

Co-infection

A number of infections, which may not always be sexually transmitted, can cause serious health problems in people with HIV.

- **Hepatitis**

Infection with the hepatitis B or hepatitis C virus is becoming a major cause of illness in people with HIV.

- **Tuberculosis**

When someone is infected with tuberculosis (TB) the likelihood of it making them ill is multiplied if they are also HIV positive.

Hepatitis

About Hepatitis

Hepatitis means inflammation of the liver. This can be caused by a range of factors, including your lifestyle – drinking alcohol can cause it, for example.

Several viruses can also cause hepatitis. Here we cover hepatitis A, B and C.

'Co-infection' with hepatitis B virus and hepatitis C virus is increasingly becoming a major cause of illness in people with HIV. Both these viruses affect the liver, can make you very ill and in some cases can be fatal.

But there are treatments, and these can work well in people with HIV.

Hepatitis A

Hepatitis A is a virus that affects the liver. It can cause a short-term illness that normally lasts between 10 and 14 days.

Transmission

The infection is spread by contact with infected human faeces (stools, excrement, shit). Contaminated food and water are often common sources of infection, but it can be spread during sex, especially by rimming (oral-anal contact).

Good personal hygiene can prevent the transmission of hepatitis A – washing your hands after going to the toilet and before preparing or eating food.

There is a vaccine against hepatitis A. This involves two injections, given six months apart, and gives immunity for about ten years. These vaccinations are given at GP clinics and work well in people with HIV. Everybody who has HIV is recommended to have this vaccine unless they are naturally immune to the infection (a test before vaccination can show this).

Diagnosis

A blood test can show present or prior hepatitis A infection.

Symptoms

Symptoms include tiredness, a yellowing of the skin, pale stools, diarrhoea, nausea and vomiting. These symptoms can be made worse by drinking alcohol, tea or coffee and eating fatty food. In people with HIV, the symptoms of hepatitis A might last for longer.

Treatment

You can normally expect to get better without any treatment and once you've had hepatitis A you cannot get it again.

Many anti-HIV drugs (as well as medicines used to treat other conditions) are processed using the liver. The liver inflammation that hepatitis A causes can mean that some people need to stop taking their treatment when they have hepatitis A. But this needs to be discussed with your doctor.

It's also important to understand how your hepatitis treatment may interact with your HIV medication.

Hepatitis B

Hepatitis B (often known as HBV) is a type of viral hepatitis, causing inflammation of the liver.

The liver is the largest internal organ in your body. Having a healthy liver is important for everybody, but it is especially important for people with HIV.

Your liver has an essential role in processing medicines used to treat HIV and other conditions. Viral infections that affect the liver, such as hepatitis A, hepatitis B and hepatitis C, can make you ill and also mean that the liver is unable to process medicines properly.

When people have both HIV and hepatitis B, this is often described as co-infection. If left untreated, liver disease caused by hepatitis B can be very serious. It is a major cause of illness and death in people co-infected with HIV and hepatitis B.

Transmission

Hepatitis B is passed on by contact with the blood, semen or saliva of an infected man. It is easily passed on during unprotected sex (including oral sex). It is many times more infectious than HIV.

Hepatitis B can be avoided by using a condom during anal and oral sex, and by not sharing sex toys.

A vaccine is available to protect you against hepatitis B. This consists of a course of three injections, given over several months. If you are uninfected, and a test shows that you do not have natural immunity against it, you should be vaccinated.

People with HIV can lose their immunity to hepatitis B as their immune system weakens, and should have their level of immunity checked regularly.

Diagnosis

You should be tested soon after your diagnosis for hepatitis B, to see if you have been infected with the virus. This is done with a blood test.

Symptoms

When you first become infected with hepatitis B, you may develop jaundice (yellowing of the eyes and skin), lose your appetite, have pain in the abdomen, nausea or vomiting (feeling or being sick), muscle and joint aches or fever.

These symptoms can be very serious or, in very rare cases, fatal.

Monitoring the health of your liver

Early in the infection, most people will develop protective immunity. However, in about 10% of adults, hepatitis B continues to reproduce in the body long after infection. These people become chronically infected with hepatitis B, meaning that they will be infectious for the rest of their lives, although they may not experience any symptoms.

Some people with chronic hepatitis B eventually develop chronic liver inflammation and have, therefore, increased risk of liver disease (cirrhosis) or cancer of the liver.

HIV-positive people who develop hepatitis B are more likely to become chronically infected with hepatitis B than people without HIV.

Everyone with HIV should have regular tests to monitor the health of their liver. These tests are especially important if you have hepatitis C. If you are co-infected with hepatitis B, doctors will regularly monitor your liver function using blood tests. Ultrasound examinations may also be performed, particularly if your liver shows signs of damage.

Treatment

During the initial period of infection with hepatitis B, it's important to get lots of rest, drink plenty of fluids and avoid paracetamol, alcohol and recreational drugs.

