

## Global Experts Meeting on

## INFECTIOUS DISEASES, DIABETES AND ENDOCRINOLOGY

February 27-28, 2019 Tokyo, Japan

**Dengue fever associated cerebral hemorrhages, a rare, poorly understood entity in an era of dengue epidemic: A case series and literature review****Nayomi Shermila Jayasinghe and Kanapathipillai Thirumavalavan**  
Bairnsdale Regional Health Service, Australia

Dengue fever is caused by a flavivirus, which is a vector borne RNA virus with four anti-genically distinct serotypes (DEN 1, DEN 2, DEN 3 and DEN 4). Neurological manifestations are rare compared to other complications of the disease. Encephalopathy, encephalitis, aseptic meningitis, intracranial hemorrhages, thrombosis, mono-neuropathies / polyneuropathies, Guillain-Barre syndrome and myelitis have been reported. Neurological manifestation in dengue hemorrhagic fever usually results from multisystem dysfunction secondary to liver failure, cerebral hypoperfusion, electrolyte imbalance, shock, cerebral edema and hemorrhage related to vascular leak. The occurrence of brain hemorrhage in a case with dengue shock can be serious and leads to death. The occurrence of brainstem hemorrhage can be a very serious fatal situation. We report this case series of dengue hemorrhagic fever with multiple intracranial, sub arachnoid hemorrhages and sub-dural hematoma causing brainstem herniation. Case 1: A 25-year-old previously healthy woman was admitted on third day of fever with thrombocytopenia. Critical phase started on 5<sup>th</sup> day with evidence of pleural effusion and moderate ascites. 31 hours into critical phase, she developed headache, altered level of consciousness, limb rigidity and respiratory depression without definite seizures. Non-contrast CT brain done at tertiary care level revealed diffuse intra cranial hemorrhages and sub arachnoid hemorrhages in right frontal, parietal, occipital lobes and brainstem, cerebral oedema with an acute subdural hematoma in right temporo-parietal region. Her platelet count was 40,000 at this time with signs of vascular leakage. She was intubated and ventilated with supportive care. Later on, she developed features of cranial diabetes insipidus and it responded to intranasal desmopressin therapy. In spite of above measures signs of brainstem herniation developed and she succumbed to the illness on day 8. Dengue was confirmed serologically. Case 2: A 24 year old previously healthy was admitted on 2nd day of fever with constitutional symptoms and no bleeding manifestations. Clinical, hematological and serological parameters confirmed dengue infection. On 5<sup>th</sup> day of illness, she entered into leaking phase, but did not have evidence of any bleeding. Intra Cranial Hemorrhage (ICH) in right parietal lobe deep white matter area associated with perilesional oedema and midline shift. Bleeding into the right lateral ventricle and Small Subdural Hematoma (SDH) were also noted in right parietal lobe area. Her platelet count at the time of development of hemorrhages was 32,000 and International Normalised Ratio was normal. NCCT brain was repeated 24 hours later and showed progression of hemorrhages. It showed progressive worsening of right occipito-temporal ICH, cerebral oedema, midline shift, right SDH and SAH. Patient remained hemodynamically stable and platelet count was on the rising trend. It was 52,000, 77,000 and 83,000 on 3 consecutive occasions. PCV was stable around 43. There were no other bleeding manifestations neurosurgical interventions were not attempted and patient was managed conservatively. Amidst maximum care provided, patient succumbed to illness on the following day. It can be concluded that diffused cerebral hemorrhages with moderate thrombocytopenia and normal coagulation profile are a very rare and fatal complication of dengue fever. Exact pathophysiological mechanism is not well understood. Increased awareness and high degree of clinical suspicion is needed among clinicians for timely diagnosis of this extremely rare complication of dengue fever. We postulate that immunological mechanisms may play a role in pathogenesis. However further comprehensive research and studies are needed to understand the pathophysiological mechanisms leading to this complication.

**Biography**

Nayomi Shermila Jayasinghe is working as a Consultant physician in Internal medicine, Bairnsdale Regional Health Service, Victoria, Australia, Associate lecturer of University of Queensland, Ex. Consultant Specialist Physician attached to specialized dengue unit in National Hospital of Sri Lanka. Her main areas of work include – Dengue infection and its complications Author of many publications on dengue infection published in national and international medical journals, symposium and congresses. She has delivered speech on changing trends of dengue infection at World congress of Internal medicine 2018.

shermi17@gmail.com