

HEPATITIS C NOT A SINGLE DISEASE ISSUE: RELATIONSHIP OF HVC TO DIABETES, LYMPHOMA, LIVER CANCER AND MENTAL DISORDERS



Overview of Hepatitis C in the United States

An estimated 3 to 5 million Americans have been infected with the hepatitis C virus (HCV).^{i, ii} At least 2.7 million people in the U.S. are chronically infected with HCV, 3-times the number of Americans living with HIV/AIDS. The most recent data available from the Centers for Disease Control and Prevention (CDC) indicate that at least 30,000 new cases of HCV occur annually.ⁱⁱⁱ Many people with chronic hepatitis C are unaware that they are infected because HCV is often asymptomatic until advanced liver damage develops.

CDC estimates at least 25% of people living with HIV/AIDS are also infected with HCV.^{iv} HIV accelerates HCV disease progression, and HIV/HCV coinfecting persons have twice the risk of cirrhosis and a six-fold increased risk of liver failure compared to people with HCV alone.^v HCV-related liver disease is now the leading cause of death among people with HIV/AIDS in many communities.

Chronic liver disease is among the top ten killers of Americans 25 years of age and older.^{vi} Hepatitis C is the most common cause of chronic liver disease in the U.S. accounting for 40-60% of all cases. HCV is also the leading indication for adult liver transplantation in the U.S. Without increased resources for counseling, testing, and medical referral services, HCV-related deaths and long-term complications are projected to increase dramatically by the year 2020: liver failure by 106%, liver cancer by 81%, and liver-related deaths by 180%.^{vii}

Diabetes Mellitus and HCV

Up to 1/3 of patients with chronic hepatitis C develop type II diabetes mellitus (DM).^{viii} People with chronic HCV have at least a two-fold greater risk of DM compared to both the general population and people with non-HCV liver disease.^{ix} Among those with HCV and other risk factors, the presence of HCV has been reported to increase the risk of DM by 11-fold.^x Research indicates that components inherent to the hepatitis C virus and not the liver damage caused by HCV are responsible for the observed increased risk.^{xi, xii, xiii} Further, chronic hepatitis C infection also appears to increase the risk of type I (insulin-dependent) diabetes mellitus, caused by decreased insulin production from the beta cells of the pancreas.^{xiv}

Lymphoma and HCV

Numerous studies from the U.S.,^{xv} Italy,^{xvi} Japan,^{xvii} Sweden,^{xviii} and other countries have demonstrated an association between non-Hodgkin lymphoma (NHL) and HCV infection. Researchers speculate that the association may be due to chronic immune stimulation caused by HCV, a systemic autoimmune type response invoked by the virus, or more direct carcinogenic effects of the virus. The relative risk of NHL in the presence of HCV reported in various studies ranges from 1.3-5.7.¹⁵⁻¹⁸ Other hematologic malignancies have also been reported to have an association with HCV including multiple myeloma and B-cell lymphoma. An Italian study reported that the fraction of NHL cases attributable to HCV was 12.4%.¹⁶

Liver Cancer and HCV

In January 2005, the hepatitis C virus was added to the DHHS Report on Carcinogens, 11th Edition as a known human carcinogen as a cause of liver cancer (HCC).^{xix} A meta-analysis from China found that the relative risk of liver cancer is 4.6 in those with HCV; coinfection with HBV increases the relative risk to 35.7.^{xx}

Interestingly, coinfection with HIV does not appear to elevate the relative risk of HCC over that seen in people with HCV alone.^{xxi} A large retrospective U.S. study found the proportion of hepatitis C virus (HCV)-related HCC increased from 11% (January 1993 to June of 1996) to 21% (July 1996 to December 1999). The risk for HCV-related HCC during the study period rose by 226%.^{xxii}

Mental Disorders, Neurocognitive Impairment, and HCV

Studies have demonstrated that non-encephalopathic patients with chronic HCV have measurable neurocognitive impairments, especially with tasks such as complex attention, visual scanning and tracking, and psychomotor speed.^{xxiii} Figures as high as 59% have been reported as the baseline level of depressive symptoms among HCV patients not on interferon-based therapy.^{xxiv} HCV RNA has been isolated at autopsy from the brain tissue of persons with active HCV.^{xxv} Follow-up research confirmed that HCV can and does replicate in the brains of at least some HCV-infected persons.^{xxvi} Researchers theorize that HCV may have direct effects on the central nervous system that explain, at least in part, the neurocognitive impairments and depression experience by people with chronic HCV.

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