

ENCEPHALITIS

Encephalitis is a rare but serious condition that causes inflammation of the brain.

It usually begins with flu-like symptoms, such as a high temperature, headache and joint pain. More serious symptoms may then develop over the next few hours or days, including:

- changes in mental state, such as confusion, drowsiness or disorientation
- seizures (fits)
- changes in personality and behaviour

Flu-like symptoms that rapidly get worse and affect mental state should be treated as a medical emergency. Dial 999 immediately to request an ambulance.

WHAT CAUSES ENCEPHALITIS?

There are several different types of encephalitis and each type has a different cause. The most common types of encephalitis are:

- infectious inflammation occurs as a direct result of an infection, which is often viral
- post-infectious inflammation is caused by the immune system reacting to a previous infection, and can occur days, weeks or months after the initial infection
- autoimmune inflammation is caused by the immune system reacting to a non-infectious cause, such as a tumour
- chronic inflammation develops slowly over many months and can be due to a condition such as HIV; in some cases, there's no obvious cause

There are also several types of encephalitis spread by mosquitoes, such as Japanese encephalitis, and ticks, such as tick-borne encephalitis. Encephalitis can also be caused by rabies.

In the UK, all types of encephalitis are relatively rare. The Encephalitis Society estimates that there are 4,000 cases of encephalitis in the UK each year.

Anyone can be affected by encephalitis, but the very young and the very old are most at risk, because their immune systems tend to be weaker.

TREATING ENCEPHALITIS

Encephalitis needs urgent treatment, usually in a hospital intensive care unit (ICU). The earlier it's diagnosed, the more successful treatment is.

Treatment depends on the type of encephalitis you have, but may include:

- anti-viral medication
- steroid injections
- immunosuppressants (medicines that stop the immune system attacking healthy tissue)

COMPLICATIONS

Some people make a full recovery after having encephalitis. However, for many it can lead to permanent brain damage and complications, including:

- memory loss
- epilepsy

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- personality and behavioural changes
- problems with attention, concentration, planning and problem solving
- fatigue (extreme tiredness)

Overall, about 10% of encephalitis cases are fatal.

PREVENTING ENCEPHALITIS

It's not always possible to prevent encephalitis. This is because it can be a rare complication of a relatively common infection.

The most effective way to reduce your risk of getting encephalitis is to ensure you have the MMR vaccine (for measles, mumps and rubella).

Practicing good hygiene for example, regularly washing your hands with soap and warm water can help to reduce your risk of developing common infections.

OTHER VACCINATIONS

Vaccinations are also available for Japanese encephalitis, tick-borne encephalitis and encephalitis caused by rabies. These types of encephalitis are rare in the UK, but more widespread in certain parts of the world. For example, rabies tends to be more common in Africa, Japanese encephalitis is more common in Asia, and the risk areas for tick-borne encephalitis are the forests of central, eastern and northern Europe.

You should discuss these specific vaccinations with your GP before travelling.

TREATING ENCEPHALITIS

Encephalitis needs to be treated urgently and most people with the condition will be admitted to a hospital intensive care unit (ICU).

Treatment depends on the type of encephalitis you have, but aims to:

- stop and reverse the process of infection
- control immediate complications caused by fever, such as seizures or dehydration
- prevent long-term complications developing

An oxygen mask will be used to help with breathing. Feeding tubes will provide nutrition and help keep the body hydrated.

Encephalitis is a very serious condition and recovery can take months. There's also a significant risk of developing complications of encephalitis, such as memory loss, behavioural changes or even death.

INFECTIOUS ENCEPHALITIS

In the UK, a medicine called aciclovir (sometimes spelt acyclovir) is the most widely used treatment for infectious encephalitis. However, it's only effective in treating cases caused by the herpes simplex virus or varicella zoster virus.

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The earlier aciclovir is used, the more successful it is, so treatment is usually started while the condition is being diagnosed. If tests reveal encephalitis is being caused by something else, the treatment will be changed.

Aciclovir works by directly attacking the DNA inside viral cells, which stops the virus reproducing and spreading further into the brain. It's given directly into a vein (intravenously), usually three times a day for two to three weeks.

Aciclovir causes some side effects, including vomiting and diarrhoea. Less commonly, it can lead to liver damage, hallucinations and a decrease in the number of white blood cells produced by the bone marrow, which can make you more vulnerable to infection.

In rare cases, where a bacterial or fungal infection causes encephalitis, treatment usually consists of antibiotics or antifungal medicines.

POST-INFECTIOUS ENCEPHALITIS

Post-infectious encephalitis is usually treated with injections of high-dose corticosteroids. This may last several days, depending on the severity of the condition.

Corticosteroids work by calming the immune system (the body's natural defence against infection and illness). This reduces the levels of inflammation inside the brain.

Some people's symptoms may improve a few hours after treatment. However, in most cases, it will take a few days before symptoms start to improve.

Side effects of corticosteroids include:

- nausea and vomiting
- indigestion
- skin irritation at the site of the injection
- rapid mood changes, such as feeling happy one moment and depressed the next

If your symptoms don't respond to treatment with corticosteroids, an additional medication called immunoglobulin therapy may be used. This comes from a blood donation and contains specific antibodies that help to regulate the immune system.

If your symptoms still don't improve, a therapy called plasmapheresis may be considered. Plasmapheresis involves gradually passing your blood through a machine to remove the parts that contain antibodies before it's returned to your body.

AUTOIMMUNE ENCEPHALITIS

Autoimmune encephalitis can be treated with corticosteroids, immunoglobulin therapy and plasmapheresis. An additional medication known as an immunosuppressant may also be recommended.

Immunosuppressants suppress your immune system, which should prevent it attacking healthy tissue. Ciclosporin is an immunosuppressant that's widely used to treat autoimmune encephalitis.

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Common side effects of ciclosporin include:

- numbness or tingling
- high blood pressure (hypertension)
- tremor (uncontrollable shaking or trembling)
- muscle pains or cramps
- increased body hair growth

CHRONIC ENCEPHALITIS

There's currently no cure for the subacute sclerosing panencephalitis (SSPE) type of chronic encephalitis. Anti-viral medication can slow its progression, but this condition inevitably proves fatal within two years of being diagnosed.

The recommended treatment for the type of chronic encephalitis known as progressive multifocal leukoencephalopathy (PML) usually depends on what's causing the immune system to weaken. If the immune system is weakened due to a treatment such as chemotherapy, this treatment may be temporarily withdrawn.

If your immune system is weakened due to an HIV infection, a type of medication known as highly active antiretroviral therapy may be effective.

If used early, HIV medication can also be an effective treatment for chronic progressive HIV encephalitis. If left untreated, it's fatal.

ADDITIONAL INFORMATION

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