Hepatitis C:
co-infection with other viruses

Infection with more than one virus is often referred to as co-infection. This section will discuss co-infection with HIV and hepatitis C and hepatitis B and hepatitis C co-infection.

HIV and hepatitis C co-infection

Epidemiology of HIV and viral hepatitis co-infection

In Australia, it is estimated that about 13% of people with HIV also have hepatitis C.[1] It is possible that a person with HIV will not know they have either hepatitis B or hepatitis C unless they are specifically tested for the hepatitis viruses.

Both hepatitis B and hepatitis C are more common in people with Human Immunodeficiency Virus (HIV) than in the general population because of shared risk factors for viral transmission. HIV shares major routes of transmission with both hepatitis C and hepatitis B.

People who inject drugs are at particularly high risk for hepatitis C and HIV co-infection. Sexual transmission is responsible for the majority of the cases of HIV-hepatitis B co-infections.

Disease course of HIV and hepatitis C co-infection

Current evidence suggests that HIV worsens hepatitis C-related liver disease and can fasten the progression to cirrhosis, decompensated liver disease and lead to earlier development of hepatocellular carcinoma (a form of liver cancer) because HIV decreases immunity. It is unclear what impact hepatitis C infection has on HIV progression.[2]

Testing for hepatitis C and HIV

A simple blood test will check whether you have hepatitis C and/or HIV. For more information on testing for hepatitis C download the **Hepatitis C: know your tests factsheet** on this site.

In some people who are co-infected with hepatitis C and HIV, the results of the first blood tests may be unclear or show a negative result. This could be caused by the HIV decreasing the antibody 'markers' for hepatitis C. It may be necessary to have ongoing blood tests that specifically look for the virus (PCR test) in order to make an accurate diagnosis.

If the results show co-infection with hepatitis C and HIV, it is important to find a doctor with experience in co-infection and HIV. An AIDS Council or Hepatitis Council will be able to suggest appropriate doctors. Regular blood tests and viral load tests are needed to track how fast the disease is progressing. Developing a good partnership with your doctor will help you feel comfortable about the management of your illness. For more information on working with your doctor download the **Hepatitis C: working with your health care team factsheet** on this site.

Treatment of HIV/hepatitis C co-infection

The treatment for hepatitis C is a combination of two drugs: pegylated interferon and ribavirin. For more information on hepatitis C treatment download the **Hepatitis C: medical treatments factsheet** on this site.

People with HIV can be treated for hepatitis C but it may be more complicated than treating either infection by itself, particularly if a person is on HIV treatment.

A recent clinical trial was performed around the world (called APRICOT) which involved 860 people with HIV/hepatitis C co-infection. The study results showed that the sustained virological response (SVR) rate for people co-infected with HIV and hepatitis C was 40% overall. Patients with genotype 1 achieved a lower SVR (29%) than those with genotypes 2 and 3 (62% SVR).

[1] Dore, G. & Sasadeusz, J. (Eds) (2006). Coinfection: HIV & Viral hepatitis a guide for clinical management. ASHM.
[2] Dore, G. & Sasadeusz, J. (Eds) (2006). Coinfection: HIV & Viral hepatitis a guide for clinical management. ASHM.

An important consideration of treatment of co-infection is the safety of the treatment, particularly, the potential interactions between HIV treatment and hepatitis C combination therapy. Overall, in the APRICOT study, 25% of patients had to stop taking the hepatitis C treatment because of the side effects.

HIV can be treated even if a person also has hepatitis C. However, hepatitis C can affect HIV treatment choices, because of the potentially toxic effects some HIV drugs have on the liver. There's no accepted list of 'best HIV treatments' for people with both HIV and hepatitis C virus, however, specific HIV drugs to be avoided include nevirapine and full dose ritonavir and timpranavir.

The treatment options for people with HIV/hepatitis C co-infection changes, as the liver cannot tolerate some of the antiviral drugs used in the treatment of HIV. It is important that a person with HIV/hepatitis C co-infection receives specialised care from their doctor and other referred specialists.

Taking care of your liver with HIV/hepatitis C co-infection

It is important for people who are co-infected with HIV and hepatitis C to have their liver function carefully and regularly tested. In addition, avoiding any damage or stress to the liver is vital. Refer to Guide to managing your lifestyle with hepatitis C.

Vaccination against hepatitis A and hepatitis B is essential for people with hepatitis C and HIV.

Preventing the spread of hepatitis C and HIV

Hepatitis C and HIV are both spread through blood-to-blood contact, therefore, transmission of both viruses can be prevented by being blood aware. For more information download the **Hepatitis C: how people get it factsheet** on this site.

Decisions around safe sex when someone has HIV/hepatitis C co-infection are likely to be very individual but should be based on reliable information. Using condoms may be the preferred option. However, some HIV positive people with HIV positive partners often choose not to use condoms. If an individual is having sex with someone who is HIV positive, but not hepatitis C positive, they may want to discuss some of the potential risks for the sexual transmission of hepatitis C with a doctor, and whether they need to use a condom or barrier protection.

Recent studies have reported a higher than expected prevalence of hepatitis C infections occurring in men with HIV, particularly in men who have sex with men.[3, 4, 5] If a man is co-infected with HIV and hepatitis C he may wish to avoid high risk sexual activities with multiple casual partners and where there is the potential for blood-to-blood contact including unprotected oral and anal sex.

