



Questions and Answers

Here are some frequently asked questions and their answers

What exactly is encephalitis?

Encephalitis is inflammation of the brain.

Encephalitis is different from meningitis. Meningitis means inflammation of the protective layers that cover the brain. Sometimes people have both meningitis and encephalitis and this is called *meningoencephalitis*.

How is the inflammation caused?

The inflammation is caused either by an infection invading the brain (infectious); or through the immune system attacking the brain in error (*post-infectious / autoimmune encephalitis*).

Who can get encephalitis ?

Anyone, at any age. Statistics from the USA provide an indication of the prevalence of encephalitis. Beghi et al (1984) reported the annual incidence as 7.4 people per 100 000 and, more recently, Khetsuriani et al (2002) reported 7.3 hospitalizations per 100 000 population. There are no statistics for the UK. However, based on the US statistics, it can be estimated that about 4000 people are newly affected each year (Easton et al, 2006).

What causes infectious encephalitis?

Viruses are the commonest cause of infectious encephalitis. Many viruses cause minor infections elsewhere in the body, such as tummy upsets, skin rashes and cold sores. Only very rarely do the same infections affect the brain, therefore encephalitis is often described as *a rare complication of common infections*. The introduction of vaccination for measles, mumps and rubella has greatly lowered the rate of encephalitis from these diseases. Within the British Isles, Herpes Simplex Virus (HSV or the cold sore virus) is the virus most frequently identified. Worldwide other viruses are found, many of which can be transmitted by mosquito or tick bites.

More rarely bacteria, fungus and parasites can also cause encephalitis.

What causes Post-infectious Encephalitis / Autoimmune Encephalitis

Although viruses infecting the brain are a major cause of encephalitis, the body's reaction to infection can lead to encephalitis. This occurs when the immune system tries to fight off the infection, and by mistake attacks the brain at the same time. This condition is called Post-infectious Encephalitis.

It has recently been recognised that there are other forms of encephalitis that result from attack of the brain by the body's immune system. Some of these types of autoimmune encephalitis are identified by finding a specific antibody in the blood. The trigger in these cases is not known.

What are the main symptoms?

Encephalitis often begins with a "flu-like" illness or with headache. Symptoms indicating that this is a more serious illness follow later and typically include "alteration in level of consciousness". These might include confusion, drowsiness, seizures (fits) and coma. Other symptoms can include aversion to bright lights, inability to speak or control movement, sensory changes, neck stiffness, uncharacteristic behaviour, as well as other symptoms depending on the area of the brain under attack.

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How is encephalitis diagnosed?

Diagnosis of encephalitis is made where there is evidence of an inflammatory process of the brain in association with clinical evidence of neurologic dysfunction.

The range of possible symptoms and their rate of development vary widely, and are not just found in encephalitis, so making the diagnosis can be difficult.

What tests are undertaken?

- Lumbar puncture - to exclude bacterial meningitis and test for the herpes virus.
- Brain scans (CT or MRI) - to exclude brain tumours, aneurysms and strokes and show the extent of any inflammation.
- Blood tests - to exclude metabolic encephalopathies.

It is not unusual for the results of tests to be “normal”, it is important to initially exclude some more common and treatable diseases.

How is encephalitis treated?

Prompt treatment with Acyclovir is important. Acyclovir is an anti-viral agent effective against herpes viruses. Although not always identified, herpes simplex 1 (the cold sore virus) is the most commonly identified cause of encephalitis in this country. There is no specific treatment, at present, for any other viruses infecting the brain. Other treatments may include anti-convulsants to control seizures and sedatives to reduce agitation. Intensive care with ventilation may also be necessary in severe cases to reduce swelling of the brain. Antibiotics may be given as a precaution to prevent bacterial infections.

Do people get better?

Nerve cells may be damaged or destroyed by the viral infection, the immune reaction and by pressure resulting from the inflammation. This damage is termed “acquired brain injury (ABI). Some loss of brain function is therefore a probable outcome of encephalitis. In some cases, however, this loss occurs on a relatively small scale resulting in very minor impairment, such as some loss in speed of thinking. In other cases damage can be extensive leading to significant impairments.

Recovery is a long and slow process. An initial period of convalescence with plenty of rest is recommended. This should be followed by a programme of graded activity and rest over 3 – 6 months giving the brain the opportunity to restore function. In more severe cases a period in a brain injury rehabilitation unit may be necessary.

What are the after effects?

There will be a wide variation in exactly in how encephalitis affects the person in the long term. Tiredness, recurring headaches, difficulties with memory, concentration and balance are often reported as are mood swings, aggression and clumsiness. Epilepsy, as well as being a feature of the acute illness, may develop weeks or months after the illness has subsided. Physical problems may include weakness down one side of the body, loss of sensations and of control of bodily functions and movement. Speech and language problems are also common features. Speed of thought and reaction may be reduced.

Bereavement

Compared to other infectious diseases, encephalitis has a high mortality rate. The illness can be very quickly fatal causing extreme trauma for all the family. It is difficult to understand why a virus infection in the modern world can have such devastating consequences.

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FS 001 Questions and Answers Created 03/2000 Last Update 07/2008

The Encephalitis Resource Centre, 7B Saville Street, Malton, North Yorkshire YO17 7LL UK
Information: +44 (0) 1653 699 599 Administration: +44 (0) 1653 692 583 Fax: +44 (0) 1653 604 369
Email: mail@encephalitis.info Website: www.encephalitis.info

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