

Hepatitis C Virus: What Clinicians Need to Know



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Do patients with chronic HCV typically have no symptoms?

Jennifer's presentation is typical, since chronic infection of Hepatitis C virus (HCV) is often asymptomatic. Of persons with HCV infection, only 25% to 30% have symptoms related to HCV infection.¹ Some patients with chronic infection experience malaise, nausea, abdominal pain and pruritus. The physical examination may reveal signs of liver disease, such as:

- spider angiomata,
- palmar erythema and
- telangiectasia.

Much later in the course, if advanced cirrhosis develops, jaundice, splenomegaly, ascites and hepatic encephalopathy may be noted.

Extrahepatic manifestations are uncommon and may include a skin rash of cryoglobulinemia, lichen planus and porphyria cutanea tarda.



What tests are used to diagnose HCV? How accurate are they?

Abnormal results on liver enzyme tests usually prompt clinicians to screen patients for HCV infection. The sensitivity and specificity of

Jennifer's case

Jennifer, 35, is notified by the blood bank of the presence of hepatitis C virus (HCV) antibodies in her blood following a routine blood donation. At the time, she had been feeling well and had no symptoms of liver disease. She now presents at your office with questions about her test.

During her interview, she recalled receiving a blood transfusion in 1988 after experiencing trauma from a car accident.

Next steps...

Following this story, you send Jennifer for several tests to further evaluate her HCV status, which reveals that she is infected with genotype 1 HCV.

Treatment

Based on her results, Jennifer subsequently receives 48 weeks of anti-HCV therapy. She tolerates the treatment well and at the end of her treatment, results of a repeat HCV polymerase chain reaction test is negative.

HCV enzyme immunoassays depend on the prevalence of HCV infection in the population.² In high-prevalence populations (e.g., IV drug users), test sensitivities range from 98% to 100%, while in low-prevalence populations (e.g., blood donors) 40% of the results of HCV immunoassays can be false-positive (Table 1).

Q & A *What additional studies are useful to evaluate asymptomatic patients with HCV infection?*

If the anti-HCV test result is positive, infection can be confirmed with a highly sensitive polymerase chain reaction (PCR)-based qualitative HCV ribonucleic acid (RNA) assay. However, such confirmatory testing is expensive and unnecessary in routine primary care practice. Patients who should be tested for HCV RNA include:

- those whose anti-HCV result was unexpected (e.g., those with no previous risk factors),
- immunocompromised patients who may not generate antibodies to infection (e.g., those with HIV or those undergoing hemodialysis) and
- patients thought to be in a period of acute infection (i.e., when the PCR test result will be positive but antibodies have not yet developed).

Q & A *Why is it important to identify the HCV genotype?*

The HCV genotype predicts the degree of response and the duration of the therapy. There are six major genotypes of HCV. In the US, the most common is Genotype 1, which represents approximately 72% of HCV-infected patients. The prevalence of Genotypes 2 and 3 is fairly equally split and represents the majority of the remaining approximate 25% of infected patients (Figure 1). There are other HCV genotypes, including Genotypes 4, 5 and 6, which are found almost exclusively in individuals originating from areas of the world where these particular genotypes are endemic. For example, Genotype 4 is almost completely restricted to individuals who immigrate to North America from Egypt and the Middle East; Genotype 5 is predominantly found in persons from South Africa; and Genotype 6 is generally found in persons from Southeast Asia.

