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HEPATIC ENZYMES STATUS IN PATIENTS WITH DENGUE INFECTION

Paediatrics

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ABSTRACT

Dengue infection is known to elevate the liver enzymes based on the clinical presentation, infection, and is more common in patients with severe dengue. Awareness of these manifestations of hepatic involvement in dengue may be helpful in arriving at early diagnosis and avoiding morbidity and mortality. Since our hospital is tertiary care hospital, we do see a lot of children with dengue infections including those with atypical manifestations. So, an attempt has been made to study hepatic enzymes status and its prognostic significance in children with dengue virus infection.

KEYWORDS

SGOT, SGPT, LFT, Dengue.

INTRODUCTION:

Dengue infection is known to elevate the liver enzymes based on the clinical presentation, infection, and is more common in patients with severe dengue. Awareness of these manifestations of hepatic involvement in dengue may be helpful in arriving at early diagnosis and avoiding morbidity and mortality. Since our hospital is tertiary care hospital, we do see a lot of children with dengue infections including those with atypical manifestations. Mildly elevated liver enzymes have been reported in dengue infection[1,2,3]. Dengue infection leads to liver parenchyma involvement which 7 releases these markers into the blood. The significance of elevated liver enzymes in dengue infection is that it is an early marker of dengue infection .It can also be used as a predictor for assessing the disease severity and higher the levels of liver enzymes poorer is the prognosis of the disease[4,5]. Most of the studies showed that unlike other viral infections, in dengue the rise of SGOT is usually more than SGPT and is believed to be due to release from the damaged myocytes. In view of this biochemical pattern, it is possible to confuse liver involvement in dengue infection with typical acute viral hepatitis, especially in countries where outbreaks of hepatitis A and E are common[6,7]. However, the presence of thrombocytopenia and persistence of fever with elevated hepatic enzymes should help to make a diagnosis of dengue infection[7,8].

Awareness of these manifestations of hepatic involvement in dengue may be helpful in arriving at early diagnosis and avoiding morbidity and mortality. Since our hospital is tertiary care hospital, we do see a lot of children with dengue infections including those with atypical manifestations. So, an attempt has been made to study hepatic enzymes status and its prognostic significance in children with dengue virus infection.

AIMS AND OBJECTIVES:

Compare Hepatic Enzyme status in Dengue.

MATERIALS AND METHODS:

METHODOLOGY

The present study was conducted in the Department of Pediatrics The Oxford Medical College, Hospital and Research Center, Bangalore. 120 patients were chosen for the study.

The study was done in 30 patients who were admitted with Dengue Positive.

Inclusion Criteria:

1. Cases confirmed with Dengue with Antigen sensitive tests.
2. Cases with Liver manifestations confirmed by LFT

Exclusion Criteria:

1. Patients put on hepato-toxic drugs and other immunosuppressant drugs
2. Any other forms of liver disease.

RESULTS:

Table 1: Age

Total	Mean Age	SD
120	11.34 years	± 5.23 years

Table 2: Sex Distribution

Total	Male	Female
120	79	41

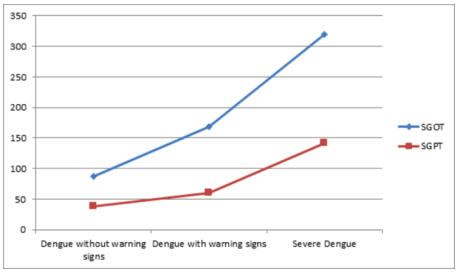
Table 3: Spectrum of Dengue

Spectrum	Frequency
Dengue without warning signs	79
Dengue with warning signs	43
Severe Dengue	08

Table 4: Enzyme

Spectrum	SGOT (Mean)	SGPT (Mean)
Dengue with warning signs	79.21	37.47
Dengue without warning signs	171.84	69.46
Severe Dengue	326.57	152.56

Graph 1: Enzymes



DISCUSSION:

Dengue is fast emerging pandemic-prone viral disease in many parts of the world. Dengue flourishes in urban poor areas, suburbs and the countryside but also affects more affluent neighbourhoods in tropical and subtropical countries.Dengue is a mosquito-borne viral infection causing a severe flu-like illness and, sometimes causing a potentially lethal complication called severe dengue. The incidence of dengue has increased 30-fold over the last 50 years. Up to 50-100 million infections are now estimated to occur annually in over 100 endemic countries, putting almost half of the world's population at risk.Severe dengue (previously known as dengue haemorrhagic fever) was first recognized in the 1950s during dengue epidemics in the Philippines and Thailand. Today it affects Asian and Latin American countries and has become a leading cause of hospitalization and death among children and adults in these regions.The full life cycle of dengue fever virus involves the role of mosquito as a transmitter (or vector) and humans as the main victim and source of infection. The dengue virus (DEN) comprises four distinct serotypes (DEN-1, DEN-2, DEN-3 and DEN-4) which belong to the genus Flavivirus, family Flaviviridae. Distinct genotypes have been identified within each serotype, highlighting the extensive genetic variability of the dengue serotypes. Among them, "Asian" genotypes of DEN-2 and DEN-3 are frequently associated with severe disease accompanying secondary dengue infections. The *Aedes aegypti* mosquito is the main vector that

transmits the viruses that cause dengue. The viruses are passed on to humans through the bites of an infective female *Aedes* mosquito, which mainly acquires the virus while feeding on the blood of an infected person.

The degree of liver dysfunction in children with dengue infections varies from mild injury with elevation of transminase activity, hepatomegaly (tender/non tender) to severe injury with jaundice and fulminant hepatic failure. The elevation of liver enzymes varies according to the type of clinical presentation of dengue infection, and is more common in patients with severe dengue[9,10].

CONCLUSION:

SGOT is significantly elevated in severe dengue cases than SGPT.

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