Science Publications

Global Journal of Epidemiology and Infectious Disease, 2022, 2, 36-37
www.scipublications.org/journal/index.php/gjeid
DOI: 10.31586/gjeid.2022.238

Mini Review

Role of Ivermectin in Management of COVID-19

Areej Mohamed Abdelhady Ahmed Helaly [1], Ghada Essam El-Din Amin [1,2], Salwa Mostafa Mohammad Abdel Rahman [1,3], Mohamed Farouk Allam [1,4,*]

[1] Department of Family Medicine, Faculty of Medicine, Ain Shams University, Cairo, Egypt

[2] Department of Community, Environmental and Occupational Medicine, Faculty of Medicine, Ain Shams University, Cairo, Egypt

[3] Department of Anesthesia, Intensive Care and Pain Management, Faculty of Medicine, Ain Shams University, Cairo, Egypt

[4] Department of Preventive Medicine and Public Health, School of Medicine, University of Cordoba, Cordoba 14004, Spain

*Correspondence: Mohamed Farouk Allam (farouk.allam@med.asu.edu.eg)

Abstract: The pandemic corona virus disease 19 (COVID-19), caused by (SARS-CoV-2) a single stranded-RNA virus, has been spread rapidly worldwide with high rate of morbidity and mortality. Few months after the spread of the pandemic, few medications have proven to be efficient in human clinical trials. Several antiviral drugs have been used outside the scope of their initial medical use, such as lopinavir, hydroxychloroquine or azithromycin. Recent researches were done to show the efficacy of ivermectin in reducing SARS-CoV-2 viral RNA within 2 days. The use of ivermectin in in vitro studies has proven its efficacy against Corona virus. Based on the potency of ivermectin in in vitro studies, various clinical trials including patients infected with COVID-19 have been started; most of them have not been completed yet. Since the way how the virus infects the cells in vitro and in vivo is different, a decisive comment about how the ivermectin could exactly be beneficial to the patients has not been proven yet. Nevertheless, if ivermectin is compared to the other therapeutic treatments available for COVID-19 management, ivermectin has proved to have leverage over them. New randomized controlled clinical trials to assess the effectiveness of ivermectin the management of COVID-19 are strongly and urgently needed.

Keywords: Coronavirus, COVID-19, Ivermectin, Management, Review

How to cite this paper: Helaly, A. M. A. A., Amin, G. E. E.-D., Abdel Rahman, S. M. M., & Allam, M. F. (2022). Role of Ivermectin in Management of COVID-19. *Global Journal of Epidemiology and Infectious Disease*, *2*(2), 36–37. Retrieved from https://www.scipublications.com/journal/index.php/gjeid/article/view/238

Received: January 21, 2022
Accepted: March 24, 2022
Published: March 26, 2022

Mini Review

The pandemic corona virus disease 19 (COVID-19), caused by (SARS-CoV-2) a single stranded-RNA virus, has been spread rapidly worldwide with high rate of morbidity and mortality. The first known case was recorded in December 2019 and then spread to various continents, including Europe, the United States and Africa, while the exact behaviour of the virus and its pathogenicity are not yet fully known [1]. Most of the cases are categorized as mild, for whom clinical monitoring and symptomatic treatment is recommended despite providing symptomatic treatment, a therapeutic medication that would limit the course of viral activity is needed [2].

Few months after the spread of the pandemic, few medications have proven to be efficient in human clinical trials. Several antiviral drugs have been used outside the scope of their initial medical use, such as lopinavir, hydroxychloroquine or azithromycin. Recent researches were done to show the efficacy of ivermectin in reducing SARS-CoV-2 viral RNA within 2 days [3].

Ivermectin, a widely used drug to treat a range of diseases, with its antimicrobial, antiviral, and anti-cancer properties, is thought to act at different protein-binding sites to

reduce viral replication, consequently many countries have included ivermectin in their treatment protocols [4].

The use of ivermectin in *in-vitro* studies has proven its efficacy against Corona virus. Based on the potency of ivermectin in *in-vitro* studies, various clinical trials including patients infected with COVID-19 have been started; most of them have not been completed yet. Since the way how the virus infects the cells in vitro and in vivo is different, a decisive comment about how the ivermectin could exactly be beneficial to the patients has not been proven yet [5]. Nevertheless, if ivermectin is compared to the other therapeutic treatments available for COVID-19 management, ivermectin has proved to have leverage over them. To clarify, the side effects associated with some therapeutic medications as hydroxycloroquine or the combination of lopinavir and ritonavir are not seen in patients using ivermectin. In addition, the therapeutic regimen with ivermectin turns out to be more cost-effective. The therapeutic regimen using antiviral drugs or the combination of azithromycin and hydroxychloroquine turns out to be much more expensive than the one using ivermectin. Taking into consideration these merits, it is imperative to prove whether ivermectin could be beneficial to the patients infected with Covid-19 virus or not [2,5,6].

In conclusion, ivermectin could have an important role in the management of COVID-19. New randomized controlled clinical trials to assess the effectiveness of ivermectin the management of COVID-19 are strongly and urgently needed.

References

[1] Heidary F, Gharebaghi R. Ivermectin: a systematic review from antiviral effects to COVID-19 complementary regimen. *J Antibiot (Tokyo)*. 2020;73(9):593-602. doi:10.1038/s41429-020-0336-z.

[2] Ahmed S, Karim MM, Ross AG, Hossain MS, Clemens JD, Sumiya MK, Phru CS, Rahman M, Zaman K, Somani J, Yasmin R, Hasnat MA, Kabir A, Aziz AB, Khan WA. A five-day course of ivermectin for the treatment of COVID-19 may reduce the duration of illness. *Int J Infect Dis*. 2021; 103: 214-216. doi: 10.1016/j.ijid.2020.11.191.

[3] Camprubí D, Almuedo-Riera A, Martí-Soler H, Soriano A, Hurtado JC, Subirà C, Grau-Pujol B, Krolewiecki A, Muñoz J. Lack of efficacy of standard doses of ivermectin in severe COVID-19 patients. *PLoS One*. 2020;15(11):e0242184. doi: 10.1371/journal.pone.0242184.

[4] López-Medina E, López P, Hurtado IC, Dávalos DM, Ramirez O, Martínez E, Díazgranados JA, Oñate JM, Chavarriaga H, Herrera S, Parra B, Libreros G, Jaramillo R, Avendaño AC, Toro DF, Torres M, Lesmes MC, Rios CA, Caicedo I. Effect of Ivermectin on Time to Resolution of Symptoms Among Adults With Mild COVID-19: A Randomized Clinical Trial. *JAMA*. 2021;325(14):1426-1435. doi: 10.1001/jama.2021.3071.

[5] Gupta D, Sahoo AK, Singh A. Ivermectin: potential candidate for the treatment of Covid 19. *Braz J Infect Dis*. 2020;24(4):369-371. doi: 10.1016/j.bjid.2020.06.002.

[6] Vallejos J, Zoni R, Bangher M, Villamandos S, Bobadilla A, Plano F, Campias C, Chaparro Campias E, Achinelli F, Guglielmone HA, Ojeda J, Medina F, Farizano Salazar D, Andino G, Ruiz Diaz NE, Kawerin P, Meza E, Dellamea S, Aquino A, Flores V, Martemucci CN, Vernengo MM, Martinez SM, Segovia JE, Aguirre MG. Ivermectin to prevent hospitalizations in patients with COVID-19 (IVERCOR-COVID19): a structured summary of a study protocol for a randomized controlled trial. *Trials*. 2020;21(1):965. doi: 10.1186/s13063-020-04813-1.