Background and objectives

Dengue is a major public health problem, associated with epidemics and high morbidity. It is caused by a virus of same name, belonging to flavivirus family of class arbovirus. The principle vector of the disease is the Aedes family mosquitoes. The highest dengue epidemic of dengue fever in India occurred in 2015 which claimed 800 lives and affected 4 million people. In 2016 it is still raging on, unstoppable causing great distress on the public health as well the individual

The most important phase of dengue fever is the critical phase. This is the phase where the plasma leakage occurs, the mechanism which is required for dengue shock syndrome. The other main complication of dengue is the hemorrhagic fever associated with it called dengue hemorrhagic fever. Close monitoring and early diagnosis of this stage is essentially crucial for treatment of dengue shock syndrome and dengue hemorrhagic fever. Most commonly haematocrit and platelet counts are used to monitor the patient in the critical phase. Many other tools are in the phase of development. Serial ultrasound guided evaluation of gall bladder thickness has been proposed and has many positive reviews in the detection of plasma leakage. So this study comprises assessment of gall bladder wall thickness in diagnosed dengue patients and comparing it with disease severity.

Methods

Patients who are admitted with fever and who have been diagnosed with dengue confirmed by IgM ELISA were included in this study after there written informed consent. The patients were then subjected to history, clinical examination, vitals monitoring, lab investigations, and ultrasonogram of abdomen for gall bladder wall thickness and perinephric fluid collection. The
data collected from 100 patients were compiled and using statistical tools were analysed.

**Results**

Of the 100 patients taken up for study 16 patients had mild thrombocytopenia, 21 had moderate thrombocytopenia, 38 had severe thrombocytopenia, 12 had severe thrombocytopenia. Only 6% had high haematocrit. 30 patients had bleeding manifestations. 31 patients had normal gall bladder wall thickness (GBWT). 62 patients had increased GBWT in the range of 4 to 6 mm. 7 patients had GBWT more than which is a sign of severe plasma leakage and they all had complications of bleeding, hypotension and features of multi-organ dysfunction.

**Conclusion**

Gall bladder wall thickness is an excellent tool or monitoring and assessing the severity of dengue fever. It is relatively easy and non-invasive test that can be used even by physicians with training. Haematocrit value alone may not be useful. Ultrasonogram is a good synergetic tool in effective management of dengue as it can pick up evidence of plasma leakage at an early stage.

**Key words:**

dengue, dengue hemorrhagic fever, dengue shock syndrome, plasma leakage, gall bladder wall thickness, multi-organ dysfunction syndrome.