



LETTER TO THE EDITOR

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Plasma Therapy: Why not for post – exposure prophylaxis in Health Care Professionals?

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Dear Editor,

The COVID-19 pandemic caused by SARS CoV-2, originated in China in December 2019, is creating havoc in almost all countries and has now become a major concern all over the world. In a battle against COVID-19 disease, health care professionals carry a higher risk of exposure. Health care workers represent one of the most vulnerable populations in terms of contracting the highly virulent disease. It has been observed that during the course of management of COVID-19 cases, many health care professionals have suffered from this dreadful virus. The report shows that many health care professionals from almost all countries with COVID-19 pandemic and in particular from China, United States of America, Germany, Italy, Spain, etc. have lost their lives because of COVID-19 disease. As per the report from WHO 22,073 healthcare workers across 52 countries were infected by COVID-19 as of April 12, 2020.¹ The percentage of infected health workers has almost doubled the number registered in China throughout the epidemic and as many as 100 doctors have succumbed to death in Italy after contracting the novel coronavirus while treating the patients of COVID-19 disease.^{2,3} Almost 600 US Healthcare workers have died From COVID-19 as of June 9, 2020.⁴ To protect the health of health care professionals must be the top most priori-

ty, especially in a current pandemic of COVID-19. Although hydroxychloroquine has been recommended for prophylaxis, there is no supportive evidence that it is an effective prophylactic option to offer protection against SARS CoV-2.⁵ Artificially acquired passive immunity is used for treatment as well as for prophylaxis and is particularly useful in clinical emergencies where immediate and temporary protection is needed. The principle of passive immunization is mainly used for prophylaxis in suspected exposed cases and also for treating infected cases. Previously, the use of convalescent plasma has been reported to be successful in postexposure prophylaxis and/or treatment of various infectious diseases, including other coronavirus infections such as SARS-1, Middle East respiratory syndrome (MERS), etc.⁶ In view of non-availability of a suitable vaccine and non-availability of defined/established treatment modality against SARS CoV-2, in a current outbreak convalescent plasma (CP) collected from recently recovered individuals from COVID-19 disease is coming up as one of the treatment options. The CP therapy has been proved to be effective in the management of COVID-19 cases with clinical benefits including radiological resolution of pulmonary pathology, reduction in viral loads and improved survival.⁶⁻⁹ In view of non – availability of effective prophylactic option for health care pro-

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professionals for COVID-19 in a current situation, plasma therapy could be an effective option for post – exposure prophylaxis of health care professionals exposed to infection while treating these cases, as it has been found to be more effective and better in prevention as compared to the treatment/management of infected cases, and thus, has been more promising treatment option for COVID-19 cases with early symptoms and to prevent disease in those who are exposed to infection.¹⁰⁻¹¹ It has been observed that administration of convalescent plasma would be expected to be more effective before the patient develops its own antibodies to SARS-CoV-2; hence, it would be more effective option for post-exposure prophylaxis rather than treating the infected cases in which already antibodies are formed in response to infection.¹² In a review by Rojas et al., it has been suggested that the benefits of Convalescent Plasma therapy in neutralization of the virus, control of an overactive immune response and immunomodulation of a hypercoagulable state are expected to be better achieved in non-critically hospitalized patients.¹³

We hope that the use of convalescent plasma for post-exposure prophylaxis in health care professionals would be helpful to reduce the mental stress in them and give courage to work non-apprehensively to discharge better services in the present dreadful situation of COVID-19.

References

1. Healthworld.com <https://health.economictimes.indiatimes.com/news/industry/who-says-over-22000-healthcare-workers-across-52-countries-infected-by-covid-19/75107238>. Accessed 23/06/2020.
2. Neto MLR, Almeida HG, Esmeraldo JD, et al. When health professionals look death in the eye: the mental health of professionals who deal daily with the 2019 coronavirus outbreak. *Psychiatry Res.* 2020. doi:10.1016/j.psychres.2020.112972
3. The Businessline. <https://www.thehindubusinessline.com/news/world/covid-19-over-100-italian-doctors-have-died-of-treating-virus-patients/article31305687.ece#>. Accessed 23/06/2020.
4. Medscape. <https://www.medscape.com/viewarticle/932028>. Accessed 23/06/2020.
5. Rathi S, Ish P, Kalantri A, Kalantri S. Hydroxychloroquine prophylaxis for COVID-19 contacts in India. *Lancet Infect Dis.* 2020. doi:10.1016/S1473-3099(20)30313-3.
6. Bloch E, Shoham S, Casadevall A, et al. Deployment of convalescent plasma for the prevention and treatment of COVID-19. *J Clin Invest.* 2020;130:2757-2765.
7. Chen L, Xiong J, Bao L, Shi Y. Convalescent plasma as a potential therapy for COVID-19. *Lancet Infect Dis.* 2020;20:398-400.
8. Shen C, Wang Z, Zhao F, et al. Treatment of 5 critically ill patients with COVID-19 with Convalescent plasma. *JAMA.* 2020;323(16):1582-1589.
9. Duan K, Bende L, Cesheng L et al. Effectiveness of convalescent plasma therapy in severe COVID-19 patients. *Proc Natl Acad Sci USA.* 2020;117:9490-9496.
10. Özdemir Ö, Melek Arsoy HE. Convalescent (Immune) Plasma Therapy with all Aspects: Yesterday, Today and COVID-19. *Erciyes Med J.* 2020;42. doi:10.14744/etd.2020.36528.
11. Anudeep TC, Jeyaraman M, Shetty DU, Raj MH, Ajay SS, Somasundaram R, et al. Convalescent Plasma as a Plausible Therapeutic Option in nCOVID-19 – A Review. *J Clin Trials.* 2020;10. doi:10.35248/2167-0870.20.10.409.
12. Roback J D, Guarner J. Convalescent Plasma to Treat COVID-19 Possibilities and Challenges. *JAMA.* 2020;323(16):1561-1562.
13. Rojas M, Rodriguez Y, Monsalve DM, et al. Convalescent plasma in Covid-19: Possible mechanisms of action. *Autoimmunity Reviews.* 2020;19. doi:10.1016/j.autrev.2020.102554.