HIV and Hepatitis C (HCV)

Hepatitis C virus (HCV) is a disease that infects the liver. HCV can cause lifelong infection, and over time it can cause fibrosis (mild to moderate liver scarring), cirrhosis (serious liver scarring), liver cancer, liver failure and death.

Hepatitis C is common among people living with HIV. In the United States, approximately 25 percent of people living with HIV are coinfected with HCV. This means that about 225,000 to 330,000 people in the United States are living with both viruses.

HIV can worsen hepatitis C. Not only does HIV increase the risk of liver damage, but it can also speed up the onset of liver damage following infection. It is important for people who are coinfected with HIV and HCV to work closely with their health care providers in order to safely and effectively monitor and treat both conditions.

If you are living with HCV and are NOT coinfected with HIV, please check out Hep’s comprehensive lesson on the diagnosis, monitoring and treatment of hepatitis C.

If you are living with HIV and are NOT coinfected with HCV, please check out POZ’s comprehensive lesson on the diagnosis, monitoring and treatment of HIV.

Am I at greater risk for HCV if I am HIV positive?
Hepatitis C is blood-borne. To cause a new infection, HCV must pass from the blood of an infected person into the blood of an uninfected (susceptible) person. In other words, HCV is most easily spread through direct blood-to-blood contact. People who inject drugs who have shared needles or other injection equipment, including cookers, cotton and measuring syringes, are at the highest risk of being infected with HCV. Roughly 75 percent of people who are infected with HIV from injecting drugs are also infected with HCV. This is because both viruses can be spread easily through blood and blood products.

While sexual transmission of HCV is relatively rare, being HIV positive appears to increase the risk for acquiring hepatitis C sexually. During the past decade, outbreaks of sexually transmitted hepatitis C have been reported among HIV-positive gay, bisexual, and other men who have sex with men (MSM).

Researchers have found some common risks—along with HIV itself—that are associated with these
sexually transmitted outbreaks, such as:

- Participating in group sex
- Finding sex partners on the Internet
- Rougher, longer anal intercourse (receptive and insertive)
- Receptive or insertive fisting
- Shared sex toys
- Non-injection drug use (nasal or anal)
- Having another sexually transmitted infection

You may be at risk for hepatitis C and should contact your health care provider for a blood test if you:

- Were notified that you received blood from a donor who later tested positive for hepatitis C.
- Have ever injected illegal drugs—even if it was only once.
- Have ever gotten a tattoo or piercing in a non-professional setting where equipment such as ink, inkwells or needles are re-used and potentially unsterilized.
- Received a blood transfusion or solid-organ transplant before July 1992.
- Received a blood product for clotting problems before 1987.
- Have ever been on kidney dialysis.
- Have evidence of liver disease (for example, persistently elevated liver enzyme levels).
- Have had multiple sexual partners, or sexual contact with an HCV-positive person.
- Have an HCV-positive mother.

HIV may increase the risk of sexually transmitted hepatitis C infection among women. HIV-positive women who have a male partner who uses injection drugs are more likely to be coinfected with hepatitis C than HIV-negative women who have a male partner who uses injection drugs.

Coinfected women can pass hepatitis C to their infants during pregnancy, labor and delivery. The risk for mother-to-infant transmission of HCV is around 6 percent in women with HCV alone. When HIV is present, the HCV transmission risk doubles or triples. Although antiretroviral therapy reduces the risk for HIV transmission from mother to child, it is not clear whether it lowers the risk of hepatitis C transmission. What’s more, delivering a baby via caesarean section, compared with vaginal delivery, does not appear to reduce the risk of mother-to-child HCV transmission. Breastfeeding is known to transmit HIV, and it may increase the risk of HCV transmission when the mother is living with both viruses.
Some HIV-positive people can clear HCV by a strong immune response or with treatment. It is possible, however, for a person who ultimately clears the virus—either spontaneously or through treatment—to become reinfected with HCV.

