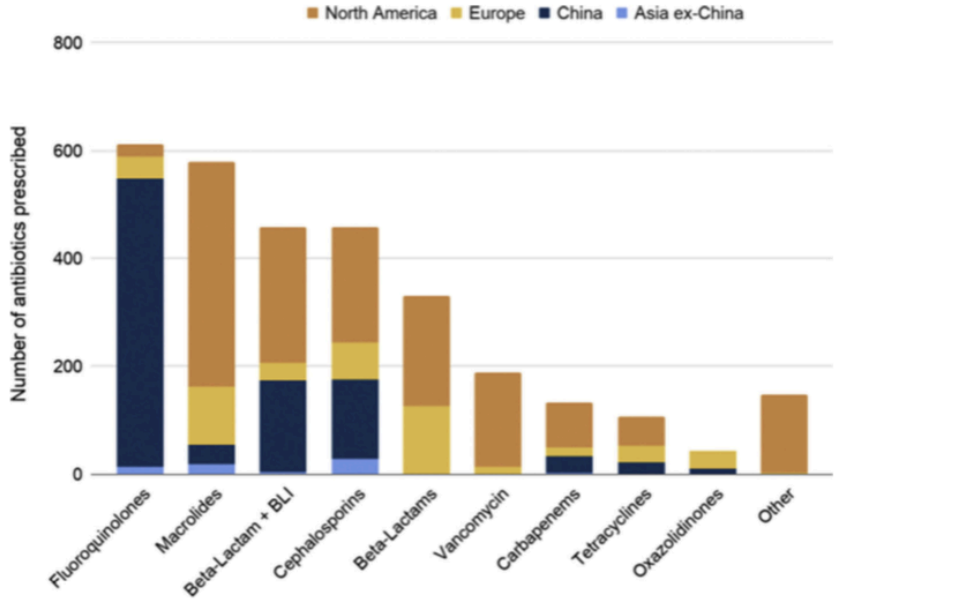


Fig. 2. Classes of antibiotic prescribing in patients with COVID-19 by region. BLI, β-lactamase inhibitor. One course of polymyxins was prescribed in China.

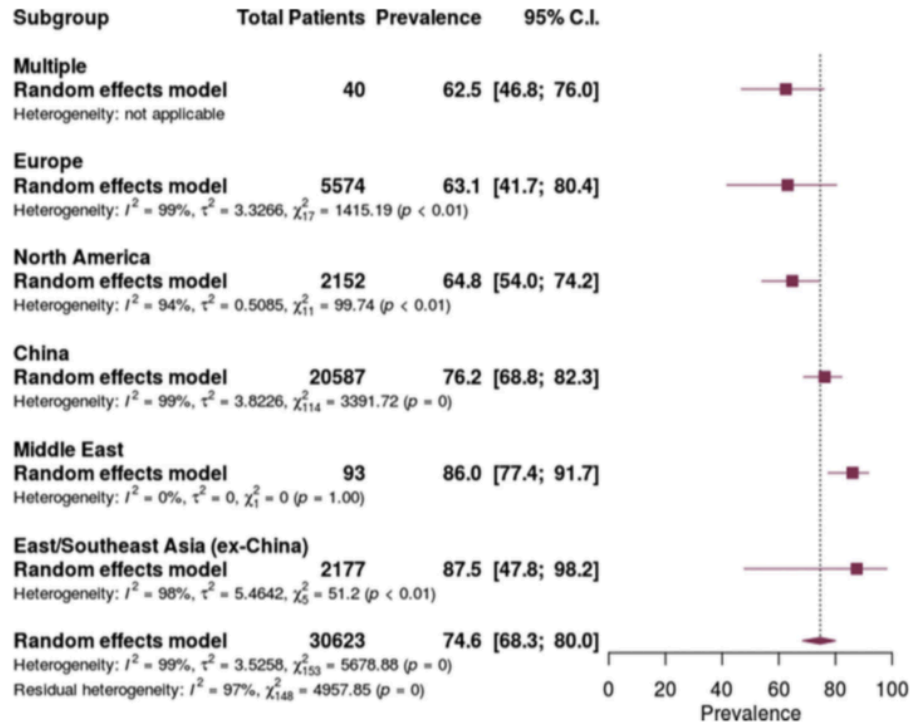


Fig. 3. Antibiotic prescribing in patients with COVID-19 by region.

Systematic review

Antibiotic prescribing in patients with COVID-19: rapid review and meta-analysis

Bradley J. Langford [1, 2, *], Miranda So [3, 4, 5], Sumit Raybardhan [6], Valerie Leung [1, 7], Jean-Paul R. Soucy [8], Duncan Westwood [9], Nick Daneman [1, 4, 9, 10], Derek R. MacFadden [11]

