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# HEPATITIS C

## NEWSLETTER

Compiled by: Cerballiance Editorial Board

### DID YOU KNOW?

**With more than 150 million individuals infected worldwide.**

### The Hepatitis C virus represents a major public health issue.

Globally, an estimated 50 million people have chronic hepatitis C virus infection, with about 1.0 million new infections occurring per year. WHO[1] estimated that in 2022, approximately 242,000 people died from hepatitis C, mostly from cirrhosis and hepatocellular carcinoma (primary liver cancer).

Credit Source: [1] Hepatitis C (who.int)

**20%**  
of  
Hepatitis C cases  
cures on its own,  
without  
treatment.

### Hepatitis C in a nutshell

Discovered in 1989, it is a fact that the virus is transmitted mainly through the bloodstream, even if sexual transmission exists. Most often discovered by chance, hepatitis C virus infection is not discovered until late when the disease has become chronic. Only 20% of affected individuals recover before the disease becomes chronic, during the acute phase.

Today, existing treatments allow for the effective management of affected individuals with high cure rates.

### HEPATITIS C IS AN INFECTIOUS LIVER DISEASE CAUSED BY THE HEPATITIS C VIRUS (HCV) THAT BELONGS TO THE FLAVIVIRIDAE FAMILY.

Acute infection occurs after an incubation period of 7 weeks on average, but it can occur as early as the second week and up to 6 months after contamination. In 90% of cases, the acute infection is asymptomatic. The infection becomes chronic in 55% to 85% of cases and progresses in 20% of cases to Cirrhosis. It is now considered that 65% of HIV-positive patients have a Chronic infection.

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we  
Doing?

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## How HCV is transmitted?

Hepatitis C is mainly transmitted through the bloodstream.

Since the 1990s, the risk of transfusion-related transmission has become negligible.

- Drug use: intravenous drug use, and to a lesser extent nasal (straw) or smoked (sharing the crack pipe), is the major mode of contamination,
- Equipment in contact with blood: any equipment in contact with blood that has not been disinfected may present a risk of transmission (tattoos, piercings, razors, etc.). The risks associated with medical care (endoscopy, injections, etc.) are decreasing,
- Occupational or non-occupational Blood Exposure Accident (AES),
- Sexual contact: Sexual transmission is very low but exists. It is promoted by blood contact: intercourse during menstruation, injuries due to STIs, etc.
- There is no risk of transmission of the hepatitis C virus through saliva, sweat, cough or touch.

## Symptoms of Hepatitis C

The Hepatitis C virus is responsible for a liver disease: Hepatitis C. A distinction must be made between acute hepatitis and chronic hepatitis.

### Acute Hepatitis

Acute hepatitis is referred to in the first 6 months after the patient is infected. Even if it is most often asymptomatic, acute hepatitis can be accompanied by:

- Jaundice (or jaundice),
- Fatigue
- Fever
- Joint and muscle pain.

### Chronic Hepatitis

Symptoms that can essentially manifest themselves are the following:

- Fatigue of varying degrees that may be associated with depression
- Skin damage: purpura, itching, dry skin, etc
- Dry mouth and eyes: dry syndrome
- Joint and muscle pain
- Vasculature
- Thyroid involvement

## Chronic Hepatitis

Chronic hepatitis is when the virus is still present in the body beyond 6 months after contamination. The persistence of the virus, responsible for an inflammatory syndrome, will lead to a more or less significant deterioration of the liver with the formation of fibrous tissue: this is called fibrosis. It is also responsible for extra-hepatic degradation. The course of fibrosis can lead to the formation of cirrhosis.

This evolution is slow and can range from 10 years to 40 years after contamination without the patient having shown symptoms. The symptoms are not related to the severity of the infection. Cirrhosis can progress in the liver to the formation of a cancerous tumour: hepatocellular carcinoma.

## Hepatitis C and pregnancy

The **risk of mother-to-child transmission of hepatitis C is 5%**. In the event of co-infection of the mother with HIV, the risk of transmission is then 20%. Transmission of the virus from mother to child occurs mainly at the time of delivery.



## Treatment of Hepatitis C

The interest of hepatitis C treatment is twofold: to eradicate the virus if possible and to improve the condition of the liver. The treatment of chronic HCV infection is based on two drugs: interferon, which stimulates immune defences, and an antiviral that blocks the multiplication of the virus. There is no vaccine against hepatitis C, unlike hepatitis A and B.

## LABORATORY DIAGNOSIS OF HEPATITIS C INFECTION

### Those who bleed blood

As hepatitis C is a liver disease, many biological parameters are disrupted.

The following parameters can be measured to indicate or provide an indication of the course of the infection:

- Liver and gallbladder enzymes: transaminases (TGO, TGP), gamma-GT, alkaline phosphatases (ALPs) and bilirubin. Their level increases in the event of infection.
- Prothrombin level (PT): this is a level that measures the time it takes for the blood to clot. In the case of hepatitis, this rate is lengthened.
- The complete blood count (CBC): the blood platelet count is lowered in the case of hepatitis and the level of leukocytes (white blood cells) can be disturbed.
- Testing for cryoglobulin: its presence can be associated with symptoms during the acute and chronic phases.



### HCV Serology

Biological diagnosis of hepatitis C is based on the search for specific antibodies to the hepatitis C virus (HCV antibodies) from the patient's blood. This research is called HCV serology or HCV. The search for specific antibodies is negative. Two interpretations are possible:

- The patient is not infected with the hepatitis C virus.
- It may be a recent infection for which specific antibodies are not yet detectable in the blood. An average delay of 2 to 3 weeks after contamination is necessary to detect specific antibodies. This period corresponds to the period of seroconversion. The search for specific antibodies is positive, if there is no history of hepatitis C virus infection, it is recommended to perform a second serology on a new specimen and another detection technique (performed by your laboratory) to confirm the result of the first serology.
- Patients who have been in contact with the hepatitis C virus, whether they have recovered, whether they are in the acute or chronic phase, have antibodies to HCV. Only PCR will confirm or not the presence of the virus.

### VIRAL RNA TESTING BY PCR

RNA represents the genetic heritage of the virus. Its presence in the blood can confirm an ongoing infection with the hepatitis C virus.

- A positive test can confirm the diagnosis of acute or chronic hepatitis C if:
- HCV serology is positive without any notion of old hepatitis C,
- The serology is negative because it was carried out too early:
- The PCR is positive before the detection of anti-HCV antibodies about a week after contamination.
- The patient is immunocompromised in the presence of a context suggestive of hepatitis C.
- The amount of RNA found in the blood does not allow us to judge the severity of the disease.

PCR also makes it possible to monitor the effectiveness of antiviral treatments. It should be noted that there are blood tests that can measure the stage of liver fibrosis (Fibrotest®, Fibrometer®). These tests can be used as a substitute for a liver biopsy. Other tests measure the degree of inflammatory necrosis (Actitest®).