Cytomegalovirus (CMV)

WHAT IS CMV?

Cytomegalovirus (CMV) is a common virus that can cause HIV-related opportunistic infections (OIs). Between 50-85% of the U.S. population tests positive for CMV by the time they are 40 years old. A healthy immune system keeps this virus in check.

When immune defenses are weak, CMV can attack several parts of the body. This can be caused by various diseases including HIV. Combination antiretroviral therapy (ART) has reduced the rate of CMV in people with HIV by 75%. However, about 5% of people with HIV still develop CMV disease.

The most common illness caused by CMV is retinitis. This is the death of cells in the retina, the back of the eye. It can quickly cause blindness unless treated. CMV can spread throughout the body and infect several organs at once. The risk of CMV is highest when CD4 cell counts are below 50 cells/mm^3. It is rare in people with CD4 cell counts greater than 100 cells/mm^3.

The first signs of CMV retinitis are vision problems such as moving black spots called floaters. They may indicate an inflammation of the retina. People may also notice light flashes, decreased or distorted vision, or blind spots. Some healthcare providers recommend eye exams to catch CMV retinitis. The exams are done by an ophthalmologist (an eye specialist). **If your CD4 cell count is below 100 cells/mm^3 and you experience any vision problems, tell your healthcare provider immediately.**

Some people who have recently started ART with very low CD4 cell counts can get inflammation in their eyes causing loss of vision. This is called immune reconstitution inflammatory syndrome (IRIS).

HOW IS CMV TREATED?

The first treatments for CMV required daily intravenous (IV) infusions. Most people had a permanent medication port inserted into their chest or arm. People had to keep taking anti-CMV drugs for life.

CMV treatments have improved dramatically over the past several years.

With strong HIV therapies, people can stop taking CMV drugs if their CD4 cell count goes over 150 cells/mm^3 and stays there for at least 3 months. However, there are two exceptions:

1. IRIS can cause severe inflammation in the eyes of people with HIV even if they didn't have CMV

before. The usual treatment is to add anti-CMV drugs to the person's ART regimen.
2. If the CD4 cell count drops below 50 cells/mm^3, there is an increased risk of developing CMV disease.

CAN CMV BE PREVENTED?

The best way to prevent CMV disease is to get tested and start ART before CD4 cell counts are low.

Ganciclovir was approved for prevention (prophylaxis) of CMV. However, many healthcare providers don't prescribe it. They don't want to add up to 12 capsules a day to people's drug regimens. Also, it's not clear that it does any good. Two large studies came to different conclusions. Finally, strong antiretroviral medications (ARVs) keep most people's CD4 cell counts high enough so that they won't get CMV.

HOW DO I CHOOSE A TREATMENT FOR CMV?

There are several issues to consider when choosing a treatment for active CMV disease:

Is your vision at risk? You need to take quick action to save your eyesight.

How effective is it? IV ganciclovir is the most effective overall CMV treatment. Implants in the eye are very good at stopping retinitis, however they only work in the eye with the implant.

How is it administered? Pills are the easiest to manage. IV medication involves needle sticks or a medication line that might become infected. Ocular injections mean inserting a needle directly into the eye. Implants, which last 6-8 months, take about an hour to insert in an office procedure.

Is it local therapy or systemic? Local therapies affect just the eyes. CMV retinitis can progress rapidly and lead to blindness. For this reason, it is treated aggressively when it first shows up. The newer injections or implants put medication directly into the eye and have the greatest impact on retinitis.

CMV can also show up in other places in the body. To control CMV in the rest of the body, you need a systemic (whole-body) therapy. IV medication or valganciclovir pills can be used.

What are the side effects? Some CMV drugs can damage your bone marrow or kidneys. This may require additional medications. Other drugs require infusions that can take a long time. Discuss the side effects of any CMV treatment with your healthcare provider.

What do the guidelines say? Recently, several sets of professional guidelines have recommended valganciclovir as the preferred treatment for people who are not at immediate risk of losing their sight.

THE BOTTOM LINE

Strong ARVs are the best way to prevent CMV. If your CD4 cell count is below 100 cells/mm^3, talk with your healthcare provider about CMV prevention and a regular schedule of eye exams. If you have a low CD4 cell count and experience **ANY** unusual vision problems, **see your healthcare provider immediately!**

Treatments directly in the eye make it possible to control CMV retinitis. With drugs to treat CMV, you can avoid implanted medication lines and daily IV infusions.

Most people can safely stop taking CMV medication when they take ARVs, and if their CD4 cell counts go up and stay above 150 cells/mm^3.

MORE INFORMATION

CDC: Cytomegalovirus (CMV)

HIV.gov: Cytomegalovirus Disease

UCSH HIV InSite: Cytomegalovirus and HIV

Reviewed July 2025