Hepatitis C Treatment May Prevent Diabetes

On the flip side, a recent study found that hep C treatment was associated with rising cholesterol.

March 13, 2017

Those who undergo treatment for hepatitis C virus (HCV) may experience improvements in risk factors for developing diabetes. On the flip side, a recent study found that hep C treatment was associated with rising cholesterol levels and may warrant the use of statins to mitigate the risk of cardiovascular disease.

Italian researchers conducted a study of 77 people with hep C who were treated with direct-acting antivirals, excluding those with diabetes. They conducted various laboratory tests at three points: at the start of treatment, at the end of treatment and at the end of 12 weeks of follow-up.

Findings were presented at the 2017 Conference on Retroviruses and Opportunistic Infections (CROI) in Seattle.

The participants had an average: age of 58.7 years; liver stiffness of 19.1 kilopascals (above 7.2 KPa indicates moderate liver fibrosis; above 14.5 indicates cirrhosis); body-mass index (BMI) of 24.7 (a BMI between 25 and 30 is overweight); ALT liver enzymes of 87.9 units per liter (ALT levels of 7 to 25 U/L are considered normal); total cholesterol of 155.6 milligrams per deciliter (200 mg/dL is considered high); LDL cholesterol of 82.4 mg/dL; HDL cholesterol of 119.2 mg/dL; hep C viral load of about 1.17 million; and homeostatic model assessment-insulin resistance (HOMA-IR) of 4.46 (a HOMA-IR of less than 3 indicates normal insulin resistance, a result between 3 and 5 indicates moderate insulin resistance and a result greater than 5 indicates severe insulin resistance). The study authors used a threshold of 3.5 to designate those in a prediabetic state.

Seventy-four percent of the study participants had genotype 1 of hep C, 57.1 percent were male, 36 percent had steatosis (fatty liver disease) and 28 percent had metabolic syndrome.

A total of 31.1 percent of them were treated with Sovaldi (sofosbuvir) and Olysio (simeprevir), 27.3 percent were treated with Harvoni (ledipasvir/sofosbuvir), 22.1 percent were treated with Viekira Pak (ombitasvir/paritaprevir/ritonavir; dasabuvir), 13 percent were treated with Sovaldi and Daklinza (daclatasvir) and 6.5 percent were treated with Sovaldi and ribavirin. Seventy percent of the regimens included ribavirin.

The average HOMA-IR dropped from 4.46 prior to treatment to 3.5 at the end of treatment and remained essentially stable, reaching 3.62 at the end of follow-up. Before treatment, 45.5 percent of the participants had a HOMA-IR of at least 4, a proportion that decreased to 32.5 percent after treatment. This shift was gender-related. Among men, the pretreatment HOMA-IR average was just over 5, dropped to about 3.5 after treatment and rose to just above 3.5 at the end of follow-up. Women's average HOMA-IR remained just below 3.5 throughout.

Average total cholesterol increased from 155.56 at the initiation of treatment to 170.29 at the end of treatment to 181.6 at the end of follow-up. The corresponding figures for LDL cholesterol were 82.36, 94.97 and 109.28 and 53.71, 61.16 and 72.58 for the oxidated form of LDL, or oxLDL (oxLDL is a biomarker of cardiovascular disease and is linked with all stages of atherosclerosis, coronary and peripheral arterial disease, acute coronary syndromes and ischemic cerebral infarction).

The researchers concluded that the improvement in insulin resistance and the drop in the proportion of individuals in a prediabetic state suggest that treated hep C might dial back HCV-related alterations in the metabolism of glucose.

The rapid increases in total, LDL and oxLDL cholesterol levels during and immediately following HCV treatment indicate a potential increase in risk of cardiovascular disease. Consequently, the researchers speculated that the addition of a statin during or immediately after hep C treatment might mitigate such a risk.

To read the conference abstract, click here.