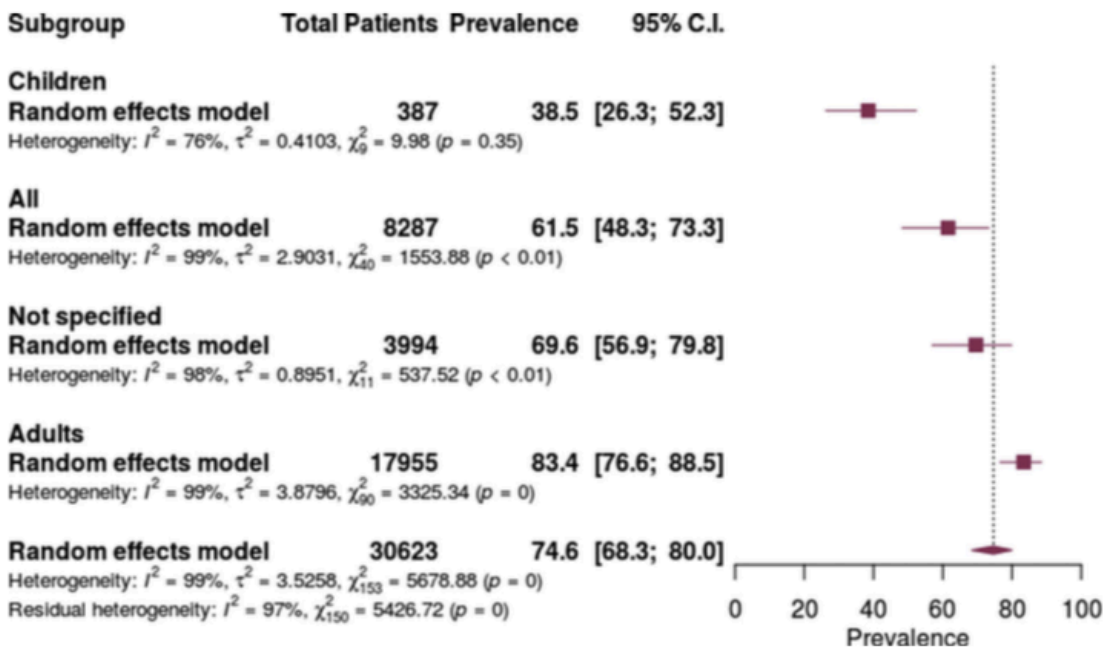


Fig. 4. Antibiotic prescribing in patients with COVID-19 by age group.

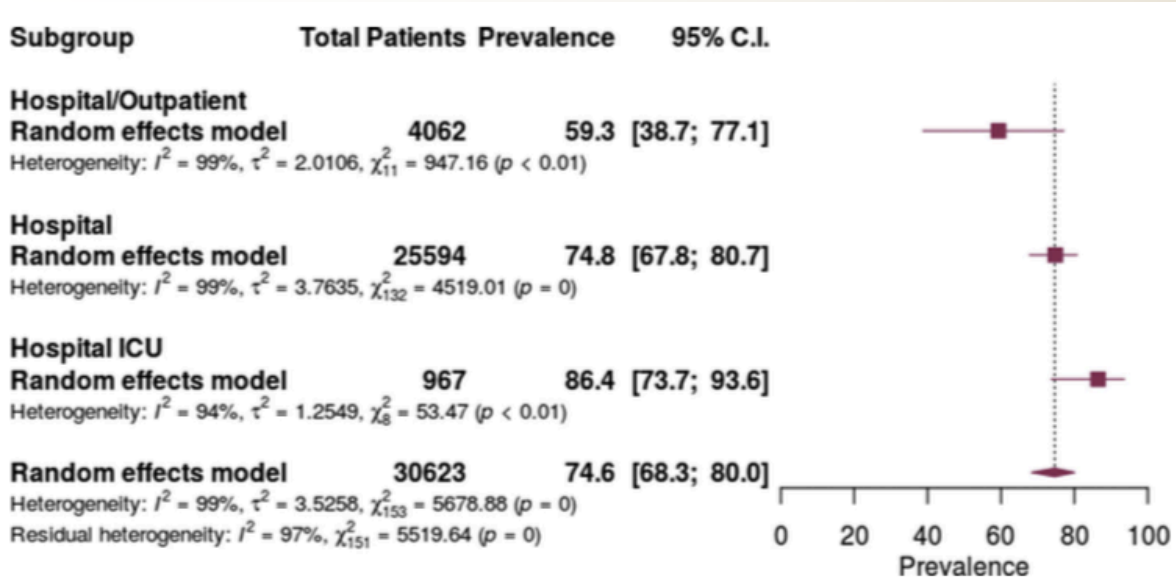


Fig. 5. Antibiotic prescribing in patients with COVID-19 by healthcare setting.

Coinfección en Covid-19

Journal of Infection 81 (2020) 266–275

Contents lists available at ScienceDirect

Journal of Infection

journal homepage: www.elsevier.com/locate/jinf

Co-infections in people with COVID-19: a systematic review and meta-analysis

Louise Lansbury[a,*], Benjamin Lim[b], Vadsala Baskaran[a,c], Wei Shen Lim[c]

30 estudios seleccionados
3800 pacientes
7% de coinfecciones bacterianas
3% de coinfecciones virales

Co-infections in people with COVID-19: a systematic review and meta-analysis

Louise Lansbury [a,*], Benjamin Lim [b], Vadsala Baskaran [a,c], Wei Shen Lim [c]

