

Medical Complications: Critical Phase

Encephalopathy

In the past, controversy existed if the mental status changes in dengue were due to encephalitis (direct viral invasion of brain) or encephalopathy from other associated conditions such as metabolic acidosis. Since 1996, there is laboratory evidence of dengue virus causing neuroinvasive disease. Encephalopathy can occur in patients with severe dengue due to the following:

- Metabolic acidosis due to prolonged shock
- Cerebral edema
- Hyponatremia
- Fulminant hepatic failure, which can be part of a Reye-like syndrome
- Intracranial hemorrhage

Myocardial Dysfunction

New evidence suggests that cardiac dysfunction might play a role in some dengue cases with fluid-refractory shock. The incidence of myocardial dysfunction among patients with dengue is unknown, but in studies measuring left-ventricular ejection fraction (EF) by echocardiogram (ECHO) in children and adults with laboratory-confirmed dengue and no past medical history, the degree of impairment appears to be mild with EF of greater than 35% but less than 50%. These same studies found poor correlation between degree of EF dysfunction and overall disease severity. The etiology of myocardial dysfunction among dengue patients is unknown, but rapid recovery has been reported in most cases.

Abdominal Compartment Syndrome

Abdominal compartment syndrome is a potentially lethal condition caused by an event that produces intra-abdominal hypertension that causes progressive hypoperfusion and ischemia of the intestines and other peritoneal and retroperitoneal structures. Abdominal compartment syndrome is defined by presence of abdominal distention with intrabdominal pressure (IAP) greater than 15 mm Hg in a patient with two of the following:

- oliguria or anuria
- respiratory compromise
- shock or hypotension
- metabolic acidosis

Abdominal compartment syndrome has been known to occur in patients with dengue, although the incidence is not known. In dengue patients, abdominal compartment syndrome might occur due to the presence of edematous swollen intestines resulting from intestinal ischemia due to prolonged shock, or fluid overload due to massive volume replacement. The management of abdominal compartment syndrome in dengue consists of serial measurements of intra-abdominal pressure (usually measured via a bladder catheter), careful fluid management with judicious use of diuretics, and peritoneal drainage if necessary.

