



TO STUDY THE COMPLICATIONS IN DENGUE LIKE ILLNESSES

General Surgery

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ABSTRACT

Background- Dengue has a wide spectrum of clinical presentations, often with unpredictable clinical evolution and outcome. to study the complications in dengue like illnesses

Methods- The hospital based study was conducted on patients presenting to paediatric hospital, who fulfilled inclusion and exclusion criteria were enrolled for the study. A comprehensive history taking, physical examination, and lab investigations were carried out and data were collected in pre-designed proforma.

Results- According to complications, in dengue positive cases, bleeding was the most common complication seen in 44.00% cases while shock, myocarditis, and convulsion were present in 32.00%, 2.00% and 2.00% of cases respectively. Among the dengue negative cases, 62.00% had no complication while shock and bleeding were present in 30% and 12.00% cases respectively. On applying the chi-square test, the difference was found statistically highly significant ($p < 0.001$).

Conclusion- Dengue is one of the major causes of undifferentiated fever. It presents as a highly unspecific illness and is hardly recognized as a clinical entity by primary health care physicians. It concluded that shock was most common complication

KEYWORDS

Hematocrit, Dengue, Dengue Like Illness

INTRODUCTION

WHO estimates that presently about two fifths of the world population is at risk for this viral infection. Incidence of dengue infection has increased around the world in recent decades and has become a major international public health concern. It is estimated that worldwide nearly 2.5 billion people continue to live at risk of contracting the infection while 50 million cases and 24,000 deaths tend to occur in 100 endemic countries every year. In India, epidemics are becoming more frequent. Involvement of younger age group and increase in the frequency of epidemics are indicators of higher incidence of infection.¹

Dengue was first reported in 1780, when Benjamin Rush described this condition as "break bone fever". It is a mosquito borne viral infection with four serotypes causing dengue fever (DF), dengue hemorrhagic fever (DHF), and dengue shock syndrome (DSS).^{2,3}

India is one of the seven countries in the South-East Asia region regularly reporting incidence of DF/DHF outbreaks due to its high incidence which constantly threatens the health care system. The first confirmed report of dengue infection in India dates back to 1940s, and since then more and more new states have been reporting the disease which mostly strikes in epidemic proportions often inflicting heavy morbidity and mortality.⁴ Several fatal forms of the disease i.e., DHF, DSS have been reported in India from time to time in Kolkata, Delhi, and Chennai.⁵⁻⁸ All the four serotypes of the virus have been in circulation and documented in Tamil Nadu.⁹ During all these epidemics infection occurred in active adults in the age group of 16-60 years.¹⁰⁻¹¹ The common signs and symptoms observed were fever, headache, myalgia, arthralgia and bleeding manifestations have also been observed.

Since there is a paucity of literature on this, and there exist many gaps in the current understanding of such predictive factors, this study is being planned to assess history, examination, and investigation based predictive factors for complications of dengue-like illnesses.

MATERIAL AND METHODS

Study Design: Hospital-based cross-sectional study.

Inclusion criteria

All the patients admitted to Paediatric ward with-

1. Age 6 months to 14 years.
2. A history of fever as given by the patient or parents or a documented fever > 38 -degree Celsius in the first 24 hours after admission.
3. Thrombocytopenia of $< 100,000$ /cubic mm as documented in the automated counter within 24 hours of admission.

4. The diagnosis of dengue fever, dengue hemorrhagic fever and dengue shock syndrome was based on the WHO criteria³

Exclusion criteria

1. Patients with a proven bacterial infection as the cause for thrombocytopenia and fever.
2. Patients with a pyogenic focus of infection.
3. Discharge against medical advice or referral to higher center before ascertaining the final outcome.

The study was commenced after obtaining clearance from the institutional ethical committee. Written consent was taken from the parents and those who were not willing excluded from the study. Patients presenting to paediatric hospital, who fulfilled inclusion and exclusion criteria were enrolled for the study. A comprehensive history taking, physical examination, and lab investigations were carried out and data were collected in pre-designed proforma.

OBSERVATIONS

Table 1. Socio-demographic variable

Variable	Dengue		p-value
	Positive	Negative	
Age in Years (Mean \pm SD)	10.06 \pm 4.12	10.07 \pm 4.01	>0.05
Male : Female	31 : 19	33 : 17	>0.05

Mean age was 10.06 \pm 4.12 year in dengue negative cases and 10.07 \pm 4.01 year in dengue positive cases. This difference was found statistically insignificant ($p > 0.05$). In the present study, male patients outnumber than the female. This difference was found statistically insignificant ($p > 0.05$).