Table 1

Diagnostic tests for HCV

	Diagnostic test type	
	Serologic	Virologic
Specifications	Antibodies	Virus
Mode of detection	> 95%	> 98%
Sensitivity	Variable	> 98%
Specificity	2-6 months	2-6 weeks
Detection post-exposure	Screening	Confirmation
Use		

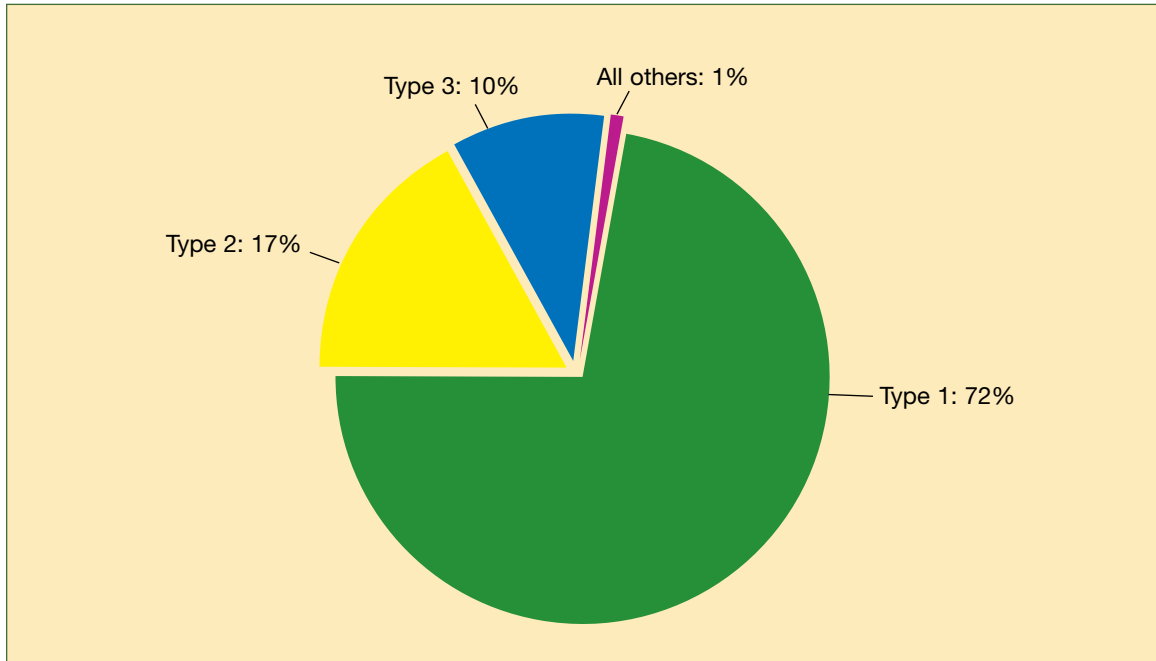


Figure 1. HCV genotypes in the US.

Q What are the risk factors for the HCV infection?

The HCV infection is commonly associated with a patient history of IV drug use or a blood transfusion received prior to 1992 (the year HCV screening in blood transfusions became available). Other risk factors include:

- multiple sexual partners,
- body piercing,
- tattooing,
- needle stick injuries and
- hemodialysis (Figure 2).



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In Canada, injection drug use has been and continues to be the dominant mode of HCV acquisition.³

Q Which patients should be screened for HCV infection?

Not every patient in clinical practice should be screened for HCV infection. Figure 2 shows the recommendations from The Centers for Disease Control and Prevention and several other health organizations for patients at increased risk of HCV infection who should be routinely tested.

Q What is the prognosis for infected patients ?

The natural history of HCV has been extensively studied. After acquiring the infection, a minority

