

## Zinc ionophores' postulated antiviral and Immunomodulator effects, A reflection on the pathogenesis of COVID-19

Eman Ibrahim Anwar

Alexandria Faculty of Medicine, Egypt



### Abstract

In the Pandemic of COVID-19 infection, no longer the age and preliminary immune status are a barrier against this disease associated morbidity and mortality. An abnormal immune response and exaggerated cytokines release are reported to be in the background of disease. Notably, micronutrients homeostasis play a key role in maintaining a healthy immune response especially zinc, ascorbic acid and calcitriol. Although loss of taste and smell were reported in post-viral infection complications, in COVID-19 it was an early alarming sign in which the disease begins with in its pathogenesis. This sign is in line with acute zinc deficiency clinical presentation. In COVID-19, the pathogenesis can be possibly explained as zinc ion redistribution and acute immune cellular dysfunction due to serum zinc deficiency. Studies reported that zinc deficiency results in multiple immunological changes with a shift towards a predominantly innate immune response. The latter is not as effective in viral immune clearance as the adaptive immune response. Before COVID-19 pandemic, about two billion people are estimated to be affected by zinc deficiency worldwide. In developing countries, zinc deficiency is the 5th leading cause for the loss of healthy life years. In industrial countries, nearly 30% of the elderly population is considered to be zinc deficient. It is postulated that zinc supplementation combined with zinc ionophores may offer dual antiviral and immune modulatory effects in favor of enhancement of adaptive immune response.



### Biography:

Eman I. Anwar is a lecturer in Clinical Pharmacology at Alexandria Faculty of Medicine, Egypt, completed her Master degree Medical Basic Science in Pharmacology general grade Excellent GPA score: 3.642, August 2016. She is Pharmacovigilance & drug counseling center advisor at university hospital clinics Since June 2015 and Egyptian Association of Medical Basic Sciences (EAMBS) member since 2009. Her research interest is on Experimental pharmacology in oncology, endocrinology, Pharmacovigilance, Medical, 2011 and Doctor degree in Clinical Pharmacology with education and E-learning.

### Speaker Publications:

1. "Anti-Diabetic Drugs & Cancer Risk Challenge."

[3<sup>rd</sup> International Conference on Clinical Microbiology, Virology and Infectious Diseases](#), Webinar - April 29-30, 2020

### Abstract Citation:

Eman Ibrahim Anwar, Zinc Ionophores Postulated Antiviral and Immunomodulator effects, A reflection on the pathogenesis of COVID-19, Microbiology Meet 2020, 3<sup>rd</sup> International Conference on Clinical Microbiology, Virology and Infectious Diseases, Webinar, June 12-13, 2020  
<https://microbiology.vaccineconferences.com/>