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Original Research Article

The Study of Clinical Manifestations, Trend and Outcome of All Confirmed Dengue Cases Admitted in a Tertiary Care Hospital

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ABSTRACT

Aims and Objectives: To study the common clinical features, progress of disease, grades of severity and outcomes in all confirmed dengue cases admitted in a tertiary care hospital. **Materials & Methods:** A total of 115 cases, identified as suspected dengue by clinical suspicion according to WHO criteria for the diagnosis of dengue, were registered in the study. Detailed clinical history and examination were performed and recorded on a pre-designed Performa after taking their written consent. Acute-phase blood samples were collected from all probable case of dengue infection patients. Sera of all cases were tested for dengue NS1 antigen and anti-dengue immunoglobulin IgM and IgG by cassette ELISA test using a commercial kit (J.Mitra).
Result: During the period of study total 115 Dengue suspected patients were admitted. Out of these 54 patients (38 male and 16 female with a ratio 2.375:1) were found to have positive NS1 antigen. The mean age of patients was 37.5±10 years. The most common clinical signs myalgia 96.29%, headache (85.18%), skin rash (61.11%) was sown in many cases. 83.33% patient showed Thrombocytopenia, 77.77% Leucopenia, 33.33% Anemia and prolonged SGPT showed in 40.47%. Conclusion: The epidemic of dengue fever in Barabanki, India 2013 showed slight difference in clinical features and course of disease compared to epidemic in other regions. They indicate the need for continuous sero-epidemiological surveillance.

Key words: Dengue, DHF, DSS, Skin rash, Epidemic

INTRODUCTION

Dengue is a major international health problem in tropical and subtropical countries. Dengue fever is a mosquito born viral disease. It is caused by one of the four serotypes of dengue virus which belong to the family *Flaviviridae.* The virus is transmitted by Aedes Egypt and a few other members of Aedes species. [1]

The dengue fever disease was first found and recorded in Chinese medical Encyclopedia in 1992. After II[nd] world war the first major epidemic of severe and fatal form of disease occurred in South East Asia. [2] Data from India and Bangladesh suggests

increasing incidence of disease with all four serotypes. [3] Dengue infection was first documented from Punjab in 12 out of 174 samples collected in 1968 and 1978. [4] The first epidemic DHF was recorded from Civil Hospital, and Aga Khan University Hospital, Karachi in 1994-95, published in 1997-98. [3]

The WHO estimates that presently about two fifths of the world population is at risk for this viral infection. [5] In India, since the first outbreak in Kolkata in 1963, [6] more than 60 outbreaks have been reported from all over the country. [7] During September-December 2003, an epidemic of febrile illness with hemorrhagic manifestations occurred in Lucknow. [8]

India is one of the seven countries in the South-East Asia region regularly reporting incidence of Dengue fever and Dengue Hemoregic fever outbreaks due to its high incidence which constantly threatens the health care system. The first confirmed report of dengue infection in India was detected in 1940s. [9] In Kolkata, Delhi and Chennai time to time several form of the disease i.e. DHF, DSS have been reported from India. [10-13] During all these epidemics infection occurred in active adults in the age group of 16-60 years. [14, 15] The common sign and symptoms observed were fever, headache, myalgia, arthralgia and bleeding manifestations have also been observed.

The exact clinical profile is important for patient management and thus crucial for saving life. This study was undertaken to evaluate clinical features of serologically confirmed dengue fever cases in adults and to identify common clinical features, progress of disease and grades of disease encountered in patients.

Aims and Objectives

- To study the clinical manifestations, trend and outcome of all confirmed dengue cases admitted in a tertiary care hospital.
- To study of serologically confirmed Dengue fever in order to identify common clinical features, progress of disease, grades of severity and outcomes.

MATERIALS AND METHODS

The study was undertaken as a hospital- based descriptive study with prospective data collection. The study was done in Department of Microbiology, Hind Institute of Medical Sciences, Barabanki, Uttar Pradesh, India, during the periods of January 2013 to December 2013. A total of 115 cases, identified as suspected dengue by clinical suspicion according to WHO criteria for the diagnosis of dengue, were registered in the study. Detailed clinical history and examination were performed and recorded on a pre-designed Performa after taking their written consent.

Acute-phase blood samples were collected from all probable case of dengue infection patients. Sera of all cases were tested for dengue NS1 and anti-dengue immunoglobulin IgM and IgG by cassette ELISA test using a commercial kit (J. Mitra).

All the clinical parameters and complications were analyzed using Pearson correlation co-efficient by using statically SPSS 11.0 software.

RESULT

During the period of study total 115 Dengue suspected patients were admitted. Out of these 54 patients (38 male and 16 female with a ratio 2.375:1) were found to have positive NS1 antigen. There ages from 15 to 60 years with a mean age of 37.5±10 years.

The entire patient had fever at a time of admission. The symptoms of the disease are tabulated in table no.2. The most

common clinical signs myalgia 96.29%, headache (85.18%), skin rash (61.11%) was sown in many cases.

Table 1: Age & Sex Distribution of Patients with and without dengue fever.

