



Hepatitis C is a viral infection of the liver caused by the hepatitis C virus (HCV) found in the blood of persons who have this disease. HCV was discovered in 1989 and in 1992; a highly sensitive antibody blood test was implemented nationwide to screen blood donors and to identify people exposed to the HCV. There are six major strains of hepatitis C called genotypes. The most common genotype in the U.S. is genotype 1. Other major genotypes are 2, 3, 4, 5, and 6. A blood test can determine the genotype of the virus causing their infection. An estimated 3-4 million Americans are chronically infected. Many show no signs or symptoms and are not aware of their infection. About 18,000 new infections were reported in 2008 with an estimated 170 million persons infected worldwide.

Hepatitis C is a silent, slowly progressing liver disease that may take 20 to 30 years to cause serious liver damage. Between 15% and 45% of infected individuals will clear the virus within six months and are no longer infectious. Between 55% and 85% of those who are infected have some liver damage but many do not feel sick. Cirrhosis (scarring of the liver) develops in about 10%-20% of people with chronic infection and liver cancer can eventually develop in 1% to 5% over a period of 20 to 30 years. Cirrhosis or bridging fibrosis is usually present before the onset of liver cancer. The liver disease due to HCV advances more rapidly when drinking alcohol and when the individual is coinfecting with hepatitis B virus (HBV) or HIV. HCV-associated chronic liver disease is the most frequent indication for liver transplantation among adults.

TRANSMISSION OF HEPATITIS C

HCV is spread primarily by direct contact with human blood of an HCV infected person. HCV is not spread by sneezing, hugging or kissing, coughing, breast feeding, food or water, sharing utensils or drinking glasses, or casual contact.

- Individuals who injected drugs, even just once many years ago, are at risk and should be tested. HCV occurs from sharing contaminated needles, syringes, water, or other equipment associated with drug use. Of persons injecting drugs for at least 2 years, 60%-80% are infected with HCV.
- Recipients of clotting factors or solid organ transplants prior to 1987 and 1992, respectively are at increased risk of hepatitis C. Today in the U.S., the risk for transmission of HCV through donated blood is 1 in 2 million units of blood.
- HCV is not readily transmitted sexually. In relationships where there is one steady partner, sexual transmission is less than 1%. Sexual transmission increases in those with multiple sex partners, when other sexually transmitted disease are present, during anal intercourse especially among men who have sex with men when condoms are not used, and during sex that leads to blood exposure such as traumatic sex.
- There is no evidence indicating that HCV is transmitted through breast milk.
- HCV can be transmitted if the needles, ink, and other equipment used in tattoos or body piercing have someone else's infected blood on them or if the artist or piercer does not follow good health-safety practices.
- HCV can be spread by sharing razors or toothbrushes with HCV contaminated blood on them.
- Hemodialysis patients have about a 10% risk of infection.
- Hepatitis C transmission to infants born to an HCV-infected mother is about 3 - 5%. If the mother is coinfecting with HCV and HIV the risk of transmission of HCV to her infant is about 10%.

SYMPTOMS

- Most people with HCV do not have symptoms. A few may have symptoms that are very mild, mimicking the flu including fatigue, poor appetite, nausea, muscle and joint pains, or a mild discomfort in the area of the liver.

DIAGNOSIS

Early diagnosis is important so you can be checked for liver disease, get treatment if indicated, learn how to protect your liver from further harm, and learn how you can prevent spreading HCV to others.

- The incubation period for HCV infection varies from 2 to 26 weeks (an average of 45 days).
- A specific blood test that detects antibodies or an exposure to the virus does not differentiate between a past infection and a current infection. For early diagnosis, a specific blood test for the virus may be done as soon as two weeks after exposure. Follow up tests should be done to confirm HCV infection status and exclude laboratory error.
- Hepatitis C blood tests are not a part of a routine physical exam. Ask your doctor for a hepatitis C test.

HEPATITIS C TESTING RECOMMENDED FOR PERSON WHO:

- Ever injected illegal drugs.
- Received clotting factors made before 1987.
- Received blood or organs before July 1992.
- Ever were treated with hemodialysis.

