



Cytomegalovirus (CMV)

Cytomegalovirus (CMV) is a member of the herpes family of viruses. CMV infects more than half of all adults but rarely causes significant disease unless there is damage to the body's immune system. CMV usually infects healthy adults through close personal or sexual contact. After CMV infects a healthy person, the immune system prevents the virus spreading and causing disease but the virus is never eliminated from the body.

How does it affect someone who is HIV positive?

After HIV infection has damaged the immune system, the body may no longer be able to suppress CMV and the virus may go on to cause disease. CMV disease is rare in individuals with a CD4 count above 50. When it is below 50 however, CMV may cause retinitis in the eye, oesophagitis or colitis in the gut, and occasionally problems with the nervous system, liver or lungs.

What are the signs and symptoms of CMV disease?

The symptoms of CMV disease depend on the part of the body affected by the disease. Also, similar symptoms can be caused by other conditions. Early CMV retinitis often occurs without any symptoms, but if they are present people may experience:

- blurry, lost vision and /or blind spots
- see small, moving spots called 'floaters' or shadows, as if a shade is drawn over the eye
- seeing flashing lights

CMV oesophagitis usually causes:

- pain or discomfort in the mid chest when swallowing food.

People with CMV colitis (gut) may have:

- fever
- loss of appetite
- abdominal pain
- diarrhoea

CMV can also cause tingling or pain in the legs, hands or feet (neuropathy), yellowing of the eyes and skin (jaundice), or pneumonia, although this is rare. If you have any of the symptoms already described then check with a clinician as soon as possible.

How is CMV disease diagnosed?

Detection of early CMV retinitis disease requires dilating the pupils with eye drops, and then examination with an ophthalmoscope (an instrument for looking into the back of the eye). It has a typical appearance, small yellow-white patches on the retina often accompanied by bleeding. Occasionally a biopsy may be required to confirm the presence of the virus.

To diagnose CMV disease in other parts of the body, the doctor will need to perform a biopsy, which involves taking a tiny sample of tissue from the affected part and this is then examined in a laboratory to see if the virus is present. Small numbers of CMV may be present in body fluids even in people without symptoms, and the virus may be detected from the culture. A positive culture means that CMV is present in the body. It does not however, mean that it is causing disease.

Treatment

There are three standard drug therapies for CMV disease: ganciclovir, cidofovir and foscarnet. None of these drugs will cure CMV, but they often suppress the disease, improve symptoms and prevent further damage to the body. High dose therapy with one of these drugs is generally provided for 2-3 weeks, followed by a reduced daily dose once the infection has been stabilised.

Ganciclovir and foscarnet require daily infusion through a drip every 2-4 hours, and this is done through a tube called a catheter, which is inserted into the chest or arm as this makes it easier and safer to give the infusion. The catheter stays in the body until the treatment is over and must be bandaged and kept clean and dry. Cidofovir, which persists in the body longer, does not require a catheter as it is given intravenously only once a week during treatment therapy. Because the drugs only slow down, but do not eliminate CMV from the body, maintenance doses of the drugs must continue. You must also see your doctor regularly to make certain that the CMV disease is not getting worse and that the drugs are not causing serious side effects.

It is possible that these drugs will not work well or have side effects that will make you feel sick. In this case your doctor may advise a change in your therapy.

Ganciclovir and foscarnet are also available as an intravitreal injection (directly into the eye) for the treatment of retinitis. There is another treatment option called an intraocular device, or implant, which is surgically placed into the eye and gradually releases ganciclovir over a period of many months. Once there is no drug left in the implant, and if treatment is still required, then a new one can be inserted, and the old one either left in place or removed.

An oral form of ganciclovir is also available for maintenance therapy, once the CMV has been stabilised with intravenous treatment. This would not be the best option for people, who have diarrhoea or malabsorption, as these would reduce the uptake of the drug.

Other medications, which might be more effective and easier to take, are also being evaluated in clinical trials.

Can CMV disease be prevented?

There are no drug therapies proven to prevent CMV from causing disease in HIV positive people, although oral ganciclovir is currently being evaluated. Regular eye examinations may be useful in detecting early retinitis in those at risk.

CMV in the HAART era

The best way of dealing with CMV is for the body's own immune system to control the disease, or to prevent it in the first place, i.e. by keeping the CD4 count above 50 with the use of HAART (highly active anti-retroviral therapy). If CMV does develop, combination therapy should be started at the same time as CMV treatment.

For further details of CMV drug therapies and side effects, see the relevant factsheets.

