

Original Research Article

Clinical profile of dengue fever in children in a university level medical college of North India

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ABSTRACT

Background: Dengue epidemics are more frequent in developing countries like India. Dengue is a self-limiting disease but its complication in children may cause high morbidity and mortality. Objective: The main objective of this study was to assess the clinical profile of dengue fever in children less than 15 years of age.

Methods: This was a retrospective study done in a pediatric department of Maharishi Markandeshwar institute of medical science and research hospital, Ambala, a university level medical college of North India for a period of 17 months.

Results: A total of 130 patients of dengue fever were identified in our study. Out of these 130 patients, 39 patients were included in dengue without warning signs, 78 were included in dengue with warning signs and 13 in severe dengue category. The most common age group was between 5 to 10 years of age. Fever was the most common presenting symptom in all dengue patients. No mortality was observed during our study period due to dengue.

Conclusions: It is one of the dreaded fevers for all the pediatric age group. So, early suspicion and effective management can reduce the severity.

Keywords: Dengue, Fever, Outcomes

INTRODUCTION

Dengue is an acute febrile arboviral illness. It is transmitted by *Aedes aegypti* and *Aedes albopictus* which is mainly found in tropical and subtropical areas. Dengue fever has been identified as an emerging infectious disease in India. In Southeast Asian countries, dengue is the major cause of pediatric morbidity and mortality.¹ In India the annual incidence is estimated to be 7.5 to 32.5 million.² Dengue affects all age groups; however, 90% of dengue infections occur in children of age less than 18 years.³ Fever is the most common presenting feature of dengue in children followed by vomiting and abdominal pain.⁴ Due to limitations of world health organization (WHO) 1997 dengue classification guidelines, WHO revised their guidelines in 2009 and accordingly the clinical

classification was revised as dengue without warning signs, dengue with warning signs and severe dengue. The main objective of this study was to assess the clinical profile and evaluate the outcome of dengue infection in children of less than 15 years age group.

METHOD

This was a retrospective study conducted in the Pediatric department of Maharishi Markandeshwar institute of medical science and research at a university level medical college of North India. Total 130 patients with serologically proved dengue fever were admitted in our department. Study was conducted over a period of 17 months. (1st Jan 2021 to 31st May 2022). Clinical presentation, laboratory findings, severity of illness score

and outcomes were recorded. Children below 15 years of age and had features suggestive of dengue illness and confirmed by rapid dengue test (IgM, IgG and NS1Ag) were included in the study. Children with other significant diseases and who were positive for malaria and meningitis were excluded from the study. A detailed history and clinical examination were recorded in a predesigned proforma at the time of admission. Cases were followed up daily for clinical and laboratory parameters. The patients were classified according to revised WHO criteria and were managed accordingly.

Statistical analysis

SPSS version 22.0.0.0 software was used for data entry and analysis.

RESULTS

Total 505 patients were admitted in pediatric department of our institute during this study period. Out of these 505 patients, 130 were diagnosed as dengue patients with serologically positive dengue tests either NS1ag or rapid (IgM, IgG ab) serological test kit (J. Mitra and co. Pvt. Ltd). There were 75 (57.6%) males and 55 (42.3%) females in our study (Table 1).

Table 1: Demographic data of dengue patients.

Variables	N	
Age (years)	<5	27
	5-10	65
	>10	38
Sex	Male	75
	Female	55
Residence	Rural	72
	Urban	58

According to WHO criteria, we divided dengue into 3 categories (Table 2): Dengue without warning signs, dengue with warning signs and severe dengue (DHF and DSS).

Table 2: Categories of dengue.

Categories	Frequency (%)
Dengue without warning signs	39 (30)
Dengue with warning signs	78 (60)
Severe dengue (DHF and DSS)	3 (10)

The most common age group was between 5 to 10 years followed by 1-5 years and youngest was 2 years of age as shown in Table 3.

Clinical symptoms

Fever was observed in all dengue patients with mean duration of 5-6 days. The common presentation by these

children includes headache (60%), myalgia (68.4%), bleeding (34.6%), and decrease urine output (45.3%) (Table 4).

Table 3: Age wise distribution of dengue patients.

Age group (Years)	Frequency (%)
Between 1-5	17 (13)
Between 5-10	78 (60)
Between 10-15	35 (26.92)

Table 4: Clinical symptoms of dengue patient.

Clinical symptoms	Dengue without warning signs	Dengue with warning signs	Severe dengue	Total (%)
Headache	21	53	5	79 (60)
Myalgia	19	61	9	89 (68.4)
Decreased urine output	17	39	3	59 (45.3)
Bleeding	3	35	7	45 (34.6)

Among the clinical findings, hepatomegaly and splenomegaly were noted in 80% and 33% of the cases.

Table 5: Investigations of these patients.

Investigations	Number of cases (%)
Raised hematocrit >35%	74
Thrombocytopenia <1 lakh	88
Leucopenia <5000	40

Crystalloids either RL or NS were used in 78% of cases. In some of the patients, blood and its components were used (Figure 1).

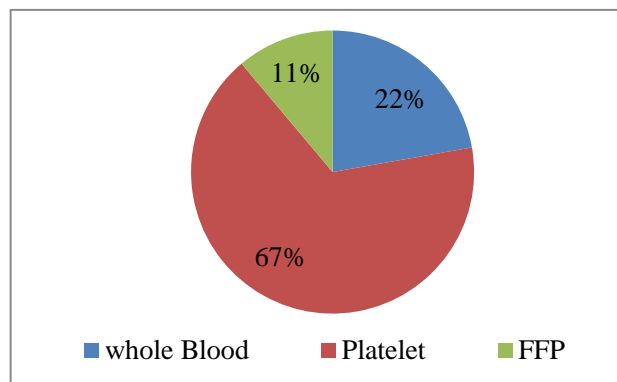


Figure 1: Blood and its different products used.

No mortality was observed during our study period due to dengue.

DISCUSSION

A total of 130 dengue cases were enrolled during the study period of 17 months. The 5-10 years age group was most commonly affected as similar findings of same age group was found in other studies.^{5,6} Boys were affected more than girls in our study which is similar to other studies.⁷

In our study fever was present in all cases. Abdominal pain, vomiting and abdominal distension were seen commonly. The most common bleeding manifestation in both severe and non-severe dengue was petechiae, purpura and ecchymosis. The most consistent finding was hepatomegaly which was similar to the other studies.^{8,9} Myalgia and headache was the most common symptom.

In this study high Hct (74%), low platelet count (88%), and leucopenia (40%) were observed which was also found in other studies.¹⁰ In our study, leucopenia observed was seen to be more than other studies.¹¹ In some DF patients the rise of PCV could have been due to dehydration as a result of poor intake and vomiting.¹¹ Elevated liver enzymes were raised in (35%) patients and very high level of SGOT and SGPT were observed with severe dengue as noted in previous studies.^{6,12}

Limitations

Overlapping of age group of study patients led to small sample size.

CONCLUSION

Dengue is one of the dreaded fevers for all the pediatric age group. The disease has various clinical features and symptoms but early diagnosis and management can decrease the complications and fatality rate in these patients. In this study we also conclude that laboratory parameters like raised SGOT is very significant for distinguishing severe from non-severe varieties.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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