Elevated Triglycerides a Neuropathy Risk Factor

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Another risk factor for peripheral neuropathy among people living with HIV has been identified by researchers: elevated triglyceride levels. According to the study team's report, to be published in a forthcoming issue of AIDS, managing hypertriglyceridemia may reduce the risk of this debilitating nerve condition, a suggestion that should be explored in future studies.

HIV infection is commonly associated with peripheral neuropathy, with prevalence rates as high as 55 percent, depending on the patient populations surveyed. Signs of peripheral, or sensory, neuropathy include pain, tingling or numbness in the hands and feet.

In the early years of HIV treatment, the risk of HIV-sensory neuropathy increased with low CD4 cell counts and high HIV viral loads. With the development of effective antiretrovirals (ARVs) and the decreasing popularity of HIV drugs known to cause neuropathy—such as Hivid (zalcitabine), Videx (didanosine) and Zerit (stavudine)—the number of new cases of sensory neuropathy has decreased substantially, yet the prevalence of neuropathy has remained relatively consistent.

Researchers have observed that metabolic abnormalities, such as elevated blood sugar and lipids, are frequently associated with sensory neuropathy. In turn, Sugato Banerjee, MD, of the HIV Neurobehavioral Research Center in San Diego and his colleagues set out to further explore the potential connection between elevated lipid levels and sensory neuropathy in people receiving ARV treatment.

Their study involved 436 HIV-positive and 55 HIV-negative individuals seen at the Center between January 2000 and December 2009. Among the HIV-positive study subjects, most were men whose average age was 47. About three quarters were receiving ARV therapy and had undetectable viral loads.

Compared with the HIV-negative study subjects, the study volunteers living with HIV had significantly higher triglyceride levels: 245 milligrams per deciliter (mg/dL) compared with 160 mg/dL. The HIV-positive study volunteers were also more likely to have sensory neuropathy (27 percent) compared with the HIV-negative subjects (10 percent).

Study subjects who were older and taller and had a history of a low CD4 cell count, type 2 diabetes and treatment with a protease inhibitor or statin for high cholesterol were the most likely to develop sensory neuropathy in the study—all risk factors identified previously. Interestingly, however, HIV-positive individuals with a history of treatment with Hivid, Videx or Zerit were no more likely to experience peripheral neuropathy than HIV-positive individuals in the study who had

not received these nucleoside analogues.

High triglycerides were also independently associated with peripheral neuropathy. According to Banerjee's group, the 145 HIV-positive patients with triglyceride levels above 243 mg/dL were 2.6 times more likely to have neuropathy than those with low triglyceride levels (below 141 mg/dL).

A possible reason for this? Elevated triglyceride levels might alter the ways in which mitochondria—tiny powerhouses inside cells—metabolize energy and, thus, may affect nerve function.

"Since increased [triglyceride] levels were identified as a major risk for HIV-sensory neuropathy, interventions leading to reduction of [triglyceride] levels could reduce incidence of HIV-sensory neuropathy, a possibility that should be explored in future studies," the authors conclude.

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