



Encephalitis: Overview of Symptoms and Causes

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What is Encephalitis?

Encephalitis is an inflammation of the brain. Inflammation is caused either by an infection invading the brain (Infectious Encephalitis); or through the immune system attacking the brain (Post-infectious / Autoimmune Encephalitis).

Encephalitis is different from Meningitis. Meningitis means inflammation of the protective layers that cover the brain. Sometimes patients have both Meningitis and Encephalitis and this is called Meningoencephalitis.

Symptoms

The types of symptoms seen in Encephalitis reflect the specific areas of the brain affected by inflammation. The range of symptoms and their rate of development vary widely and can make the diagnosis of Encephalitis difficult.

Encephalitis frequently begins with a 'flu-like illness or headache. Typically more serious symptoms follow hours to days later. The most serious finding is an alteration in level of consciousness. This can range from mild confusion or drowsiness, to loss of consciousness and coma.

Other symptoms include a high temperature, seizures (fits or convulsions), aversion to bright lights, inability to speak or control movement, sensory changes, neck stiffness, or uncharacteristic behaviour.

Some people may also experience hallucinations and vivid nightmares during the acute period of the Encephalitis. These can be very distressing for the person concerned and the family who may witness their distress. This phase usually ceases as the inflammation and swelling of the brain subsides.

Infectious Encephalitis

Viruses are the most common infections that cause infectious Encephalitis. Many of these 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 Infectious Encephalitis is often described as *a rare complication of common infections*.

Vaccination against 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. Other common viral causes include varicella zoster virus (Chickenpox virus) and enteroviruses. Worldwide other viruses are found, many of which can be caught by mosquito or tick bite.

More rarely bacteria, fungi and parasites can cause Encephalitis.

Post-infectious Encephalitis / Autoimmune Encephalitis

Although viral brain infections are a major cause of Encephalitis, the body's reaction to a virus itself can lead to Encephalitis. This occurs when an infection outside the brain triggers an abnormal immune response, which results in damage to the brain. Often the trigger infection is minor. This condition is called Post-infectious Encephalitis.

Post-infectious Encephalitis has a variety of other names which include *Acute Disseminated Encephalomyelitis (ADEM)*, *Parainfectious Encephalitis* and *Post-vaccinal Encephalitis*. It probably accounts for one-third of all known cases of Encephalitis. The illness usually follows in the wake of a mild viral infection (such as those that cause rashes in childhood) or immunisations. Typically there is a delay of days to several weeks between the triggering infection and development of Encephalitis.

Other Autoimmune causes

Not all forms of Autoimmune Encephalitis are triggered by infection. Autoimmune Encephalitis can occur due to autoimmune disease affecting other organs in the body. In the last decade it has recently been recognised that there are other forms of autoimmune Encephalitis that are associated with finding specific antibodies in blood. This group of causes of Encephalitis is called Antibody-Associated or Antibody-Mediated Encephalitis. Please see the separate factsheets on specific types of Antibody-Associated Encephalitis.

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