

# The ABCs of viral hepatitis

How to prevent and treat liver infections when you have HIV

by Dr. Marina B. Klein



The question “Have you ever had hepatitis?” isn’t always easy to answer. There are several different types, each with its own letter; they’re transmitted in different ways; some are curable while others aren’t. But the details are important. If you’ve had hepatitis in the past, this could influence the choice of treatment for HIV. If you haven’t, there are practices and, sometimes, vaccines that can prevent you from becoming infected. This article looks at the three most common types of viral hepatitis, all of which can be detected and evaluated using simple blood tests.

## Hepatitis A

Hepatitis A is a common form of viral hepatitis, found in North American and tropical countries. It’s transmitted by exposure to fecal material, either by eating food prepared by someone who didn’t wash their hands after using the bathroom or drinking contaminated water. It’s highly infectious and most commonly acquired when travelling to countries that have high rates of infection. It can also be passed on through sexual intercourse, particularly oral sex or anal sex with a person who’s in the active phase of infection. Between 15% and 60% of Canadian adults over age 30 have been exposed to hepatitis A. Aboriginals, immigrants and men who have sex with men (MSM) have higher rates.

## Severe but passing symptoms

Hepatitis A tends to be the least harmful of the three. Most people who become infected will have

symptoms of severe fatigue, nausea, vomiting, pain and swelling of the liver, jaundice (yellowing of the skin and eyes) and dark urine. Although these symptoms can be quite severe, they almost always resolve on their own and rarely result in severe damage to the liver. Once the symptoms are gone, the infection is considered cured and a person is protected from getting infected again. There's no chronic form of hepatitis A.

Hepatitis A can be particularly severe and occasionally life-threatening for people who also have another form of chronic hepatitis (e.g. hepatitis B or C).

Hepatitis A infection is diagnosed by testing for antibodies in your blood. During acute infection, concentrations (titres) of IgM antibodies are high. When the infection resolves, IgG antibodies appear and persist life-long. These indicate that you're now protected from being infected with hepatitis A again, but they don't protect you from hepatitis B or C. (See sidebar on page 12 for more on testing).

## Prevention

Hepatitis A infection can be prevented with a vaccine (Havrix™, or in combination with hepatitis B vaccine in the form of Twinrix™). All persons with HIV who've never had hepatitis A (e.g. in whom IgG antibodies are negative) should receive the hepatitis A vaccine, particularly MSM and those with other chronic hepatitis infections.

## Hepatitis B virus (HBV)

Hepatitis B infection, although less common than hepatitis A, can be much more serious. Hepatitis B infection has both acute and chronic phases, and about 5% to 8% of Canadians infected with HIV are also chronically infected with HBV.

HBV is mainly transmitted in much the same way as HIV — from mother to child, by sexual contact or percutaneous (under the skin) blood exposure (e.g. injection drug use or tattoos). HBV is the most contagious of any of the hepatitis viruses (about 100 times more infective than HIV), so household members and sexual partners of persons chronically infected with HBV are at high risk for acquiring this infection unless they've been vaccinated.

## Worse if you have HIV

Acute infection with HBV produces symptoms similar to hepatitis A, but these can be far more severe and in some cases life-threatening. In most people, the infection will resolve, but in others it doesn't and the infection becomes chronic. People living with HIV who acquire HBV will develop chronic

infection about 25% of the time — a much higher rate than people who don't have HIV. Chronic infection will persist lifelong and, if untreated, can lead to serious liver damage including cirrhosis (scarring of the liver), liver failure and liver cancer. It can also be passed on to other people. Like hepatitis A, HBV can be diagnosed with blood tests, which can also determine if the infection is acute or chronic and measure the level of infectiousness. HBV DNA tests are used to measure the amount of HBV in the blood. If detectable, treatment for HBV is generally recommended.

## Treatment

Fortunately, hepatitis B can be treated. In fact, some of the medications used to treat HIV are also the most effective treatments used for HBV. Tenofovir (Viread®), lamivudine (3TC), emtricitabine (FTC) and the combination of tenofovir/FTC (Truvada®) can all be used to reduce the HBV to undetectable levels, usually as part of a combination HIV treatment regimen. Other HBV drugs are also active against HIV, so they should only be used when HIV levels are undetectable. If HBV drugs are used without also receiving fully effective HIV treatment, there is a high risk that HIV will develop resistance. Controlling HBV to undetectable levels leads to reduced rates of liver disease and can prevent cirrhosis.

## Vaccination

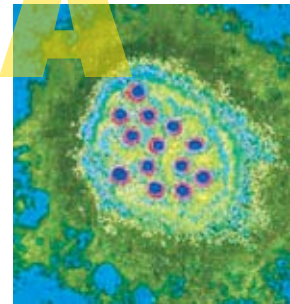
For those who haven't ever had hepatitis B (have negative antibody tests), vaccination is recommended, particularly for anyone who's chronically infected with HCV or has partners or family members with chronic HBV. HBV vaccination requires three shots of vaccine, given over a six-month period. Vaccination can be very effective at preventing HBV. However, not all people with HIV will respond well to vaccines, because their immune system may prevent the development of protective antibodies. It's therefore important to get HBV antibody levels measured following the vaccine series to make sure it worked.

