

Encephalitis (Brain Fever): A Medical Mystery due to Brain Viral Infection Leading Cause of Premature Deaths in India

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COLUMN ARTICLE

The central nervous system (CNS) in humans is protected externally by skull and spinal cord from external damage whereas it is highly isolated by blood-brain barrier from circulating pathogens. However, under certain physiological conditions micro-organisms still manage to infect and induce diseases including neurodegenerative diseases, neurodevelopmental disease, and traumatic injuries [1-3]. Among all infectious microorganisms, viral infections have highest relative risk (44%) and the magnitude of their threat to global health is increasing [4]. The infections of meninges (meningitis) or with brain parenchyma involvement (encephalitis) are common causes of hospital admissions. The incidence and aetiology of such infections vary in time, by geographic region, with age, co-morbidities and vaccination policies. In this regard, vector-borne diseases, such as dengue and acute encephalitis syndrome, are of particular concern [5].

The acute encephalitis (AE) dragged attention of scientists due to high number of children deaths in the recent decades. Causative organisms of AE include wide range of microorganisms (spirochetes, viruses, bacteria etc.) as well as several toxins and noninfectious agents. Viral causes account for the largest proportion, but in the last decade there

has been growing recognition of anti-neuronal antibody syndromes [6]. Encephalitis is a condition of inflammation of the brain parenchyma, occurs as a result of infectious or autoimmune causes, and can lead to encephalopathy, seizures, focal neurological deficits, neurological disability, and eventually death. Immunocompromised children are particularly more vulnerable to acute encephalitis. The evaluation and management of critically ill children with acute encephalitis is complicated by diagnostic challenges and a lack of effective therapeutic options. Overall, encephalitis results in high mortality and often severe morbidity for survivors [7].

The disease was clinically diagnosed in India for the first time in 1955 in the southern State of Madras (now Tamil Nadu). At present, the disease is endemic in as many as 171 districts in 19 States. During 2016, 11,651 case and 1301 deaths were reported to the National Vector Borne Diseases Control Programme (NVBDCP), with a CFR of around 11 per cent. Most deaths were from Uttar Pradesh, followed by West Bengal, Assam and Bihar.

A report in Lancet journal by Patralekha Chatterjee put a glimpse on cause of AE. She mentioned that the malnutrition among kids was the main reason of AE; though the toxins found in lychee fruit were also linked earlier with AE. The inability of having proper food in low economic group chil-

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dren was associated with onset of this deadly disease [8]. Earlier, a direct relation of lychee consumption and no dinner was found during a hospital based survey [9].

It's the government and administration who could have atleast meal once a day and further should try to improve the condition of its people. The health department should set up knowledge camps where the people should be aware about the precautions and symptoms so that they go to the hospitals in case of any such illness. It is the joint efforts of the government and its people to combat the AE.

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