

Hepatitis C viral infection increases the risk of lymphoid neoplasms

Chronic hepatitis C virus (HCV) infection is a global health problem, with an estimated 185 million chronic hepatitis C patients worldwide and approximately 0.7 million such patients in Taiwan. In addition to increased liver-related complications, such as cirrhosis and hepatocellular carcinoma, HCV infection is also associated with many extra-hepatic manifestations, including cardiovascular, renal, metabolic and central nervous system diseases.

Previous epidemiological studies have suggested that HCV infection is associated with non-Hodgkin's lymphoma (NHL); however, investigations in regions with different HCV prevalence rates have produced inconsistent results. Neither the temporal relationship and association between HCV and lymphoid neoplasms nor relevant risk estimates have been clearly established. NHL is the 11th leading cause of cancer-related death in Taiwan, and investigating risks of NHL can help improve management of this disease.

Dr. Su and his colleagues sought to use a nationwide population-based cohort to investigate the temporal relationship between HCV infection and lymphoid neoplasms. Patients with chronic HCV infection were retrieved from the Taiwan National Health Insurance Research Database from 2001-2005 and designated as the HCV cohort. The investigators attempted to eliminate potential confounding factors; therefore,

propensity scores for age, sex, and comorbidities, including rheumatological disorders and diabetes, were used to match the HCV cohort with a non-HCV cohort. Both cohorts were followed longitudinally until 2009 for new diagnoses of any lymphoid neoplasms or NHL.

A total of 11,679 HCV patients and 46,716 non-HCV patients were included and followed for 8 years. The incidence rates of any lymphoid neoplasms and NHL were significantly greater in the HCV cohort than in the non-HCV cohort (per 100,000 person-years, 48.4 versus 22.1 and 37.0 versus 17.5, respectively, with $P < 0.001$ for both comparisons), even after lymphoid neoplasms that developed within the first year of follow-up were excluded. Cox proportional hazards regression analysis indicated that HCV infection was associated with a 2.3-fold increased risk of any lymphoid neoplasms and a 2.0-fold increased risk of NHL.

Dr. Su concluded that after adjustments for confounders and biases, chronic HCV infection is

temporally associated with a two-fold increased risk of lymphoid neoplasms, particularly NHL. Additional large-scale studies are needed to explore whether the eradication of HCV can reduce the incidence of lymphoid neoplasms. In the current era of direct antiviral agents that can effectively eradicate hepatitis C, reduced risks of lymphoid neoplasms should be monitored longitudinally.

Reference

Tung-Hung Su, Chun-Jen Liu, Tai-Chung Tseng, Shih-Wan Chou, Chen-Hua Liu, Hung-Chih Yang, Shang-Ju Wu, Pei-Jer Chen, Ding-Shinn Chen, Chi-Ling Chen, Jia-Horng Kao, (2016). Hepatitis C Viral Infection Increases the Risk of Lymphoid-Neoplasms: A Population-Based Cohort Study. *Hepatology*. 63(3), 721-730. DOI: 10.1002/hep.28387

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