



ORIGINAL RESEARCH PAPER

Paediatrics

A STUDY ON CLINICAL CORRELATION AND OUTCOME OF DENGUE FEVER WITH HEPATIC DYSFUNCTION IN CHILDREN.

KEY WORDS:

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INTRODUCTION

- Dengue infection is a major public health problem in most of the tropical areas of the world with the greatest risk occurring in Indian sub-continent and other southeast Asian countries.
- There are at least 4 distinct antigenic types of dengue virus DEN 1, DEN 2, DEN 3, DEN 4 which is a member of family Flaviviridae.
- Dengue infections are known to present with a diverse clinical spectrum, ranging from asymptomatic illness to fatal outcome.
- Unusual manifestations have become more common. These include encephalitis, Guillain-Barre Syndrome, dengue hepatitis, myocarditis, and acute respiratory distress syndrome. Hepatic dysfunction varies from mild injury with elevation of transaminase activity, hepatomegaly to severe damage with jaundice and fulminant hepatic failure.
- Most data reported on abnormal liver function in dengue are retrospective, therefore this observational study with new data was undertaken to assess the spectrum of hepatic involvement in children with dengue infection at a tertiary care center.
- As hepatic dysfunction in dengue is transient and reversible, early identification can reduce life threatening complications.

AIM

To access clinical features and severity of dengue infection in co relation with hepatic dysfunction in children admitted in ward with childhood dengue infection.

OBJECTIVE

To study hepatic dysfunction in childhood dengue infection and to study clinical co-relation like severity, clinical features, and outcome.

METHODOLOGY

- Seventy children who were admitted in ward with dengue infection and diagnosed by serologically proven cases of dengue were studied from pediatrics department, PDU medical college Rajkot.
- Any child with associated infections known to cause hepatic involvement like malaria, enteric fever, hepatitis, leptospirosis was excluded.
- Written informed consents were taken from parents or guardian of children prior to study.

Then dengue seropositive patients are selected and examined clinically for hepatomegaly and jaundice and subjected to complete blood count, liver function tests, ultrasound abdomen, PT, APTT, Widal, HBsAg, HCV and data entered into excel sheets and analyzed.

Inclusion Criteria

Children admitted in ward of age 2months to 12 years with serologically proven cases of dengue, Pediatric department, PDU Medical college, Rajkot.

Exclusion Criteria

- Child with associated infections known to cause hepatic

involvement like malaria, enteric fever, hepatitis, leptospirosis.

- Children with dengue like illness but serologically negative.
- Children with negative consent from parents/guardians.

RESULTS

This study was conducted on 70 serologically IgM dengue antibody positive cases between age group 2 months to 12 years of age fulfilling the WHO criteria for the diagnosis of dengue infection.

Of the 70 patients hospitalized with dengue infection, 29 were classified as having Probable Dengue, 33 were with Warning Signs and 8 were suffering from Severe Dengue.

PROBABLE DENGUE (29 CASES)

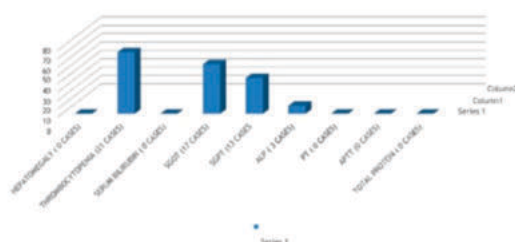


Figure 1. Distribution Of Cases According To Involvement Of Hepatic Dysfunction Based On Investigations In Patients Of Probable Cases Of Dengue

DENGUE WITH WARNING SIGNS (33 CASES) :

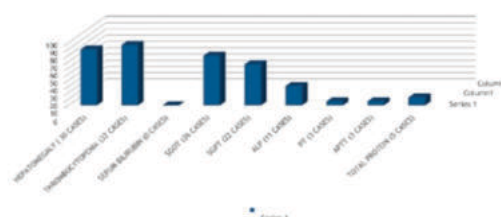


Figure 2: Distribution of cases according to involvement of hepatic dysfunction based on investigations in patients with dengue with warning signs

SEVERE DENGUE (8 CASES):

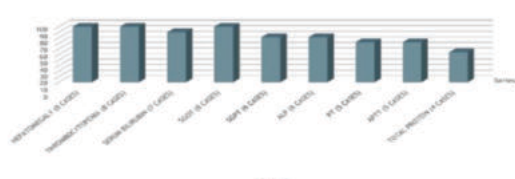


Figure 3: Distribution Of Cases According To Hepatic Dysfunction Based On Investigations In Severe Dengue Patients

DISCUSSION

- Dengue fever has a manifestation ranging from asymptomatic to life threatening complications.
- Jaundice is associated with poor prognosis. It is associated with fulminant hepatic failure. In this study, serum total bilirubin was raised in 10% of subjects with severe dengue infection.
- Hypoalbuminemia may be due to liver injury and capillary leakage. In current study 12% had hypoalbuminemia. In another study by Jagadish war et.al, hypoalbuminemia was observed in 66% of the cases [8].
- Elevation of AST was more compared to ALT in the present study and similar observations were made by others also.
- This differs from the pattern seen in viral hepatitis, in which ALT levels are usually higher than or equal to AST levels.
- Two cases of severe dengue expired secondary to DIC. Injection vitamin K was given to the children who had elevated PT and APTT. Fresh whole blood transfusion was required in 4 children in view of falling hematocrit.

CONCLUSION

A significant rise of liver enzymes helps in recognition of severe forms of dengue infection. As hepatic dysfunction in Dengue is transient and reversible, early identification of the same should help to reduce life threatening complications.

Serial liver function tests can help in early detection of fulminant hepatic failure. This can help to reduce Morbidity and Mortality.

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