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LETTERS TO EDITOR

COVID-19: The African enigma

COVID-19: El enigma de Africa

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We read with interest the paper by Guerrero *et al* "COVID-19: The Ivermectin African Enigma" [1]. In an ecological study they compared COVID-19 related mortality and infection rates between APOC (African Programme for Onchocerciasis Control) and non-APOC countries. After adjusting for Human Development Index (HDI) and number of performed test, COVID-19 mortality and infection rate were respectively 28% and 8% lower in non-APOC countries compared to APOC countries [1]. The authors suggested that this difference may be related to the community directed treatment with ivermectin (CDTI) programs established in APOC countries.

We agree that it remains to be explained why a lower COVID-19 mortality is observed in many APOC countries compared to other parts of the world. However, we do not believe that this is related to CDTI programs. Indeed, in APOC countries ivermectin is distributed only once (most countries) or twice a year [2]. Moreover, April 1st 2020, because of the COVID-19 pandemic, CDTI programs were interrupted and were only recently restarted [2].

Ivermectin has an *in vitro* anti-COVID-19 effect [3] and also certain clinical trials suggested a beneficial effect of ivermectin on COVID-19 disease outcome [4]. However, in a recent small double blind, randomized control trial in Colombia, five days of ivermectin, at a 10 times the recommended dose, did not reduce the duration of symptoms of mild COVID-19 disease compared to placebo [5]. Given the half-life of ivermectin, approximately 18h [6], it is unlikely that CDTI, only one dose of ivermectin once or twice a year, may be able to reduce COVID-19 related mortality.

Many factors could explain the lower COVID-19 mortality in APOC countries [7]. One of them could be exposure to parasitic infections and the immune response induced by these infections. For example, for *P. falciparum*, a parasitic infection highly prevalent in APOC countries, it has been hypothesised that the immunological memory against *P. falciparum* merozoites primes SARS-CoV-2 infected cells for early phagocytosis and therefore may protect persons with a recent *P. falciparum* infection against severe COVID-19 disease [8]. Helminth infections, such as onchocerciasis, may down regulate immune responses [9] and potentially inactivate the inflammatory signalling pathways that may induce acute respiratory distress syndrome (ARDS), one of the causes of death in COVID-19 infected persons [10].

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LETTERS TO EDITOR

Reply to a letter by Robert from Colebunders entitled COVID-19: The African Enigma

Respuesta a una carta de Robert de Colebunders titulada COVID-19: The African Enigma

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Conflicts of interest:
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