

EVALUATION OF CLINICAL PROFILE OF DENGUE FEVER AMONG CHILDREN

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ABSTRACT

Background: Dengue virus fever is a major challenge to public health, especially in South-East Asian countries. Dengue virus fever is a major emerging disease and becoming epidemic concern and major challenge to public health in India. The WHO reported that dengue viral fever has diverse clinical spectrum and annually more than 50 million cases of dengue viral fever occur in Asian countries and fatality rates were of less than 5%. **Material & Methods:** The present prospective study was conducted at department of pediatrics of our tertiary care hospital. The study was an observational study conducted during a period of 9 months or when 100 cases over. The study done at 95% confidence interval at 10% of maximum allowable error. All patients who were diagnosed with dengue fever were enrolled into the study. Clearance from hospital ethics committee was taken before start of study. **Results:** In present study, out of total study participants, based on the symptoms, the most common clinical presenting symptom was fever, which was present all patients (100%) followed by myalgia in 90%, and headache was present in 84% patients, vomiting was present in 79% patients, pain in abdomen was present in 70% patients, bleeding tendencies was present in 19% patients, purpura was present in 14% patients, oliguria was present in 2% patients, and the least common symptoms presented were convulsions 1% and altered sensorium in 1%. **Conclusion:** We concluded from the present study that the most common presenting symptoms were fever, headache, myalgia, pain in abdomen and vomiting. The commonest signs recorded were skin rash, hepatomegaly and ascites. The most common complication found was hepatic dysfunction.

Keywords: Dengue fever, Clinical profile, Complications.

INTRODUCTION

Dengue virus fever is a major challenge to public health, especially in South-East Asian countries. Dengue virus fever is a major emerging disease and becoming epidemic concern and major challenge to public health in India (1). Worldwide the burden of dengue viral fever has tends to increase, reported in various studies (2). The WHO reported that dengue viral fever has diverse clinical spectrum and annually

more than 50 million cases of dengue viral fever occur in Asian countries and fatality rates were of less than 5% (3). Dengue fever is a vector borne disease caused by *Aedes aegypti*, a daytime biting mosquito (4). Dengue fever characterized by biphasic fever, myalgia or arthralgia, retro-orbital pain, rash and lymphadenopathy (5). Dengue viruses has 4 distinct

types and belong to family *Flaviviridae*. The incubation period of dengue fever is 10 days (6).

The WHO reported that in the South-East Asia region dengue, India is in the top seven countries that had very high prevalence of dengue viral fever (7). Therefore, in India dengue viral fever is kept under constant surveillance and monitoring due to its high prevalence, by the public health care system (8). The many previous studies reported very high morbidity and mortality rates from dengue viral diseases in all the age groups population (9). The similar the fatal form of dengue viral disease is reported from all over the India from time to time (10). The clinical signs and symptoms were fever, myalgia, retro orbital pain, rash, headache, arthralgia and bleeding manifestations and sometimes shock have been also reported. The exact clinical diagnosis among children is a significant tool for treatment and for saving the patient's life (11). We conduct the present study to evaluate the clinical profile of dengue fever among children because in our area, prevalence of Dengue fever is high & people has fear of death when they hear cases of dengue occurring nearby.

MATERIALS & METHODS

The present prospective study was conducted at department of paediatrics of our tertiary care hospital. The study was an observational study conducted during 9 months or when 100 cases over. The study was done at 95% confidence interval at 10% of maximum allowable error. The sample size of 100 patients was calculated by epi info software. All patients who were diagnosed with dengue fever were enrolled into the study. Clearance from hospital ethics committee was taken before start of study. Written informed consent was taken from each study participant and parents.

All the study participants with signs and symptoms of dengue fever and diagnosed with dengue NS1 antigen and dengue IgM antibody positive by ELISA technique were enrolled in present study by simple random sampling. We exclude the children from the present study who were positive for IgG dengue antibody and children who had mixed positive lab results for enteric fever and malaria with dengue fever.

All the clinical signs and symptoms of dengue fever were recorded on a predefined study proforma which includes signs and symptoms, all the relevant investigations, complications, duration of hospital stay, treatment given and outcome. All the recorded data was entered in an Excel spread sheet on Microsoft Excel 2016. The statistical analysis was done using the Statistical software package SPSS v22 and Epi Info v7.2. A p-value <0.05 with 95% confidence intervals were considered statistically significant.

RESULTS

In present study we enrolled a total of 100 children who were diagnosed with dengue viral fever and their presenting signs and symptoms of dengue fever were recorded. All the study participants were below 18 years of age. Out of the total majority of study participants were in the age group of 10 - 18 years 40% which was followed by 34% in the 6-10 years age group. In the present study males 54% were more common than females 46%. (Table 1)

Table 1: Distribution of study subjects according to the age and gender.

