



Acute Encephalitis Syndrome

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Several children have died in the **Muzaffarpur district** of north Bihar, due to **Acute Encephalitis Syndrome (AES)**, which is locally known as **Chamki bukhar (brain fever)**.

- The AES cases in Muzaffarpur, Bihar and adjoining **litchi producing districts** have been observed mostly from April to June, particularly in children who are **undernourished** with a history of visiting litchi orchards.
- **High temperature** during summer, along with humidity, is considered to be an ideal situation for the outbreak of Acute Encephalitis Syndrome.
- Relationship between **consumption of litchi** and **AES** was postulated by National Centre for Disease Control, Delhi (along with Centre for Disease Control US) in acute encephalitis in children, in Muzaffarpur.
- Unripe litchis contain the toxins hypoglycin A (naturally occurring amino acid) and methylenecyclopropyl-glycine (MCPG), which cause vomiting if ingested in large quantities.
- **Acute encephalitis syndrome** is a severe case of encephalitis transmitted by mosquitoes and is characterized by **high fever** and **inflammation of the brain**.
The World Health Organisation (WHO) in 2006, coined the term AES to signify a group of diseases which seem similar to one another but are difficult to differentiate in the chaotic environment of an outbreak.
- The disease most commonly affects **children and young adults** and can lead to considerable **morbidity and mortality**.
- **Causative Agents: Viruses** are the main causative agents in AES cases, although other sources such as bacteria, fungi, parasites, spirochetes, chemicals, toxins, and noninfectious agents have also been reported over the past few decades. **It is not vaccine-preventable**.
 - **Japanese encephalitis virus (JEV)** is the major cause of AES in India (ranging from 5%-35%).
 - Herpes simplex virus, **Nipah virus, Zika virus**, Influenza A virus, **West Nile virus**, Chandipura virus, mumps, measles, dengue, scrub typhus, S.pneumoniae

are also found as causative agents for AES.

- **Symptoms:** include confusion, disorientation, coma, or inability to talk, high fever, vomiting, nausea, and unconsciousness.
- **Diagnosis: The National Vector Borne Disease Control Programme** in India has set up countrywide surveillance for AES through sentinel sites with a focus on detecting Japanese encephalitis (JEV).

In the sentinel surveillance network, AES/JE is diagnosed by **IgM Capture ELISA**, and **virus isolation** is done in the National Reference Laboratory.

Government Initiatives

In order to reduce morbidity, mortality, and disability in children due to JE/AES, Government of India under **National Programme for Prevention and Control of Japanese Encephalitis(JE)/ Acute Encephalitis Syndrome (NPPCJA)** has developed a multi-pronged strategy with the convergence of the concerned Ministries.

- **Ministry of Health and Family Welfare:**
 - Strengthening and expanding JE vaccination
 - Strengthening of public health activities
 - Better clinical management of JE/AES Cases
 - Physical medicine and rehabilitation (PMR)
 - Establishing of the district counseling center
 - Monitoring, supervision, and coordination
- **Ministry of Drinking Water and Sanitation** for the provision of safe water supply.
- **Women and Child development** for providing high-quality nutrition to vulnerable children
- **Ministry of Social Justice and Empowerment** for establishing District Disability Rehabilitation Centers for disability management and rehabilitation.
- **Ministry of Housing and Urban Poverty Alleviation (HUPA)** for ensuring the supply of safe water in slums and towns
- **Ministry of Human Resource** (Department of School Education) to provide special facilities for disabled children for their education.