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.

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OPINION

Quinacrine, an Old Drug with Potentially usefull in the Treatment for COVID-19

The novel β-coronavirus 2019-nCoV or SARS CoV-2 emerged in the city of Wuhan in China, and it is the causal agent of coronavirus disease 2019 (COVID-19) that trigger the current pandemic (1). The high speed of dissemination, the emergence of new genomic variants and the shortage of low-cost and effective treatments make it urgent to find new treatment strategies for the SARS-CoV-2 outbreak (2). Quinacrine (Qx), an aminoacridine used as an antimalarial drug, was proposed as an antiviral molecule against several viruses including Ebola and Zika (3,4), and listed among the top 16 repurposable drugs against SARS-CoV (5). Moreover, its effectiveness against SARS-CoV-2 has been demonstrated *in vitro* showing a half-maximum effective concentration (EC_{50}) range 0.58–1.88 mmol (6,7).

Among the mechanisms by which Qx induces antiviral effects highlight: a) its ability to intercalate DNA and RNA, thus inhibiting virus replication (8); b) it can increase the pH into the acidic organelles, and c) it can inhibit autophagy (9). Also, Qx is a potent inhibitor of phospholipase A2, diminishing cysteinyl leukotrienes levels and modulating Th1/Th2 response. Additionally, Qx can inhibit the secretion of proinflammatory cytokines and Toll-Like Receptors 7 and 9, molecules involved in the cytokine storm produced in severe COVID-19 patients (9,10).

Regarding its potential use in patients, Qx has been daily administrated (100 mg/daily by oral route) for extended periods proven to be well tolerated with few adverse effects even in children (nausea and vomiting). The most frequent and significant adverse effects were dermatitis and corneal edema; however, these effects were reversed when the drug was discontinued (9,11). Recently, Qx has been tested in several cancer trials (NCT01839955, NCT00417274, NCT01844076) and prion disease (NCT00183092, NCT00104663). Moreover, it was found that the maximum tolerated dose of Qx was 100 mg twice daily per 21 d in a colorectal cancer study (12).

The vast knowledge about the medical use of Qx and its corroborated efficacy inhibiting virus including SARS-CoV-2 makes Qx a viable candidate to be repurposing and clinical tested in COVID-19 patients of any age range. Considering its pharmacokinetics and set up a record of wellbeing, the safest dose reported, even in children is 100 mg/day for 7 d (13,14), which would allow reaching Qx levels in lung tissue above the anti-SARS-CoV-2 EC_{50} reported (6).

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Conflict of Interest

The author declares that there is no conflict of interest.

Supplementary Materials

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