Age in years	Male	Female	Total
0 - 1	1	0	1
1 - 3	2	4	6
3 - 6	11	8	19
6 - 10	15	19	34
10 - 18	25	15	40
Total	54	46	100

In present study, out of total study participants, based on the symptoms, the most common clinical presenting symptom was fever, which was present all patients (100%) followed by myalgia in 90%, retro orbital pain and headache was present in 84% patients, vomiting was present in 79% patients, pain in abdomen was present in 70% patients, bleeding tendencies was present in 10% patients, purpura was present in 7% patients, oliguria was present in 2% patients, and the least common symptoms presented were convulsions 1% and altered sensorium in 1%. (Table 2)

Table 2: symptoms wise distribution of study subjects

Symptoms	No. of patients
Fever	100%
Myalgia	90%
Retro-orbital pain	84%
Vomiting	79%
Headache	84%
Pain abdomen	70%
Bleeding tendencies	19%
Petechiae/Purpura	14%
Oliguria	2%
Altered sensorium	1%
Convulsions	1%

In present study, out of total study participants, based on the signs, the most common presenting sign was skin rash present in 26% patients and followed by ascites in 21% patients, hepatomegaly was present in 16% patients, tourniquet test was positive in 11% patients and least common presenting sign was splenomegaly 6% shown in table 3.

In present study, out of total study participants, based on the complications of dengue, the most common complication recorded in present study was hepatic dysfunction in 21% patients which was followed by shock in 16% patients and pleural effusion in 12% patients, renal failure was seen in 5% patients and severe haemorrhage was seen in 1% patient. The least complication presented was encephalitis. There was no morbidity was found in the present study. Average duration of hospital stay was recorded 6 - 14 days. (Table 4)

Table 3: signs wise distribution of study subjects

Signs	Number of Patients
Skin rash	26%
Ascites	21%
Hepatomegaly	16%
Tourniquet test (positive)	11%
Splenomegaly	6%

Table 4: Complications of dengue fever.

Complications	Number of patients
Hepatic dysfunction	21%
Shock	16%
Pleural effusion	12%
Renal failure	5%
Severe haemorrhage	1%
Encephalitis	1%

DISCUSSION

In present study we enrolled a total of 100 children who were diagnosed with dengue viral fever and their presenting signs and symptoms of dengue fever were recorded. All the study participants were below 18 years of age. Out of the total majority of study participants were in the age group of 10 - 18 years 40% which was followed by 34% in the 6-10 years age group. In the present study males 54% were more common than females 46%. Similar results were obtained in a study conducted by Cecilia D et al among children with dengue viral fever. They found nearly similar results with present study (12). Similar results were obtained in a study conducted by Faridi M et al among children with dengue viral fever. They found nearly similar results with present study (13).

In present study, out of total study participants, based on the symptoms, the most common clinical presenting symptom was fever, which was present all patients (100%) followed by myalgia in 90%, retro orbital pain and headache was present in 84% patients, vomiting was present in 79% patients, pain in abdomen was present in 70% patients, bleeding tendencies was present in 19% patients, purpura was present in 7% patients, oliguria was present in 2% patients, and the least common symptoms presented were convulsions 1% and altered sensorium in 1%. Similar results were obtained in a study conducted by Kaur H et al among children with dengue viral fever. They found nearly similar results with present study (14). Similar results were obtained in a study conducted by Chandralekha et al among children with dengue viral fever. They found nearly similar results with present study (15).

In present study, out of total study participants, based on the signs, the most common presenting sign was skin rash present in 26% patients and followed by ascites in 21% patients, hepatomegaly was present in 16% patients, tourniquet test was positive in 11% patients and least common presenting sign was splenomegaly 6%. Similar results were obtained in a study conducted by Selvan T et al among children with dengue viral fever. They found nearly similar results with present study (16). Similar results were obtained in a study conducted by Horwarth et al

among children with dengue viral fever. They found nearly similar results with present study (17).

In present study, out of total study participants, based on the complications of dengue, the most common complication recorded in present study was hepatic dysfunction in 21% patients which was followed by shock in 16% patients and pleural effusion in 12% patients, renal failure was seen in 5% patients and severe haemorrhage was seen in 1% patient. The least complication presented was encephalitis. There was no morbidity was found in the present study. Average duration of hospital stay was recorded 6 - 14 days. Similar results were obtained in a study conducted by Sharma et al among children with dengue viral fever. They found nearly similar results with present study (18).

CONCLUSION

We concluded from the present study that the most common presenting symptoms were fever, headache, myalgia, retro orbital pain, pain abdomen and vomiting. The commonest signs recorded were skin rash, hepatomegaly and ascites. The most common complication found was hepatic dysfunction.

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