

Role of immune dysregulation in increased mortality among a specific subset of COVID19 patients and immune-enhancement strategies for combatting through nutritional supplements

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Abstract: Background: The COVID-19 pandemic has been causing varying severities of illness. Some are asymptomatic and some develop severe disease leading to mortality across ages. This contrast triggered us explore the causes, with the background that a vaccine for effective immunization or a drug to tackle COVID-19 is not too close to reality. We have discussed strategies to combat COVID-19 through immune enhancement, using simple measures including nutritional supplements. Discussion: A literature search on mortality-related comorbid conditions was performed. For those conditions, we analyzed the pro-inflammatory cytokines, which could cause the draining of the immune reservoir. We also analyzed the immune markers necessary for the defense mechanism/immune surveillance against COVID-19, especially through simple means including immune enhancing nutritional supplement consumption, and we suggest strategies to combat COVID-19. Major comorbid conditions associated with increased mortality include cardiovascular disease (CVD), diabetes, being immunocompromised by cancer, and severe kidney disease with a senile immune system. Consumption of *Aureobasidium pullulans* strain (AFO-202) beta 1,3-1,6 glucan supported enhanced IL-8, sFAS macrophage activity, and NK cells' cytotoxicity, which are major defense mechanisms against viral infection. Conclusion: People with co-morbid conditions who are more prone to COVID-19-related deaths due to immune dysregulation are likely to benefit from consuming nutritional supplements that enhance the immune system. We recommend clinical studies to validate AFO202 beta glucan in COVID-19 patients to prove its efficacy in overcoming a hyperinflammation status, thus reducing the mortality, until a definite vaccine is made available.