

Is hepatitis B virus genotype C independently associated with cirrhosis?

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Chronic hepatitis B virus (HBV) infection is the most important risk factor of liver cirrhosis in HBV endemic areas. A research group in China performed a large epidemiological study to investigate the association of HBV genotypes with the development of probable cirrhosis in community-based population. They found that HBV genotype C was independently associated with probable cirrhosis in the hepatitis B antigen-negative subjects.

Hepatitis B virus (HBV) genotypes have distinct geographical distributions, and have been shown to differ with regard to clinical outcome and prognosis. However, the relationship between HBV genotypes and [liver cirrhosis](#) remains controversial and no study on exploring the association between HBV genotypes and subclinical cirrhosis in community-based population has been reported.

A research article to be published on January 21, 2010 in the [World Journal of Gastroenterology](#) addresses this question. The research team led by Prof. Cao from Department of Epidemiology, Second Military Medical University performed a large epidemiological study with 10 167 community-based residents at the age between 6 and 72 years in Eastern China. After excluding the subjects co-infected with hepatitis C or hepatitis D viruses, the hepatitis B surface antigen (HBsAg)-positive subjects were examined for HBV genotype, serum viral load, alanine aminotransferase (ALT), [hepatitis B](#) e antigen (HBeAg) status, and ultrasonographic changes. Logistic regression models were used to determine the factors independently associated with probable cirrhosis.

Of 634 HBsAg-positive subjects with HBV genotyped, 82 had probable cirrhosis. Probable cirrhosis was only found in the HBeAg-negative subjects, and more frequent in the subjects with genotype C than in those with genotype B. In HBeAg-negative subjects, high viral load was frequently associated with abnormal ALT level, while ALT abnormality was more frequent in those with probable cirrhosis than those without. Ultrasonographic fatty liver was not found in the subjects with probable cirrhosis. HBV genotype C, age (≥ 45 years), male sex, and ALT abnormality were demonstrated to be major risk factors of probable cirrhosis for the residents chronically infected with HBV.

Clinical relevance and public health importance of HBV genotypes are different in a given population. HBV genotype B and C are major HBV genotypes endemic in East Asia. HBV genotype B is associated with acute hepatitis and tends to be self-limiting and shorter lived. However, genotype C is associated with longer duration of liver damage in the HBeAg-negative subjects, which may be the main reason for liver cirrhosis. [Genotype C](#) HBV-infected male residents at the age of 45 years or older should be routinely examined for active hepatitis and early cirrhosis. Early intervention to the HBV-infected subjects with high risks of cirrhosis might be effective for decreasing overall mortality of liver cirrhosis.

More information: Yin JH, Zhao J, Zhang HW, Xie JX, Li WP, Xu GZ, Shen J, Dong HJ, Zhang J, Wang L, Han JK, Wang HY, Cao GW. HBV genotype C is independently associated with cirrhosis in community-based population. *World J Gastroenterol* 2010; 16(3): 379-383, www.wjgnet.com/1007-9327/16/379.asp

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