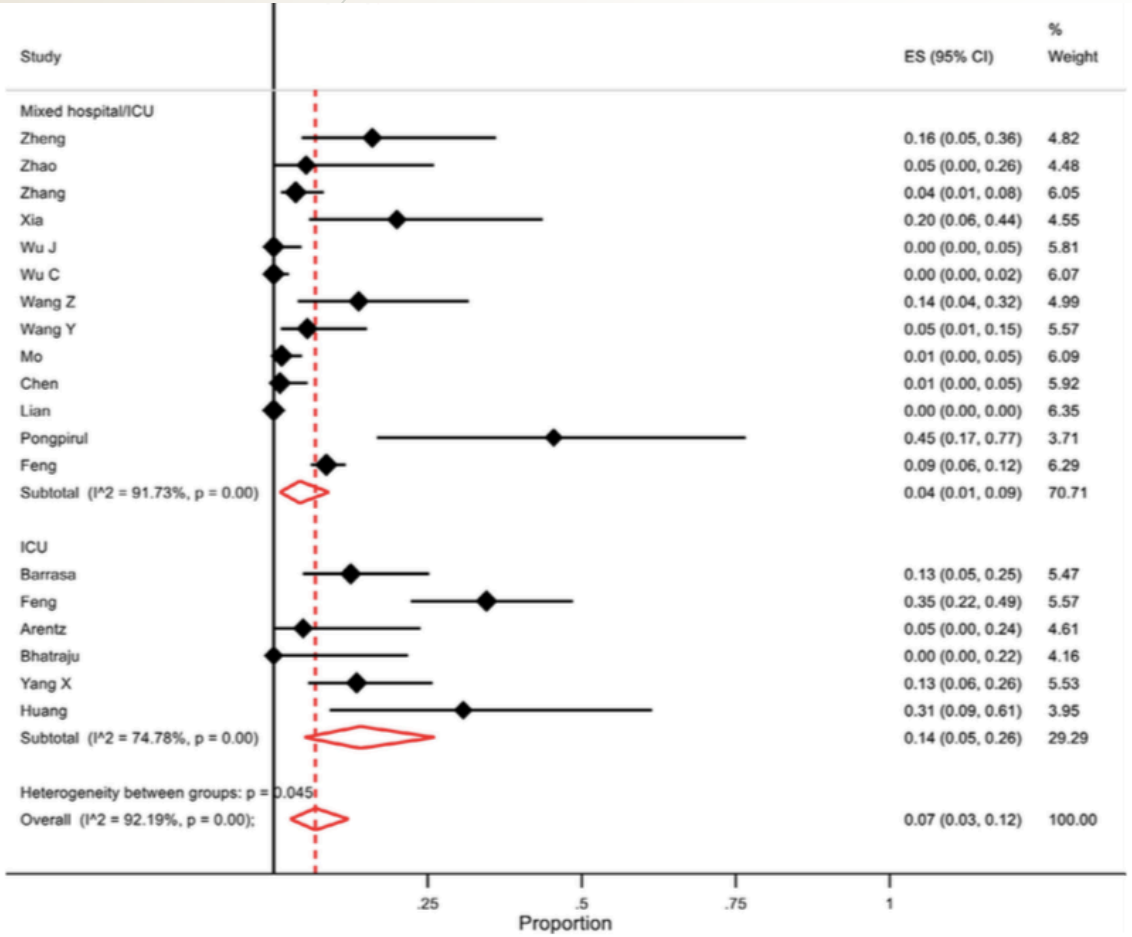


Figure 2. Forest plot of proportion of COVID-19 patients with bacterial co-infections. Subgroup analysis for ICU versus mixed ward/ICU settings.

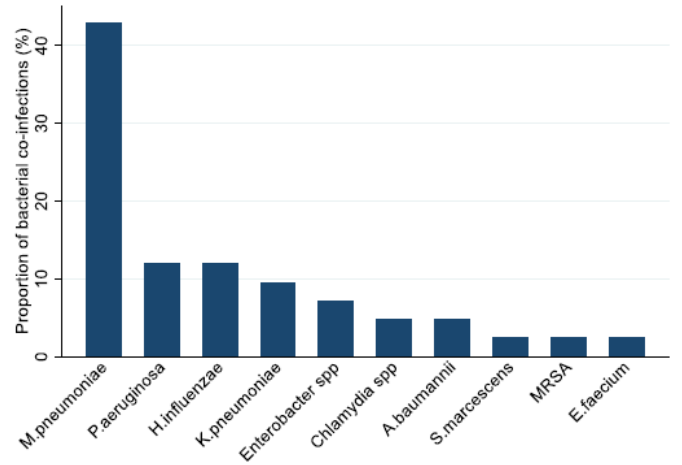


Figure 4. Bacterial pathogens detected in COVID-19 patients, as a proportion (%) of the total number of detections (n=27) Key: M pneumoniae - *Mycoplasma pneumoniae*; P aeruginosa – *Pseudomonas aeruginosa*; H influenzae – *Haemophilus influenzae*; K pneumoniae – *Klebsiella pneumoniae*, A baumannii – *Acinetobacter baumannii*, S marcescens - *Serratia marcescens*, MRSA – Methicillin-resistant *Staphylococcus aureus*; E faecium – *Enterococcus faecium*.

Co-infections in people with COVID-19: a systematic review and meta-analysis

Louise Lansbury[a,*], Benjamin Lim[b], Vadsala Baskaran[a,c], Wei Shen Lim[c]

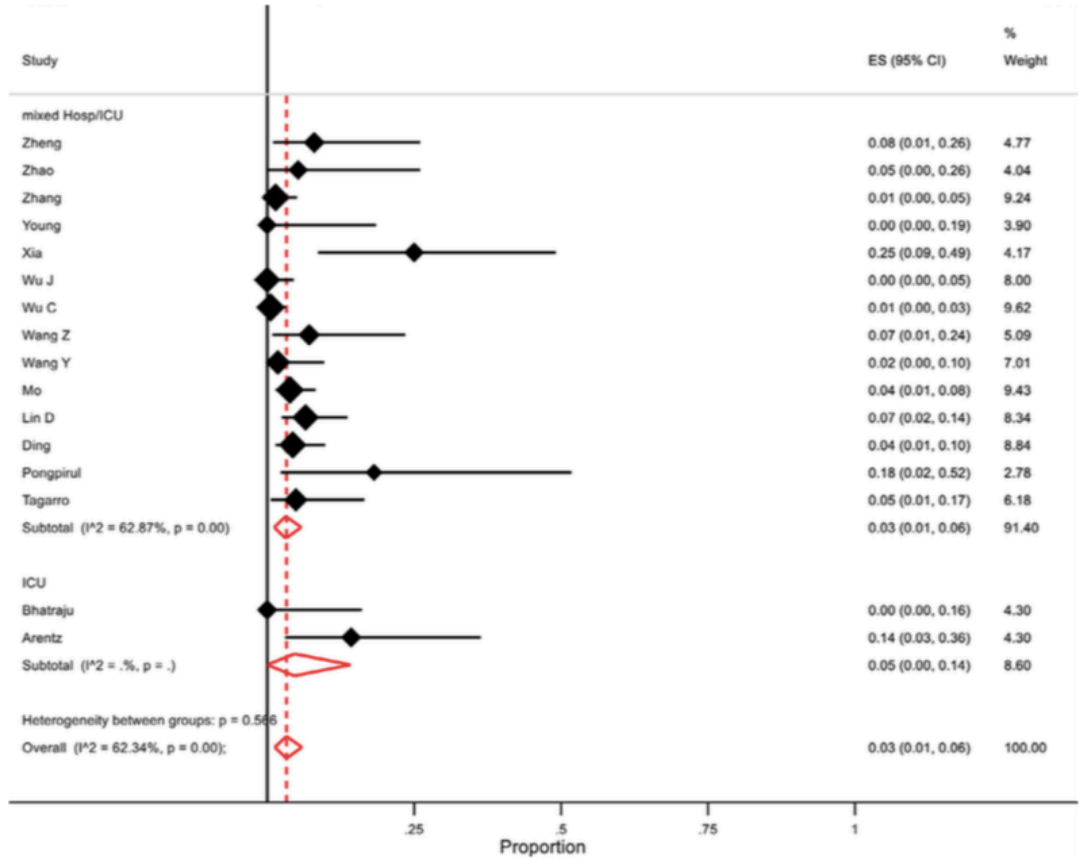


Figure 3. Forest plot of proportion of hospitalised COVID-19 patients with viral co-infections. Subgroup analysis for ICU versus mixed ward/ICU settings