Treatment is available for hepatitis B if your body does not clear the infection itself. If you are HIV-positive and have chronic hepatitis B infection, then you must receive care from a doctor skilled in the treatment of both HIV and hepatitis.

Several drugs are currently available for the treatment of hepatitis B. These are interferon alfa, adefovir (Hepsera) and the anti-HIV drug 3TC (lamivudine, Epivir). Some other anti-HIV drugs are also active against hepatitis B: Tenofovir (Viread) and FTC (emtricitabine, Emtriva).

If you are co-infected with hepatitis B, you should talk to your doctor about how it might affect your anti-HIV treatment options. Having hepatitis B is not thought to make HIV progress faster. Anti-HIV drugs can be used safely and effectively in people with hepatitis B.

Because of the risk of developing drug resistance, you should only take anti-HIV drugs that are effective against hepatitis B as part of an HIV treatment regimen. Nor should you take adefovir unless you are taking HIV treatment because of a risk of resistance. If you are going to take treatment just for hepatitis B (and not for HIV), you should take interferon alfa.

People who have hepatitis B are especially encouraged to start HIV treatment when their CD4 cell count is around 350.

It's also important to understand how your hepatitis treatment may interact with your HIV medication.

Hepatitis C

Hepatitis C (often known as HCV) is a type of viral hepatitis, causing inflammation of the liver.

The liver is the largest internal organ in your body. Having a healthy liver is important for everybody, but it is especially important for people with HIV.

Your liver has an essential role in processing medicines used to treat HIV and other conditions. Viral infections that affect the liver, such as hepatitis A, hepatitis B and hepatitis C, can make you ill and also mean that the liver is unable to process medicines properly.

When people have both HIV and hepatitis C, this is often described as 'co-infection'. If left untreated, liver disease caused by hepatitis C can be very serious. It is a major cause of illness and death in people co-infected with HIV and hepatitis C.

Transmission

Hepatitis C is normally transmitted by blood-to-blood contact. The main route of hepatitis C transmission in Malaysia is injecting drug use.

Hepatitis C can also be transmitted sexually. There has been an increase in the number of cases of sexually transmitted hepatitis C in HIV positive gay men.

Sex that involves contact with blood – for example, fisting – seems to involve the greatest risk. Anal sex without a condom has also been identified as involving a risk of hepatitis C transmission.

Ways you can protect yourself against hepatitis C:

- Do not share needles, syringes or any other equipment to inject drugs
- Use latex gloves for fisting and change gloves between partners in any group sex situation. Do not share sex toys or tubs of lubricant
- Condoms provide excellent protection against the transmission of HIV, hepatitis C and other sexually transmitted infections.

There is no vaccine for hepatitis C and unlike hepatitis A and B, having hepatitis C once does not mean you are then immune from getting it again. It is possible to be re-infected with the hepatitis C virus.

Diagnosis

Everyone with HIV should be tested to see if they are co-infected with hepatitis C. A blood test for antibodies to hepatitis C is used to see whether you have been exposed to the virus. You might be given a PCR (viral load) test to confirm infection.

In people with HIV, the diagnosis of hepatitis C can be more difficult, as the infection may not show up on their antibody tests.

If you think you may be at risk of hepatitis C infection, you should have regular tests to see if you have been infected with the virus.

Symptoms

Many people with hepatitis C have no symptoms at all. When they do occur they can involve tiredness, feeling generally unwell, stomach problems and jaundice – a yellowing of the skin and eyes.

However, even if you do not experience symptoms, the virus may still be damaging your liver.

This damage includes fibrosis – a hardening of the liver, which can lead to cirrhosis, which is permanent scarring of the liver. When this happens, the liver cannot work properly, causing serious illness. Cirrhosis increases the risk of liver cancer.

Hepatitis C may progress faster in people with HIV who are not on HIV treatment. For this reason, co-infected patients are especially encouraged to start taking HIV treatment when their CD4 cell count is around 350.

Monitoring the health of your liver

Everyone with HIV should have regular tests to monitor the health of their liver. These tests are especially important if you have hepatitis C.

These include liver function tests that monitor levels of liver enzymes. Ultrasounds and scans are also important monitoring tools.

Sometimes it is necessary to have a liver biopsy. This involves the removal of a small amount of the liver under a local anaesthetic.

Treatment

If you are HIV-positive and have hepatitis C infection, then you must receive care from a doctor skilled in the treatment of both HIV and hepatitis.

Treatment for hepatitis C is available. Unlike treatment for HIV, hepatitis C treatment is not for life – it usually lasts 24 or 48 weeks. The length of treatment depends on which strain – or genotype- of hepatitis you are infected with.

Genotypes 1 and 4 are harder to treat. If you are infected with either of these genotypes then you'll need to take treatment for 48 weeks.

