Original Article

Dengue Fever

Dengue Fever: A Study of Clinical Presentation at Tertiary Hospital in Peshawar

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ABSTRACT

Objective: To determine the frequency of clinical presentation of dengue fever children.
Study Design: Descriptive / cross sectional study
Place and Duration of Study: This study was conducted at the Department of Pediatrics, KMC/MTI KTH Peshawar from Jan to Dec 2017.
Materials and Methods: The study duration was 6 months and a total of 68 patients were studied by, 95% confidence level and 7% margin of error using WHO software for sample size. The SPSS latest version was used to analyze the data. For continuous data while for categorical one frequencies and % ages were calculated and the dated was prepared in tabulated form.
Results: In this study 68 patients with clinical manifestations and diagnosis confirmed on laboratory by Dengue NS1 were included in the study. Male to female ratio was 1.3: 1. The majority of the patients were in the age group of 6-10 years. Vomiting malaise, skin manifestations and headache were the most common presentations making. Hospital outcome was good.
Conclusion: Dengue fever is one of the most common problems affecting population equally around the globe and if managed carefully can have good prognosis.
Key Words: Dengue fever, platelets, hemorrhagic fever

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INTRODUCTION

Dengue fever is one of the commonest prevalent arthropod born infections. Dengue fever is transmitted by mosquitoes of the genus Aedes aegypti. It is affecting all human being s, of all age group and most the regions of the world. Dengue is affecting people in millions especially in South East Asia[1]. The incidence is higher in urban areas and especially those parts of urban areas where the site is suitable and favorable for the mosquitoes leading to the pathology. The responsible arthropod harbors various serotypes of dengue causing viruses Flavovirus[2]. The disease may be caused by any of the serotypes and patient gets lifelong immunity from that serotype. But this does not make them immune to rest of the serotypes. Therefore a person infected by one serotype can be infected by rest of the serotypes[3,4].

Dengue fever is endemic in more than 100 countries of the world with frequent occurring in this part of the world (South East Asia countries). Though the condition is endemic in these countries but its outbreak make it epidemic as well in its endemic zone[5].

The clinical presentations of the dengue fever ranges from mild self limiting influenza like condition to severe morbid an life-threatening dengue-hemorrhagic fever and dengue shock syndrome. Initially the condition is asymptomatic in most of the cases up to 90 percent of the cases leading to non-specific febrile illness and ultimately classic dengue fever[6]. Classic dengue fever is characterized by high grade fever, generalized bodyaches, nausea, vomiting, headache, retro-orbital pain and skin manifestations in the form of maculo-papular rash which is centrifugal pattern[7]. Dengue hemorrhagic fever is manifested when a person affected by one serotype is infected by another serotype can lead to bleeding and endothelial leak. The leakage in this condition leads to hemo-concentration, hypotension and serous cavities fluid accumulation. The plasma leakage is caused by vascular permeability secondary to short acting chemical mediators. Intravascular coagulation and hemorrhagic lesions are caused by immune complexes. Two important parameters which are carried out during management are hemotocrit concentration and platelets count respectively[8].

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A complete and comprehensive clinical assessment of the patient and laboratory investigations is extremely important for the diagnosis of the condition and timely management of the condition. Several diagnostic modalities are available for the diagnosis of the condition. The laboratory work up includes antibodies, complement fixation, ELIZA and PCR[10-12].

The clinical presentation of the dengue fever varies in various age groups. Studies have been conducted regarding clinical presentations especially in adult patients. The purpose of the current study was to know about various clinical presentations and to document it in pediatric age group in our setup.

MATERIALS AND METHODS

The prospective descriptive study was conducted at the department of Pediatrics Khyber Teaching Hospital, Khyber Medical College Peshawar. The duration was one year from Jan to Dec 2017. Both male and female patients with age fifteen years and below with diagnosis of dengue fever were included in the study.

