

Dengue infection: An emerging cause of neuromuscular weakness

Dengue fever is caused by dengue virus which belongs to the family filoviridae and genus flavi virus. *Aedes aegypti* is the vector responsible for transmission of the viral infection. Clinical spectrum ranges from an uncomplicated febrile illness to devastating hemorrhages and refractory shock. Hemorrhagic manifestations in dengue hemorrhagic fever (DHF) range from petechial hemorrhages to the life-threatening gastrointestinal, pulmonary, and cerebral or genitourinary hemorrhages.

Neurological manifestations have been increasingly recognized over the last many epidemics. Various neurological involvements reported in dengue virus infection are encephalitis, acute disseminated encephalomyelitis, transverse myelitis, Guillain-Barré syndrome (GBS), myositis, and stroke.^[1-8]

Though dengue virus has been considered a non neurotropic virus, neuroinvasion has been reported in five fatal cases of dengue encephalopathy in which dengue virus antigen was detected in the brain by immunochemistry.^[7] In patients with dengue encephalitis, CSF pleocytosis and positive IgM and polymerase chain reaction (PCR) tests have also been reported, suggesting neuroinvasion.

Neuromuscular complications have been reported in patients with dengue infection. They are GBS, acute quadriplegic paralysis due to hypokalemia, and myositis.^[5,8] Hira *et al.* in this issue reported 12 patients with different neuromuscular problems such as hypokalemic periodic paralysis, GBS, and myositis.^[9] The proposed mechanism of hypokalemia is due to redistribution of potassium in cells or transient renal tubular abnormalities leading to increased urinary potassium wasting. Hypokalemia in dengue fever responds well to potassium correction with complete recovery.^[8] Antecedent infection which

evokes an immune response which affects the myelin or the axon of peripheral nerves has been elucidated as the mechanism for GBS in these patients.^[4] The diagnosis of myositis is based on clinical presentation, raised creatinine phosphokinase (CPK), electromyography (EMG) evidence, and muscle biopsy. Misra *et al.*, reported five patients presenting with acute pure motor weakness with raised CPK.^[5] EMG and muscle biopsy were consistent with myositis in one of those patients.

Neurological manifestations in dengue fever are not uncommon. Clinicians should be aware of these manifestations particularly who present with quadriplegic and most of these patients make full recovery.

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