Daily Zinc Supplements May Slow CD4 Cell Loss and Reduce Diarrhea

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Daily zinc supplementation may help slow disease progression, notably in people living with HIV who are unable to maintain viral loads below undetectable while on an antiretroviral (ARV) drug regimen, and reduce diarrhea, according to a new study published in the June 15 issue of Clinical Infectious Diseases (CID).

Adequate zinc levels are critical for immune function. However, according to Marianna K. Baum, PhD, RD, of Florida International University and her fellow CID study authors, zinc deficiency occurs in more than 50 percent of people living with HIV. In turn, Baum's group set out to determine the safety and efficacy of long-term zinc supplementation as it related to HIV disease progression.

The randomized, controlled trial conducted by Baum's team enrolled 231 HIV-positive adults with low plasma zinc levels (less than 0.75 milligrams per liter [mg/L]) to receive zinc supplements (12 mg of elemental zinc for women and 15 mg for men) or placebo for 18 months. The primary measurement of the study was immunological failure, defined as a CD4 count below 200 at any time point during the study.

The average age of the study participants was 43. Seventy-seven percent were black, and 73 percent were men. Though 62 percent of the study participants were receiving ARV therapy, 69 percent had detectable viral loads, indicating poor control of the virus with the regimens being used. About 34 percent of the patients had CD4 counts below 200 upon entering the study; 22 percent had CD4s between 200 and 350, and 44 percent had CD4s above 350.

Zinc supplementation for 18 months resulted in a 75 percent reduction in the likelihood of immunological failure, after controlling the data for age, sex, food insecurity, baseline CD4 cell count, viral load and ARV therapy.

Daily zinc supplementation also reduced the rate of diarrhea by more than half.

There was no evidence that taking zinc supplements actually reduced the risk of death, though the study was not designed or powered to examine this aspect. A total of 11 patients in the treatment arm died compared with eight in the placebo arm.

Baum's group also reported that daily zinc supplementation was safe. Her group reported no serious side effects.

“The results of this study can be generalized primarily to HIV-infected populations with prevalent zinc deficiency, such as drug users, children, men who have sex with men, and populations in developing countries, as well as those with poor viral control while receiving [antiretroviral therapy],” the authors conclude. “This evidence supports the recommendation of zinc therapy as a safe, simple and cost-effective tool to improve the immune response and to reduce morbidity and should be considered as an adjunct therapy for HIV infection.”

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