Higher Viral Loads Associated With Metabolic Syndrome

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People with higher HIV levels are more likely to have a cluster of symptoms—called metabolic syndrome—associated with cardiovascular disease than people with lower viral loads, according to a study published in the December issue of the *Journal of Acquired Immune Deficiency Syndromes*.

For the last decade, scientists have been working diligently to understand why certain people with HIV appear to be at higher risk for developing cardiovascular disease. Though some have traditional risk factors, such as smoking or diabetes, many do not. In the earlier part of the last decade, researchers suspected that protease inhibitors (PIs) might be the primary reason for the increased cardiovascular disease risk.

Though PIs and other antiretrovirals (ARVs) appear to be associated with increases in blood lipids—cholesterol and triglycerides—which can contribute to an increased risk of cardiovascular disease, newer research suggests that HIV itself is also a factor. A leading theory is that chronic HIV infection leads to inflammation, ultimately causing abnormalities that strain the heart and its circulatory system. The greater the level of ongoing viral replications, some experts suggest, the greater the risk of cardiovascular disease.

Nicola Squillace, MD, from the University of Modena and Reggio Emilia, in Modena, Italy, and her colleagues set out to determine whether higher viral loads would increase the likelihood that a person would develop metabolic syndrome—a cluster of symptoms that includes unhealthy changes in the levels of cholesterol, triglycerides and blood sugar, weight-gain in the gut area, and high blood pressure. People with metabolic syndrome, whether they are HIV positive or not, have a profoundly increased risk of heart attacks, strokes and other cardiovascular problems.

Squillace and her colleagues examined the medical records of all HIV-positive patients seen at the metabolic clinic at the University of Modena and Reggio Emilia between January 2006 and January 2008. Their analysis included more than 1,300 people; 63 percent were men; and the average age was about 45.

Metabolic syndrome was present in 23 percent of those with viral loads below 400 copies, compared with 32 percent in people with viral loads over 400. In particular, three specific symptoms of metabolic syndrome were far more common among people with higher viral loads: high blood pressure, high triglycerides and low levels of the “good” cholesterol, HDL.

PI use, even in the past, was also associated with metabolic syndrome. The degree of association between metabolic syndrome and PI use was not nearly as high, however, as the association between the syndrome and higher viral loads.

The authors conclude that an effective ARV regimen is “mandatory for both control of HIV disease progression and for prevention of [metabolic syndrome]-related disorders.”

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