The study was carried out after permission of ethical committee Khyber Medical College and Khyber Teaching Hospital Peshawar. Patients fitting to the inclusion were selected and biodata and relevant information filed on Proforma.

We took Comprehensive history and did thorough clinical assessment in all cases. A careful scrutiny of past medical records was carried out for each patient. From all patients after observing strict aseptic technique, 5cc of venous blood was obtained and was immediately sent to hospital laboratory for HCT and Dengue NH1. All the laboratory investigations were done under supervision of expert pathologist fellow of CPSP and using same standard laboratory equipment.

All data was filed and assessed in SPSS. Frequencies and percentages were calculated for categorical variables like gender and the results were presented in tabulated form.

RESULTS

In this study carried out at KMC/KTH a total of 68 patients were assessed. Pediatric age patients ranged from few months to adolescent age. The dengue fever clinical presentation also varies a lot.

In our current study male patients were more as compared to the female patients ratio was 1.3: 1 as given in table 1.

Table No.1: Sex-wise distribution of Dengue Fever in Children (n=68)

Sex	Frequency	Percentage
Male	7	10.3
Female	12	17.6

The age ranged from 1 to 15 years with mean age of 8.35 ± 3.82. The age ranged in various age limits with the maximum number of patients found in age group 6-10 years. The details are given in table 2.

Table No.2: Age-wise distribution of Dengue fever (n=68)

Age in Years	Frequency	Percentage
0-2	7	10.3
3-5	12	17.6
6-10	29	42.6
11-15	20	29.4
Total	68	100

One of the important and prime objectives of the study was to find the various clinical presentations of the patients with dengue fever. Table 3 shows the clinical presentations of the dengue fever.

Table No.3: Frequency of symptoms in children with Dengue Fever (n=68)

Symptoms	Frequency	Percentage
Fever	68	100.0
Epistaxsis	7	10.3
Anorexia	12	17.6
Vomiting	20	29.4
Abdominal Pain	17	25.0
Myalgias	29	42.6
Headache	15	22.0
Skin manifestations	28	28

DISCUSSION

Dengue fever is one of the most important conditions affecting people around the globe with various frequencies. The disease is vector born and its prevalence is highly affected by the environment suitability to the vector.

The number of the male patients was more in our study as compared to the female patients. The same results were documented in study conducted at Faisalabad by Aisha et al[13]. In our study majority of the patients presented in the age group of 6-10 years. The results simulate to international study in this regard[14].

As far as the clinical presentation is concerned in our study all patients presented with history of fever. Other studies conducted locally in different cities and pediatric age had the same results[13]. An international study which has documented epistaxis of 25 % conducted by Kulkarni MJ et al[15].

Anorexia and vomiting is again an important clinical presentation. Anorexia and vomiting was present in 17.6 % and 29.4 % respectively. An international conducted at Brazil by de Souza showed frequency of nauseas and vomiting as 45 % and 42 % respectively[16].

We found abdominal pain as one of the commonest presentation in our study which was present in 25 percent of the cases. A study conducted by Gupta BK et al found frequency of acute abdominal pain as high as 32 percent of the study population[17].

In our study we found headache as one of the important problem constituting 22% which was almost half of the cases internationally recorded i.e. 45 % by Lovera D et al[18]. One of the reasons of this difference is no doubt the young age group population in our study where one cannot express about his or her symptoms. Though the attendants may be expressing in their own language and relating it to the patients.

Cutaneous manifestation is one of the important presenting features of dengue fever. A lot of papers have been written showing various cutaneous and muco-cutaneous manifestations of the problem. We had also recorded cutaneous manifestations of the disease. We found various dermatological manifestations in 28 % of the cases. The percentage of the dermatological presentation varies in various national and international studies ranging as high as 64 % [19].

CONCLUSION

Dengue fever is one of the most common problems affecting population equally around the globe and if managed carefully can have good prognosis.

Recommendations: Dengue fever is one of the most important conditions affecting people around the globe with various frequencies. The disease is vector born and its prevalence is highly affected by the environment suitability to the vector.

