Can hyperimmune anti-CMV globulin substitute for convalescent plasma for treatment of COVID-19?

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Letter to Editors

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ABSTRACT

Information on treatment of COVID-19 infection in renal transplant recipients is scarce, especially in symptomatic patients and patients with recent major clinical events. This group of patients suffers from different opportunistic infections which may coexist with COVID-19. Currently available expert opinions suggest reduction of immunosuppression therapy for renal transplant recipients with symptomatic COVID-19 infection with either antiviral drugs, hydroxychloroquine and/or azithromycin. Inspired by our experience in treatment of CMV pneumonia and literature data on the potential benefit of convalescent plasma for treatment of different viral diseases we suggest use of the hyperimmune anti-CMV gamma globulins in addition to other available therapies. Besides the immunosuppression reduction which is supposed to be beneficial, immunoglobulins with their immunomodulatory effects and possible antiviral role, may increase a possibility for favorable outcome.

Dear Editor

Since December 2019, the Coronavirus COVID-19 pandemic has affected almost 2,5 million people worldwide with more than 170.000 proven deaths by April 21th 2020 [1]. Renal transplant recipients are at increased risk for development of infection due to their immunocompromised state, but may also have more severe forms of the disease and an increased mortality risk due to numerous comorbidities. Information on treatment of COVID-19 infection in renal transplant recipients is scarce, especially in symptomatic patients and patients with recent major clinical events. Current epidemiologic situation with the COVID-19 pandemic present a great challenge for transplant physicians. Lack of experience and well known fact that even in the simplest cases one size does not fit all", we should more than ever focus on the individual approach to each patient. Currently available expert opinions suggest reduction of immunosuppression therapy for renal transplant recipients with symptomatic COVID-19 infection. However, a huge gap in knowledge exists for patients with additional problems besides the COVID-19 infection.

Inspired by our experience in treatment of CMV pneumonia and literature data on the potential benefit of convalescent plasma for treatment of different viral diseases we suggest use of the hyperimmune anti-CMV gamma globulins in addition to other available therapies. Besides the immunosuppression reduction which is supposed to be beneficial, immunoglobulins with their immunomodulatory effects and possible antiviral role, may increase a possibility for favorable outcome. Hyperimmune anti-CMV immunoglobulin is a CMV-specific polyclonal immunoglobulin preparation that binds to CMV surface antigens neutralizing the potential of CMV from entering host cells. Additionally, it presents the CMV particle for phagocytosis by binding to the CMV surface. Finally, the preparation has immunomodulatory actions which may be beneficial. We decided to use hyperimmune anti-CMV globulins while the preparation contains immunoglobulins directed against the multiple viral pathogens (EBV, measles, parvovirus B19…) [2], and thus may imitate (at least partially) the convalescent plasma. Convalescent plasma therapy, has been used in treatment of numerous infectious diseases including SARS and MERS pandemic [3]. Based on the theory that it may neutralize viremia in patients with SARS-CoV-2 infection, one dose of 200 mL of convalescent plasma derived from recently recovered donors, was transfused to the patients along with the supportive care and antiviral drugs. The treatment was well tolerated, resulted with clinical and laboratory improvement, but with varying degrees of absorption of lung lesions [4,5].

In conclusion, we suggest the use of hyperimmune anti-CMV immunoglobulins for treatment of COVID-19 especially when occur as coinfection with CMV instead of the convalescent plasma which may be unavailable for majority of patient.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.mehy.2020.109903.

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