## Hepatitis C virus (HCV)

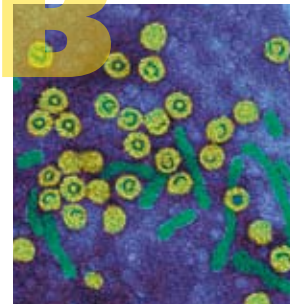
The most common chronic viral co-infection with HIV is HCV, which affects up to 30% of people living with HIV. HCV is mainly transmitted through blood transfusions, the sharing of injection drug use equipment and tattoos under non-sterile conditions. It can also, though less commonly, be transmitted

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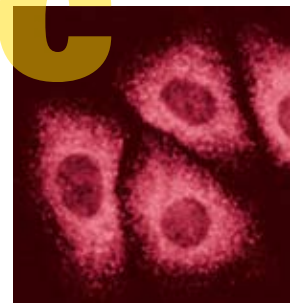
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**Dr. Marina B. Klein** is Associate Professor of Medicine at the McGill University Health Centre, Division of Infectious Diseases and Immunodeficiency.

sexually, and from mother to child. Infection with HIV increases the risk for acquiring HCV sexually and in childbirth. Acute HCV has increasingly been seen in HIV-positive MSM engaging in high-risk sexual activities. HIV-HCV co-infection also occurs commonly in sub-Saharan Africa, Latin America and South-East Asia, so immigrants from these areas are at particular risk.

Infection with HCV results in an acute hepatitis, which tends to produce fewer symptoms than hepatitis A or B. Some people with acute HCV

of HCV somewhat, but HIV-HCV co-infected persons remain at high risk for liver-related complications despite treatment. In part, this may be because HIV treatments themselves can affect the liver. Other factors such as alcohol use, which accelerates liver disease in HCV, may also be important.

Diagnosis is made by testing for HCV antibodies in the blood. Chronic infection is diagnosed by detecting HCV virus (RNA) in blood. Liver biopsies are often performed to determine the amount of damage done to the liver and whether treatment is indicated.

There's no vaccine to protect against HCV. Prevention requires avoiding high-risk activities, particularly those related to the sharing of injection drug use equipment (not just needles, but spoons, straws and other "works"), and certain sexual activities.

### Complex treatment

There's treatment available for HCV, but it's challenging to take and to tolerate, and it doesn't work in everyone. The standard HCV treatment is pegylated interferon-alpha 2a (Pegasys®) or alpha 2b (Pegetron®) — taken weekly by injection — combined with ribavirin taken orally twice daily. Recent studies suggest that there are no differences between the two available interferon products. Side effects often include flu-like symptoms, anemia, weight loss, fatigue and depression. Treatment is most effective when given during acute HCV, where up to 80% will be cured. In chronic infection, cure rates are lower and depend on the genotype, or strain, of HCV infection. The treatment response rate is about 40% on average in genotypes 1 and 4, and 60% to 70% in genotypes 2 and 3.

Despite the challenges associated with HCV treatment, it can be given successfully to a majority of people, especially in a centre that can provide multidisciplinary support. HCV treatment is the only intervention so far that's been clearly shown to improve outcomes for HIV-HCV co-infection, so it's important to be evaluated for treatment if you have HCV infection.

### Avoid liver disease

An increasing number of people are chronically infected with HCV and/or HBV and HIV due to the shared routes of transmission. With the availability of effective HIV therapies, liver disease secondary to hepatitis co-infections has emerged as a leading cause of illness and death in people with HIV and may complicate HIV treatment. It's important to get tested, get vaccinated and get treated for these conditions to reduce your risk of liver disease. **R**

## Testing for hepatitis

An antibody titre is a lab test that measures the presence in your blood of antibodies to viruses that cause hepatitis A, hepatitis B, or hepatitis C. The body creates antibodies to attack and remove foreign substances (like hepatitis virus), and the level of antibodies reflects past exposure to this substance. Elevated Immunoglobulin M (IgM) antibodies indicate acute hepatitis. Elevated Immunoglobulin G (IgG) antibodies suggest chronic hepatitis.

will clear the infection on their own, without any treatment. However, approximately 80% of those infected with HCV will go on to develop chronic infection, which, if untreated, may eventually lead to cirrhosis, liver failure and liver cancer.

### Effects on HIV treatment

HCV doesn't appear to affect HIV, but can make it more difficult to tolerate HIV treatments. As with HBV, HIV makes HCV worse, leading to faster rates of liver disease, cirrhosis and death from liver-related causes. Treatment of HIV appears to slow the effects