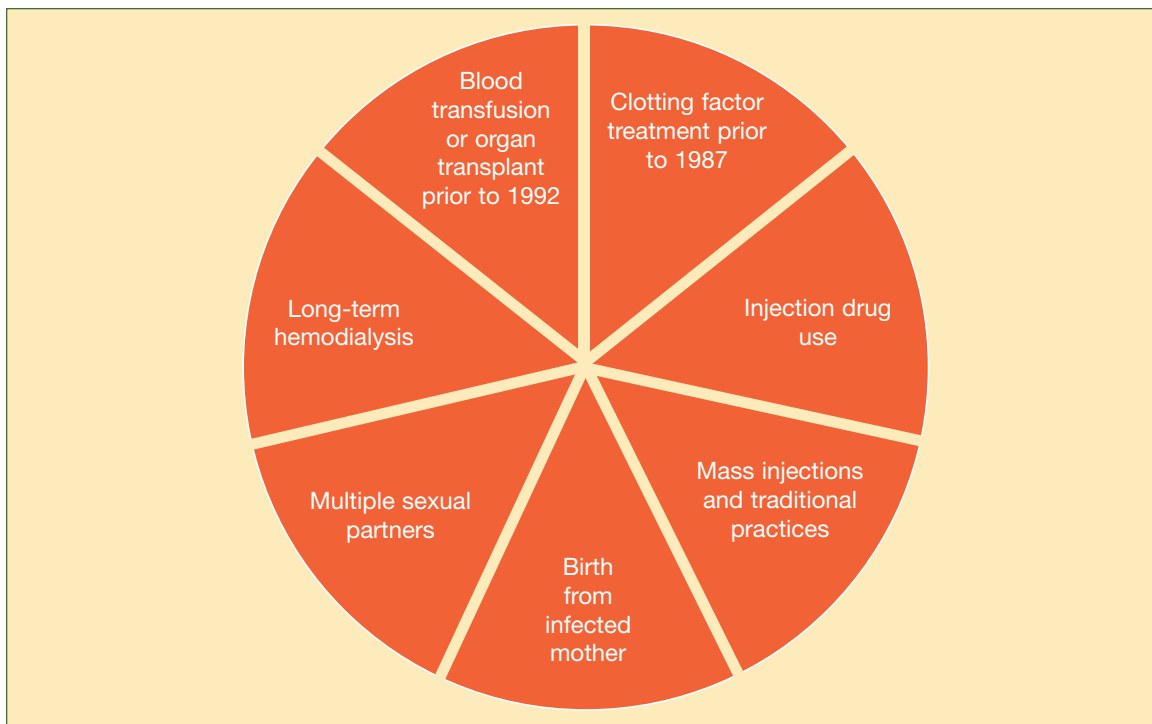


Figure 2. Risk factors for HCV infection.

of newly-infected patients (15%) will clear the infection, but in most patients (85%), the infection will become chronic (Figure 3).

Q *Are infected patients a risk to those around them?*

The estimated lifetime risk for infection in sexual partners of patients with HCV is about 1.5%. Owing to this low risk, the US Centers for Disease Control and Prevention, the US Public Health Service and the National Institutes of Health (in a consensus statement) have not recommended barrier precautions between stable monogamous sexual partners in which one partner is chronically infected with HCV.

The estimated risk for mother-to-infant transmission of HCV infection ranges from 0% to 20%. For children born to women with HCV infection, current practice guidelines recommend testing the children no earlier than 12-months-of-age. Breastfeeding from chronically infected mothers with HCV is considered safe. There is no need to curtail ordinary household activities except those that might result in blood exposure, such as sharing a razor or a toothbrush.

Q *What dietary modifications affect the course of infection?*

There is evidence that consumption of > 50 g of alcohol q.d. is associated with rapid progression

of fibrosis in patients with HCV infection. Also, alcohol consumption is associated with a poorer response to anti-HCV therapy. Patients with HCV infection are encouraged to abstain from alcohol.

Generally, there are no dietary restrictions for patients with HCV infection; however, patients with cirrhosis should limit their intake of salt to avoid volume overload and the consequent development of ascites. Recently, coffee consumption (more than two cups per day) was associated with a reduced risk of hospitalization, hepatocellular carcinoma (HCC) and mortality from chronic liver disease.⁴

Q&A *When to refer the patient with HCV infection to a hepatologist?*

Ideally, all patients with HCV infection should be evaluated by a physician with experience with liver diseases. The initial evaluation includes assessing the need for anti-HCV therapy, followed by monitoring for complications of HCV infection, especially for HCC, or referring the patient for liver transplant evaluation.³

Q&A *Should all HCV infected patients undergo a liver biopsy?*

The liver biopsy is helpful in assessing the degree of inflammation and fibrosis in the liver from chronic HCV infection and guiding patient therapy. If the results of the liver biopsy reveal normal liver histology or mild inflammation/fibrosis, these patients can be followed without therapeutic intervention. Conversely, if the liver biopsy shows significant fibrosis, the patient should be started on anti-HCV therapy before end-stage liver disease or HCC develops.

