Scholars Journal of Applied Medical Sciences
Abbreviated Key Title: Sch J App Med Sci
ISSN 2347-954X (Print) | ISSN 2320-6691 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Paediatrics

Recent Dengue Fever Outbreak in Pediatric Age Group

Dr. Md. Shamim Parvej Ibne Halim[1*], Dr. Md. Ibrahim Khalil[2], Dr. Md. Monir Hasan[3], Dr. Alok Kumar Sarkar[4], Dr. A.T.M Shahid[5], Dr. Mohammad Anwarul Hassan[6]

[1,2]Assistant Professor, Dept. of Paediatrics, Mugda Medical College, Dhaka, Bangladesh
[3]Assistant Professor, Dept. of Paediatrics, OSD, DGHS, MOHFW, Jashore Medical College, Jashore, Bangladesh
[4]Assistant Professor, Skin and VD Department, Jashore Medical College, OSD, DGHS, MOHFW, Bangladesh
[5]Assistant Professor, Dept. of Paediatrics, Mugda Medical College, Dhaka, Bangladesh
[6]Assistant Professor, Dept. of Dermatology, Dhaka Medical College, Dhaka, Bangladesh

DOI: 10.36347/sjams.2021.v09i07.017 | **Received:** 12.06.2021 | **Accepted:** 17.07.2021 | **Published:** 30.07.2021

***Corresponding author:** Dr. Md. Shamim Parvej Ibne Halim

Abstract **Original Research Article**

Objective: To evaluate Dengue fever outbreak in pediatric age group. ***Methods:*** This experimental study was conducted at tertiary medical college and hospital, Dhaka from January 2019 to December 2019, where a total of 100 children were selected consecutively based on clinical features mentioned in National Guidelines for Clinical Management of Dengue Syndrome, Bangladesh 2018. ***Result:*** During the study, where most of the patients belong to lower economic status, 60% patients had rash with itching on their body, 9% had low WBC count, 30% of patients had platelet count 51- 100*10^9/L and 24% with 21-50*10^9/L. ***Conclusion:*** From our result, we can conclude that, most of the children with dengue fever presented with high grade continued fever with vomiting and abdominal pain. More than half of the patients showed bleeding manifestation even with negative tourniquet test. Further study is needed for better outcome.

Keyword: Dengue fever, pediatric age group., low WBC count.

INTRODUCTION

Dengue is a serious mosquito-borne viral disease which in recent years has become a major international public health concern. It is the most serious viral haemorrhagic fever in the world with an annual incidence of 100 million cases per year1. Of them 250,000 to 500,000 cases are reported as dengue haemorrhagic fever (DHF) (because of the presence of haemorrhagic manifestations, thrombocytopenia and signs of plasma leakage) with an estimated death of about 12,000. The dengue virus is a RNA virus and consists of 4 serotypes (DEN 1 - 4) [1, 2].

In Bangladesh the magnitude of dengue fever was largely unknown until it took a heavy toll in 2000 (5555 cases and 93 deaths were reported) [2]. Nearly 90% of the dengue infections occur in children with risk of dying during a secondary attack is nearly 15-fold higher than that of adults [3-5]. In this study our main goal is to evaluate Dengue fever outbreak in pediatric age group.

OBJECTIVE

General objective

- To evaluate the Dengue fever outbreak in pediatric age group.

Specific objective

- To identify the clinical characteristics of pediatric patients with dengue fever.
- To detect socioeconomic condition of patients.

METHODOLOGY

Type of study	Case control study
Place of study	Mugda Medical College Hospital, Dhaka
Study period	January 2019 to December 2019
Study population	Total of 100 children were selected consecutively based on clinical features mentioned in National Guidelines for Clinical Management of Dengue Syndrome, Bangladesh 2018.
Sampling technique	Purposive

Method

During the study, after obtaining informed consent from the parents a total of 100 children were selected consecutively based on clinical features mentioned in National Guidelines for Clinical Management of Dengue Syndrome, Bangladesh 2018. Patient with any identified specific infection or febrile illness more than two weeks were excluded from the study. Demographic variables, presenting complaints and examination findings were recorded on a structured questionnaire. Tourniquet test was done in predicting feature of bleeding manifestations. White blood cell count (WBC count), platelet count, PCV, ALT, IgM and IgG antibodies for dengue virus were investigated as supporting evidence for dengue infection.