- Are infected with HIV.
- Have a needlestick/sharps or mucosal exposure to HCV-positive blood.
- Are 12 to 18 months of age, and are born to HCV-positive women.
- Are baby boomers born between 1946 and 1964

MEDICAL EVALUATION AND MANAGEMENT FOR CHRONIC HCV INFECTION

Persons testing positive for the hepatitis C virus should be assessed for evidence of chronic liver disease and for possible treatment. Antiviral drugs are available for the treatment of chronic hepatitis C, but they are not suitable or effective for everyone. Persons with chronic liver disease should be vaccinated for hepatitis A and hepatitis B and abstain from alcohol use. Learn all that you can about the disease, how it is affecting you and how to protect your family. Obesity can cause fatty liver that may cause liver disease to progress faster and interfere with the response to treatment.

TREATMENT

- Combination therapy with pegylated interferon and ribavirin had been the standard of care until May 2011, when triple therapy adding either telaprevir (Incivek) or boceprevir (Victrelis) to the combination of pegylated interferon plus ribavirin was FDA-approved for the treatment of genotype 1, chronic hepatitis C. Sustained response rates of 66% when treating naïve patients with boceprevir and 79% when using telaprevir have been reported, a marked improvement from the lower rates achieved prior to the introduction of these drugs. Additionally, 58% of patients begun on triple therapy for 12 weeks with telaprevir, have undetectable HCV RNA at weeks 4 and 12. In these patients, continuing treatment with pegylated interferon and ribavirin for 12 more weeks resulted in a sustained virologic response in nearly 90%. For boceprevir, triple therapy, treatment is begun after a 4-week lead-in of just peginterferon and ribavirin. In about 45% in whom viral levels fell significantly at week 4, triple therapy for 24 more weeks after the lead-in resulted in a sustained virologic response of about 80%. Thus both of the new treatment regimens can shorten the duration of treatment and increase the response rates. However, neither telaprevir nor boceprevir can be used without peginterferon and ribavirin. Additionally, the duration of treatment is determined by the virologic response while on therapy. High sustained response rates have been reported for relapsed patients who were previously treated with peginterferon plus ribavirin when retreated with triple therapy. However, for so-called null responders, only telaprevir has been studied and triple therapy for 12 weeks followed by 36 more weeks of pegylated interferon and ribavirin without telaprevir resulted in a sustained virologic response rate of just 32%. Because the metabolism of both drugs affects the metabolism of other drugs, several drugs are contraindicated, and others must be carefully monitored. For both drugs, anemia is common, discontinuation for adverse events may be seen in 12 to 16%, and in the case of telaprevir a severe rash is seen in about 4%.
- Pegylated interferon is given by injection and may cause a number of side effects, including flu-like symptoms of headache, fever, fatigue, loss of appetite, nausea, vomiting, depression and thinning of the hair. Interferon can interfere with the production of white blood cells and platelets.
- Ribavirin, given by mouth, can cause birth defects. Women who are pregnant or planning a pregnancy should not take ribavirin. Pregnancy should not be attempted until 6 months after treatment has ended. Ribavirin also causes early destruction of red blood cells and may cause severe anemia requiring frequent monitoring and treatment with erythropoietin. Women of reproductive age need to be on two forms of contraception and if treatment with telaprevir or boceprevir is planned, two barrier forms of contraception are required because the oral contraceptives are less effective when these drugs are used.
- Almost half of all liver transplants in the US are performed for end-stage liver disease due to hepatitis C infection. However, the virus usually infects the transplanted liver and a second transplant may be required years later.
- Maintain as normal a life as possible, eat a well-balanced diet, exercise, and keep a positive attitude. Plan physically exhausting tasks for the morning when your energy level is at its peak. Rest when you feel tired.
- There is no specific evidence proving that herbal supplements fight the virus. Many herbs are toxic to the liver. .

PREVENTION

- There is NO vaccine to prevent HCV infection. Vaccines for hepatitis A and B prevent coinfection.
- Don't touch or share anything that might have the blood of an infected person on it, such as razors, scissors, toothbrushes, nail clippers, tampons, or sanitary napkins. Wipe up blood spills with disposable towels soaked in 1:10 dilution of household bleach. Use rubber or latex gloves. Dispose of soiled materials in a plastic bag.
- Don't share anything that might have blood on it; don't share drugs, needles, water, syringes, or any drug "works."
- Use latex condoms correctly and every time including during foreplay to reduce possible exposure to HIV, hepatitis B and C, gonorrhea, chlamydia or other sexually transmitted diseases.
- Notify your physician and dentist that you are infected with HCV.
- Get vaccinated against hepatitis A and B.
- Do not drink alcohol as it speeds the liver damage and use caution with prescription and other drugs/medications.