Varicella zoster virus encephalitis

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What is Varicella zoster virus (VZV) encephalitis?

VZV encephalitis refers to a neurological complication associated with the Varicella-zoster virus (VZV), which can cause varicella (chickenpox) during primary infection and herpes zoster (shingles) upon reactivation. While VZV infections are common, encephalitis occurs more rarely, with an estimated incidence of 1 per 30,000 – 50,000 varicella cases. This condition can affect adults and infants and is more common and more severe in those who are immunocompromised.

Symptoms

Neurological signs: patients with VZV encephalitis may present with symptoms such as headache, fever, vomiting, seizures, sensory changes, and altered levels of consciousness. Symptoms may be subtle with change in personality or cognition also being presenting features.

Motor abnormalities: ataxia (loss of coordination), hypertonia or hypotonia (increased or decreased muscle tone), hyperreflexia or hyporeflexia (increased or decreased reflexes), and hemiparesis (muscle weakness on one side of the body) are also possible.

Rash presence: although encephalitis often occurs alongside the characteristic rash of chickenpox or shingles, it can also manifest without this rash. There may have been a rash in preceding few months prior to developing encephalitis.

Diagnosis

Diagnosing VZV encephalitis involves a combination of clinical assessment and diagnostic tests. Detection of VZV DNA in the central spinal fluid (CSF) is a key diagnostic method. Though it is only detected in about a third of the time. Antibody testing in the CSF may be necessary. Other laboratory tests may be performed to rule out other potential causes of encephalitis. Neuroimaging using EEG and MRI scans may identify abnormalities in brain activity and structure.

Treatment

Aciclovir, a potent antiviral drug, is the primary treatment for VZV encephalitis. Administering aciclovir early can help reduce the severity and duration of the illness. Patients may require supportive measures, including hydration and management of symptoms such as fever and seizures.

Outcomes

The outcomes of VZV encephalitis vary widely, ranging from complete recovery to various degrees of residual effects. Mortality rates range from 5% to 15%, highlighting the seriousness of this condition. Patients who survive may experience long-term neurological consequences, including cognitive impairment, motor deficits, and seizures.

Prevention

Vaccination against varicella (to prevent primary chickenpox infection) has been integrated into national immunization programs in numerous countries. Proper vaccination can prevent varicella and subsequently reduce the risk of VZV encephalitis. Practicing good hygiene and avoiding contact with individuals experiencing active VZV infections can help prevent transmission to individuals susceptible to VZV infection. Two shingles vaccines are available to prevent reactivation of the VZV virus and are available from the age of 65 years in the UK, or from 50 years for those with weakened immune systems.

In conclusion, VZV encephalitis is a rare but serious neurological complication associated with VZV infections. Timely diagnosis, appropriate treatment, and prevention measures, such as vaccination and public awareness, play essential roles in managing this condition and reducing its impact on individuals' health and well-being.

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Thank you!

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