DATA ANALYSIS

- After collection, data were entered into a personal computer and were edited, analyzed, plotted in graphs and tables. Data were analyzed by chi square test, Mann Whitney U tests, using the statistical package for social sciences (SPSS) version 20.

RESULT

In table-1 shows age distribution of the patients where most of the patients belong to 5-10 years age group, 55%. The following table is given below in detail:

Table-1: Age distribution of the patients

Age group	%
<5	35%
5-10	55%
>10	10%

In figure-1 shows gender distribution of the patients where 48% were male, 52% were female. The following figure is given below in detail:

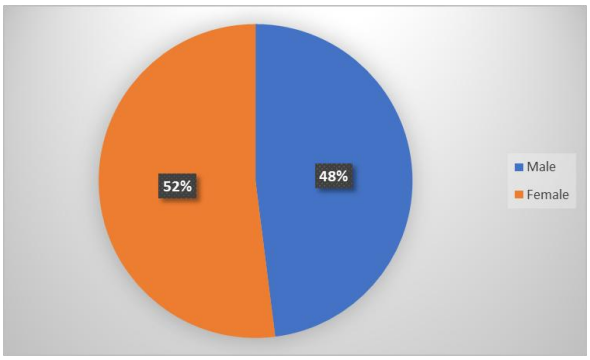

Fig-1: Gender distribution of the patients

In figure-2 shows socioeconomic status of patients where most of the patients belong to lower economic status. The following figure is given below in detail:

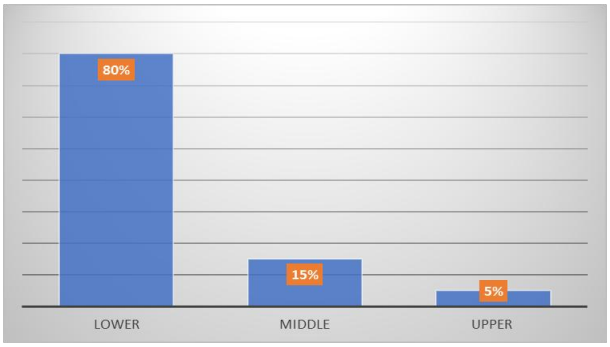

Fig-2: Socioeconomic status of patients

In table-2 shows clinical characteristics of the patients, where 63% patients had fever 5 days long and most of them had abdominal pain. The following table is given below in detail:

Table-2: Clinical characteristics of the patients

Variable	%
Duration of fever (days):	
<5	37%
>5	63%
Type of fever	
Continued	70%
Intermittent	10%
Remittent	10%
Biphasic	5%
Body pain	
Myalgia	40%
Arthalgia	20%
Headache	30%
Retro-orbital pain	20%
Runny nose/cough	11%
Loose stool	12%
Vomiting	21%
Abdominal pain	45%
Haemorrhage	50%
Subconjunctival haemorrhage	30%
Haematemesis	10%
Gum bleeding	10%

In figure-3 shows distribution of the patients according to sign and symptom where 60% patients had rash with itching on their body. The following figure is given below in detail:

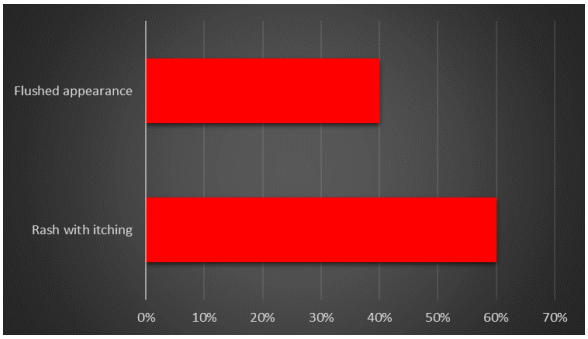

Fig-3: Distribution of the patients according to sign and symptom

In table-3 shows distribution of the patients according to tourniquet test, where 30% patients had positive result. The following table is given below in detail:

Table-3: Distribution of the patients according to tourniquet test

tourniquet test	%
Positive	**30%**
Negative	**70%**

In table-4 shows investigation result of the patients where 9% had low WBC count, 30% of patients had platelet count, 51- 100*10^9/L and 24% with 21-50X10^9/L.

