Chloroquine: is a 70-year-old treatment for malaria the key to beating coronavirus?

Doctors in France offer glimmer of hope as they reveal a positive result from treatment.

By Anne Gulland19 March 2020

Hopes of a cure for coronavirus are being pinned on chloroquine – a 70-year-old treatment for malaria – after doctors in France reported positive results.

Does the malaria pill chloroquine work against coronavirus?

Doctors in Marseille in the south of France have claimed that patients have successfully been treated with the malaria drug chloroquine. In a study of 36 patients 20 were given the drug. After six days, 70 per cent of the chloroquine patients were considered cured, that is the virus was no longer detected in blood samples, compared to just 12.5 per cent of the control group of patients.

How much faith can we put in these results?

This is a significant effect, says Dr Andrew Preston, reader in microbial pathogenesis at the University of Bath, who was not involved in the study. However, the study was conducted on a very small number of patients and would need to be replicated on a much larger scale to be scientifically convincing.

Has it been used anywhere else?

Doctors in Australia and China have also seen promising results with the drug and hope to start a trial within the next few weeks.

How might the drug work against coronavirus?

Robin May, professor of infectious disease at the University of Birmingham, says that the process is not yet well understood. However, he speculates that a process called "endocytosis" - where the virus enters the host - may have something to do with it.

"This means that the virus is initially taken up into an intracellular 'compartment' which is typically fairly acidic. Chloroquine would alter the acidity of this compartment, which can interfere with the ability of viruses to escape into the host cell and start replicating," he says. "Another possibility is that chloroquine may alter the ability of the virus to bind to the outside of a host cell in the first place - which is an essential first step for entry."

Why did doctors try it against Covid-19?

For around 10 years there have been studies reporting the anti-viral effects of chloroquine and it was used to treat patients in the severe acute respiratory syndrome (Sars) outbreak of 2002 to 2003. "[Chloroquine] received relatively little attention as the Sars outbreak died away. Recognising that the current Covid-19 virus is a close relative, several researchers have already tested whether chloroquine might be a therapeutic for the current pandemic," says Dr Preston.

Is chloroquine expensive?

No – it is cheap and relatively easy to manufacture. French pharmaceutical firm Sanofi has offered to hand out millions of packs of the drug and say they have enough to treat 300,000 patients.

Why aren't doctors using it routinely?

A full-scale clinical trial needs to be carried out before it is offered as a routine treatment. But because it is an existing drug which is known to be safe that could happen quite quickly. Repurposing existing drugs for a new disease is always a first step because scientists don't have to do animal and safety trials.

What other drugs are doctors testing?

A clinical trial has also begun on a drug called remdesivir, a broad-spectrum antiviral treatment developed for Ebola. It was used to treat the Scottish nurse Pauline Cafferkey when she suffered a relapse 18 months after being cleared of the disease which she contracted while volunteering in Sierra Leone.
HIV antiviral drugs have also been flagged as potential options, and there are several studies ongoing in China looking at a combination of lopinavir and ritonavir, both of

Trump pledges access to malaria drug chloroquine for COVID-19

Phil Taylor, March 20, 2020

President Donald Trump thrust a decades old malaria drug called chloroquine into the forefront of efforts to treat people with COVID-19 yesterday, saying the US would make it available "almost immediately", even though it hasn't been fully tested.
Chloroquine is already approved for treating malaria, lupus and rheumatoid arthritis, and is being used clinically in countries such as China and France to see if it can treat patients with mild or moderate COVID-19 infections.
President Trump said yesterday that it was "approved for safety" and that the US government had "ordered a lot of it", adding that it could be a "total game-changer" and would be available on prescription soon.

Chloroquine could be made available on a compassionate use or 'expanded access' basis ahead of full regulatory approval for COVID-19.

The FDA says it is possible the drug could reduce the duration of symptoms and viral shedding, which could help prevent the spread of the disease.
That is backed up by a small study in 24 patients conducted at a hospital in Marseille, which found that after six days the virus was detected in 25% of chloroquine-treated subjects and 90% of untreated controls.

President Trump's call nevertheless seems to have galvanised action by pharma companies, with both Bayer and Teva saying they will donate chloroquine supplies to the US government to help test and deliver the drug.

Bayer is providing three million chloroquine tablets to the federal government and is seeking emergency use authorisation for the drug in the US.

Meanwhile, Teva has promised to deliver six million tablets of hydroxychloroquine sulphate – a derivative of chloroquine approved for the same indications – by the end of March and says it will be able to supply 10 million within a month at no cost.

"Although the product is not currently approved for use in the treatment of COVID-19, it is currently under investigation for efficacy against the coronavirus and has been requested by US government officials to be made available for use immediately," said the Israeli drug maker.
President Trump also called on the FDA to cut the "red tape" to get COVID-19 therapies approved for widespread use more quickly, saying he had "directed the FDA to eliminate rules and bureaucracy so work can proceed rapidly."

He also highlighted Gilead Sciences' remdesivir, also in testing for the coronavirus, saying it was "close to approved".
The FDA clarified that it has been working with the company to "find multiple pathways to both study the drug…as well as provide the drug to patients under emergency use", adding around 250 people have been treated with the drug to date.

The agency also highlighted an ongoing trial of Regeneron's IL-6 inhibitor sarilumab to see if it can mitigate the inflammatory response that leads to respiratory shutdown in some COVID-19 patients, and the use of antibody-rich blood products harvested from patients to fight the infection.