Age	Male (Negative)	Male (Positive)	Female (Negative)	Female (Positive)	Total (Negative)	Total (Positive)
<15	07	02	02	02	09	04
16-30	13	23	06	06	19	29
31-45	13	10	05	05	18	15
46-60	07	01	02	03	09	04
<60	03	02	03	00	06	02
Total	43	38	18	16	61	54

Table 2: Symptoms and complications of dengue fever

Symptoms	Patients (n=54)
Fever	54 (100%)
Vomiting	18 (33.33%)
Headache	46 (85.18%)
myalgia	52 (96.29%)
Abdominal pain	15 (27.77%)
Breathlessness	8 (14.81%)
Skin rash	33 (61.11%)
Bleeding tendency	2(3.70%)
Complication	
Hypatic disfunction	8 (14.81%)
Renal failure	0 (00%)
Multi organ failure	0 (00%)
Encephalopathy	0 (00%)
ARDS	1 (1.85%)

Table 3: Distribution of Hematology, Biochemistry & Serology laboratory data.

Serum value	Number of Patients n=54
Anamemia (Hb<10)	20 (37.03%)
Leucopenia (TLC<4000)	42 (77.77%)
Thrombocytopenia(<1,50,000)	45 (83.33%)
Neutrophelia (>60%)	35 (64.81%)
Prolonged SGPT(>35)	22 (40.74%)
Increased Hematocrit	10 (18.51%)
NS1 Antigen- Dengue	54 (100%)
IgM- Dengue	-
IgG- Dengue	-

DISCUSSION

We conducted our study from January 2013 to December 2013.We found maximum number of cases from September 2013 to December 2013. These are many studies who also reported epidemic in September- December, [8,20] While a study conducted in Dharwad 2012-2013 reported maximum number of cases in June to September. [19]

Our study include 115 patients out of them 54 were positive for NS1 Antigen. We have not detected any IgM or IgG positive cases. This can be explained by increases awareness due to previous epidemics. Total numbers of 54 cases males (38) were more than females (16). It is also reported in other studies. [1,8,16,19,20]

While both the sexes equally affected in a study conducted in a village of Chennai (ind. J Med ped.), we found mean age of patients 37.5 years. Whereas in another study maximum no. of cases were in age groups of 15-40 years. [19] The mean age was 31.5 years by (Atiya Mahbood Zapor, et al) [1] 33.9 years by (Janak et al) [8] in a study conducted in Lucknow 2003. While in another study it was found to be 47.5 years (Lee MS). [17]

In this study all cases presented with fever 100% which is also found in many studies. [1] Other common symptoms were myalgia 96.29%, Headache 85.18%, skin rash 61.11% and vomiting 33.33%. In other studies myalgia reported 68.75%, [1] 68.5%, [17] 64.6% [8] which is slightly lower than our findings.

In our study 85.1% patients had symptoms of headache while similar finding were also reported by other study conducted in Pakistan 87% [4] the incidence of headache was very low 11%. [1] Skin rashes seen in 61.11% patients in current study in other study the skin rashes was seen in 82%, 65%, 53.7%, 46.8%, 36.4%, 20.0%. [19] Vomiting and nausea reported in 33.3% cases in our study while other studies reported slightly higher incidences 47.6%,

56%. [19] Breathlessness also reported in 14.8% patients of our study. In other study it was 10.4%. [1] In other Indian Studies incidence breathlessness was slightly higher.

In this study Haemorrhagic manifestation like purpura & petechiae in to skin reported in very less no. of patients (37%). In other study reported incidence of purpura and petechiae was only 2.2% in dengue fever. While in a focal outbreak of DF in 2007 from village of Chennai no haemorahgic manifestation was recorded (Ind j Med 2007).

In our study patients had complication; most common was hepatic dysfunction 14.81% while ARDS seen in 1.85% of patients. In other study were reported hepatic dysfunction 34% , ARDS 12%. [19]

In this study 83.33% patients showed thrombocytopenia (<1,00,000/ml), Janak Kishor, et al [8] also reported 80% thrombocytopenia in 2003 epidemic in Lucknow. In Karachi thrombocytopenia reported in 86% patients. [21]

The current study showed only slight differences in the clinical symptoms and complication as compared to previous outbreak in Lucknow and other part of India and outside of India.

Surprisingly IgM & IgG antibodies were not detected in any patients which positive for NS1 antigen of DF.

CONCLUSION

All 115 patients attended Medical OPD in HIMS with suspected diagnosis of DF & DHF were included in our study. Changing climate, urbanization, in adequate waste management and in effective vector control programs is responsible for increasing incidence of vector born diseases like dengue fever.

India is a tropical country and its weather provides favorable condition for growth of Aedes Mosquito. Dengue outbreaks in India have usually occurred between August and November. We also reported maximum number of cases during this period. In our study we found significance difference in seropositivity. We detect NS1 antigen positive in all cases while we have not detecting IgM & IgG antibodies. This can be explained by increasing awareness in population regarding previous epidemic of Dengue fever. So patients turned up early before antibody appears in blood.

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