

# Hepatitis C

Hepatitis simply means "inflammation of the liver" . Hepatitis C is a virus that was isolated in 1989. Since then, a tremendous amount has been learned about the virus.

## SYMPTOMS

Hepatitis C usually causes no symptoms when the person first become infected. However, in approximately 80 % of people, the virus becomes chronic and has the potential to cause liver damage, ranging in severity from mild to severe. This is in contrast to other types of viral hepatitis (such as hepatitis A) that usually make people sick when they first become infected , but then the virus is cleared from the body.

During its residence in the liver, the hepatitis C virus causes damage to the liver, but the amount of damage is variable, and is offset by the liver's ability to repair itself. Most infected patients, even those with progressing disease, have no specific symptoms. The most common symptom is fatigue. The absence of symptoms does not necessarily mean that the infection is under control.

## COMPLICATIONS

Hepatitis C produces ongoing inflammation in the liver over many years . In some patients scar tissue (called fibrosis) accumulates in the liver, which can eventually become extensive, leading to cirrhosis . Patients who have developed cirrhosis are at increased risk for developing complications since the scarred liver's ability to perform all of its many functions is diminished. One of the most feared complications of cirrhosis is the development of liver cancer .

## TRANSMISSION

The hepatitis C virus is spread by contact with blood. Thus, patients with hepatitis should avoid activities that could expose other persons to their blood. Examples include sharing a toothbrush, nail clippers, razors, and needles .

### **Sexual transmission**

The virus can also be spread sexually, but the risk is much lower than for other types of viruses. The risk of transmission between stable monogamous sexual partners is estimated to be approximately one in a thousand per year. Use of a condom in this setting may decrease this risk.

The risk of transmitting the virus is higher in people who are infected with hepatitis C and with HIV. Furthermore, care of patients who are coinfecting with HIV and HCV may

differ from those with HCV alone. You should tell your clinician if you know that you are infected with HIV or think you may be at risk for infection.

### **Other transmission**

There is no evidence that kissing, hugging, sneezing, coughing, sharing food, water, eating utensils or drinking glasses, casual contact, or other contact without blood exposure is associated with transmission of the hepatitis C virus. Use of illicit drugs should be avoided since they are dangerous, potentially expose the user to a variety of diseases, and can limit treatment options for HCV. Daily use of marijuana has been associated with worsening liver disease. Thus, people with HCV should avoid it.

### **Transmission during pregnancy**

The risk of transmitting hepatitis C during pregnancy may depend upon the level of virus in your blood stream. In general, the risk is about 5 to 6 % (about 1 in 20) but is increased in people who are also infected with HIV (about 12 % or 1 in 8).

## **RISK FACTORS FOR PROGRESSION**

Researchers have studied large groups of patients with hepatitis C to find out what happens to them over time. Only about 20 percent (or one in five) will develop cirrhosis 20 years after first acquiring the infection. Most of the others will have some degree of inflammation in the liver, but without a significant amount of scarring.

Researchers have tried to identify factors that increase the risk of developing cirrhosis after patients have become infected with hepatitis C. The most important include:

- Consumption of alcohol - People with hepatitis C who drink alcohol are at much greater risk for developing cirrhosis.
- Amount of liver inflammation and scarring - Increasing amounts of inflammation make it more likely that the liver will become scarred.

### **Alcohol consumption**

The amount of alcohol that is safe for people with hepatitis C to consume is not well established. Even small amounts have been linked to an increased risk of cirrhosis in patients with hepatitis C.

### **Liver inflammation**

The best test is a liver biopsy, which involves obtaining a tiny sample of the liver tissue and looking at it under a microscope. A liver biopsy is usually done as an outpatient procedure. You should discuss with your clinician whether it is required in your case.

