

Chloroquine treatment and COVID-19



In 2005, after the 2002-3 SARS epidemic researchers demonstrated the *in-vivo* anti-viral effect of chloroquine in primate cell lines infected with SARS-CoV ([Vincent et al., 2005](#)). These results were further confirmed by [Gao et al.](#), [Wang et al.](#), and [Liu et al.](#), who also showed inhibitory effects of chloroquine on SARS-CoV-2, the etiological agent of COVID-19. Chloroquine is well known for its anti-malarial properties as well as side-effects, but when used to treat malaria the benefit out-weigh the risks. Hydroxychloroquine a less toxic alternative form of chloroquine, is also used to treat autoimmune diseases such as Lupus and Rheumatoid arthritis, in addition to malaria ([McChesney 1983](#); [Touret & de Lamballerie. 2020](#)). As a result, chloroquine has been suggested as a potential COVID-19 treatment and is currently being tested in many trials including the trans-national WHO: [SOLIDARITY TRIAL](#).

Initial clinical studies on small cohorts suggested that chloroquine treatment was associated with improved prognosis ([Gauret et al., 2020](#)). However, recently published articles by [Molina et al.](#), and [Borba et al.](#), (Pre-Print), suggest no beneficial effect of the treatment. Additionally, preliminary results from a randomised clinical trial of chloroquine treatment for COVID-19 by Borba et al., (Pre-Print) further caution against high dose chloroquine treatment for COVID-19, as it leads to cardiovascular adverse effects.

We therefore, eagerly await more reports from clinical trials on the utility of chloroquine as COVID-19 treatment.

References:

- Borba et al., [Chloroquine diphosphate in two different dosages as adjunctive therapy of hospitalized patients with severe respiratory syndrome in the context of coronavirus \(SARS-CoV-2\) infection: Preliminary safety results of a randomized, double-blinded, phase IIb cl](#) MedRxiv Pre-Print
- Gao et al., 2020. [Breakthrough: Chloroquine phosphate has shown apparent efficacy in treatment of COVID-19 associated pneumonia in clinical studies.](#) BioScience Trends
- Gauret et al., 2020. [Hydroxychloroquine and azithromycin as a treatment of COVID-19: results of an open-label non-randomized clinical trial.](#) International Journal of Antimicrobial agents.
- Liu et al., 2020. [Hydroxychloroquine, a less toxic derivative of chloroquine, is effective in inhibiting SARS-CoV-2 infection in vitro.](#) Cell Discovery
- 1983. [Animal toxicity and pharmacokinetics of hydroxychloroquine sulfate.](#) American Journal Of Medicine.
- Molina et al., 2020. [No Evidence of Rapid Antiviral Clearance or Clinical Benefit with theCombination of Hydroxychloroquine and Azithromycin in Patients withSevere COVID-19 Infection.](#) Médecine et Maladies Infectieuses
- Vincent et al., 2005. [Chloroquine is a potent inhibitor of SARS coronavirus infection and spread.](#) BMJ Virology Journal
- Touret & de Lamballerie. 2020. [Of chloroquine and COVID-19.](#) Antiviral Research
- Wang et al., 2020. [Remdesivir and chloroquine effectively inhibit the recently emerged novel](#)

[coronavirus \(2019-nCoV\) *in vitro*.](#) Cell Research

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