

# May quinacrine be considered for the treatment of patients with Covid-19?

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## Dear Editor,

Corona virus disease 2019 (Covid-19) pandemic, which was first reported in Wuhan, China on 31 December 2019, has led to thousands of deaths worldwide (1). It has been suggested that an antimalarial drug hydroxychloroquine might be effective in the treatment of Covid-19. Hydroxychloroquine may inhibit the viral attachment to the cell membrane, virus release and viral transport (2). Nevertheless, hydroxychloroquine administration may result in cardiac and ocular toxicities, pancytopenia, hemolysis, liver failure, hypoglycemia, deafness, bronchospasm, convulsion and toxic epidermal necrolysis. Hydroxychloroquine interact with various drugs such as digoxin, cyclosporin, tacrolimus, methotrexate, Hemophilus influenzae type B vaccine and live Bacillus Calmette-Guérin (BCG) vaccine (3). On the other hand, it has been reported that BCG vaccination might have a protective effect from Covid-19 (4). Therefore, despite the severity of Covid-19, hydroxychloroquine may not be an appropriate option for all patients.

Similar to hydroxychloroquine, another antimalarial drug which is used for the treatment of autoimmune diseases such as systemic lupus erythematosus and dermatomyositis is quinacrine. Quinacrine is usually considered as an alternative to hydroxychloroquine, in contraindicated cases or patients who developed side effects. Both of these antimalarial drugs inhibit cellular cytotoxicity and lead to decreased production of proinflammatory cytokines and prostaglandins. Moreover, antimalarial drugs have antioxidant and antithrombotic effects (5). However, the mechanism of action of quinacrine has not been fully identified yet. It has been suggested that quinacrine has an antiviral effect against Dengue virus, Zika virus and Ebola virus. Lane et al. reported that

intraperitoneal administration of quinacrine in mice has a significantly protective effect against lethal challenge of Ebola virus. Quinacrine may accumulate in acidic cytoplasmic organelles and lead to pH alteration which may prevent the functions of enzymes required for viral entry (6).

We suggest that quinacrine may be used in the treatment of patients with Covid-19, especially when hydroxychloroquine is contraindicated or leads to side effects. Covid-19 continues to spread all over the world with high mortality rate. The efficient treatment of patients with Covid-19 is still not available. Therefore, we suggest that quinacrine should be considered for the treatment of Covid-19.

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