How does HIV affect hepatitis C?

HIV increases the risk for—and can speed up the development of—liver damage from hepatitis C. Other factors, such as alcohol intake, duration of hepatitis C infection, hepatitis B coinfection, being older than 40 and using certain antiretrovirals (ARVs), such as Videx or Zerit), may also worsen liver damage. People with fewer than 200 CD4 cells are more likely to have liver damage from hep C.

People who are coinfectected may need to select HIV meds carefully with their care providers. Although the benefits of HIV treatment outweigh the risks, many medications used to treat HIV, including the protease inhibitors and the non-nucleoside reverse transcriptase inhibitors, are broken down (metabolized) by the liver and can cause liver injury, even in people who aren’t living with HCV. People taking ARVs should have their liver enzymes monitored regularly.

On the one hand, these particular drugs may worsen or speed up the liver disease being caused by hepatitis C. On the other hand, many experts think that treating HIV can delay liver disease progression by keeping the immune system strong.

Choosing HIV medications that are known to be easy on the liver and are less likely to interact with hep C treatments is the best solution. Be sure to discuss your options with your health care provider.

People who are coinfectected usually have higher HCV viral loads than people with HCV alone, but—unlike HIV—the hepatitis C viral load is not linked to disease progression or liver damage. Liver enzymes are not a reliable indicator of disease progression, because some people have liver damage despite persistently normal liver enzyme levels.

Even though it happens more rapidly in HIV-positive people, hepatitis C progression varies widely among individuals. Researchers have found that about 25 percent of people coinfectected with HIV/HCV have rapid fibrosis progression (meaning they progress two fibrosis stages over three to four years). Some researchers have reported moderate liver damage in people coinfectected with HIV/HCV within a few years of HCV infection, but this is unusual.

As the HIV population gets older thanks to successful ARV treatment, many people who are coinfectected are developing cirrhosis. In general, HIV is known to double the rate of cirrhosis. Experts estimate that without HCV treatment at least 20 percent of coinfectected people will develop cirrhosis 20 years after HCV infection and 40 percent to 59 percent of people will develop cirrhosis in 30 years.

People with cirrhosis or end-stage liver disease are at high risk for drug-induced liver injury and
may need to avoid—or use a different dose of—some HIV drugs.

Discontinuing HIV treatment can worsen cirrhosis in people who are coinfected. Although the three-year survival rate among HIV/HCV-coinfected people with cirrhosis is 87 percent, once liver failure (also called decompensated cirrhosis) occurs, the survival rate drops to 50 percent at two years.

In fact, end-stage liver disease from untreated, or unsuccessfully treated, hepatitis C has become a leading cause of death among people with HIV in the United States and Western Europe, where there is widespread access to ARV therapy. Compared with people who have only hepatitis C, those with both HIV and HCV are more likely to experience liver failure—which is often fatal unless a transplant is performed. In one study, people infected with both viruses were 21 times more likely to die of liver failure than those only infected with HCV.

Other than being coinfected with HIV, a number of other factors can cause liver disease to progress faster in people living with HIV. These include:

- Being coinfected with hepatitis B virus (HBV) and HCV;
- Heavy consumption of alcohol;
- Being over the age of 40 years;
- Having fat in your liver (steatosis), which is usually associated with being overweight or heavy alcohol consumption;
- Being male; and
- The length of time you have been infected with hepatitis C.

Is treatment available for HCV if I’m coinfected?
The goal of hep C treatment is to cure the virus, which can be done by using a combination of drugs. Having HIV does not affect a person’s chances of becoming cured. The length of treatment, which ranges from eight to 24 weeks, depends on the person’s HCV genotype (genetic structure of the virus), whether or not they have been treated before, whether they have liver cirrhosis, and the level of virus in the body (known as viral load).

