



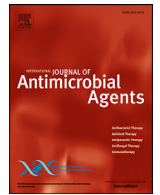
Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



Contents lists available at ScienceDirect

## International Journal of Antimicrobial Agents

journal homepage: [www.elsevier.com/locate/ijantimicag](http://www.elsevier.com/locate/ijantimicag)

## Editorial

## Publishing in face of the COVID-19 pandemic



Doctors around the world are desperately looking for guidance to enable them to better manage their COVID-19 patients. With no specific COVID-19 agents available a range of possible treatment options have been investigated including the use of anti-retroviral drugs, such as lopinavir/ritonavir, experimental anti-virals such as remdesivir, and antimicrobial drugs such as chloroquine or hydroxychloroquine with or without azithromycin. While some of these drugs are widely used for other indications, the risk/benefit analysis in COVID-19 patients has not thoroughly been evaluated.

Under normal circumstances, the “holy grail” of evidence is achieved from well-designed, randomized, controlled trials (RCTs). However, in the midst of a pandemic, it is not always possible to provide the “holy grail”. A recent article published in the BMJ suggests there is a widespread issue of compromise of quality of published or pre-printed papers in response to the pandemic [1]. Consequently, in an attempt to enhance the treatment of patients with COVID-19, the question is asked should health-care providers, including those responsible for scientific publications, ignore “lesser evidence” generated from observational studies? In this issue Machiels et al. [2] discuss the scientific merit of the paper written by Gautret et al. [3] which advocates “COVID-19 patients be treated with hydroxychloroquine and azithromycin to cure their infection and to limit the transmission of the virus to other people.” The publication has received a global and polarized response, in part because of its widespread dissemination by the President of the United States in the form of Tweets, but more importantly by a flurry of criticism in the form of social media activity (approximately 70,000 mentions) and notification from colleagues who disputed the study’s design, execution and conclusions. Concerns have been raised on social media regarding the paper’s content, the ethical approval of the study and the process the manuscript underwent to be published in the International Journal of Antimicrobial Agents (IJAA). As a consequence of the concerns raised, the International Society of Antimicrobial Chemotherapy (ISAC) on April 3 and 11, 2020 posted two statements on its website. The latter statement was made jointly with the journal’s publisher, Elsevier [4,5]. In the joint statement we clarified that the journal’s standard peer review process was followed in the publication of this paper. To minimize potential bias, as one of the authors is the Editor in Chief of the journal, the editorial handling / peer review was delegated to an Associate Editor. Furthermore, after publication ISAC arranged an additional independent peer re-

view to ascertain whether concerns about the research content of the paper had merit.

After internal and external (post-publication) review, some of the concerns regarding the paper’s methodology were substantiated [6]. Consequently, the ISAC Executive Committee, in collaboration with Elsevier, discussed a variety of options in regard to how to proceed. Despite the flaws in methodology, we have elected not to withdraw the publication by Gautret et al [3]. We believe, in addition to the importance of sharing observational data at the height of a pandemic, a robust public scientific debate about the paper’s findings in an open and transparent fashion should be made available.

Prior to publication, the authors were invited to respond within the journal to this editorial and the reviews by Machiels et al. [2] and Rosendaal [6]. At time of publication, a response has been posted on the authors’ institutional website and is currently under review in IJAA.

ISAC invites researchers to participate in this debate in the form of Letters to the Editor and wishes to thank the journal’s editor, section editors and reviewers for their support, enabling our journals to deliver important knowledge in a timely fashion.

**Funding:** None.

**Competing Interests:** All authors are senior officers of the International Society of Antimicrobial Chemotherapy (ISAC), the official society behind the International Journal of Antimicrobial Agents (IJAA). None of the authors declared a conflict of interest in regard to the content of the editorial.

**Ethical approval:** Not required.

Andreas Voss\*

*Canisius-Wilhelmina Hospital, Department of Medical Microbiology and Infectious, Diseases, Nijmegen, The Netherlands  
Radboudumc, Radboud Center for Infectious Diseases, Nijmegen, The Netherlands*

Geoffrey Coombs  
*Murdoch University, Perth, Australia*

Serhat Unal  
*Turkey*

Raphael Saginur  
*Ottawa Hospital Research Institute, Ottawa, Canada*

DOIs of original articles: [10.1016/j.ijantimicag.2020.106063](https://doi.org/10.1016/j.ijantimicag.2020.106063), [10.1016/j.ijantimicag.2020.105949](https://doi.org/10.1016/j.ijantimicag.2020.105949), [10.1016/j.ijantimicag.2020.106056](https://doi.org/10.1016/j.ijantimicag.2020.106056)

<https://doi.org/10.1016/j.ijantimicag.2020.106081>

0924-8579/© 2020 Published by Elsevier B.V.

Po-Ren Hsueh

Departments of Laboratory Medicine and Internal Medicine, National  
Taiwan University Hospital, National Taiwan University College of  
Medicine, Taipei, Taiwan

\*Correspondence on behalf of the ISAC Senior Executive  
Officers: Canisius-Wilhelmina Hospital, Department of Medical  
Microbiology and Infectious Diseases, Weg door Jonkerbos 100,  
6532 SZ Nijmegen, The Netherlands  
E-mail address: [a.voss@cwz.nl](mailto:a.voss@cwz.nl) (A. Voss)

## References

- [1] Glasziou PP. A deluge of poor quality research is sabotaging an effective evidence based response. *BMJ* 2020;369 m1847.
- [2] Machiels JD, Bleeker-Rovers CP, Hein ter R, Rahamat-Langendoen J, Mast de Q, Oever ten J, et al. Reply to Gautret et al: hydroxychloroquine sulfate and azithromycin for COVID-19: what is the evidence and what are the risks? *Int J Antimicrob Agents* 2020:106056. doi:10.1016/j.ijantimicag.2020.106056.
- [3] Gautret P, Lagier JC, Parola P, Hoang VT, Meddeb L, Mailhe M, et al. Hydroxychloroquine and azithromycin as a treatment of COVID-19: results of an open-label non-randomized clinical trial. *Int J Antimicrob Agents* 2020 Mar 20:105949 Online ahead of print. doi:10.1016/j.ijantimicag.2020.105949.
- [4] Statement of the International Society of Antimicrobial Chemotherapy (ISAC) posted on its website, on April 3rd, 2020, <https://www.isac.world/news-and-publications/official-isac-statement>
- [5] Statement of the International Society of Antimicrobial Chemotherapy (ISAC) posted on its website, on April 11th, 2020, <https://www.isac.world/news-and-publications/isac-elsevier-statement>.
- [6] Rosendaal FR. Review of: "Hydroxychloroquine and azithromycin as a treatment of COVID-19: results of an open-label non-randomized clinical trial Gautret et al 2020, DOI:10.1016/j.ijantimicag.2020.105949". *Int J Antimicrob Agents* 2020:106063. doi:10.1016/j.ijantimicag.2020.106063.