

## Does Exposure to Hepatitis B Virus Increase the Risk for Liver Cancer in Patients with Hepatitis C Infection?

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The full report is titled “Antibody to Hepatitis B Core Antigen and Risk for Hepatitis C–Related Hepatocellular Carcinoma: A Prospective Study.” It is in the 1 May 2007 issue of *Annals of Internal Medicine* (volume 146, pages 649-656). The authors are K. Ikeda, H. Marusawa, Y. Osaki, T. Nakamura, N. Kitajima, Y. Yamashita, M. Kudo, T. Sato, and T. Chiba.

### What is the problem and what is known about it so far?

Hepatitis is chronic inflammation of the liver that can be caused by various viral infections. Two of the viruses, hepatitis B virus (HBV) and hepatitis C virus (HCV), can cause chronic infection that may progressively damage the liver. One of the effects of chronic inflammation of the liver is widespread formation of scar tissue, a condition known as *cirrhosis*. In addition, chronic HCV infection is the most common cause of liver cancer (known as *hepatocellular carcinoma* [HCC]). Patients with cirrhosis are at greater risk for HCC than are those with hepatitis alone. Although researchers have suggested that people with chronic HCV infection are more likely to develop HCC if they have also been exposed to HBV, it is not known how much this exposure actually increases the risk for liver cancer.

### Why did the researchers do this particular study?

To find out whether previous exposure to HBV increased the risk for HCC in people with chronic HCV infection. They also wanted to find out whether treatment with interferon (a drug used to treat HCV infection) had an effect on the incidence of HCC.

### Who was studied?

846 patients with chronic HCV infection being cared for at Kyoto University and its affiliated hospitals (in Japan) were enrolled in the study in 1995 and were followed until 2005.

### How was the study done?

At the start of the study, the researchers divided the participants (all of whom had chronic HCV infection) into 2 groups: those who had chronic hepatitis and those who had cirrhosis. They then did blood tests to detect evidence of exposure to HBV. They also determined which participants had received interferon therapy and whether the treatment had been successful in eliminating HCV infection (either briefly or on a sustained basis). All of the participants were followed carefully over the next 10 years for evidence of HCC. The researchers then calculated the incidence of HCC in each subgroup.

### What did the researchers find?

There was evidence of exposure to HBV in 52.2% of participants with cirrhosis and in 43.6% of those with hepatitis. Participants with cirrhosis and HBV exposure were more than one and a half times as likely to develop HCC than those without HBV exposure; participants with hepatitis (but without cirrhosis) and HBV exposure were not at greater risk. Fewer than 2% of participants who had a sustained response to interferon therapy developed HCC.

### What were the limitations of the study?

The study observed what happened to a group of people with the disease and did not randomly assign them to treatment with or without interferon. Treatments for HCV infection that are more effective than conventional interferon monotherapy are now available.

### What are the implications of the study?

Exposure to HBV increases the risk for HCC in patients with HCV infection and cirrhosis. Antiviral treatment can decrease the risk for HCC.

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