

Encephalitis

West Nile virus (WNV) has been the cause of majority of outbreaks.

Herpes simplex viruses VZV, PRV → sensory neurons

Epidemics of encephalitis are caused by arboviruses (viruses that are transmitted by arthropod vectors).

Rabies is a zoonotic infection that occurs in a variety of mammals, are transmitted to humans through bites.

poliovirus, RABV → somatic neuron

somatic neuron

عليها سؤال باسئ

How do encephalitis patients present?

In addition to fever and headache, and symptoms of accompanying meningitis (if present), the patient with encephalitis commonly has

focal or diffuse neurologic signs and symptoms (aphasia, ataxia, upper or lower motor neuron patterns of weakness).

Depressed level of consciousness ranging from mild lethargy to coma

• In addition to encephalitis symptoms, in encephalitic (furious) rabies, episodes of hyperexcitability are typically followed by periods of complete lucidity that become shorter as the disease progresses

Rabies is a zoonotic infection that occurs in a variety of mammals, transmitted to humans through bites.

Prophylaxis involves wound care, and passive immunization with rabies immune globulin.

How to diagnose a suspected encephalitis patient?

• Lumber puncture: CSF profile is indistinguishable from that of viral meningitis and typically consists of a lymphocytic pleocytosis, a mildly elevated protein concentration, and a normal glucose concentration.

CSF PCR has become the primary diagnostic test for viral CNS infections.

Acyclovir is of benefit in the treatment of HSV (and VSV and EBV severe infections)

should be started empirically in patients with suspected viral encephalitis, while awaiting viral diagnostic studies

A 64-year-old man living on a farm in southern Minnesota is brought on July 15 to the emergency room by his brother. The brother said the man had a 2-day history of fever, headache, and some vomiting, but today he appeared confused. He is confused by some of the simple questions you ask him. His spinal tap is clear with 75% PMNs and a head CT is normal. The most likely cause of his symptoms is

- (A) California encephalitis virus
- (B) Enterovirus
- (C) HSV
- (D) West Nile virus

The answer is D. The symptoms are most consistent with West Nile neurologic disease, a rare complication of West Nile virus infections.

Prions

abnormal folding of specific normal cellular proteins called prion proteins (PrP) that are found most abundantly in the brain.



مثل الوردة الجافة اذا جفت بتلة من بتلاتها بتصير كل البتلات مثل اختهم الجافة

فبتموت الوردة

Prions composed of the prion protein (PrP) are hypothesized as the cause of transmissible spongiform encephalopathies (TSEs).

- TSEs in humans include:
 - 1- Creutzfeldt-Jakob disease (4 forms): the sporadic (sCJD) - the hereditary/familial (fCJD) - the iatrogenic (iCJD) - the variant form (vCJD).
 - 2- Kuru.
 - 3- Fatal familial insomnia (FFI).
- TSEs in animals include:
 - 1- Scrapie in sheep and goats.
 - 2- Bovine spongiform encephalopathy (BSE) in cows. (Madcow disease)

Signs & Symptoms of CJD

- Rapidly progressive dementia (confusion, disorientation, and problems with memory, thinking, planning and judgment).
- Rigidity.
- Agitation, apathy and mood swings.
- Myoclonus.
- As the condition worsens physical manifestations such as: Ataxia, speech impairment, changes in gait

right about TSEs
Answer: sporadic more common
mostly in adult > 60 years old

The spinal cord can be involved in infections as well (infectious myelopathies)

Myelitis arises from intrinsic infection and inflammation of the spinal cord.

location within the cord. The herpesviruses and enteroviruses are ubiquitous, accounting for a substantial number of viral myelitis cases.

Pyogenic epidural abscess

Treponema pallidum, the causative agent of syphilis, is a rare etiology of myelopathy in the 21st century.

Forms of CJD

diagnosed

- Electroencephalography (EEG)
- Magnetic resonance imaging (MRI)

only way to confirm a diagnosis of CJD is by brain biopsy or autopsy

There is no known cure or effective treatment for CJD

عليه سؤال باسئ

Sporadic (sCJD)

Familial (fCJD)

acquired (iCJD)/ (vCJD)

Opiate drugs can help relieve pain if it occurs, and the drugs clonazepam and sodium valproate may help relieve myoclonus

- True about familial Creutzfeldt-Jakob:

- a. Acyclovir is important as empirical treatment
- b. Brain biopsy has no importance in diagnose
- c. There is no treatment for this disease

Answer: C

A patient came with a headache, fever, and focal neurologic deficits. CSF investigations have shown leukocytosis with predominance of lymphocytes and normal glucose and protein levels, the most appropriate diagnostic method is?
A. PCR
B. viral culture
C. biopsy
D. CT imaging
Answer: A

-Wrong statement about encephalitis:

Answer: It cannot be prevented or treated

-Which of the following is true regarding encephalitis ?

- a. Streptococci are the most identified pathogens in sporadic cases of encephalitis .
- b. Encephalitis patients are usually treated at home with anti-pyretics and painkillers .
- c. Persons infected with Herpes simplex type-1 commonly develop encephalitis
- d. SF culture is necessary to confirm the diagnosis of encephalitis .
- e. Arboviruses are associated with epidemics of encephalitis .

Answer: E

-False statement about meningitis (or encephalitis):

Answer: Brain biopsy is usually acquired for diagnostic purposes

-Wrong about a patient with CJD:

Answer: His survival median is very long

-The most common cause of sporadic encephalitis:

Answer: HSV



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