



The Medical **Bulletin**

History

World Encephalitis Day on February 22

Encephalitis is defined as an inflammation of brain parenchyma caused by infection or immune mediated process.

- In Ancient Greek enkephalos means "brain", it is means "inflammation".
- Encephalitis + Meningitis-Meningoencephalitis
- Encephalitis + Spinal cord-Encephalomyelitis

Causes

Infectious- Acute or Chronic

- Viral encephalitis (most common) - Herpes simplex, Varicella, Rabies, Polio, Measles, Arboviral
- Bacterial- Mycoplasma pneumoniae, Listeria monocytogenes, Legionella
- Protozoal- Toxoplasmosis, Malaria, Amoebic meningoencephalitis

Immune Mediated

- Autoimmune encephalitis- Anti-NMDA receptor, Anti LGI1/Caspr2 encephalitis etc
- Paraneoplastic encephalitis - Anti Hu,Yo,Ri,Tr,CRMP,Ma etc

In India, Japanese encephalitis virus causes outbreaks, which was first reported in 1955 from Vellore, Tamil Nadu. Some other virus caused outbreaks are Chandipura virus and Nipah virus.

Clinical Features

Altered sensorium, behavioral and personality changes, seizures, focal neurological deficits, fever, headache, vomiting



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Diagnosis

- MRI Brain with contrast study
- CSF Study - Lymphocytic pleocytosis, mildly elevated protein, normal glucose levels are typical of viral encephalitis
- CSF-PCR testing to detect the presence of viral DNA
- EEG

Clues to Etiological Diagnosis

- Temporal lobe involvement (MRI, EEG) - HSV
- Extraparamidal symptoms and signs, Basal ganglia and/or Thalamus involvement in MRI - Japanese encephalitis
- Hydrophobia, Aerophobia, Pharyngeal muscle spasm- Rabies
- Vesicular skin lesions, Multimodal hemorrhagic or ischemic infarction (CNS Vasculopathy) in MRI - Varicella Zoster
- Parotitis - Mumps
- Hydrocephalus in MRI - Non viral causes (Bacterial, Fungal, Parasitic)
- Psychiatric manifestations, memory impairment, autonomic dysfunctions, movement disorders, sleep seizures - NMDAR encephalitis
- Limbic, brainstem encephalitis, associated primary malignancies like small cell lung cancer - Paraneoplastic

Treatment

- Antiepileptics for seizures
- Antiviral medications in viral encephalitis (IV Acyclovir in HSV and VZV encephalitis, IV Ganciclovir, Foscarnet in CMV encephalitis)
- Antibiotics, (if bacteria is cause)
- Immunotherapy (Steroids, IVIG, immunosuppressants in autoimmune encephalitis)
- Treatment of underlying malignancy in paraneoplastic encephalitis



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Prevention

- MMR vaccination for children
- Vaccination against tick-borne and Japanese encephalitis
- To protect against mosquito and tick bites.

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