Author's Contribution:

Concept & Design of Study:	Arshia Munir
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REFERENCES

1 Deshwal R, Qureshi I, Singh R. Clinical and laboratory profile of dengue fever. J Assoc Physician Ind 2015; 63: 30-31.

2 Kyle JL, Harris E. Global spread and persistence of dengue. Ann Rev Microbiol 2008; 62: 71-92.

3 Karoli R, Fatima J, Siddiqi Z, Kazmi KI, Sultania AR. Clinical profile of dengue infection at a teaching hospital in North India. J Infect Dev Ctries 2012; 69&): 551-554.

4 Rodenhuis-Zybert IA, Wilschut J, Smit JM. Dengue virus life cycle: viral and host factors modulating infectivity. Cell Mol Life Sci 2016; 67(16): 2773-86.

5 Halstead SB. Dengue. Lancet 2007:1644-1652.

6 Mishra S, Ramanathan R, Agarwalla SK. Clinical profile of dengue fever in children: A study from Southern Odisha, India. Scientifica 2016:1-6.

7 PothapregadakS, Kamalakannan B, Thulasingam M. Clinical profile of atypical manifestations of dengue fever. Ind J Pediatr 2016; 83(6): 493-99.

8 Guzman MG, Harris E. Dengue. Lancet 2015; 385 (9966): 453-65.

9 Simmons CP, Farrar JJ, Chau NVV, Wills B. Dengue. N Engl J Med 366: 1423-32.

10 Muller DA, Depelsenaire AC, Young PR. Clinical and laboratory diagnosis of dengue virus infection. J Infect Dis 2017; 215(2): 89-95.

11 Chen X, Chen R, Gu W, He J, Cai W, Li G, Duan C. Clinical evaluation of dengue RNA, NS1 an dIgM for diagnosis of dengue in Southern China. J Med Virol 2016; 88: 28:28-34.

12 Alam AS, Saadat S, Swapan Z, Ahmed A, Karim N, Paul HK, Zaman S. Clinical profile of dengue fever in children. Bangladesh J Child Health 2009; 33(2):55-58.

13 Sajid A, Ikram A, Ahmed M. Dengue fever outbreak 2011: Clinical profile of children presenting at Madina teaching hospital Faisalabad. JUMD 2012; 3(1): 42-47.

14 Pongpan S, Wistwong A, Tawichasri C, Patumanond J, Namwongprom S. Development of dengue infection severity score. ISRN Pediatr 2013; 845876:1-6.

15 Kulkarni MJ, Sarathi V, BVhalla V, Shivpuri D, Acharya U. Clinico-epidemiological profile of children hospitalized with dengue. Indian J Pediatr 2010; 77: 1103-7.

16 de Souza LJ, Pessanha LB, Mansur LC, de Souza LA, Ribeiro MBT, Silveira M. Comparison of clinical and laboratory characteristics between children and adults with dengue. Brax J Infect Dis 2013; 17(1)27-31.

17 Gupta BK, Nehara HR, Parmar S, Meena SL, Gajraj S, Gupta J. Acute abdomen presentation in dengue fev3er during recent outbreak. J Acute Dis 2017; 6(5): 198-204.

18 Lovera D, Martinez de Cuellar C, Araya S, Amarilla S, Gonzalez N, Aguiar C, et al. Clinical characteristics and risk factors of dengue shock syndrome in children. Pediatr Infect Dis J 2016; 35(12): 1294-99.

19 Mahboob A, Iqbal Z, Javed R, Taj A, Munir A, Saleemi MA, Yaqub F. Dermatological manifestations of dengue fever. J Ayub Med Coll Abbottabad 2012; 24(1): 52-54.

20 Azfar NA, Malik LM, Jamil A, Jehangir M, Tirmizi N, Majid A, et al. Coetaneous manifestations in patients of dengue fever. J Pak Assoc Dermatol 2012; 22(4): 320-4.