Q&A *What are the therapeutic options for patients with chronic HCV infection?*

The standard treatment of chronic HCV infection is a combination regimen of peginterferon and ribavirin.⁵ Based on the virus genotype, the duration of treatment is usually between six and 12 months. If the patient is a candidate for antiviral therapy, testing for the HCV genotype and viral load should be performed (Table 2).

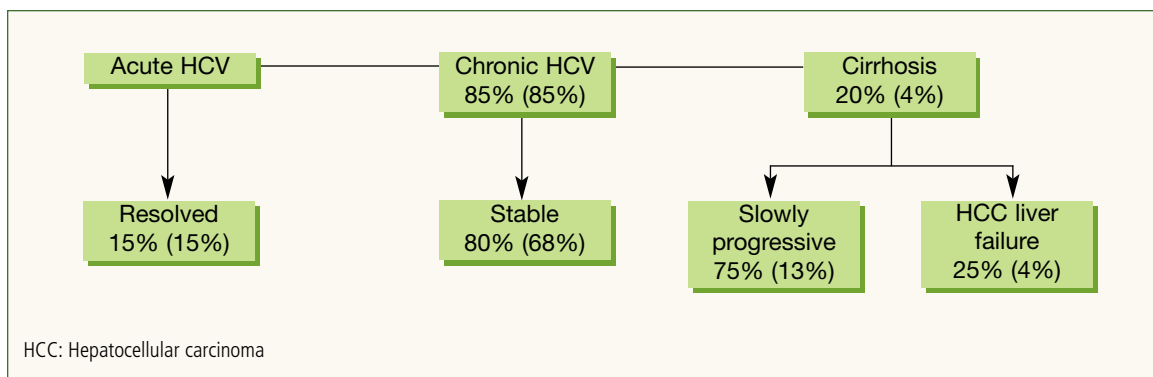


Figure 3. Natural history of HCV infection.

Table 2

Monitoring patients during anti-HCV therapy

Disease severity	Response to therapy
AST/ALT	ALT
Bilirubin	HCV RNA
Albumin	HCV genotype
INR	Liver biopsy
Platelet count	-
Liver biopsy	-

AST: Aspartate aminotransferase
 ALT: Alanine aminotransferase
 RNA: Ribonucleic acid

Table 3

Adverse effects of anti-HCV therapy

Interferon

- Flu-like symptoms
- Injection site reactions
- Myalgia and arthralgia
- Neuropsychiatric adverse effects

Ribavirin

- Anemia
- Teratogenicity
- Insomnia

Frequent monitoring of patients during therapy is extremely important, since some patients can develop life-threatening adverse effects that require dose adjustment or discontinuation of the treatment (Table 3).

Q & A What are the goals of HCV therapy?


The ultimate goal of treating HCV is the long-term eradication of the virus from the patient and consequent elimination of the risk of cirrhosis and its long-term complications

including HCC. This goal can be achieved in about 40% to 85% of patients based on host and virus factors. The virus genotype is the most important predictor of therapy success.⁵

Of persons with HCV infection, only 25% to 30% have symptoms related to HCV infection.



Final thoughts?

HCV represents a major public health problem in the world, infecting approximately 3% of the world's population. For this reason, the World Health Organization has indicated HCV as an emerging disease that should claim the priorities of national health programs dedicated to prevention, screening and treatment. 

References

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