Dietary Supplement Use and COVID-19: What You Need to Know

Article By

Heather Hatcher, Ph.D.
Womble Bond Dickinson (US) LLP

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It is no surprise that four in five Americans (86 percent) reportedly take dietary supplements to improve their overall health. Now more than ever, health consciousness is at the forefront – we are focused on improving our immune systems, specifically with an increased intake of readily accessible ingredients such as vitamins, minerals, herbs, amino acids, and enzymes, collectively known as dietary supplements. In the 27 years since Congress passed the Dietary Supplement Health and Education Act of 1994 (“DSHEA”), the US Food and Drug Administration (FDA) has had the authority to regulate dietary supplements; and, the FDA “plays an important role in helping consumers make use of safe, high-quality dietary supplements while also protecting Americans from the potential dangers of products that don’t meet the agency’s standards for marketing.”

Prior to the pandemic, the dietary supplement market grew by several billion dollars, which has accelerated during the COVID-19 pandemic. Demand has been greatest for supplements such as zinc, elderberry, and vitamins B, C, and D, which have been shown to support immune function. Analysis of social media activity related to dietary supplements has shown increased chatter on the benefits, and a push championing the use of dietary supplements to prevent infection. However, unlike drugs, dietary supplements are not permitted to be marketed for the purpose of treating, diagnosing, preventing, or curing diseases. Since the onset of COVID-19 in December 2019, FDA has issued numerous warning letters to companies whose products were marketed as dietary supplements but were actually being illegally advertised as unapproved new drugs because the products boasted unproven claims to prevent, treat or cure COVID-19.

Can taking dietary supplements prevent you from getting COVID-19?

While there is limited current evidence to suggest this is the case, users should be aware that the FDA created a special emergency Coronavirus Treatment Acceleration Program (CTAP) for possible coronavirus therapies. As of January 31, 2021, more than 600 drugs have been under study as part of CTAP, and ClinicalTrials.gov lists over 140 clinical trials that are evaluating the effects of dietary supplements on COVID-19. To date, the FDA has not issued an Emergency Use Authorization (EUA) or new drug approval for the use of any dietary supplement to prevent, treat, cure or mitigate COVID-19.

Zinc (Zn), an anti-inflammatory and antioxidant micronutrient found in food, is essential for multiple cellular functions including maintenance of immune health. Pal et al. (2020) state that “much of the current knowledge about the use of Zn as an antiviral therapy and immuno-modulatory agent has originated from studies done with other viral diseases.” A previously described role of Zn ions and ionophores as “potent inhibitors of various RNA viruses,” like SARS-CoV-2, the virus that causes COVID-19, is the rationale for using Zn. There were nearly two dozen clinical and observational studies of zinc and COVID-19 as of August 4, 2020, and 4 studies were exclusively using different combinations of dietary supplements including Zn as an intervention against COVID-19, but none of the four studies had been completed at the time of the review.

Vitamin C (i.e., ascorbic acid) is known to be a potent antioxidant; however, “evidence does not support the routine use of vitamin C for prevention of viral infections, including the common cold.” A shortening in duration of the common cold by 8% was suggested following meta-analyses of clinical trial data of regular vitamin C intake. But, Adams et al. (2020) state, “It cannot be assumed, therefore, that outcomes of vitamin C from the management of the common cold will translate to the management of COVID-19.”
Vitamin D₃ is a fat soluble vitamin that, due to complex mechanisms, supports immune function, and contributes to the enhanced activity of our innate immunity. Observational data of low levels of vitamin D have been associated with acute respiratory viral infection. Studies from the Eastern Virginia Medical School noted that US patients with low levels of vitamin D were more likely to be hospitalized and had higher mortality rates after viral infection. Evaluation of patient data from more than 10,000 individuals from 25 clinical trials revealed that oral vitamin D₃ supplementation reduced the risk of acute respiratory tract infections and underlies the speculation for use of vitamin D during the COVID-19 pandemic.

Elderberry (i.e., Sambucus nigra) has been hypothesized to have antiviral properties; however, “there are no published studies evaluating the use of elderberry and COVID-19.” Adams et al. (2020) state, “Although elderberry and its phenolic acid components exhibit antiviral activity against human coronavirus HCoV-NL63 in vitro, this cannot be extrapolated to COVID-19.” As we readily await the efficacy and worldwide administration of the COVID-19 vaccines, dietary supplements may be beneficial to your overall health. The option to provide our bodies with optimal support along with following best practices of prevention seems a viable option to keep our body’s immune system functioning well through the current pandemic and beyond.

References

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