Zinc Ionophores' Postulated Antiviral and Immunomodulator effects , a Reflection on The Pathogenesis of COVID-19

Anwar E.

Dr. Eman Ibrahim Anwar, lecturer in Clinical Pharmacology, Alexandria Faculty of Medicine, Egypt.

dremanpharmalex@gmail.com

Abstract

In the Pandemic of COVID-19 infection, no longer the age and preliminary health status were a barrier against this disease associated morbidity and mortality. A dysregulated immune response and an exaggerated cytokines release were reported to be in the background the disease.

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 as reported in various studies on sepsis. Studies reported that zinc deficiency results in multiple immunological changes a shift towards a predominantly innate immune response. The latter is not as effective in viral immune clearance as the adaptive immune response. Notably, micronutrients homeostasis play a key role in maintaining a healthy immune response especially zinc.

Current studies on zinc ionophores especially, chloroquine and quercetin ,reported an effectiveness in COVID-19 morbidity and mortality with an early administration. It is postulated that zinc supplementation combined with zinc ionophores may offer dual antiviral and immune modulatory effects in favor of both the maintenance and the resetting of an effective cell-mediated immune response.

Key words: zinc , zinc ionophores , chloroquine , quercetin , COVID-19 , dysregulated immune responses.