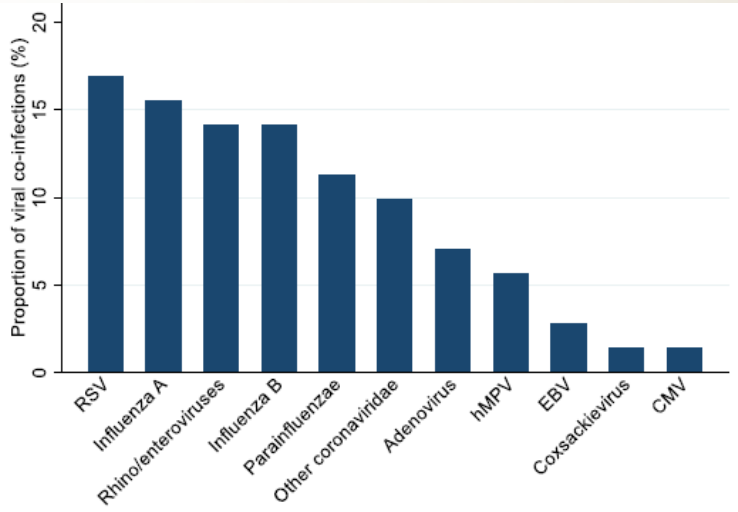


Figure 5. Viral pathogens as a proportion (%) of the total number of viral detections (n=71). Key: RSV – Respiratory Syncytial Virus, hMPV – human Metapneumovirus, EBV – Epstein-Barr Virus, CMV - Cytomegalovirus.

Consumo antimicrobianos en Covid-19

Azithromycin for community treatment of suspected COVID-19 in people at increased risk of an adverse clinical course in the UK (PRINCIPLE): a randomised, controlled, open-label, adaptive platform trial

*PRINCIPLE Trial Collaborative Group**

Summary

Background Azithromycin, an antibiotic with potential antiviral and anti-inflammatory properties, has been used to

Lancet 2021; 397: 1063–74

Pacientes con sospecha de COVID-19
Mayores de 65 años o menores con comorbilidad
Ambulatorio (APS), 2265 pacientes
Auto-reporte de mejoría clínica

Azithromycin for community treatment of suspected COVID-19 in people at increased risk of an adverse clinical course in the UK (PRINCIPLE): a randomised, controlled, open-label, adaptive platform trial

*PRINCIPLE Trial Collaborative Group**

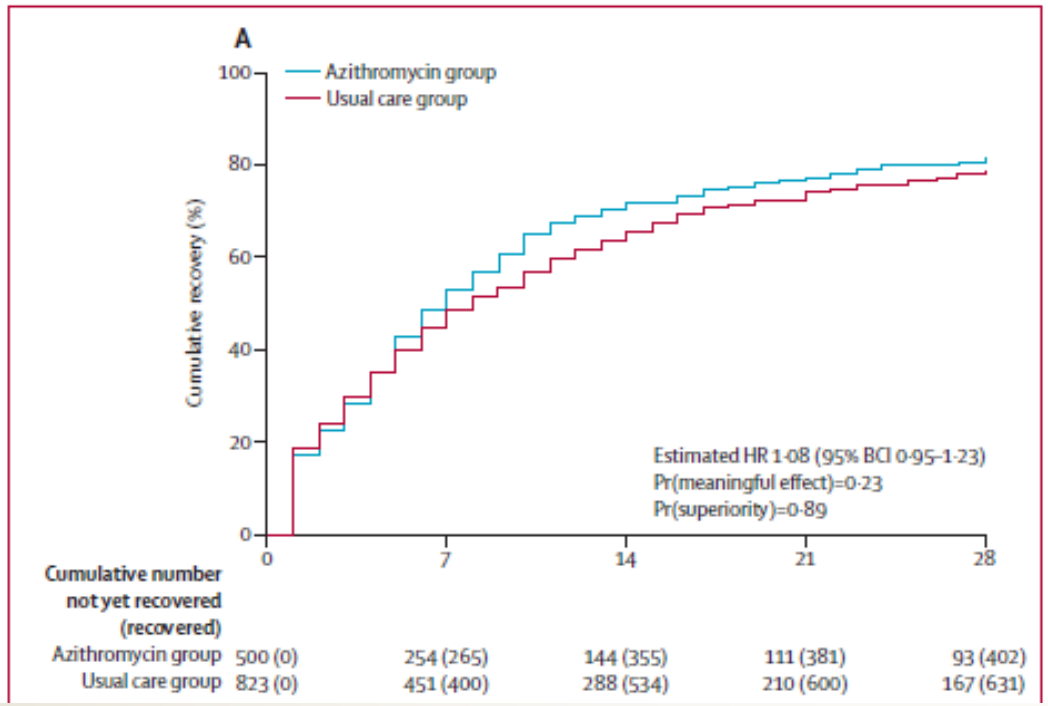
	Azithromycin plus usual care	Usual care alone	Estimated treatment effect (95% Bayesian credible interval)	Probability of meaningful effect	Probability of superiority
Primary outcomes (primary analysis population)					
First reported recovery	402/500 (80%)	631/823 (77%)	..	..	..
Time to first reported recovery (days)	7 (3 to 17)	8 (2 to 23)	1·08 (0·95 to 1·23)*	0·23*	0·89*
Hospitalisation or death at 28 days	16/500 (3%)	28/823 (3%)	0·3% (–1·7 to 2·2)†	0·042†	0·64†
Primary outcomes (SARS-CoV-2-positive analysis population)					
First reported recovery	136/186 (73%)	163/236 (69%)	..	..	..
Time to first reported recovery (days)	9 (4 to not reached)	13 (5 to not reached)	1·12 (0·91–1·38)*	0·47*	0·86*
Hospitalisation or death at 28 days	11/186 (6%)	17/236 (7%)	1·6% (–3·1 to 6·2)†	0·43†	0·76†

Data are n/N (%) or median (IQR). HR=hazard ratio. *Estimated HR derived from a Bayesian piecewise exponential model adjusted for age and comorbidity at baseline, with 95% Bayesian credible interval. HR >1 favours azithromycin. †Estimated absolute benefit in percentage of hospitalisation or death derived from a Bayesian logistic regression model adjusted for age and comorbidity at baseline, with 95% Bayesian credible interval. A positive value favours azithromycin.