Your clinician will obtain two other blood tests that are helpful for determining the best treatment and monitoring treatment:

- Hepatitis C virus (HCV) RNA, which is a measure of the amount of virus circulating in your blood
- HCV genotype, which determines the specific type of virus that you have (most people in the United States have type 1)

## **SELF-CARE MEASURES**

Avoiding alcohol is the best way to protect the liver from further damage. In addition, all people infected with hepatitis C should be vaccinated against hepatitis A and B, unless they are already known to be immune. Pneumococcal vaccine should be given every five years while influenza vaccination should be given yearly in addition to other routine vaccinations. Routine vaccinations included diphtheria and tetanus booster immunizations every ten years.

## **LONG-TERM MANAGEMENT**

People who have developed cirrhosis should undergo regular screening for hepatocellular carcinoma, which is typically done with an annual or biannual (every other year) ultrasound examination plus a blood test (alpha fetoprotein level). In addition, a procedure called an upper gastrointestinal endoscopy may be done.

### **Diet**

No specific diet has been shown to improve the outcome in patients with hepatitis C. The best advice is to eat a normal, healthy, and balanced diet. It is reasonable to take a multivitamin without iron. Coffee consumption is safe.

### **Exercise**

Exercise is good for overall health and is encouraged, but has no effect on the virus.

### **Prescription and nonprescription drugs**

Many drugs require metabolism by the liver. Thus, it is always best to check with your clinician or pharmacist before starting a new prescription. As a general rule, unless your liver is already scarred, most drugs are safe for people with hepatitis C.

One important exception is acetaminophen ; the maximum dose should be no more than 2000 milligrams or 2 grams (in divided doses) per 24 hours.

### **Herbal medications**

Although many claims about herbal medications have been made (particularly on the internet), none has been proven to improve outcomes in patients with hepatitis C. In addition, some herbal medications have been associated with serious liver toxicity.

## **TREATMENT OPTIONS**

The goal of treating people with hepatitis C is to prevent progression of the liver disease. As mentioned above, about 20 % of people will develop cirrhosis 20 years after becoming initially infected. Therefore, people with hepatitis C who are young have a greater lifetime chance of developing cirrhosis and complications of cirrhosis. Unfortunately, it is not always possible to predict accurately in whom the disease will progress.

Currently, most patients are treated with a combination of pegylated interferon and ribavirin. This treatment is not easy since both drugs can cause side effects. The most common side effects are flu-like symptoms and fatigue, although many less common but potentially serious side effects can also occur.

During therapy, the level of the virus in the blood (called viral load) will be monitored, with the goal of completely eliminating the virus. Therapy may be stopped early for those who do not respond; otherwise treatment is continued for six to 12 months (depending in large part upon the specific genotype).

## **Cure**

The chance of being cured depends in part upon the specific type of hepatitis C virus (ie, the specific genotype). Overall, the chance is approximately 40 to 50 % for the most common genotype (genotype 1). The best chance (approximately 80 % or more) occurs with genotypes 2 and 3. The recommended duration of treatment for genotype 1 is 48 weeks, whereas for genotype 2 and 3 it is usually 24 weeks.

Patients must wait six months after therapy is completed to determine if they have been cured, since the virus can recur after therapy has been discontinued. Recurrence happens about 25 to 30 percent of the time. The absence of the virus for more than six months after stopping therapy amounts to a cure. Follow-up studies of these patients show no trace of the virus in the blood or liver for over 10 years.

## **NEW TREATMENTS**

Even though combination therapy cures about 50 % of people (up to 80 percent with genotype 2 and 3), many are not cured. Thus, new treatments for hepatitis C are actively being developed.

## **REASONS TO BE OPTIMISTIC**

If you have recently discovered that you or someone you care about has hepatitis C, there are many reasons to be optimistic:

- Hepatitis C progresses slowly, and many people who harbor the virus will never get sick.
- You are not alone; about 2.7 million people in the United States have hepatitis C virus in their blood. Treatment is available, and researchers are at work developing new treatments.
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