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Commentary

# Hydroxychloroquine and COVID-19: Usefulness and side effects

Pathum Sookaromdee[1*], Viroj Wiwanitkit[2,3]

[1]Private Academic Consultant, Jaipur, India

[2]Honorary professor, Dr DY Patil University, Pune, India

*Author for correspondence:
Email: pathumsook@gmail.com

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## Abstract

Hydroxychloroquine is an alternative drug that was proposed for possible usefulness in management of COVID-1. Until present, there still no conclusion whether the drug is useful for the management of COVID-19 or not. The wide usage of hydroxychloroquine during COVID-19 pandemic resulted in an increased report of side effects. It is necessary to weight between benefit and risk of the drug when it is applied as an alternative management of COVID-19 in each individual patient.

**Keywords:** Hydroxychloroquine, COVID-19, Side effects

## Introduction

One of the most severe global crises in recent years has been the coronavirus disease 2019 (COVID-19) outbreak, which has resulted in about 463 million confirmed illnesses and several million coronavirus-related deaths (data on 17th March 2022). In general, COVID-19 is an emerging infectious disease caused by a novel coronavirus. This infection usually presented as an acute respiratory illness and it can result in death in severe cases. After the first report from East Asia, disease rapidly spread and attacked around the world [1]. Fever, dry cough, general weariness, respiratory symptoms, diarrhea, and sore throat are symptoms of COVID-19 infection, which are similar to those of acute respiratory distress syndrome. SARS-CoV-2, the virus that causes COVID-19, is a new coronavirus strain.

COVID-19 has become one of the major causes of death worldwide, making it one of the most pervasive and important public health issues in decades. The first stage of COVID-19 is characterized by upper respiratory tract infection; the second stage is characterized by the onset of dyspnea and pneumonia; the third stage is characterized by a worsening clinical scenario dominated by a cytokine storm and the resulting hyperinflammatory state; and the fourth stage is characterized by death or recovery. At this time, there is no specific treatment for the SARS-CoV-2 infection. Antiviral medicines, inflammatory inhibitors/antirheumatic medications, low molecular weight heparins, plasma, and hyperimmune immunoglobulins are the groups of drugs utilized based on the pathological aspects and different clinical phases of COVID-19, notably in patients with moderate to severe COVID-19 [2].

The unique SARS-CoV-2 coronavirus that produces COVID-19 has brought together scientists in the search for therapeutic and prophylactic options. The top priorities at the moment are twofold: first, to repurpose already-approved pharmacologic agents; and second, to develop novel therapies to reduce the morbidity and mortality associated with the ever-spreading virus [3].

In this commentary, the authors specifically discuss on one the most widely studied alternative drug for management of COVID-19, Hydroxycholoroquine.

**Usefulness and Side Effect of Hydroxychloroquine in the Management of COVID-19**

Following early *in vitro* antiviral activities against SARS-CoV-2, hydroxychloroquine or chloroquine with or without azithromycin have been widely advocated to treat coronavirus COVID-19. COVID-19

does not have an effective treatment. The mechanism of action of hydroxychloroquine's antiviral effect has piqued the curiosity of various researchers. Several *in vitro* studies have demonstrated its efficacy against the severe acute respiratory syndrome virus, and investigations on the 2019 new coronavirus are now being done both *in vitro* and *in vivo*. It has been treated with hydroxychloroquine, but their safety and efficacy are unknown. The lack of clinical evidence of hydroxychloroquine's unequivocal beneficial effect on COVID-19 has resulted in the drug's passionate use for moderate to severe instances only, and has sparked the necessity for extensive clinical trials for this treatment. According to the existing information, Hydroxychloroquine may not improve clinical results in COVID-19. To investigate the efficacy and safety of the drug for COVID-19, well-designed randomized trials are necessary [3,4].

Side effects from using hydroxychloroquine as alternative management of COVID-19 is an important issue to be discussed. According to a recent meta-analysis, in hospitalized COVID-19 patients, hydroxychloroquine alone was not related with lower mortality; the combination of hydroxychloroquine and azithromycin significantly increased death [5]. When compared to placebo or no prophylaxis, there is a greater incidence of adverse effects. However, the evaluation of the hydroxychloroquine should be further studied with a good comparison to other available alternative therapies. The outcome of the patient might be affected by several factors including to the physiological background. Since the mild COVID-19 might be self-resolved, alternative drug is usually given to the severe case and it might be associated with a high mortality in outcome measurement. A specific study in young subjects might give a different observation on a positive outcome of hydroxychloroquine. In young and previously healthy subjects, chemoprophylaxis with either oral hydroxychloroquine or oral vitamin C was superior to oral vitamin C in preventing SARS-CoV-2 infection [6]. Additionally, the good selection of the patients is required. The adverse effects of the drug might be significant if the patient has an underlying cardiac problem. If there is a good selection, the trial reveals no serious of using hydroxychloroquine as an alternative management of COVID-19 [7].

## Conclusion

Hydroxychloroquine is an alternative medication that has been suggested for use in the treatment of COVID-19. Until now, there has been no conclusive evidence that the medicine is effective in the treatment of COVID-19. The widespread use of hydroxychloroquine during the COVID-19 pandemic resulted in a rise in side effect reports. When using the drug as an alternative to COVID-19 treatment, it's important to balance the drug's benefits and risks in each patient.

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- 1c. Substantial contributions to analysis and interpretation of data

- 2. Drafting the article or revising it critically for important intellectual content

- 3. Final approval of the version of the article to be published

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