ACTA SCIENTIFIC NUTRITIONAL HEALTH (ISSN:2582-1423)

Volume 4 Issue 5 May 2020

Editorial

COVID-19 Infection and Anti-Aging Gene Inactivation

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Received: March 23, 2020

Published: April 06, 2020

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The World Health Organization on December 31, 2020 was informed by Chinese authorities of an outbreak of a novel strain of coronavirus called SARS-CoV-2. In February 20, 2020, nearly 167,500 COVID-19 cases have been documented and the virus has killed over 6,600 people [1]. The infected individuals may experience mild illness and recover while others can become seriously ill and die. The reasons for the differences between individuals with relevance to COVID-19 severity may be associated with biotherapy of the immune system [2]. Diet and nutrition have been a major focus with relevance to the global chronic disease epidemic. Chronic diseases such as obesity, diabetes and neurodegenerative diseases are expected to increase in the next 30 years and non-alcoholic fatty liver disease (NAFLD) to reach between 30 - 40% of the global population [3,4]. These chronic diseases are associated with an altered immune system that lead to severe illnesses after virus infections. The role of diet, nutrition and appetite control may be critical to stabilize and reverse the illness in infected individuals.

The role of anti-aging genes have become of major importance to the global chronic disease epidemic [5]. The anti-aging gene Sirtuin 1 (Sirt 1) is critical to maintain the immune system [2] and when Sirt 1 is defective diseases such as NAFLD, obesity, diabetes and neurodegenerative diseases are accelerated. Sirt 1 is a NAD+ dependent protein deacetylase and is involved in the deacetylation of the nuclear receptors with its critical involvement in insulin resistance and the immune system. The anti-aging gene is linked to telomere biology and global DNA repair which provides mechanistic explanations for Sirt 1 functions in the protection of DNA damage and thus genomic stability. COVID-19 infected individuals should be tested early for the anti-aging protein Sirt 1 which needs to be in the plasma in ng/ml quantities [6]. In the presence of Sirt 1 repression with low Sirt 1 plasma protein levels the immune system will be defective and the COVID-19 infection uncontrolled.

In the developing world factors such as xenobiotics [3] and bacterial lipopolysaccharides [7] are elevated that may repress Sirt 1 with the severity of COVID-19 infection in the developing world individuals that may lead to death. The major concern with COVID-19 infection is that it may lead to Sirt 1 inactivation and multiple organ disease syndrome [8]. Sirt 1 and body temperature should be carefully controlled with relevance Sirt 1 inactivation [9]. Antibiotic resistance in the developing world with raised LPS levels may only increase the severity of COVID-19 in these individuals. Food quality is of major concern with relevance to diet and nutrition in infected individuals with food mycotoxin and LPS levels to be measured [7]. Diets that reverse NAFLD [11] are particularly important to maintain liver function and an intact immune system [12].

Heat, diet and lifestyles are important to reduce COVID-19 infection and severity that may be linked to inactivation of the anti-aging gene Sirt 1. In elderly individuals the anti-aging gene may be repressed with COVID-19 severity linked to programmed cell death. The most serious threat to the body by COVID-19 is the attack on Sirt 1's important role in mitochondrial function with increased COVID-19 severity that leads to mitophagy and cell death. The major concern of COVID-19 infection is associated with animal versus human infection [1]. Sirt 1 and its inactivation by COVID-19 may

Acknowledgement

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