Successful HCV treatment is defined as an undetectable hep C viral load 12 weeks after completing treatment. This is called a sustained virologic response, or SVR. It is also abbreviated as “SVR12,” based on the weeks that have passed since treatment. People who achieve an SVR12 are generally considered cured.

A cure typically stops the advancement of liver scarring (called fibrosis) and may even send it in reverse to an extent. Ridding yourself of the virus also reduces, but does not necessarily eliminate, the raised risk of future health complications resulting from hep C, including cirrhosis, liver cancer, liver failure and death. The risks of such outcomes are higher if they already have severe liver
scarring or cirrhosis, despite being cured of hepatitis C.

Research has suggested that people who are living with both HIV and hep C (this is called being coinfected) tend to experience faster progression of hepatitis C-related complications than those who only have hep C. The American Association for the Study of Liver Diseases (AASLD) says that people with hepatitis C who are coinfected with HIV should be prioritized for HCV treatment.

There are a number of highly effective treatments currently approved by the U.S. Food and Drug Administration (FDA) to treat hepatitis C. Many others are being studied in clinical trials or are awaiting FDA approval. For details on these medications, [click here](#). To check out the AASLD-recommended regimens for those who are coinfected with HIV, [click here](#). (The treatment recommendations are based on your hep C genotype and how well your liver is functioning. If you don’t know your virus genotype, that’s a good thing to ask your doctor.)

Drug-drug interactions
Some of the hepatitis C drugs have been shown to interact negatively with HIV antiretrovirals. This is called a drug-drug interaction. So it’s important for you, your physician and your pharmacist to consider what HIV regimen you are taking, to make sure it is safe with the hep C medications you are going to take and to make any necessary adjustments. Luckily, with the number of HCV therapies available today, the opportunities for safe and effective treatment when someone is being treated for HIV are quite broad.

Identified drug-drug interactions between HIV antiretrovirals and the various HCV drugs, as described in the various medications’ published prescribing information, include:

Daklinza (daclatasvir):

- Daklinza requires dose adjustment when used with ritonavir-boosted Reyataz (a decrease to 30 mg daily) and efavirenz (found in Sustiva and Atripla) or Intelence (etravirine) (an increase to 90 mg daily).

Epclusa (sofosbuvir/velpatasvir):

- Epclusa can be used with most antiretrovirals, but not efavirenz, etravirine, nevirapine, or ritonavir-boosted tipranavir.
- Because the velpatasvir in Epclusa increases tenofovir levels, when given as tenofovir disoproxil fumarate (TDF; found in Viread, Truvada, Atripla, Complera, and Stribild), using Harvoni in combination with any of these HIV medications should be avoided by those with reduced kidney function (determined by laboratory tests measuring creatinine clearance rate).
Tenofovir alafenamide (TAF; found in Descovy, Odefsey, and Genvoya) may be an alternative to TDF during Epclusa treatment for patients who take cobicistat or ritonavir as part of their antiretroviral therapy.

Harvoni (sofosbuvir/ledipasvir):

- Harvoni can be used with most antiretrovirals, but should not be used with ritonavir-boosted tipranavir.
- Because the ledipasvir in Harvoni increases tenofovir levels, when given as tenofovir disoproxil fumarate (TDF; found in Viread, Truvada, Atripla, Complera, and Stribild), using Harvoni in combination with any of these HIV medications should be avoided by those with reduced kidney function (determined by laboratory tests measuring creatinine clearance rate).
- Because this effect may be more likely to occur when TDF is used with HIV antiretrovirals boosted with either ritonavir or cobicistat, Harvoni should be avoided when these HIV drugs are being used, unless the antiretroviral regimen cannot be changed and the urgency of treatment is high. Tenofovir alafenamide (TAF; found in Descovy, Odefsey, and Genvoya) may be an alternative to TDF during Harvoni treatment for patients who take cobicistat or ritonavir as part of their antiretroviral therapy.

