

Human Herpes Virus type 6 (HHV-6) encephalitis

By Abdusshakur Muhammad Auwal, MBBS, MSc, National Institute of Health and Research, and Encephalitis International Academic Clinical Fellow, University of Liverpool and Walton's Neuroscience NHS Foundation Trust; and reviewed by Prav Prathapan, Encephalitis International

What is HHV-6 and how does it cause encephalitis?

Human Herpes Virus type 6 (HHV-6) is a virus belonging to the herpes virus family. It has two forms: types A and B. Type B is more common, infecting over 90% of children up to the age of three. Less is known about Type A but it mostly infects adults and often does not cause symptoms.

The virus is present worldwide and mostly transferred from mother to infant and remains dormant in blood cells, the salivary glands, and the brain.

Weakening of the immune system leads to the reactivation of the dormant virus and subsequent brain inflammation (encephalitis). Weakened immune systems can result from HIV/AIDS, chemotherapy, organ or stem cell transplantation or other medications that lower immunity.

Symptoms

Most children experience:

- High fever
- Rash

Some children can also experience seizures and, infrequently, some develop encephalitis manifesting as irritability and behavioural changes. Most of these symptoms resolve by themselves within five to seven days.

Adults, on the other hand, have the following symptoms:

- Fever
- Symptoms of graft rejection
- Low sodium
- Confusion
- Forgetfulness
- Behavioural changes
- Seizures

Sadly, infection with HHV-6 can lead to death in both adults and children.

How is it diagnosed?

Diagnosis of HHV-6 encephalitis is based on identifying the virus in the cerebrospinal fluid (CSF) by lumbar puncture or spinal tap, the presence of signs and symptoms suggestive of encephalitis, and the absence of other causes to explain the signs and symptoms.

Other tests that support diagnosis include routine blood tests which may show anaemia and signs of infection. Sometimes an MRI scan may show changes in the temporal lobes of the brain and can help exclude other conditions. An electroencephalogram (EEG) can also support diagnosis and is particularly helpful in those with seizures.

Is it treatable?

Yes, ganciclovir and foscarnet are antiviral medications commonly used to treat HHV-6 encephalitis. These are usually administered through the vein for at least 3 weeks. However, treatment duration can be extended depending on the individual's response. It is important to note that these medications can affect the bone marrow and the kidneys respectively. Therefore, both blood count and kidney function need monitoring. Other treatments are able to support the body while it recovers from the infection. Patients are usually treated in an intensive care unit (ICU).

What is the course of the illness?

Outcomes vary significantly between patients. With treatment, about half of the individuals with HHV-6 encephalitis recover completely, 1 in 5 improve but with neurological complications, and 25% die within 1-4 weeks of being diagnosed. Long-term complications include mental health-related problems or epilepsy.

Can it be prevented?

Unfortunately, there is currently no vaccine or any known way of preventing infection by HHV-6. Early diagnosis and prompt treatment are important to reduce the risk of death and limit complications.

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Encephalitis International, 32 Castlegate, Malton, North Yorkshire, YO17 7DT, UK

Administration: +44 (0) 1653 692583 **Support:** +44 (0) 1653 699599

Email: mail@encephalitis.info **Website:** www.encephalitis.info

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