ORIGINAL RESEARCH PAPER

Orthopaedics

A STUDY OF HEPATIC ENZYMES STATUS IN PATIENTS WITH DENGUE INFECTION:

KEY WORDS: Hepatic Enzyme, Dengue, Fever.

Dr.Princy Joseph* Associate Professor; Azeezia Institute of Medical Science and Research Kollam *Corresponding Author

ABSTRACT

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.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.

Introduction:

Mildly elevated liver enzymes have been reported in dengue infection1,2,3. 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 disease4,5. 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 common6,7. However, the presence of thrombocytopenia and persistence of fever with elevated hepatic enzymes should help to make a diagnosis of dengue infection7,8.

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:

To study hepatic enzymes status in patients with dengue infection.
Materials and Methods:

METHODOLOGY

The present study was conducted in the Department of Pediatrics Azeezia Institute of Medical Science and Research Kollam during the study period from May 2017 to April 2018.

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

Inclusion Criteria:

1. Cases confirmed with Dengue
2. Cases with Liver manifestations

Exclusion Criteria:

1. Patients put on hepato-toxic drugs
2. Congenital liver disease.

Results:

Table 1: Age

Total	Mean Age	SD
30	9.78 years	± 1.35 years

Table 2: Sex Distribution

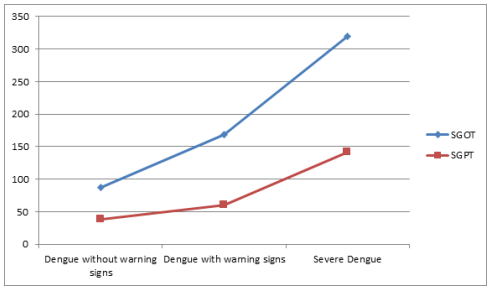
Total	Male	Female
30	11	19

Table 3: Spectrum of Dengue

Spectrum	Frequency
Dengue without warning signs	21
Dengue with warning signs	07
Severe Dengue	02

Table 4: Enzyme

Spectrum	SGOT	SGPT
Dengue without warning signs	88	38
Dengue with warning signs	168	61
Severe Dengue	320	142



Graph 1: Enzymes

Discussion:

Dengue epidemics are known to have occurred over the last three centuries in tropical, subtropical and temperate areas of the world. In spite of multiple dengue strain endemicity and countrywide invasion of Aedes aegypti, till very late India remained a silent zone, however by late eighties this scenario started changing beginning from Surat in 1988, sharp outbreaks of dengue have occurred all over the country, in last decades many cities: Delhi, Kolkata, Bangalore, Chennai, Jaipur, Gwalior have suffered of dengue epidemic. Dengue fever has been reported from India over a long time, but dengue hemorrhagic fever (DHF) was first reported in 1963 from Calcutta city. Since then several outbreaks of dengue fever have been reported from India with a major epidemic of dengue hemorrhagic fever that occurred in Delhi in 1996 when 10252 cases and 423 deaths were reported. The number of DF/DHF cases and deaths reported since the epidemic has been low till 2002 but again has risen from 2003. The case fatality has been above 21% for the last 10 years. The global prevalence of dengue has grown dramatically in recent decades. The disease is now endemic in more than 100 countries in Africa, Americas, the eastern Mediterranean, South East Asia and western pacific. South East Asia and western pacific are most seriously affected. Nearly 2.5 billion people are at risk of dengue. WHO currently estimates there may be 50 million cases of dengue infection worldwide every year. During epidemics of dengue, attack rates among susceptible are often 40-50%, but may reach 80-90%. An estimated 500,000 cases of dengue infection require hospitalization each year, of which very large populations are children. At least 2.5% cases die,

although case fatality could be twice as high. Without proper treatment DHF case fatality can exceed 20%. Dengue viral infections are known to present a diverse clinical 4 spectrum, ranging from asymptomatic illness to severe dengue. Unusual manifestations of dengue infections such as encephalitis, Gullian Barre syndrome, hemolytic uremic syndrome, dengue hepatitis, myocarditis, acute respiratory distress syndrome are 5 recognized and they have become more common in recent years. Hepatic injury with dengue infection has been described since 1967. 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 dengue9,10,11.

Conclusion:

Elevated hepatic enzymes (in hundreds) are consistent features in dengue infection. SGOT is significantly elevated in severe dengue cases than SGPT. In endemic areas elevated liver enzymes should alert the clinician to suspect severe dengue which in turn helps to bring down morbidity and mortality.

REFERENCES:

1. Ashok S Kapse. Dengue Illnesses. A Parthasarathy, MKC Nair, PSN Menon.IAP Textbook of Pediatrics 3rd Edition 2006.247-254.
2. Dengue. Guidelines for classification, diagnosis, treatment, prevention and control, Geneva, World Health Organization,2009, WHO/HTM/NTD/DEN/2009.
3. Scott B. Halstead. Dengue Fever and Dengue Hemorrhagic Fever:Behrman R.E., Kliegman R.M, Jenson HB, Bonita F. Stanton . Nelson Textbook of Pediatrics, 18th Edition,Philadelphia:Saunders,2008.1412-1414.
4. Rashmi Kumar, Piyush Tripathi, Sanjeev Tripathi, Alok Kanodia, Vimala Venkatesh. Prevalence of dengue infection in North Indian Children with acute hepatic failure, Annals of Hepatology 2008; 7(1): January –March:59-62
5. George R, Lum LCS. Clinical spectrum of dengue infection in Gubler DJ and Kuno G Eds Dengue and Dengue hemorrhagic fever. Washington Cab International, 1997.
6. Viroj Wiwanitkit. Liver dysfunction in dengue Infection,an analysis of previously published Thai cases. J Ayub Med Coll Abbottabad 2007;19(1):10-12.
7. Srivenu Itha, Rajesh Kashyap, narendra Krishnani, viveka Saraswat, gourdas Choudhari, Rakesh Aggarwal. Profile of liver involvement in dengue virus infection. The national Medical Journal of India 2005;vol 18 (3).
8. Seneviratne SL, Malavige GN, de Silva HJ. Pathogenesis of liver involvement during dengue viral infections. Trans R Soc Trop Med Hyg 2006; 100: 608-614.
9. M Narayanan, MA Arvind, P Ambikapathy,R prema, MP Jeyapaul. Dengue feverClinical and laboratory parameters associated with complications. Dengue Bulletin Vol 27,2003.
10. Srivenu Itha, Rajesh Kashyap, narendra Krishnani, viveka Saraswat, gourdas Choudhari, Rakesh Aggarwal. Profile of liver involvement in dengue virus infection. The national Medical Journal of India 2005;vol 18 (3).
11. K jagadish, puja jain, et al. Hepatic involvement in dengue fever in children iran J Pediatr. Jun 2012; 22(2): 231–236.