Table 2: **Primary outcomes**

Azithromycin for community treatment of suspected COVID-19 in people at increased risk of an adverse clinical course in the UK (PRINCIPLE): a randomised, controlled, open-label, adaptive platform trial

*PRINCIPLE Trial Collaborative Group**



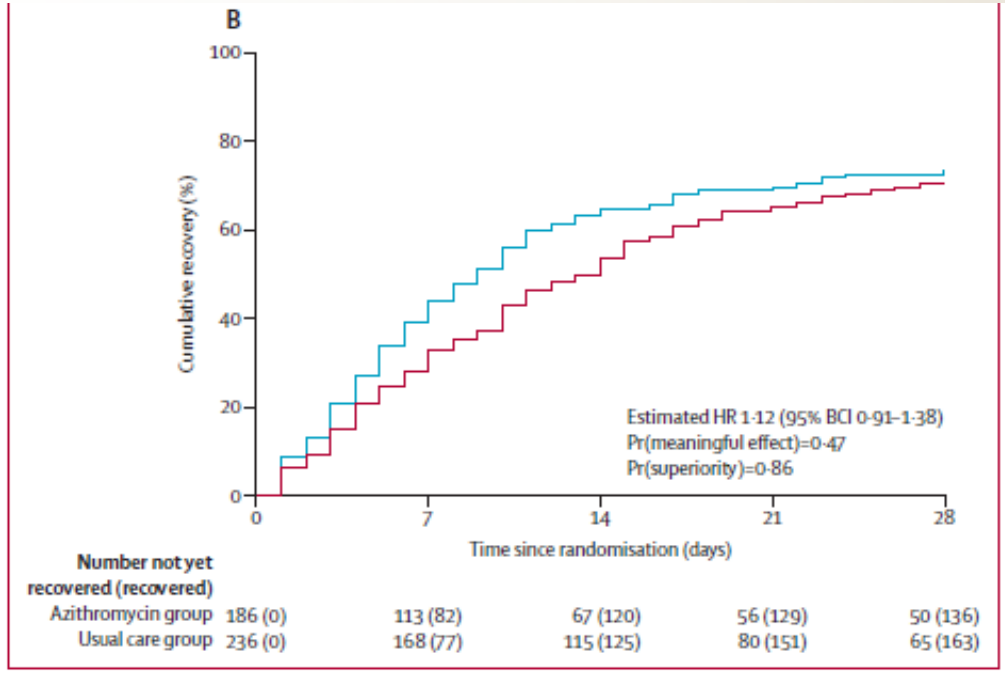


Figure 2: **Summary and results of the time to first self-reported recovery**
(A) Primary analysis population. (B) SARS-CoV-2-positive analysis population. Pr(meaningful effect) is the Bayesian model-based estimated probability that the benefit in median time to recovery compared with usual care is at least 1·5 days. Pr(superiority) is the probability of superiority; treatment superiority is declared if Pr(superiority) ≥0·99 versus usual care. HR=hazard ratio. BCI=Bayesian credibility interval.

Azithromycin for community treatment of suspected COVID-19 in people at increased risk of an adverse clinical course in the UK (PRINCIPLE): a randomised, controlled, open-label, adaptive platform trial

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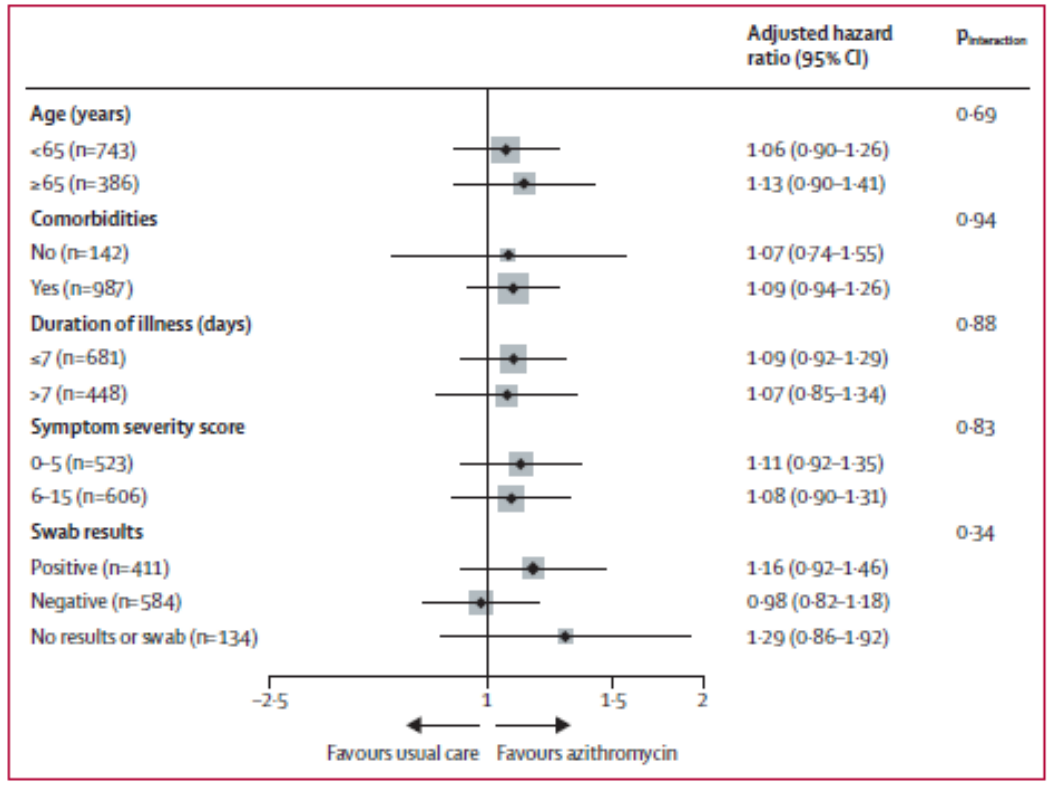

Figure 3: Subgroup analysis of time to recovery outcome (concurrent randomisation analysis population)

