

1 **A Reply to:**

2 Margolin, E., Burgers, W.A., Sturrock, E.D. *et al.* Prospects for SARS-CoV-2 diagnostics,
3 therapeutics and vaccines in Africa. *Nat Rev Microbiol* (2020).

4 <https://doi.org/10.1038/s41579-020-00441-3>

5 **And**

6 Mbow M, et al. COVID-19 in Africa: Dampening the storm? *Science*. 2020 Aug

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10 **Title: COVID-19 in Africa: What else?**

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44 In September 10th, 2020, Margolin et al. reviewed in *Nature Reviews Microbiology*, the
45 prospects for SARS-Cov-2 in Africa (1). A couple of weeks before, the factors which may explain
46 the dampened course of COVID-19 in Africa, had been discussed in *Science*, from genetic
47 characteristics to immunological factors and even microbiote (2). We, being Professors of
48 Infectious diseases or microbiology, MD, PhD, coauthors from Algeria, Morocco, Senegal, Niger,
49 Mali, Mauritania, Gabon, République du Congo and France, all involved in the COVID 19
50 pandemic in Africa were stunned that both journals who have been long known as the best and
51 independent journals in science, missed (2) or misestimated (1) a major issue about COVID-19
52 treatment in Africa.

53 After the first Chinese publications about antiviral effects of chloroquine (CQ) and its
54 derivatives against SARS-COV2 (3,4) and a preliminary trial in France (5), many African
55 countries have adopted CQ or hydroxychloroquine (HCQ) with or without azithromycin (AZ) to
56 treat presumptive or confirmed COVID-19 cases (6,7). And this, despite the WHO position (8)
57 and published or retracted studies claiming that this regimen would not be effective or toxic (9,
58 10).

59 More evidence came with the demonstration of a synergistic effect of *in vitro* HCQ-AZ
60 combination on SARS-CoV-2 at concentrations compatible with that obtained in the human lung
61 (11) and from observational studies with thousands of treated cases (12). In addition to their
62 antiviral effect, both HCQ and AZ are immunomodulators, which may prevent the “cytokine
63 storm” of COVID 19 (13, 14). In the context of pulmonary embolism associated with covid, it is
64 important to highlight that *in vitro* and animal models have demonstrated that HCQ had several
65 antithrombotic effects (15, 16). Also, several clinical studies have underlined the interest of HCQ
66 for thrombosis prevention in antiphospholipid syndrome of interest in the context of COVID-19
67 induces coagulopathy (17-19). Finally, AZ-HCQ has been associated with a reduction in viral
68 shedding, with potential public health effects by reducing the duration of contagiousness (12).

69 The use of HCQ-AZ remains controversial and has resulted in political issues and
70 academic discord. A lot of noise has been made in the media and scientific journals about the
71 toxicity of CQ or HCQ, which seen from Africa where billions of dose have been taken in the past
72 century leaves speechless.

73 Randomized controlled trial (RCT) are not relevant for urgent health issues such as
74 emerging infectious disease outbreaks (20). While in many African countries a pragmatic safely
75 use of CQ or HCQ with or without AZ has prevailed, Western countries are still awaiting the
76 results of clinical trials to define their strategy, worrying about hypothetical side effects of HCQ-
77 AZ that have been used for decades, or are favoring other treatments (with no demonstration of
78 efficacy) or the standard care only, which may be limited when people are asked to stay home.

79 With all the respect we have for the opinion of our colleagues from Cape town, South-
80 africa (2), where CQ neither HCQ is not recommended, and where the mortality seems higher than
81 in our African countries, we think that all voices from African scientists and doctors need to be
82 heard and not be censored by any conflict of opinion. To date, the countries with the highest
83 mortality from COVID-19 include the countries that have demonized CQ, HCQ or HCQ-AZ the
84 most, i.e. Western Europe and part of the United States (6, 7). Now, more than 100 studies have
85 been published about CQ or HCQ (21-24). Although the link between the large cost-effective use
86 of CQ, HCQ or HCQ-AZ and the evolution of the COVID-19 pandemic in Africa has not been
87 demonstrated, it deserves, at least to be discussed.

88 **Conflict of Interest and Financial Disclosures:**

89 No authors have financial or non-financial actual or potential conflicts of interest

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