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# Topic wise content



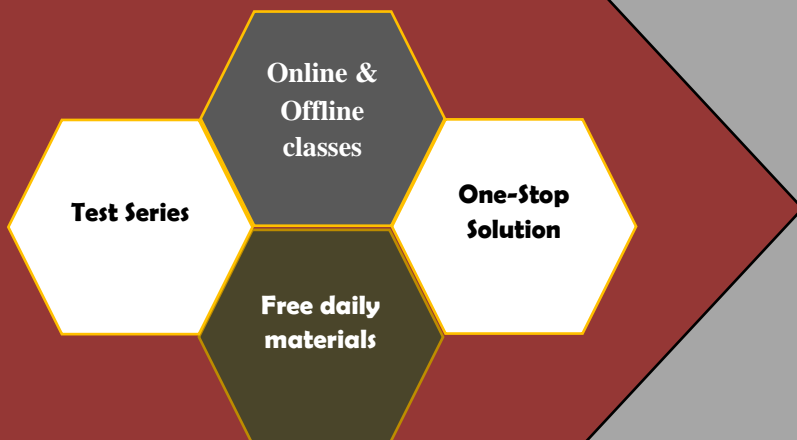
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## Acute Encephalitis Syndrome (AES)

Notes for civil services preparation



UPSC

General Studies

## Acute Encephalitis Syndrome (AES)

- While the causes of AES are still researched, the association with hypoglycaemia and litchi fruit has drawn attention.

### About AES:

- Acute encephalitis syndrome is a basket term used for referring to hospitals, children with clinical neurological manifestation that includes mental confusion, disorientation, convulsion, delirium, or coma.
- Meningitis caused by virus or bacteria, encephalitis (mostly Japanese encephalitis) caused by virus, encephalopathy, cerebral malaria, and scrub typhus caused by bacteria are collectively called acute encephalitis syndrome.
- The disease most commonly affects children and young adults and can lead to considerable morbidity and mortality.

### Symptoms:

- It is characterized as acute-onset of fever and a change in mental status (mental confusion, disorientation, delirium, or coma) and/or new-onset of seizures in a person of any age at any time of the year.

### Cause of the disease:

- Acute Encephalitis Syndrome (AES) is considered a very complex disease as it can be caused by various agents including bacteria, fungi, virus and many other agents.
- Viruses are the main causative agents in AES cases, although other sources such as bacteria, fungus, parasites, spirochetes, chemicals, toxins and non-infectious agents have also been reported over the past few decades.
- Japanese encephalitis virus (JEV) is the major cause of AES in India (ranging from 5%-35%).
- Nipah virus, Zika virus are also found as causative agents for AES.
- How is it related to litchi fruits? How it affects?

- In India, AES outbreaks in north and eastern India have been linked to children eating unripe litchi fruit on empty stomachs.
- Unripe fruit contain the toxins hypoglycin A and methylenecyclopropylglycine (MCPG), which cause vomiting if ingested in large quantities. Hypoglycin A is a naturally occurring amino acid found in the unripened litchi that causes severe vomiting (Jamaican vomiting sickness), while MCPG is a poisonous compound found in litchi seeds.

### **Why it affects undernourished children?**

- Blood glucose falls sharply causing severe brain malfunction (encephalopathy), leading to seizures and coma, and death in many cases.
- This is because under-nourished children lack sufficient glucose reserve in the form of glycogen and the production of glucose from non-carbohydrate source is blocked midway leading to low blood sugar level.
- This causes serious brain function derangement and seizures.

### **Measures needed:**

1. Increase access to safe drinking water and proper sanitation facilities.
2. Improve nutritional status of children at risk of JE/AES.
3. Preparative measures to be in place before the possible outbreaks.
4. Vector control.
5. Better awareness generation among children, parents through Anganwadi workers, ANMs etc.