	Azithromycin plus usual care (n=500)	Usual care alone (n=629)	Estimated treatment effect (95% CI)	p value
Sustained recovery	317/500 (63%)	414/629 (66%)	--	--
Time to sustained recovery (days)	19 (7 to not reached)	20 (7 to not reached)	0·94 (0·81 to 1·09)*	0·39
Alleviation of all symptoms	401/420 (95%)	473/505 (94%)	--	--
Time to alleviation of all symptoms (days)	3 (1 to 7)	3 (1 to 7)	1·04 (0·91 to 1·19)*	0·57
Sustained alleviation of all symptoms	338/422 (80%)	425/510 (83%)	--	--
Time to sustained alleviation of all symptoms (days)	8 (3 to 27)	10 (3 to 24)	0·94 (0·81 to 1·09)*	0·40
Initial reduction of severity of symptoms	449/494 (91%)	554/622 (89%)	--	--
Time to initial reduction of severity of symptoms (days)	4 (2 to 10)	4 (1 to 11)	0·99 (0·88 to 1·13)*	0·91
Rating of how well participant feels (1 worst, 10 best)				
Day 7	7·2 (1·8) [484]	7·1 (1·9) [620]	0·10 (–0·12 to 0·32)†	0·36
Day 14	7·8 (1·8) [484]	7·7 (1·7) [613]	0·08 (–0·16 to 0·32)†	0·51
Day 21	8·0 (1·7) [421]	8·0 (1·6) [539]	0·03 (–0·25 to 0·30)†	0·86
Day 28	8·0 (1·7) [497]	8·3 (1·6) [612]	–0·15 (–0·46 to 0·16)†	0·33
Wellbeing (WHO-5 Well-Being Index score)				
Day 14	45·3 (23·8) [472]	44·1 (24·1) [601]	0·61 (–1·89 to 3·11)†	0·63
Day 28	52·9 (23·9) [474]	53·4 (24·3) [590]	–0·06 (–2·56 to 2·44)†	0·96
Self-reported contact with one or more health-care services	255/499 (51%)	323/628 (51%)	1·00 (0·89 to 1·12)‡	0·99
General practitioner reported contact with one or more health-care services	173/287 (60%)	200/387 (52%)	1·16 (1·01 to 1·32)‡	0·039
Prescription of antibiotics	20/271 (7%)	26/353 (7%)	1·00 (0·57 to 1·76)§	>0·99
Hospital assessment without admission	9/500 (2%)	11/629 (2%)	1·03 (0·43 to 2·46)§	>0·99
Oxygen administration	10/497 (2%)	15/625 (2%)	0·84 (0·38 to 1·85)§	0·69
Mechanical ventilation	2/496 (<1%)	5/625 (1%)	0·50 (0·10 to 2·59)§	0·47
Intensive care unit admission	3/495 (1%)	5/625 (1%)	0·76 (0·18 to 3·15)§	>0·99

Rev. Fac. Med. Hum. Octubre 2020;20(4):761-762.
DOI 10.25176/RFMH.v20i4.3050
ISSN Versión Online: 2308-0531
Facultad de Medicina Humana URP

CARTAS AL EDITOR

CONTROL DE ANTIBIÓTICOS EN TIEMPOS DE COVID-19

ANTIBIOTIC CONTROL IN TIMES OF COVID-19

Christian Chiara-Chilet[1,a], Marcos Saavedra-Velasco[2,a]

Editorials

Tackling antimicrobial resistance in the COVID-19 pandemic

Haileyesus Getahun,[a] Ingrid Smith,[a] Kavita Trivedi,[a] Sarah Paulin[a] & Hanan H Balkhy[b]

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Clinical Microbiology and Infection

journal homepage: www.clinicalmicrobiologyandinfection.com

Commentary

COVID-19: don't neglect antimicrobial stewardship principles!

B.D. Huttner [1, 2, *], G. Catho [2], J.R. Pano-Pardo [4], C. Pulcini [5, 6], J. Schouten [3]

Clinical Infectious Diseases

IDSA FEATURES

Infectious Diseases Society of America Guidance on the Treatment of Extended-Spectrum β-lactamase Producing Enterobacterales (ESBL-E), Carbapenem-Resistant Enterobacterales (CRE), and *Pseudomonas aeruginosa* with Difficult-to-Treat Resistance (DTR-*P. aeruginosa*)

Pranita D. Tamma,[1] Samuel L. Aitken,[2] Robert A. Bonomo,[3] Amy J. Mathers,[4] David van Duin,[5] and Cornelius J. Clancy[1]

AAC Accepted Manuscript Posted Online 19 January 2021
Antimicrob Agents Chemother doi:10.1128/AAC.02204-20

Meropenem-vaborbactam as salvage therapy for ceftazidime-avibactam-, cefiderocol-resistant ST-512 *Klebsiella pneumoniae* producing KPC-31, a D179Y variant of KPC-3

…rco Falcone[a]#, Alessandro Leonildi[b], Cesira Giordano[b], Simona …ele Arcari [c], Alessandra Carattoli[c] and Francesco Menichetti[a]

1 Synergistic rifabutin and colistin reduce emergence of
2 resistance when treating *Acinetobacter baumannii*

3 **Authors: Jiaqi Cheng[1], Jun Yan[1], Zeferino Reyna[1], Matt Slarve[1], Peggy Lu[1], Brad Spellberg[2], and Brian**
4 **Luna[1*]**

Costo del abuso antimicrobianos

Intensive Care Med (2020) 46:225–235
https://doi.org/10.1007/s00134-020-05929-3

NARRATIVE REVIEW

Antimicrobial-associated harm in critical care: a narrative review

Nishkantha Arulkumaran[1], Matthew Routledge[2,3], Sanmarié Schlebusch[4,5], Jeffrey Lipman[4,6,7] and Andrew Conway Morris[8,9*]

