

Fenofibrate, a drug for COVID-19? All we need to know

Taimoor Hassan¹, Saleha²

¹ Post-graduate Scholar, School of Pharmacy & School of Medicine, Changzhou University, Jiangsu, China; ² Research Assistant, Department of Anthropology, Quaid-E-Azam University, Islamabad, Pakistan. **Correspondence:** Dr. Taimoor Hassan, Post-graduate Scholar, School of Pharmacy & School of Medicine, Changzhou University, Jiangsu, China. **Email:** Taimoorhassan408.th@gmail.com

Cite this Article: Hassan, T., Saleha. Fenofibrate, a drug for COVID-19? All we need to know. International Journal of Rawalpindi Medical College. 30 Jun. 2022; 1(1): 4-5.

Received November 2, 2021; accepted January 13, 2022; published online June 30, 2022

Fenofibrate, a cholesterol-lowering medication, also destabilizes the spike protein on SARS-CoV-2 and prevents it from attaching to human cells. It was efficacious even against SARS-CoV-2 variants investigated in vitro by the researchers.¹ According to laboratory tests, a low-cost generic medication decreases SARS-CoV-2 contamination in human cells by up to 70%.² One medicine that individuals used to regulate cholesterol levels might be an effective therapy against COVID-19, according to a multinational initiative comprising scientists from San Raffaele Scientific Institute in Milan, University of Birmingham, and the University of Keele in the United Kingdom. The study's findings will be published in the journal *Frontiers in Pharmacology*.^{1,2}

In the beginning, researchers tested a number of approved medicines on animals. For COVID-19 therapy, they were seeking medicines that disrupted interactions between the viral spike protein and the human cell surface. Dr. Alan Richardson, a co-author of the study, told a source that they have evaluated above 100 medicines and discovered that fibric acids had the most potential. Fenofibrate proved to be a better alternative to clofibrate because of its unfavorable side effects."³ Fenofibrate was developed by scientists in the 1980s, and it was frequently prescribed by Physicians to lower cholesterol levels in patients.² It was incredibly popular, until statins were discovered, to reduce the risk of heart disease. Statins are currently taken by over 30 million people in the United States and throughout the world. Fenofibrate, on the other hand, is used by patients who cannot tolerate statins.⁴

Currently, the medication is efficacious against the Beta and Alpha strains of SARS-CoV-2, and the team is researching its efficacy against the Delta variant nowadays. "Resistance will be tougher to develop since the medication hits several targets, not only the spike protein, thus future variations should not be able to escape the effect."² Fenofibrate was shown to be just as efficient against a live virus as

the isolated protein.³ Dr. Farhat Khanim, a co-author of the paper, tested the medication against a live virus. She had high hopes for it. The scientists are cautiously and extremely enthusiastic about the possibilities. They further opined that we must not lose sight of the reality that there are high-risk categories of individuals for whom the vaccination will not function. In order to treat SARS-CoV-2, we must urgently increase our arsenal of medicines.⁴

According to Dr. Khanim: "The medication appears to work, regardless of spike mutations."⁴

When infected cells were given fenofibrate in vitro, the researchers looked at the amount of virus that was released from them. When compared to untreated cells, they discovered that viral release was reduced by 60%. Statins, for example, did not have the same impact.⁵

Fascinatingly, fenofibrate can be taken orally and is extremely inexpensive, so if scientists duplicate the findings in clinical trials, it might be helpful for poor and medium-income countries that have struggled with vaccinations in the past. Fenofibrate is readily available, according to the estimates, a course of therapy would cost between £10 and £20.⁶

If this in vitro result translates into a beneficial clinical impact, it may add another medication to our arsenal, according to Dr. Peter English. This is all theoretical at the moment, he says, because the medication hasn't been tested outside of the laboratory yet. The study's authors urge caution in interpreting their conclusions because they are based on laboratory experiments. For COVID-19, they are eager to begin clinical studies with fenofibrate.⁷

As Dr. Khanim told, "I'd want to see clinical studies in high-risk people in the community with symptoms, initiating therapy early to see whether it reduces hospitalization."²

References

- [1] Begley A. Licensed drug may reduce COVID-19 infection by 70 percent. Drug Target Review. [Online]. Available online at: <https://www.drugtargetreview.com/news/95512/licensed-drug-may-reduce-covid-19-infection-by-70-percent/> [Cited on October 24, 2021]
- [2] Lang K. A readily available drug may help fight COVID-19. Medical News Today. [Online]. Available online at: <https://www.medicalnewstoday.com/articles/a-readily-available-drug-may-help-fight-covid-19> [Cited on October 24, 2021]
- [3] Press Release. Cholesterol medication, Fenofibrate, could reduce SARS-CoV-2 infection by up to 70 percent: UK study. Outbreak News Today. [Online]. Available online at: <http://outbreaknewstoday.com/cholesterol-medication-fenofibrate-could-reduce-sars-cov-2-infection-by-up-to-70-percent-uk-study-27719/> [Cited on October 24, 2021]
- [4] Cohan A. Cholesterol drug found to reduce coronavirus infection by up to 70%, according to new study. Boston Herald. [Online]. Available online at: <https://www.bostonherald.com/2021/08/14/cholesterol-drug-found-to-reduce-coronavirus-infection-by-up-to-70-according-to-new-study/> [Cited on October 24, 2021]
- [5] Gorman A. Cholesterol-lowering drug being tested at Penn Medicine to help fight COVID-19. 6ABC.COM. [Online]. Available online at: <https://6abc.com/cholesterol-drug-covid-19-tricor-penn-medicine/10943141/> [Cited on October 24, 2021]
- [6] SciTechDaily. Research Shows Drug Reduces COVID Infection by Up to 70% – Already FDA Approved for Cholesterol. SciTechDaily.com. [Online]. Available online at: <https://scitechdaily.com/research-shows-drug-reduces-covid-infection-by-up-to-70-already-fda-approved-for-cholesterol/> [Cited on October 24, 2021]
- [7] Puiu T. High cholesterol drug could reduce SARS-CoV-2 infection by 70%. ZME Science. [Online]. Available online at: <https://www.zmescience.com/medicine/high-cholesterol-drug-could-reduce-sars-cov-2-infection-by-70/> [Cited on October 24, 2021]