



Can COVID-19 be Cured?

Shyamapada Mandal*

Laboratory of Microbiology and Experimental Medicine, Department of Zoology, University of Gour Banga, India

*Corresponding Author: Shyamapada Mandal, Laboratory of Microbiology and Experimental Medicine, Department of Zoology, University of Gour Banga, India.

Received: January 25, 2021

Published: February 27, 2021

© All rights are reserved by **Shyamapada Mandal**.

The COVID-19 is a pandemic, which is caused with the infection of SARS-CoV-2 that emerged initially in China in December 2019, and the virus thereafter spread to almost all the countries and territories very rapidly, causing 96,658,420 people sick including 2,092,062 deaths [as per the World Health Organization], as of January 23, 2021, globally [1]. Although the clinical spectrum of COVID-19 might be mild asymptomatic or severe/critical [2], the common COVID-19 symptoms include cough, fever, shortness of breath, myalgia, joint pain and fatigue, gastrointestinal discomfort, as well as anosmia and dysgeusia [3]. Such symptoms, mainly fatigue, dyspnoea, joint pain, and chest pain might even persist for long time (termed as long COVID or long haulers) when there were PCR negative tests among people following recovery from SARS-Cov-2 infection [3-6].

Actually the highly infectious Betacoronavirus, SARS-CoV-2, replicates within the upper respiratory system at the initial stage of the disease [causing mild or asymptomatic COVID-19 in most cases], followed by immunopathological stage of inflammatory response to SARS-CoV-2 infection causing severe/critical COVID-19 with cytokine storm [a stage with substantial elevation of blood serum pro-inflammatory cytokines levels] and ARDS [acute respiratory distress syndrome] and multiple organ failure [majorly lungs, as well as heart, liver and kidney] [7]. The critical COVID-19 display clinical conditions [inflammation, immune dysfunction, and coagulopathy] that are also seen among cancer patients [8].

No specific drug as well as vaccine is available to combat effectively the COVID-19 ongoing pandemic, which devastated the foremost vulnerable: old people, or people with medical conditions, and so that the existing approved drugs [antibacterial, anti-parasitic, antiviral, anticancer, and anti-inflammatory] are repurposed to treat COVID-19 patients [9,10], and such drugs are mostly under clinical trials. Exploring the therapeutic targets, so as to find the ef-

fective drugs for the treatment of COVID-19, it is prime to elucidate the structure of SARS-CoV-2, genome, and replication cycle [9]. The promising targets of drugs include 3-chymotrypsin-like protease, papain-like protease, RNA-dependent RNA polymerase, alongside the drug targets related to viral entry and immune regulation pathways [11]. Plants possess a large number of bioactive components [basically the phenolics, flavonoids, steroids, glycosides, saponins, alkaloids and tannins] that targets with helicases, ACE2, TMPRSS2, 3CL-pro, and PL-pro, for their action, with excellent binding affinity, against the virus, SARS-CoV-2, that causes COVID-19 [12].

On repurposing, the current COVID-19 therapeutic approaches are, thus, antivirals (that inhibit host cell entry and replication of SARS-CoV-2) and immune modulators (that facilitate the immune system to fight the virus, SARS-CoV-2, or stop cytokine storm). Accounting the facts mentioned, repurposing of approved or experimental drugs, including the anticancer agents, in addition to biotherapeutics (probiotics and phytochemicals) may well be tested following the novel trial methodologies, and considering all aspects of safety and effectiveness, for the management and treatment of COVID-19 patients. Therefore, studies with the bioactive phytochemicals and probiotics having the capacity to combat bacterial secondary infection, may open a new vista in discovering and developing effective drugs to treat COVID-19. Also, vaccine is desperately needed to stop SARS-CoV-2 transmission, and deaths from COVID-19.

Bibliography

1. World Health Organization. WHO Coronavirus Disease (COVID-19) Dashboard (2020).
2. Johansson MA., *et al.* "From people without COVID-19 symptoms". *JAMA Network Open* 4 (2021): e2035057.
3. Brodin P. "Immune determinants of COVID-19 disease presentation and severity". *Nature Medicine* 27 (2021): 28-33.

4. Yelin D., *et al.* "Long-term consequences of COVID-19: research needs". *Lancet Infectious Diseases* 20 (2020): 1115-1117.
5. Carfi A., *et al.* "Persistent symptoms in patients after acute COVID-19". *JAMA* 324 (2020): 603-605.
6. Marshall M. "The lasting misery of coronavirus long-haulers". *Nature* 585 (2020): 339-341.
7. Yang L. "COVID-19: immunopathogenesis and Immunotherapeutics". *Signal Transduction and Targeted Therapy* 5 (2020): 128.
8. Saini KS., *et al.* "Repurposing anticancer drugs for COVID-19-induced inflammation, immune dysfunction, and coagulopathy". *British Journal of Cancer* 123 (2020): 694-697.
9. Mandal M., *et al.* "Bioinformatic Approaches for identification of potential repurposable drugs in COVID-19". *Journal of Drug Delivery and Therapeutics* 11 (2021): 13-22.
10. Mandal M., *et al.* "Insights into the molecular mechanism of anticancer drug ruxolitinib repurposable in COVID-19 therapy". *medRxiv* (2020).
11. Chibber P., *et al.* "Advances in the possible treatment of COVID-19: A review". *European Journal of Pharmacology* 883 (2020): 173372.
12. Benarba B., *et al.* "Medicinal plants as sources of active molecules against COVID-19". *Frontiers in Pharmacology* 11 (2020): 1189.

Assets from publication with us

- Prompt Acknowledgement after receiving the article
- Thorough Double blinded peer review
- Rapid Publication
- Issue of Publication Certificate
- High visibility of your Published work

Website: www.actascientific.com/

Submit Article: www.actascientific.com/submission.php

Email us: editor@actascientific.com

Contact us: +91 9182824667