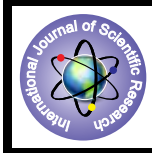


Comparative Study of 112 Cases of Dengue Fever Out of Which 8 Cases of Dengue Mortality in Outbreak of 2012 At Tertiary Care Centre of Smt. N.H.L. Municipal Medical College, Ahmedabad, Gujarat, India.



Medical Science

KEYWORDS : Dengue, mortality, epidemic 2012

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ABSTRACT

Dengue virus is flavi virus causing dengue fever & its complications. Aim of our study is to correlate clinical, USG & pathological findings of dengue fever which are useful for early diagnosis & proper management of dengue fever to reduce morbidity & mortality. We analysed 800 suspected cases of DF, out of which 112 cases were serologically positive & out of seropositive cases death occurred in 8 cases. In our study Dengue virus infection presented most commonly in age group of 0-10 years, with most common clinical feature of fever & hepatomegaly with most common USG findings of thick GB wall, hepatomegaly & splenomegaly, with APC most commonly in range of 25,000-1 lakh & WBC most commonly in range of 4000-6000 mainly in month of October 2012. Early detection by serological testing mainly NS-1 Ag detection in all suspected cases & early supportive management can reduce morbidity, complications & mortality.

Introduction

Dengue virus is a flavivirus found in areas of the tropic & sub-tropics. There are four distinct but antigenically related serotypes of dengue viruses & transmission is by mosquito, principally *Aedes aegypti* & *Aedes albopictus*. Infection with one serotype confers lifelong homotypic immunity and a brief period of heterotypic immunity, but each individual can eventually be infected by all 4 serotypes.¹

WHO estimates that 50-80 million cases of dengue fever occur worldwide each year, including a potentially deadly form of the disease called dengue hemorrhagic fever & dengue shock syndrome.² Early diagnosis of dengue shock syndrome is very important, as patients may die within 12 to 24 hours if appropriate treatment is not administered.

Dengue has become a major international public health concern in recent years. The aims of this study are early diagnosis of undifferentiated fever, to decrease mortality due to dengue fever, to correlate the clinical, USG & pathological findings of dengue fever which are useful for early diagnosis & proper management of dengue fever to reduce morbidity & mortality.

Vivid spectrum of dengue fever was analyzed in suspected 800 suspected cases of dengue fever, out of which 112 were serologically positive [NS1(52%), IgM Antibodies (41%) & IgG Antibodies (26%)].

We have included sero-positive cases of dengue fever only. NS1 is the antigen detected even before the radiological signs are seen. Ig M Antibodies & radiological signs almost run parallel. The patients were classified according to age, gender, symptoms & signs, tests & associated co morbidities & mortality. We have included dengue fever cases from January 2012 to December 2012. Clinical manifestations are in forms of undifferentiated fever, Dengue fever syndrome & Dengue hemorrhagic fever. Dengue shock syndrome is included in Dengue hemorrhagic fever. Mortality rate was 7.14 % in our study.

Method & material

We analysed 800 suspected cases of Dengue fever, out of which 112 cases were serologically positive & out of seropositive cases death occurred in 8 cases. We have taken time period from January-2012 to December 2012. We compared following features in treated & deceased patients.

Clinical features, Pathological (Hematological, Serological, Biochemical findings), USG findings. In this triad of clinico-ultrasonographic-pathological findings, detection of NS-1 antigen is first one to be detected as a confirmatory test.

In serological testing of dengue fever, we considered detection of NS-1 antigen, IgM antibodies & Ig G antibodies.

Table No-1

	Total No of cases	Seropositive cases	Seronegative cases
Number	800	112	688
Percentage	100%	14%	86%

Table No-2

Total no of seropositive cases	No of deaths in seropositive cases
112	8 (7.14%)

In study population age ranged between 5 months to 75 years & age & sex distribution of diseased & deceased cases is as follows.

Chart No-1

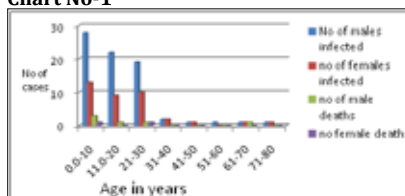


Figure 1- Age distribution of Dengue cases

Dengue cases most commonly occurred in October 2012 with maximum mortality in March, October & November 2012.

Chart No-2

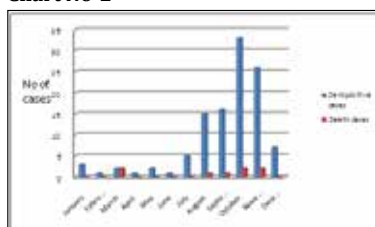


Figure 2- Monthwise distribution of Dengue cases

In dengue cases platelet & WBC counts were most commonly in range of 25,000-1 lakh & 4000-6000 respectively while in 8

cases of death platelet & WBC counts were most commonly in range of 0-75,000 & 8000-10000 respectively.

