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Statin May Affect Markers Associated With Progression of HIV, Trial Suggests

A recent multicenter clinical trial of atorvastatin, a type of cholesterol-lowering drug, found that although the drug did not inhibit plasma HIV RNA levels, it did inhibit expression of cellular markers of immune activation and inflammation in patients with HIV infection. Since immune activation and inflammation are associated with progression of HIV infection, the implication is that the statin may inhibit disease progression and help in the infection's management.

The findings are in a study published in The Journal of Infectious Diseases.

The investigators, led by Anuradha Ganesan, MD, of the National Naval Medical Center and the Infectious Disease Clinical Research Program in the Department of Preventive Medicine and Biometrics at the Uniformed Services University of the Health Sciences in Bethesda, Md., randomized 22 HIV-1-infected patients not on anti-retroviral therapy and with cholesterol levels lower than those requiring statin therapy in a double-blind protocol of high-dose drug or placebo for eight weeks. After a four-to-six-week washout phase, each group was switched to the other treatment for another eight weeks.

The primary objective was to study the effect of atorvastatin on plasma HIV-1 RNA levels, as previous studies had shown conflicting results. The effect on cellular markers of immune activation was a secondary objective. HIV-1 RNA levels were not significantly affected by the drug, but levels of such immune activation markers as CD38 and HLA-DR on CD4 and CD8 T cells were reduced.

The researchers noted that their findings with atorvastatin suggest that understanding the mechanism by

statins affect immune markers may identify new approaches for the management of HIV infection. They point out, however, that their trial was not designed to demonstrate clinical benefits, for which larger studies of longer duration are needed.

In an accompanying editorial, Andrew Carr, MD, of St. Vincent's Hospital in Sydney, Australia, agreed, noting that "a very large study would probably be required to determine whether potentially positive effects of statin therapy on inflammatory biomarkers will translate into less HIV disease progression."

Source: Anuradha Ganesan, Nancy Crum-Cianflone, Jeanette Higgins, Jing Qin, Catherine Rehm, Julia Metcalf, Carolyn Brandt, Jean Vita, Catherine F. Decker, Peter Sklar, Mary Bavaro, Sybil Tasker, Dean Follmann, Frank Maldarelli. High Dose Atorvastatin Decreases Cellular Markers of Immune Activation without Affecting HIV-1 RNA Levels: Results of a Double-Blind Randomized Placebo Controlled Clinical Trial. The Journal of Infectious Diseases, 2011; DOI: 10.1093/infdis/jiq115

A. Carr. Statins as Anti-inflammatory Therapy in HIV disease? The Journal of Infectious Diseases, 2011; DOI: 10.1093/infdis/jiq120