Hepatitis B and hepatitis C co-infection

There is relatively little research on hepatitis B and hepatitis C co-infection, therefore, no accurate figures on the number of people who have both hepatitis viruses is available for Australia. However, it appears that hepatitis B and hepatitis C co-infection is not uncommon, especially in areas where hepatitis B is common, for example, Asia.

Hepatitis B and hepatitis C are both transmitted through blood contact, therefore, it is possible to contract both viruses at the same time or a person with one of the viruses may be infected with the other virus at a later time.

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[3] Filippini, P., Coppola, N., Scolastico, C. et al. Does HIV infection favour the sexual transmission of hepatitis C? Sexually Transmitted Diseases 2001; 28:725–729.

[4] Ghosn, J., Pierre-Francois, S., Thibault, V. et al. Acute hepatitis C in HIV-infected men who have sex with men. HIV medicine 2004; 5:303–306.

[5] Serpaggi, J., Chaix, M-L., Batisse, D. Sexually transmitted scute infection with a clustered genotype 4 hepatitis C virus in HIV-1 infected men and inefficiency of early antiviral therapy. AIDS 2006; 20:233–240.

[6] Crockett, S.D. and Keeffe, E.B. Natural history and treatment of hepatitis B virus and hepatitis C virus coinfection. Annals of Clinical Microbiology and Antimicrobials 2005: http://www.ann-clinmicrob.com/contents/4/1/13.

Being infected with both hepatitis B and hepatitis C can lead to severe liver disease including cirrhosis and/or liver failure and they are at an increased risk of developing hepatocellular carcinoma (HCC), a form of liver cancer.[6]

Testing for hepatitis B and hepatitis C

Hepatitis B and hepatitis C co-infection can be difficult to diagnose because when the viruses exist together in the body they can interact with each other, which means that one virus usually becomes dominant over the other. Several studies have demonstrated that the hepatitis C virus can suppress the reproduction of the hepatitis B virus, which can affect the detection of the hepatitis B virus in the blood. Similarly, it has been reported that hepatitis B can also reduce the reproduction of the hepatitis C virus. However, the overall dominant effect appears to be hepatitis C over the hepatitis B virus.[7]

It is important to remember that suppression of one hepatitis virus does not mean that it has gone from the body. Instead its effects have simply been slowed or stopped, until the dominant virus is treated, after which the suppressed virus could flare up again.

Treatment of hepatitis B and hepatitis C co-infection

Treatment of hepatitis B and hepatitis C co-infection is not well established, therefore, the same treatment criteria is applied to patients who are co-infected as are applied to patients who have either hepatitis B or hepatitis C only.[8] Deciding which treatment is best for patients with hepatitis B and hepatitis C co-infection should be based on assessing which is the dominant hepatitis virus.

Interferon has been widely studied in the case of hepatitis B and hepatitis C co-infection, because it is effective against both viruses individually. One study showed that using interferon and ribavirin in 24 patients with hepatitis B and hepatitis C co-infection, resulted in a sustained virological response (SVR) of 43%, compared to 60% SVR for patients with hepatitis C only. Therefore, in co-infected patients with hepatitis C dominant disease, treatment with interferon and ribavirin has proven efficacy.

In patients with hepatitis B dominant disease, interferon with or without Lamivudine is a reasonable option. To date, there have been not published studies regarding treatment of co-infected patients with adefovir and entecavir.[9]

Caution must be exercised in treating patients with co-infection because flares (high virus activity) of the untreated virus may occur as its reproduction is no longer being slowed or stopped by the dominant virus.

Taking care of your liver with hepatitis B and hepatitis C co-infection

People co-infected with hepatitis B and hepatitis C should have their liver function checked regularly by a liver doctor or hepatitis specialist. In addition, avoiding any damage or stress to the liver is vital (refer to Guide to managing your lifestyle with hepatitis C).

Preventing the spread of hepatitis B and hepatitis C

Hepatitis B and hepatitis C can be spread in similar ways. Therefore, it is very important to be blood aware and take precautions to prevent contact with other people's blood (refer to Preventing the spread of hepatitis C) even if you already have a hepatitis virus.

[7] Crockett, and Keeffe (2005). Op sit.

[8] Liu, C.J., Chen, P.J., Lai, M.Y. et al. (2003). Ribavirin and interferon is effective for hepatitis C virus clearance in hepatitis B and C dually infected patients. Hepatology. 37: 568-567.

[9] Crockett, and Keeffe (2005). Op sit.

Most importantly people who have hepatitis C or those who are at risk of being exposed to other people's blood need to consider being vaccinated against hepatitis A, but most importantly hepatitis B.

For more information

For further information on hepatitis C please contact the national infoline 1300 HEP ABC (1300 437 222). The infoline diverts to information and support lines at your local state or territory hepatitis council.

Some of the information on hepatitis C above has been abridged from various resources, these resources include:

HIV Co-infection (Hepatitis C Council of NSW)—Download PDF from www.hepatitisc.org.au/quickref/factsheet.html

A beginner's guide to hepatitis B / Hepatitis C co-infection (Hepatitis C Council of South Australia)

Co-infection: HIV & Viral hepatitis a guide for clinical management (Australasian Society for HIV Medicine)—Download PDF from www.ashm.org.au/coinfection-management/