NARRATIVE REVIEW

Antimicrobial-associated harm in critical care: a narrative review

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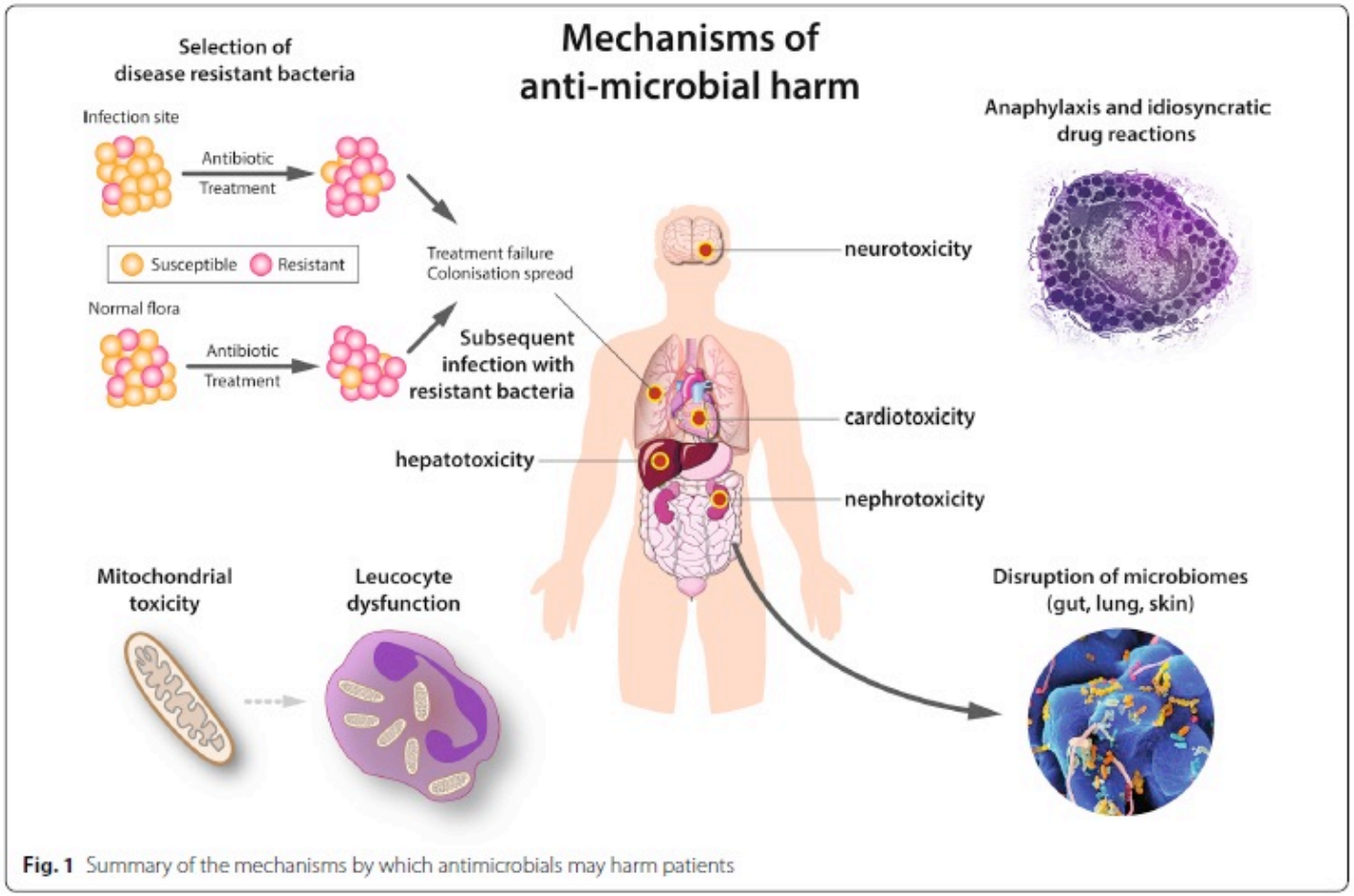

Fig. 1 Summary of the mechanisms by which antimicrobials may harm patients

Costo del abuso antimicrobianos

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Science of the Total Environment

journal homepage: www.elsevier.com/locate/scitotenv

Short Communication

Environmental side effects of the injudicious use of antimicrobials in the era of COVID-19

Muhammad Usman [a,*], Muhammad Farooq [b,**], Khalil Hanna [c,d,**]

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[b] Department of Clinical Sciences, College of Veterinary and Animal Sciences, University of Veterinary and Animal Sciences, Jhang, Lahore, Pakistan
[c] Univ Rennes, Ecole Nationale Supérieure de Chimie de Rennes, CNRS, ISCR (Institut des Sciences Chimiques de Rennes) – UMR 6226, F-35000 Rennes, France
[d] Institut Universitaire de France (IUF), MESRI, 1 rue Descartes, 75231 Paris, France.

Short Communication

Environmental side effects of the injudicious use of antimicrobials in the era of COVID-19