Genotypes 2 and 3 are easier to treat, and their treatment normally lasts for 24 weeks.

The standard treatment for hepatitis C consists of two antiviral drugs - pegylated interferon and ribavirin.

These drugs may cause side-effects, which can be severe but your doctor can give you other treatments to help reduce them. In addition, many people find that their side-effects become less severe, or go away completely over time.

The aim of this treatment is a cure - sometimes described as a 'sustained virologic response', which means that no hepatitis C virus is detectable in your blood six months after you've finished treatment.

Treatment for hepatitis C is more likely to work if you take it soon after you are first infected with the virus. It works less well for people who have had hepatitis C for a long time.

People who have hepatitis C are especially encouraged to start HIV treatment when their CD4 cell count is around 350. Taking HIV treatment can also improve the health of your liver and slow the damage caused by hepatitis C.

New types of drugs for hepatitis C are being developed. It is hoped that these will provide effective treatment for more people. It is not yet known if they are safe and effective in people with HIV.

It's also important to understand how your hepatitis treatment may interact with your HIV medication.

Tuberculosis

Tuberculosis (TB) is caused by bacteria called *Mycobacterium tuberculosis* and is the single biggest cause of illness and death in people with HIV around the world.

Some people become ill soon after they are infected with TB. This is called 'active' TB.

However, people can also have 'latent' TB, sometimes called 'dormant' TB. This means that TB is present in the body but not causing illness, although it can become active again at a later stage.

Transmission

TB is normally passed on to other people when an infected person coughs.

People infected with TB were usually exposed during childhood, although people can become infected at any time of life.

There is a vaccine against TB, called the BCG. You should not have this if you are HIV positive, as it is a 'live' vaccine. This means it uses a weakened form of the bacteria, and can cause you to become unwell with a TB-like illness.

Try to avoid contact with people who have active lung TB until they are no longer infectious. If you are exposed to someone with TB, see your doctor as soon as possible.

One of the best ways to prevent TB if you have HIV is to ensure your immune system is as healthy as possible. HIV treatment is an important part of this.

If you are HIV positive and have dormant (latent) TB, some doctors recommend a course of treatment to reduce the risk that you will develop active TB. This is called TB prophylaxis.

Symptoms

TB usually affects the lungs. A common symptom of TB is a cough that won't go away and produces phlegm (mucus or sputum), which can be bloody. Other symptoms are a high temperature, fevers, night sweats, weight loss, shortness of breath and chest pain.

It is important to tell your doctor if you have any of these symptoms. You will then need to have tests to see if you have TB. The standard test is to have a chest X-ray. The disease often shows up as 'shadows' or white patches on the lungs. Samples of your sputum will be tested, which can tell if you have active TB and are infectious.

If doctors are having difficulty finding out what is causing your illness, they may do a bronchoscopy (putting a tube with a camera through your nose into your lungs) or a biopsy (taking a sample of tissue from your lungs). You will have an anaesthetic for these procedures.

In HIV positive people with serious immune damage, TB can spread into other parts of the body including lymph nodes, the gut, the spine, the liver and the brain. If you have any symptoms suggesting your TB has spread, you will have other tests to confirm this.

Treatment

If you are HIV positive and have dormant (latent) TB, some doctors recommend a course of treatment to reduce the risk that you will develop active TB. This is often called TB prophylaxis.

You will be treated with the anti-TB drug isoniazid for six months, or isoniazid with another drug, rifampicin, for four months. This has been shown to reduce the risk that you will develop active TB.

TB that is causing illness is treated with a combination of antibiotics. Treatment usually lasts for six months but sometimes people have to take treatment for longer.

For the first two months, you will take a combination of four different anti-TB drugs. After that, your treatment will last another four months, with two drugs.

It is very important to take your TB treatment exactly the way your doctor tells you to, even if you start to feel better. If the drugs are not taken in the right way, TB can become resistant to the drugs used to treat it. This means the drugs will stop working on the TB. It can also mean the TB will come back.

Resistant TB is harder to treat and is much more serious. If TB is resistant to two or more of the main TB drugs, it is called multidrug-resistant tuberculosis (MDR-TB). MDR-TB can usually be treated successfully but doctors will have to work out which drugs will work.

Some TB is resistant to many of the TB drugs available. This is called extensively drug-resistant TB (XDR-TB).

TB treatment and HIV treatment together

It can be difficult to treat TB and HIV at the same time because some anti-HIV drugs can interact with anti-TB drugs. In addition, taking HIV treatment when you have active TB can cause a condition called immune reconstitution inflammatory syndrome (IRIS).

To reduce the risk of this happening, you should complete your TB treatment before starting your HIV treatment if your CD4 cell count is above 350.

If your CD4 cell count is between 350 and 100, you are recommended to have two months of TB treatment before starting HIV treatment.

If your CD4 cell count is below 100 you should start HIV treatment as soon as possible after starting anti-TB drugs.