CATIE

FACTSHEET

Cytomegalovirus disease (CMV)

Summary

Cytomegalovirus disease (CMV) is a viral infection that can affect one part of the body, such as the eyes, or it can spread throughout the body. Before the availability of effective HIV therapy (commonly called ART), it was common for people with AIDS to develop CMV. Today thanks to ART, cases of CMV disease in HIV-positive people in Canada is relatively rare. People with HIV whose CD4 counts are below 50 cells/mm^3 are most at risk for developing this disease. Fortunately, treatment for CMV has improved dramatically in recent years.

What is CMV?

CMV is a serious infection caused by a virus called cytomegalovirus (CMV). This virus is related to the herpes viruses that cause chicken pox and mononucleosis (mono).

CMV is one of a number of infections that can develop in people who are living with HIV, called opportunistic infections. Opportunistic infections only occur if your immune system is quite weakened and your body becomes vulnerable to infections that would not otherwise affect you. Most adults carry CMV but are unaware of it because the virus doesn't make them sick. In people with severely weakened immune systems, CMV can make a person feel as though they have mono. CMV can also cause serious disease in different parts of the body, most commonly the eyes (see Symptoms below).

Who is at risk for CMV?

People who have a weakened immune system, due to HIV, cancer, long-term use of drugs that weaken the immune system, or who have received transplanted tissue, are at risk of developing CMV.

People living with HIV most at risk of developing CMV tend to have the following features:

- have a CD4 count below 50 cell/mm^3
- have a viral load over 100,000 copies/ml
- are not taking or do not respond to ART
- have previously had CMV or other life-threatening infections

Symptoms

The most common complication of CMV is:

- **retinitis**—This involves inflammation of the light-sensitive portion of the eyes, the retina. CMV infects these cells causing inflammation and the death of these cells. Usually at first, people with CMV retinitis may experience no or gradually increasing symptoms affecting their vision. Others experience more severe symptoms. Retinitis can cause blurred vision, blind spots, light flashes, and dark specks that seem to float around in your field of vision, sometimes called "floaters."

Two thirds of people who are initially diagnosed with retinitis have the disease in just one eye; however, without ART or anti-CMV treatment, most people develop retinitis in both eyes within 10 to 21 days of symptoms first appearing. When left untreated, retinitis leads to permanent blindness within three to six months. If you have problems with your vision, contact your doctor right away.

Other illnesses and symptoms of CMV can include (but are not limited to):

- **esophagitis**—when CMV infects the esophagus (the passage that connects the mouth to the stomach). Symptoms of this complication can include fever, nausea, painful swallowing and swollen lymph nodes.
- **colitis**—when CMV infects the colon (the longest part of the large intestine). Symptoms include fever, diarrhea, weight loss, pain in the abdomen (or belly) and general feeling of being unwell.
- **diseases of the central nervous system (CNS)**—when CMV infects the brain and spinal cord. Symptoms include confusion, fatigue, fever, seizures, weakness and numbness in the legs, and loss of bowel and bladder control.
- **pneumonia**—if CMV infects the lungs (rare in HIV-positive people).

CMV that has spread throughout the body can make a person feel as though they have mononucleosis. When an infection has spread throughout the body it is called disseminated. Symptoms of disseminated CMV can include unexpected tiredness, stiff joints, aching muscles, fever, swollen lymph nodes, sore throat and loss of appetite.

Because CMV can be life-threatening if not treated early, *it is important that you call your doctor as soon as possible if you have HIV and experience any of the symptoms of CMV, regardless of your CD4 count*.

Diagnosis

Blood and urine tests are often used to detect and measure CMV. A biopsy (a procedure that involves a doctor removing a small piece of tissue, which is then examined under a microscope for signs of disease) may be required to confirm a diagnosis of CMV, unless the disease is affecting the eyes or CNS.

If your doctor suspects CMV retinitis, he or she will refer you to an eye specialist (an ophthalmologist). The eye specialist will examine your eyes to check for CMV retinitis.

If you are pregnant and have CMV, your doctor may recommend that you have a test called an amniocentesis, to determine whether or not your baby has CMV. To perform an amniocentesis, a doctor inserts a long thin needle through the abdomen and into the womb, to collect a small amount of fluid from the amniotic sac surrounding the baby. CMV infection can harm the developing fetus. If the test shows that the fetus does have CMV, the doctor will examine your baby after birth to check for any birth defects or health problems, so that they can be treated if possible.

Treatment

Medications to treat CMV may be given by mouth (orally), through a vein (intravenously, by IV) or locally (to the area affected)—for example, in the case of CMV retinitis, after a local anesthetic is used, medication

may be injected directly into the eye, to control the disease. The choice of treatment depends on the location and severity of the CMV, the strength of your immune system, other medications you may be taking and other factors. Treatment guidelines list the following options:

- ganciclovir (Cytovene), valganciclovir (Valcyte) either drug given intravenously or orally
- foscarnet (Foscavir), cidofovir (Vistide) either drug given intravenously

ART

If you are diagnosed with CMV-related diseases and are not already taking ART, treatment guidelines recommend that you start ART right away. This should strengthen your immune system and help you fight the infection. People with CMV disease of the CNS who are not already taking ART should treat the CMV first and wait until their CMV symptoms improve before they start taking ART. Talk to your doctor before starting or stopping any medication.

Preventing recurrence

Once the CMV-related disease has subsided, your doctor will likely recommend that you take medication to prevent the infection from returning. This medication should be taken until your CD4 count remains higher than 100 cells/mm^3 for at least three to six months as a result of ART.

However, bear in mind that a high CD4 count is no guarantee that CMV disease will not recur. Even people whose immune systems recover and who are able to discontinue anti-CMV treatment can have a relapse. For example, in very rare cases, retinitis has recurred even when a person's CD4 count is as high as 1250 cells/mm^3. This problem seems to occur, even though CD4 counts may be high, because the immune system may have lost its ability to control CMV; HIV viral load may be elevated or CD4 count elevations may be temporary. For these reasons, regular appointments should be scheduled with your ophthamologist to have your eyes checked for CMV—ideally, every three months.

Prevention

The best way to reduce the risk of CMV is to keep your CD4 count well above 100 cells/mm^3. ART can strengthen your immune system and keep your CD4 count up. This is typically the best way to keep CMV under control.

People living with HIV whose CD4 counts are below 100 cells/mm^3 should be examined regularly by an ophthamologist for retinitis even if they don't have symptoms. If you notice an increase of "floaters" (dark specks that seem to float around in your eye) or other changes in your vision, make an appointment to see your ophthamologist and have it checked out as soon as possible.

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Published: 2016

CATIE Canada's source for HIV and hepatitis C information

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Funding has been provided by the Public Health Agency of Canada.

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