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[b] Department of Clinical Sciences, College of Veterinary and Animal Sciences, University of Veterinary and Animal Sciences, Jhang, Lahore, Pakistan
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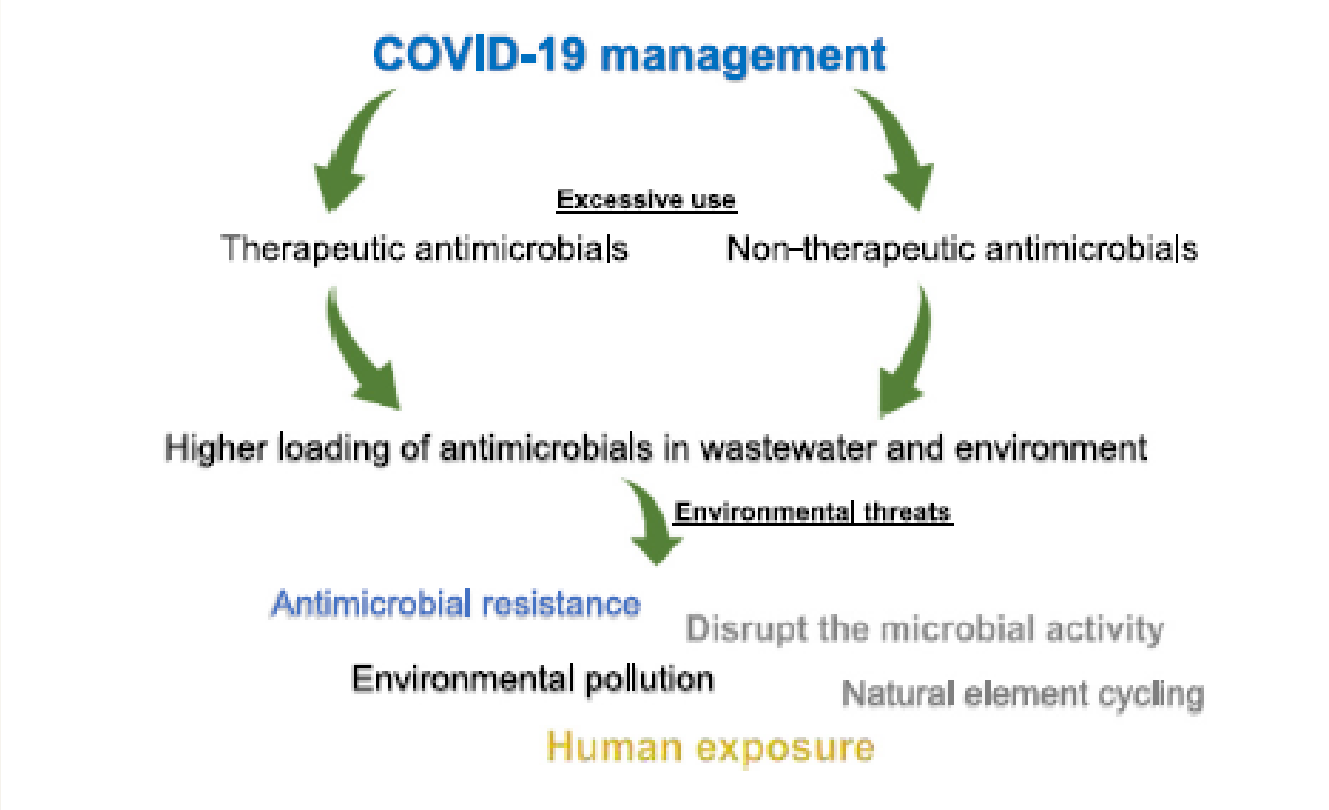

Assessing asymptomatic, pre-symptomatic and symptomatic transmission risk of SARS-CoV-2

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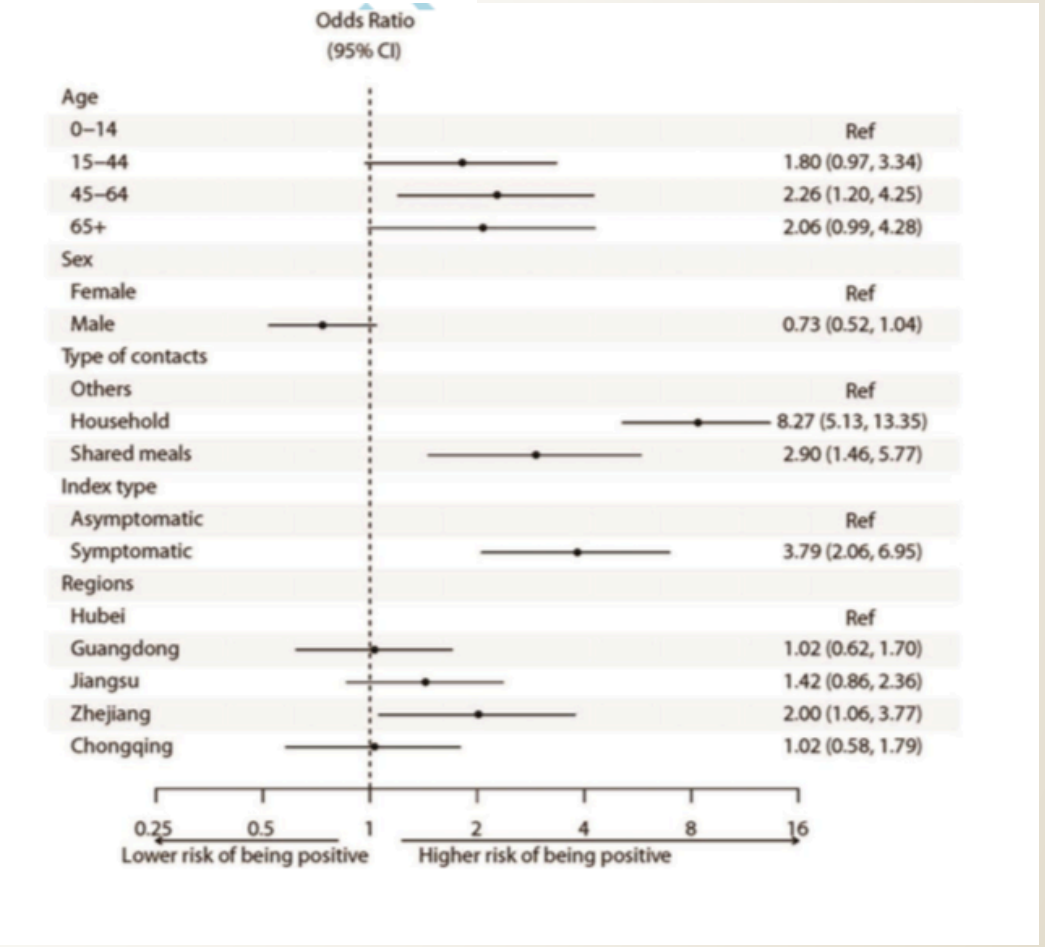


Cuidarnos del Covid-19
ESTÁ EN
NUESTRAS
MANOS


Coronavirus (COVID-19)
5 Medidas básicas
de prevención
Funcionan aplicadas en su conjunto
1 Distancia física de 1,5m
2 Mascarilla
3 Higiene de manos y respiratoria
4 Limpieza y desinfección del entorno
5 Ventilación adecuada

En resumen…

- La COVID-19 es una infección viral que seguirá con nosotros por bastante tiempo
- Coinfecciones bacterianas son infrecuentes
- No se justifica terapia antibiótica empírica en APS ni hospitalizados
- Importante educar y evitar autoprescripción
- Urgencia antibiótica: shock (mala perfusion, hipotensión)
- Uso antibiótico tiene costos: individuales y colectivos
- Resistencia antibiótica es un problema mundial, asociado a mortalidad
- CUIDEMOS LOS ANTIBIÓTICOS!!