

## Editorial

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### Dengue Virus and Neurological Complications

Dengue virus (DENV) incidence still continues in various parts of Pakistan. It has been observed that the dengue virus affects the brain and the spinal cord as well. It has multiple manifestations of the brain including, encephalitis, epilepsy, Guillain-Barré syndrome (GBS), and vertigo (behavior change or decreased memory). The spinal manifestations such as myelitis. It is known four main DENV serotypes, their epidemiology, and the extended dengue syndrome, which encompasses multisystem involvement in the disease's severe form, including the involvement of the central nervous system (CNS). A neurotropic virus, DENV has the capacity to infect the CNS's supporting cells. Direct neuro-invasion and/or the phenomena of antibody-dependent enhancement, which causes plasma leakage and coagulopathy, cause neural damage during the acute stage of the infection.<sup>1</sup>

We are aware that DENV infection can have neurological symptoms, some of which can be fatal if untreated quickly. Clinicians need to be aware of the enlarged dengue syndrome, which is characterized by the simultaneous impairment of the gastrointestinal, renal, cardiac, neurological, and hematopoietic systems. The neuropathies may be caused by immune-mediated processes, direct involvement of cranial nerve nuclei, or nerve involvement. It is crucial to rule out other well-known causes of isolated cranial nerve palsies, even if dengue is determined to be the cause. Strokes that are ischemic or hemorrhagic can happen after dengue illness.<sup>1</sup> Neurological signs are now more commonly identified, signaling a shift in the clinical presentation spectrum. The most frequent neurological effects of dengue are encephalopathy and encephalitis, which are thought to occur between 0.5 and 6.2% of the time.<sup>2</sup> Findings imply that the injected DEN virus may enter the cerebral spinal fluid and travel to the spinal cord neurons, where it may produce a number of pathogenic reactions in the neurons. Additionally, the DEN virus was found in both myelinated and unmyelinated nerve fibers as well as standard neuronal synapses. It appears that some virion-containing vesicles merged with presynapse membranes, suggesting that the DEN virus may travel from neuron to neuron in the spinal cord.<sup>3</sup>

In order to avoid such neurological complications, we should focus on preventive aspects, safe clothing, and the use of creams that donors allow vectors to attach to the body. Prevention and treatment both are essential. The first dengue vaccine to be suggested for use in the United States is Dengvaxia, which is also one of the first to call for laboratory testing of prospective vaccine recipients.<sup>4</sup>

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