

Men-only hepatitis B mutation explains higher cancer rates

October 17 2013

A team of researchers has identified a novel mutation in the hepatitis B virus (HBV) in Korea that appears only in men and could help explain why HBV-infected men are roughly five times more likely than HBV-infected women to develop liver cancer. Although some women do progress to cirrhosis and liver cancer, the mutation is absent in HBV in women. The research is published ahead of print in the *Journal of Clinical Microbiology*.

"This is the first mutation found that can explain the gender disparity in incidence of hepatocellular carcinoma," says Bum-Joon Kim of Seoul National University, Korea, an author on the study.

In the study, the researchers randomly collected and analyzed serum samples from 292 patients with chronic HBV infection who visited one of 3 hospitals in Korea from 2003-2005. Previous studies had suggested that a gene mutation known as W4P/R was associated with higher incidence of [liver cancer](#) and cirrhosis. They developed an assay to specifically identify HBV with the W4P/R mutation. When compared to patient outcomes, the W4P/R mutation was significantly associated with severe [liver disease](#) and was found exclusively in male patients.

The investigators believe the assay they developed to discover the mutation may hold promise as a diagnostic for predicting male progression to cirrhosis and liver cancer. They caution that first larger studies are necessary to confirm their findings, as only 67 of the 292 samples came from women.

HBV infection is a global health problem, with 350 million chronic carriers of the virus, a number that is roughly equivalent to the combined populations of the US and Canada. The prevalence of infection ranges from less than half a percent in the United States to around 10 percent in Asia, to as high as 15 percent in parts of Africa. Major means of transmission include injection drug abuse, unprotected sex, and transmission via childbirth. Worldwide mortality is about 600,000 annually, according to the World Health Organization. In the US, despite the availability of a vaccine, an estimated 3,000 die annually from hepatocellular cancer or [chronic liver disease](#) caused by hepatitis B.

More information: A copy of the manuscript can be found [online](#). Formal publication is scheduled for the December 2013 issue of *Journal of Clinical Microbiology*.

Provided by American Society for Microbiology

Citation: Men-only hepatitis B mutation explains higher cancer rates (2013, October 17)
retrieved 25 April 2024 from
<https://medicalxpress.com/news/2013-10-men-only-hepatitis-mutation-higher-cancer.html>

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