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HEPATIC ENZYMES STATUS IN PATIENTS WITH DENGUE INFECTION: DOES THE PHYSIOLOGY OF THE ORGAN GET ALTERED?

Physiology

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ABSTRACT

Dengue causes any alteration in the normal physiology of the liver is the question that has been asked by many. Direct observation is not presented. Any changes in the severity of the disease affect the physiology of the liver in an adverse manner. So an attempt has been made to study the hepatic enzyme values and whether it reflects the prognosis is checked in this study.

KEYWORDS

Physiology, LFT, SGPT, SGOT, Dengue, Infection

INTRODUCTION:

Liver function tests (LFTs or Lfs), also referred to as a hepatic panel, are groups of blood tests that provide information about the state of a patient's liver.[1] These tests include prothrombin time (PT/INR), aPTT, albumin, bilirubin (direct and indirect), and others. The liver transaminases aspartate transaminase (AST or SGOT) and alanine transaminase (ALT or SGPT) are useful biomarkers of liver injury in a patient with some degree of intact liver function.[2][3][4] Most liver diseases cause only mild symptoms initially, but these diseases must be detected early. Hepatic (liver) involvement in some diseases can be of crucial importance. This testing is performed on a patient's blood sample. Some tests are associated with functionality (e.g., albumin), some with cellular integrity (e.g., transaminase), and some with conditions linked to the biliary tract (gamma-glutamyl transferase and alkaline phosphatase). Several biochemical tests are useful in the evaluation and management of patients with hepatic dysfunction. These tests can be used to detect the presence of liver disease, distinguish among different types of liver disorders, gauge the extent of known liver damage, and monitor the response to treatment. Some or all of these measurements are also carried out (usually about twice a year for routine cases) on those individuals taking certain medications, such as anticonvulsants, to ensure that the medications are not adversely impacting the person's liver. Dengue causes any alteration in the normal physiology of the liver is the question that has been asked by many.

So an attempt has been made to study the hepatic enzyme values and whether it reflects the prognosis is checked in this study.

Aims and Objectives:

Hepatic Enzyme as a prognostic evaluator in Dengue.

MATERIALS AND METHODS:

METHODOLOGY

The present study was conducted in the Department of Physiology in colobration and help of the Department of Medicine , in A.J.Institute of Medical Sciences from Dec 2008 to Nov 2012.

60 patients were chosen for the study.

The study was done in 60 patients who were admitted with Dengue Positive.

Inclusion Criteria:

1. Cases confirmed with Dengue with Antigen antibody reaction test with specificity of more than 90.
2. Cases with elevated liver enzymes.

Exclusion Criteria:

1. Alcoholics
2. Patients on Hepatotoxic drugs
3. Previous Dengue infections.

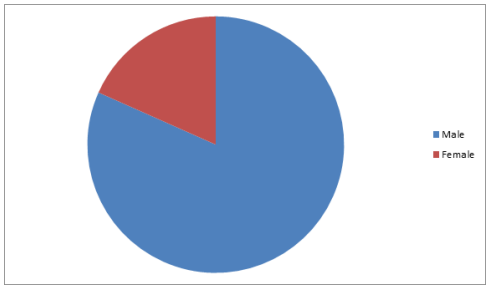
All the statistical analysis is done using the ANNOVA.

RESULTS:

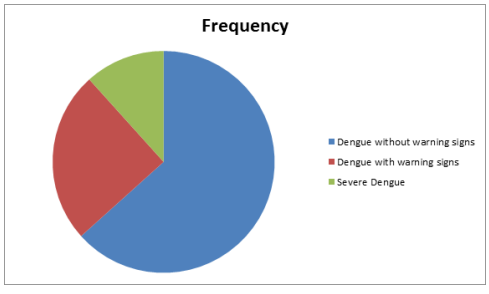
Table 1: Age

Total	Mean Age	SD
60	31.45 years	± 11.74 years

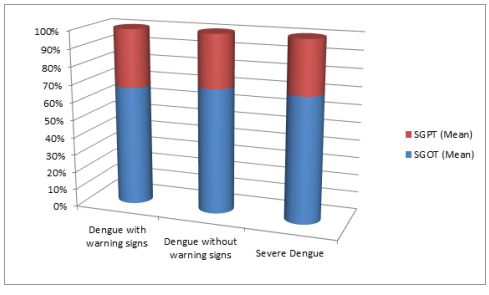
Graph 1: Sex Distribution



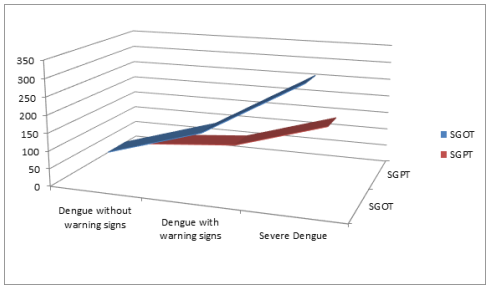
Graph 2: Spectrum of Dengue



Graph 3: SGOT vs SGPT



Graph 1: Enzymes



DISCUSSION:

Mildly elevated liver enzymes have been reported in dengue infection[1,2,3]. Dengue infection destroys the liver tissue and the

enzymes are elevated in blood that is absorbed partially or fully in the blood stream. The liver enzymes in dengue are elevated in early dengue infection and it's a rule and natural history of the disease. The enzymes can 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[5]. 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].

Dengue is an Arboviral disease which significantly effects the population of the tropical countries and India being one of the densely populated tropical countries the impact of the disease has a far more consequence. The virus is proved to have a hepato-toxic effect. Mild to moderate elevations of bilirubin, transaminases and derangements of albumin has been noted in a variet of studies all over the world[9,10]. This study defines the significance of knowing the values of elevated enzyme levels in different scenarios of the disease and also it may be a more important prognostic factor to determine the morbidity and mortality by the disease.

CONCLUSION:

Both SGOT and SGPT are significantly elevated in severe dengue cases than SGPT. But the increase of SGOT is significantly higher.

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