Liver Disease in Persons with Asymptomatic Hepatitis C Virus Infection

What is the problem and what is known about it so far?
Hepatitis C virus (HCV) can cause severe liver disease. It is transmitted when an uninfected person is exposed to the blood of someone with the infection. Before it became possible to test donated blood for HCV, many persons became infected when receiving blood transfusions. Other ways to spread HCV include illicit drug use; exposure to blood in the workplace (such as occurs with health care workers, firefighters, and police officers); and such procedures as body piercing, tattooing, or dental work with nonsterile tools. However, the source of infection is unknown in many persons. Although some people with HCV infection become severely ill (they almost die or need liver transplants), many remain healthy and have no symptoms. Among persons who have HCV infection with no symptoms, it is unclear how many also have damage to the liver with no symptoms (“silent” liver damage). Knowing the extent to which silent liver damage exists in people with asymptomatic HCV infection will help determine how aggressive doctors need to be when examining healthy people for HCV infection.

Why did the researchers do this particular study?
To find out how often persons with HCV but no symptoms have liver damage.

Who was studied?
4820 healthy employees and relatives of employees of a company in northern Italy who were participating in a study of risk factors for heart disease.

How was the study done?
The researchers tested the blood of the participants for HCV by first using a screening test and then using a test that measures levels of the virus in the blood. In persons whose blood tested positive for the virus, another test was used to measure alanine aminotransferase (ALT), a substance that increases in people with liver disease. Researchers also took a small piece of liver to look at under the microscope (liver biopsy) in persons who agreed to have this procedure.

What did the researchers find?
Of the 4820 participants, 85 tested positive for HCV in their blood. About half of these 85 people had normal ALT levels, and half had elevated ALT levels. Abnormalities were present on liver biopsy in about 20% of persons with normal ALT levels and about 60% of persons with elevated ALT levels. The older a person was, the more likely he or she was to have HCV infection and, if the person had the infection, the more likely he or she was to have liver disease.

What were the limitations of the study?
This study took place in Italy, and the results may not apply to other geographic areas. The researchers did not follow participants to see whether they actually became ill.

What are the implications of the study?
Persons with HCV infection but no symptoms can have liver damage. People who are older and who have elevated ALT levels are more likely to have liver damage than are those who are younger or who have normal ALT levels.