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The full report is titled “Antiviral Therapy for Cirrhotic Hepatitis C: Association with Reduced Hepatocellular Carcinoma Development and Improved Survival.” It is in the 18 January 2005 issue of *Annals of Internal Medicine* (volume 142, pages 105-114). The authors are Y. Shiratori, Y. Ito, O. Yokosuka, F. Imazeki, R. Nakata, N. Tanaka, Y. Arakawa, E. Hashimoto, K. Hirota, H. Yoshida, Y. Ohashi, and M. Omata, for the Tokyo-Chiba Hepatitis Research Group.

## Long-Term Effects of Antiviral Treatment for Hepatitis C

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

Hepatitis C is inflammation of the liver caused by hepatitis C virus (HCV). HCV is transmitted primarily by blood-to-blood contact through needlestick accidents, intravenous drug use, body piercing, and tattooing. Most people do not rid their body of HCV on their own. More than 80% keep the virus in their blood for longer than 6 months and develop chronic hepatitis C.

Chronic hepatitis C progresses slowly over 10 to 30 years. It causes inflammation and severe scarring of the liver (cirrhosis). If untreated, it can lead to liver failure and liver cancer. Treatment with antiviral drugs, such as interferon, clears HCV from the blood and helps prevent some liver damage. Few studies, however, show whether treatment can prevent liver cancer in patients who already have severe scarring or cirrhosis.

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

To see whether antiviral therapy prevents liver tumors and improves long-term survival in patients with chronic hepatitis C and cirrhosis.

### Who was studied?

345 adults with chronic hepatitis C and cirrhosis: 74 had declined to receive antiviral treatment and 271 had received interferon injections.

### How was the study done?

In the early 1990s, the researchers conducted 2 trials of interferon therapy in patients with chronic hepatitis C and liver scarring. Patients in the trials received interferon injections 3 times a week for 26 to 88 weeks. For several years, the researchers followed these patients, as well as patients who declined antiviral therapy (median follow-up, 6.8 years). Every few months, the researchers tested the patients' blood for HCV and signs of liver inflammation, and they did liver ultrasonography to check for tumors. Additional tests, such as computed tomography and liver biopsies, were done to see whether any tumors were cancer. The researchers then compared outcomes among people who had and had not received antiviral treatment.

### What did the researchers find?

Liver cancer occurred in 47% of the patients who declined treatment compared with 31% of those treated with interferon. In addition, more patients who declined treatment died than did those who got interferon (32% vs. 17%).

### What were the limitations of the study?

The study was not a randomized, controlled trial. Factors other than the interferon treatment might have contributed to the differences between groups. The study did not assess effects of different types of treatments for hepatitis C.

### What are the implications of the study?

Antiviral treatment with interferon might prevent liver cancer and improve survival in some patients with chronic hepatitis C and cirrhosis.