Antioxidants improve lung immune markers in HIV-infected patients who are immune non-responders

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Some people with HIV infection experience a limited recovery of their T cell counts after they start antiretroviral therapy, even though the virus is well controlled. This leaves them at higher risk for other infections, such as lung infections.

Dietary supplementation with zinc and S-adenosylmethionine, an antioxidant, can improve the function of immune cells in the lungs, a small study involving 14 HIV-infected patients indicates.

The results were presented on Feb. 23 at the Conference on Retroviruses and Opportunistic Infections in Boston by Sushma Cribbs, MD, MSc, assistant professor of medicine at Emory University School of Medicine. Cribbs is in the Division of Pulmonary, Allergy, Critical Care and Sleep Medicine.

"Our previous research has shown that people living with HIV often have zinc and glutathione deficiencies in the lung, and that in vivo supplementation can improve alveolar macrophage immune functions," Cribbs says.

"We wanted to test whether this intervention could improve lung immunity in these patients. Given our preliminary results, these antioxidants could potentially prevent lung infections in HIV-infected immune non-responders, but that outcome would need to be explicitly

tested in a much larger randomized controlled trial."

Participants in the study had average CD4 T-cell counts of 257 per microliter despite being treated with antiretroviral therapy for greater than 18 months and having HIV levels below the level of detection. They were given 30 mg zinc and 1600 mg S-adenosylmethionine daily, and samples were taken from inside their lungs before the supplement regimen and then after one year.

Samples of lung macrophages, a type of immune cell, displayed improved measures of function (phagocytosis). They also showed a significant improvement in their CD4 count, signs of reduced T-cell proliferation and improved HIV clearance from the lung: proviral DNA was detected in 5/14 patients initially and all were negative after treatment.

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