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LETTER TO THE EDITOR

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Metformin and COVID-19: A novel deal of an old drug

To the Editor,

In 2002, China witnessed the emergence of a severe acute respiratory disease caused by coronavirus (SARS-CoV). Ten years later in 2012, a new version of the virus appeared in the Middle East known as Middle East Respiratory Syndrome Coronavirus. At the end of 2019, the Chinese Center for Disease Control and Prevention (China CDC) recorded a pneumonia of unknown causes. Epidemiologically, the pneumonia was linked to a wet animal and seafood wholesale market in Wuhan, Hubei Province, China, later Known by COVID-19. The COVID-19 is a global pandemic infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).[1] Till now the total number of confirmed cases is 2 709 483 in over 225 countries around the world. A recent report indicates that obesity may responsible for increasing the mortality of COVID-19 in Italy rather than in China.[2] Here, we would like to shed light on a new suggestion to decrease the mortality rate of COVID-19. Metformin was discovered in the search for antimalarial agents in the 1940s and, proved useful in treating influenza during its clinical trial by lowering blood glucose.[3] Metformin was approved by the Food and Drug Administration (FDA) in 1995 as an oral hypoglycemic agent and it has become one of the most routinely prescribed antidiabetic drugs worldwide with the potential for further therapeutic applications.[4] In recent years, several studies reported the potential efficacy of metformin as a promising drug for treating polycystic ovary syndrome, cancer, aging, cardiovascular diseases, metabolic syndrome, and neurological diseases. In addition, it is used off-label for weight reduction in the USA.[5] Recent evidence indicates novel actions of metformin in the treatment of autoimmune disease and reduced macrophage cytokines synthesis.[5] Besides, it has been suggested that metformin may have an inhibitory effect on the virus, through increasing insulin sensitivity.[6] A retrospective cohort study was conducted in the USA from 2002 to 2012 for older patients more than 65 years of age, and prior history of diabetes and who were hospitalized with pneumonia. Interestingly, the prior administration of metformin was associated with significantly lower mortality.[7] Furthermore, a recent cohort study for 23 920 individuals with asthma and diabetes, the initiation of metformin was associated with a lower hazard ratio (0.92) of asthma exacerbation, driven by lower hazards of asthma-related emergency department visits (0.81) and hospitalizations (0.67).[8] Substantially, people in old age have more prone to COVID-19 than younger age. The death rate of elderly patients with COVID-19 is higher than that of young and middle-aged patients.[9] Consequently, it is now appropriate for the FDA to change the status of metformin to on-label use as an adjuvant therapy to decrease the mortality rate of COVID-19 in elderly, obese, and diabetic patients through the reduction of weight and pneumonia.

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

Amr Ahmed EL-Arabey[1]
Mohnad Abdalla[2]

[1]*Department of Pharmacology and Toxicology, Faculty of Pharmacy, Al-Azhar University, Cairo, Egypt*
[2]*Department of Biology, Qingdao Institute of Bioenergy and Bioprocess Technology Chinese Academy of Sciences, CAS Key Laboratory of Biofuels and Shandong Provincial Key Laboratory of Synthetic Biology, Qingdao, Shandong, China*

Correspondence

Amr Ahmed EL-Arabey, Department of Pharmacology and Toxicology, Faculty of Pharmacy, Al-Azhar University, Cairo, Egypt.
Email: ph.amrcapa@gmail.com and amrel_arabey@azhar.edu.eg

Mohnad Abdalla, Department of Biology, Qingdao Institute of Bioenergy and Bioprocess Technology Chinese Academy of Sciences, CAS Key Laboratory of Biofuels and Shandong Provincial Key Laboratory of Synthetic Biology, Qingdao, 266101 Shandong, China.
Email: mohnadabdalla200@gmail.com

ORCID

Amr Ahmed EL-Arabey http://orcid.org/0000-0003-0420-7191
Mohnad Abdalla https://orcid.org/0000-0002-1682-5547

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