Causes of Encephalitis

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Infectious Encephalitis

Viruses are the commonest 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 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 caught by mosquito or tick bite.

More rarely bacteria, fungus and parasites can cause encephalitis.

Post-infectious Encephalitis / Autoimmune Encephalitis

Although viruses infecting the brain are a major cause of encephalitis, the body’s reaction to a virus itself can lead to encephalitis. This occurs when the immune system tries to fight off the virus, and by mistake attacks the brain at the same time. 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 two to three weeks between the triggering infection and development of the encephalitis.

Other Autoimmune causes

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 blood. The trigger in these cases is not known.

- Known viral causes of encephalitis:
- Human herpesviruses (e.g. cold sores, glandular fever)
- Rash-causing viruses (e.g. mumps, measles, rubella)
- Throat & chest viruses (e.g. ‘flu, enteroviruses)
- Gut viruses (e.g. enteroviruses, Echo virus)
- Insect-borne (e.g. Japanese Encephalitis virus, West Nile virus)
- Tick-borne (e.g. Central European Tick-borne virus)
- Other causes of encephalitis:
- Bacteria (e.g. mycoplasma, meningococcal, pneumococcal and listeria)
- Fungi (e.g. histoplasma, cryptococcus, candida)
- Parasites (e.g. malaria, toxoplasma)
- Drug reactions
- Post-infectious Encephalitis
- Autoimmune Encephalitis
- The above examples are not an exhaustive list.