Table-4: Investigation result of the patients

variable	%
Low WBC (<4x10^9/l)	**9%**
Platelet count	
> 100X10^9/L	**29%**
51-100X10^9/L	**30%**
21-50X10^9/L	**24%**
< 20X10^9/L	**11%**
PCV <45%	**98%**
Raised ALT	**42%**

DISCUSSION

In our study, the mean age of the patients was 6.5±3.5 years with age range of 6 months to 15 years. Similar results were reported by one study, mean age of the patient's 7.9±2.9 years and their age range was from 1 month to 12 years [6], while another study found mean age 9.0±2.8 years with an age range of 2.5-12 years [7]. A male preponderance with a male female ratio of 3:2 was observed by one study [6]. In our study, 48% were male, 52% were female.

Majority of the patients had continued type of fever. One study reported that, abdominal pain was the cardinal complaint in 60% of the patients followed by vomiting (57%), myalgia (46.3%), headache (31.5%), arthalgia (18.5%), retro-orbital pain (14.8%), loose stool (9.3%) and runny nose/cough (3.7%) [8]. This was very similar to our study. These findings were completely different from another report.

One study had reported headache as the most predominant symptom (91%) followed by myalgia/ arthralgia (85%) and vomiting (64%). Another study found headache in 85%, myalgia in 73%, and retro-orbital pain in 27% & vomiting in 15% of children [9]. Diaz *et al*. had reported abdominal pain precede the onset of plasma leakage in approximately 6% of adults and children with DHFII.

In the present study rash with itching was a predominant feature (60%) followed by flushed appearance (40%), Subconjunctival haemorrhage (30%), Malavika *et al*. in one study had reported about 40% of patients with rash and 90% with flushed appearance.

A haemorrhagic tendency could be elicited by tourniquet test. In the present study, about 30% of the patients had positive tourniquet test. 9% had low WBC count. 30% of patients had platelet count, 51-100X10^9/L and 24% with 21-50X10^9/L.

CONCLUSION

From our result, we can conclude that, most of the children with dengue fever presented with high grade continued fever with vomiting and abdominal pain. More than half of the patients showed bleeding manifestation even with negative tourniquet test. Further study is needed for better outcome.

REFERENCE

1. Price, D.D., Wilson, S.R. (2008). Dengue Fever. [Online].2008 [cited 2009 Jan 21]. Available from:URL:http://emedicine. medscaDe.com/article/78
2. World Health Organization. Dengue fever and dengue haemorrhagic fever. [Online], [cited 20 Jan 26]. Available from: URL: http://www.whoban.org/cominunicable.dis dengue.html
3. World Health Organisation. (1999). Prevention and control of dengue and dengue hemorrhagic fever: comprehensive guidelines. WHO regional publication. SEARO, No. 29. WHO, 1999.
4. Lucus, G.N., Amerasinghe, A., Sriranganathan, S. (2000). Dengue haernorrhogic lever in Sri Lanka. Indian J Pediatr, 67; 503-04.
5. Kobilan, L., Balasubramanian, S., Keshava, S.M. (2003). Dengue disease spectrum among infants in the 2001 dengue epidemic in Chennai, Tamil Nadu, India. J Clin Microbiol, 41; 3919-21.
6. Mishra, B., Itsstho, R.K. (2007). Virological interpretations of dengue disease spectrum in infants in Chennai, Tamil Nadu, India, need re-evaluation. J Clin Microbiol, 42; 23-27.
7. Malaria and Vector Borne Diseases Control Unit. (2000). Diseases Control Directorate, Directorate General of Health & Family Welfare and World Health Organization. National Guidelines for Clinical Management of Dengue Syndrome, Bangladesh.
8. Malavige, G.N., Ranatunga, P.K., Velathanthiri, V.G.N.S., Fernando, S., Karunatilaka, D.H., Aaskov, J. (2006). Patterns of disease in Sri Lankan dengue patients. Arch Dis Child, 91; 396-4
9. Rahim, M.A., Azad, M.A.K. (2006). Dengue: past, present and future - A review. Bangladesh J 9Medicine, 17; 27-39.
10. Gibbons, R.V. (2002). Vaughn DW: Dengue: an escalating problem. BMJ, 324; 1563-1566. 10.1136/bmj.324.7353.1563