Mavyret (glecaprevir/pibrentasvir):

- Mavyret should not be taken with atazanavir (found in Reyataz and Evotaz), darunavir (found in Prezista, Prezcobix and the investigational combination tablet Symtuz), lopinavir (found in Kaletra) or ritonavir (found in Kaletra and often used as a “boosting agent” to raise the drug levels of other HIV medications). These drugs may raise the body’s levels of the medications in Mavyret.
- Mavyret should not be taken with efavirenz (found in Sustiva and Atripla) because it may lower the body’s level of the two drugs in Mavyret and thus reduce the HCV treatment’s effectiveness.

Ribavirin:

- Combining with didanosine, stavudine, or zidovudine is not recommended.
Sovaldi (sofosbuvir):

- Aptivus (ritonavir-boosted tipranavir) should not be used with Sovaldi.

Technivie (ombitasvir/paritaprevir/ritonavir):

- Technivie should not be combined with ritonavir (found in Kaletra and is often included as a “boosting agent” to raise the drug levels of other HIV medications). This restriction against combining Norvir and Technivie only applies to those who are known to have what are known as hypersensitivity reactions to Norvir, such as the severe skin eruptions toxic epidermal necrolysis (TEN) and Stevens Johnson syndrome.
- Technivie should not be combined with efavirenz (found in Sustiva and Atripla). Combined with efavirenz, the paritaprevir and ritonavir components of Technivie are not well-tolerated and may result in raised liver enzymes.
- Because Technivie contains an HIV medication, ritonavir (known by the brand name Norvir), individuals living with HIV who take Technivie for hep C should also take a full-combination HIV treatment regimen at that time. Taking ritonavir without any other HIV medication can prompt HIV to develop resistance to the protease inhibitor class of HIV drugs.

Viekira Pak (ombitasvir/paritaprevir/ritonavir; dasabuvir):

- Viekira Pak should be used with antiretroviral drugs with which it does not have substantial drug-drug interactions. These are: atazanavir, dolutegravir, emtricitabine, enfuvirtide, lamivudine, raltegravir, and tenofovir.
- The dose of ritonavir used for boosting of HIV protease inhibitors may need to be adjusted (or held) when Viekira Pak (which contains ritonavir) is to be used to treat HCV. The dose of ritonavir should be restored when HCV treatment with Viekira Pak is completed. The HIV protease inhibitor itself should be taken at the same time of day as Viekira Pak.
- Viekira Pak should not be used with darunavir, efavirenz, ritonavir-boosted lopinavir, ritonavir-boosted tipranavir, etravirine, nevirapine, cobicistat, or rilpivirine.
- Viekira Pak should not be used in HIV/HCV-coinfected individuals who are not taking HIV antiretroviral therapy.
Vosevi (sofosbuvir/velpatasvir/voxilaprevir):

- Vosevi should not be combined with atazanavir (found in Reyataz and Evotaz) or lopinavir (found in Kaletra). These drugs may raise the body’s level of voxilaprevir.
- Vosevi should not be combined with Norvir (ritonavir)-boosted Aptivus (tipranavir) as the drug may lower the body’s level of the sofosbuvir and velpatasvir components of Vosevi.
- Vosevi should not be combined with efavirenz (found in Sustiva and Atripla) as the drug may lower the telaprevir and voxilaprevir components of Vosevi.
- Vosevi may raise the body’s level of tenofovir disoproxil fumarate (found in Viread, Atripla, Complera, Stribild and Truvada). Physicians should monitor those receiving Vosevi and Viread for indications of adverse reactions to the latter drug.

Zepatier (grazoprevir/elbasvir):

- Zepatier should be used with antiretroviral drugs with which it does not have substantial drug-drug interactions. These are: abacavir, emtricitabine, enfuvirtide, lamivudine, raltegravir, dolutegravir, rilpivirine, and tenofovir.
- Zepatier should not be used with cobicistat, efavirenz, etravirine, nevirapine, or any HIV protease inhibitor.

For more information about hepatitis C, visit hepmag.com

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