Chart No-3

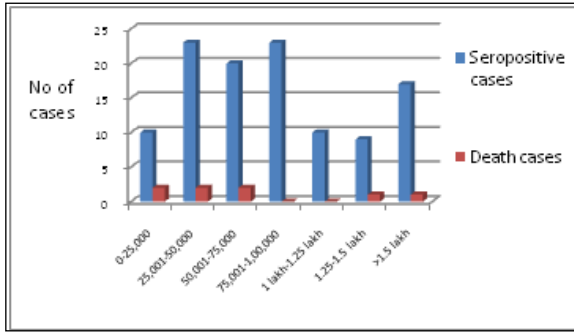


Figure 3- Platelet counts of dengue cases

Chart No-4

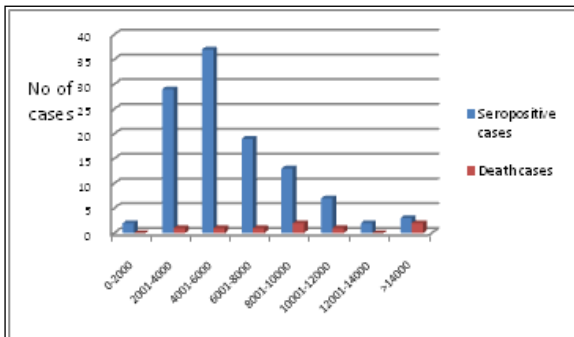


Figure 4-WBC counts of dengue cases

In dengue cases most common USG findings were thick gall bladder wall & splenomegaly while in 8 deceased cases most common USG finding was hepatomegaly.

Chart No-5

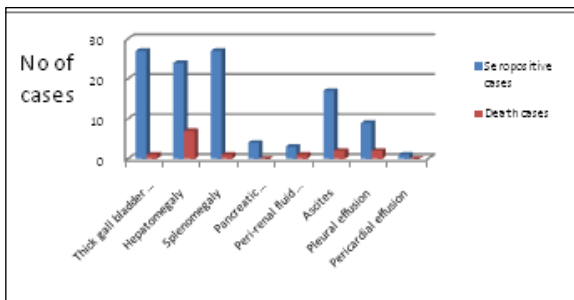


Figure 5- USG findings of dengue cases

In dengue cases most common features were fever & headache while in 8 deceased cases most common features were fever, shock & hepatomegaly.

Chart No-6

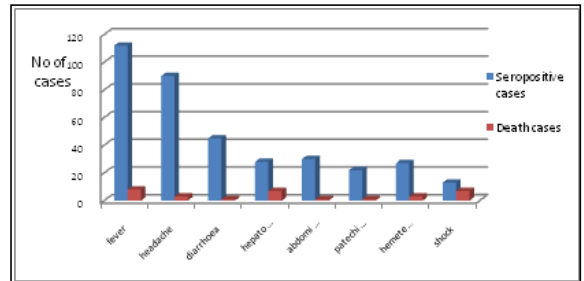


Figure 6- Clinical features of dengue cases

Discussion

We studied 800 Dengue cases out of which 112 were serologically positive & death occurred in 8 cases.

Out of 8 deaths occurred due to Dengue fever, 6 cases were Ig G antibody positive & 8 Cases were Ig M antibody positive .

In study by Parvati et al most common age group affected was 5-10 years while in our study most common age group affected was 0-10 years.³

In study by Halstaed et al most common clinical features were fever & heaptomegaly in our study most common clinical features were also fever & hepatomegaly. ⁶

In study by Mia MW et al most common USG findings were hepatomegaly, & fluid collection in body cavities while in our study most common USG findings were thick gall bladder wall, hepatomegaly & splenomegaly.⁵

Most common causes of death in our study were Dengue hemorrhagic fever & Dengue shock syndrome.

In Our study thrombocytopenia was detected in 84 % (95 cases) of total sero positive cases as compared to 57 % (57 cases) cases by Mia MW et al. ⁵

In study by Ritwika et al most cases were encountered in month of august 2012 while in our study most cases were encountered in october 2012.⁴

In Our study Mortality Rate was 7.14 % which is higher as compared to Ritwika et al in which it was 3 %.

Dengue NS-1 Ag is known as day 1 test which is rapid visual test for dengue.

Detection of NS-1 antigen & differential detection of Ig M antibodies & Ig G antibodies against dengue virus is helpful in early diagnosis.

Early detection by serological testing is must in all suspected dengue cases & early fluid replacement therapy can reduce morbidity, complication & mortality.

Mortality & morbidity in dengue fever can be reduced by earliest diagnosis, supportive treatment which gives promising results.

Awareness & education are necessary in epidemic areas & in community.

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