

Taking hydroxychloroquine may not prevent COVID-19 after exposure

Health-care workers taking the drug still got sick after coming in contact with the coronavirus



Healthcare workers and household contacts of people diagnosed with COVID-19 may not be protected against the disease if they take hydroxychloroquine after exposure to the virus, a new study suggests.

MARC BRUXELLE/ALAMY STOCK PHOTO

By **Tina Hesman Saey**

JUNE 4, 2020 AT 3:58 PM

Hydroxychloroquine is no better than a sugar pill at stopping health-care workers and others exposed to COVID-19 from getting sick, the first results from a clinical trial testing the drug as a prophylactic suggest.

In a study of 821 people who had been exposed to someone with a confirmed case of COVID-19, 11.8 percent of people taking hydroxychloroquine and 14.3 percent of people taking a placebo developed symptoms. There is [no statistically meaningful difference](#) in those numbers, researchers report June 3 in the *New England Journal of Medicine*.

"This study definitely tempers enthusiasm for post-exposure prophylaxis among health-care workers," says Rachel Hess, a primary care doctor and health services researcher at the University of Utah School of Medicine in Salt Lake [City](#). She was not involved in the study, but is testing hydroxychloroquine in a clinical trial of people newly diagnosed with COVID-19.

A far larger study of the drug's potential to prevent disease, which involves thousands of health-care workers, is still ongoing and expected to report results later this year.

Interest in hydroxychloroquine stems from studies in lab dishes that have suggested that the antimalarial drug could block coronavirus entry into cells and slow viral replication. But studies testing the antimalarial drug against severe cases of COVID-19 largely haven't panned out.

A study published May 22 in the *Lancet* also had suggested hydroxychloroquine carries a higher risk of death for people with serious cases of COVID-19, leading the World Health Organization to temporarily stop one part of a clinical trial testing the drug. But editors of the *Lancet* issued an [expression of concern](#) June 3 that the study might be based on faulty data provided by a company founded by coauthor Sapan Desai. Surgisphere Corp, based in Chicago, refused to turn its proprietary database over to reviewers, so the other authors of the study [retracted the paper](#) June 4. The WHO also announced June 3 that [testing of hydroxychloroquine will resume](#) after a safety review found no reason to halt the trial.

Despite disappointing results from studies of patients with severe disease, researchers were [hopeful that giving the drug earlier might have benefits](#) (*SN*: 5/22/20). "There is some thought that it could still be clinically important, but we're less optimistic than we were before we got our results," says Sarah Lofgren, an infectious diseases doctor at the University of Minnesota.

Lofgren and colleagues recruited participants via the Internet. Study volunteers were mostly health-care workers or family members who had been exposed to a person with a known case of COVID-19 for 10 minutes or longer while not wearing a mask or eye protection. That's considered a high-risk exposure. Some people in the study had moderate risk exposures, in which they were wearing masks but not eye protection when they encountered the person with coronavirus.

Researchers asked participants to take a total of 19 tablets over five days, assigning participants at random to get either hydroxychloroquine or a placebo. Neither the researchers nor volunteers

Sign up for e-mail updates on the latest coronavirus news and research

knew which drugs each person received. Participants then reported symptoms and side effects for 14 days, with follow-up surveys four to six weeks later.

Because the study began in March when testing for COVID-19 was scarce, only 20 people in the study got tested with PCR, which detects the virus's genetic material, to confirm their infections. Researchers relied on other study participants' symptoms to determine whether they likely had COVID-19. Studies have shown that nearly half of people who contract the virus have mild or no symptoms. "If they were asymptomatic, we missed them," Lofgren says.

About 40 percent of participants who took hydroxychloroquine had side effects, which mostly consisted of gastrointestinal problems such as nausea, diarrhea and indigestion. Only about 17 percent of people taking placebo reported side effects. None of the side effects reported by either group were severe. But the lack of clear benefit for people taking hydroxychloroquine coupled with the risk of side effects led a review board to stop the trial early for "futility."

Even if the difference between the two groups crossed the threshold to be statistically important, there's not enough clinical evidence of benefit to suggest hydroxychloroquine can stop coronavirus infection after exposure to the virus, Lofgren says. Lofgren and colleagues also are finishing two other trials testing the drug at two other stages: whether it can prevent infection when given before exposure or hold off serious disease for those already infected.

See all our coverage of the coronavirus outbreak

But [Myron](#) Cohen, director of the Institute for Global Health & Infectious Diseases at the University of North Carolina School of Medicine in Chapel Hill, suggests that the jury

is still out on hydroxychloroquine's preventive powers. The study results "are more provocative than definitive, suggesting that the potential prevention benefits of hydroxychloroquine remain to be determined," he writes in an editorial also published June 3 in the journal. He notes that some study participants quit taking the drug before they had finished all 19 pills, usually because of side effects. And there was no [way](#) to confirm that others [took the drug as instructed](#).

Hess says she's waiting for other studies to confirm or contradict this study. These findings indicate that people shouldn't take the drug as a COVID-19 preventative if not enrolled in a

clinical trial, she adds. Instead, wearing masks, social distancing and thorough handwashing will best help protect individuals and communities from infection.

CITATIONS

D. R. Boulware *et al.* [A randomized trial of hydroxychloroquine as postexposure prophylaxis for Covid-19](#). *New England Journal of Medicine*. June 3, 2020. doi: 10.1056/NEJMoa2016638

M. S. Cohen. [Hydroxychloroquine for the prevention of Covid-19 – Searching for evidence](#). *New England Journal of Medicine*. June 3, 2020. doi: 10.1056/NEJMe2020388

The *Lancet* Editors. [Expression of concern: Hydroxychloroquine or chloroquine with or without a macrolide for treatment of COVID-19: a multinational registry analysis](#). *Lancet*. June 3, 2020. doi: 10.1016/S0140-6736(20)31290-3

M. R. Mehra, F. Ruschitzka and A. N. Patel. Retraction: "[Hydroxychloroquine or chloroquine with or without a macrolide for treatment of COVID-19: a multinational registry analysis](#)." *Lancet*. June 4, 2020. doi: 10.1016/S0140-6736(20)31324-6