Table 2. Distribution of Cases According to Complication

Complication	Dengue			
	Negative		Positive	
	No.	%	No.	%
Bleeding	6	12.00	22	44.00
Myocarditis	0	-	1	2.00
Shock	15	30.0	16	32.00
Convulsion	0	-	1	2.00
No Complication	32	62.00	11	22.00
Total	50	100.00	50	100.00
P	<0.001			

According to complications, in dengue positive cases, bleeding was the most common complication seen in 44.00% cases while shock,

myocarditis, and convulsion were present in 32.00%, 2.00% and 2.00% of cases respectively. Among the dengue negative cases, 62.00% had no complication while shock and bleeding were present in 30% and 12.00% cases respectively.

On applying the chi-square test, the difference was found statistically highly significant ($p < 0.001$).

DISCUSSION

Dengue is a major international health concern that is prevalent in tropical and sub-tropical countries. Since the first confirmed case of dengue in India, during the 1940s, intermittent reports from Delhi, Ludhiana, Mangalore, Vellore and from other states have been published. The diagnosis is by clinical profile but they can present with varied manifestation¹²⁻¹³.

There is a steady increase in the outbreak of dengue fever over the years and so among children. This is due to the rapid urbanization with unplanned construction activities and poor sanitation facilities contributing fertile breeding grounds for mosquitoes. Due to an increase in the awareness among health care professionals following the initial epidemic and the availability of diagnostic tests have contributed to the increased diagnosis¹⁴.

A outbreak of dengue fever during pre-monsoon and monsoon season reported due to stagnation of water after a bouts of rainfall which facilitate vector breeding. This highlight the preventive measures against dengue fever should be taken during water stagnation periods after the initial bouts of rainfall and at the end of monsoon.

Mean age was 10.06±4.12 year in dengue negative cases and 10.07±4.01 year in dengue positive cases. This difference was found statistically insignificant ($p > 0.05$). In the present study, male patients outnumber than the female. This difference was found statistically insignificant ($p > 0.05$). This may be due to out-door activities of these children, where chances of getting bitten by mosquitoes are more. Similar finding was observed in other studies¹⁵.

Boys were slightly more affected then girls were also observed by Selvan et al¹⁶ and Sahana et al¹⁷ and similar pattern was seen in the retrospective analysis of the 2006 North Indian Dengue outbreak¹⁸. This may be due to out-door activities of these children, where chances of getting bitten by mosquitoes are more.

According to complications, in dengue positive cases, bleeding was the most common complication seen in 44.00% cases while shock, myocarditis, and convulsion were present in 32.00%, 2.00% and 2.00% of cases respectively. Among the dengue negative cases, 62.00% had no complication while shock and bleeding were present in 30% and 12.00% cases respectively. On applying the chi-square test, the difference was found statistically highly significant ($p < 0.001$).

Raj et al¹⁸ observed that shock was the most common and difficult to treat complication despite appropriate fluid management in accordance with WHO regimen. 20(10.2%) children had shock, of which 7 were refractory to fluid therapy and blood products (whole blood, packed cell volume, FFP) given as indicated.

CONCLUSION

Dengue is one of the major causes of undifferentiated fever. It presents as a highly unspecific illness and is hardly recognized as a clinical entity by primary health care physicians. It concluded that shock was most common complication

REFERENCES

1. World Health Organization; Dengue and Dengue Hemorrhagic fever. Available in www.who.int/media/centre/factsheets/fs117/en/ accessed on 19.4.2013.
2. Guzmán MG, Kouri G; Dengue: An update. *Lancet Infect Dis.*, 2002; 2: 33–42.
3. World health Organization. Dengue and dengue haemorrhagic fever. Fact Sheet.No. 117, 2002. Available from: <http://www.who.int/mediacentre/factsheet/fs117/en>.
4. Dengue in Kerala: A critical review. *ICMR Bulletin.* 2006; 36:13–22.
5. Konar NR, Mandal AK, Saha AK. Hemorrhagic fever in Kolkata. *J Assoc Physicians India.* 1966; 14:331–40.
6. Abdul Kader MS, Kandaswamy P, Appavoo NC, Anuradha. Outbreak and control of dengue in a village of Dharmapuri, Tamil Nadu. *J Commun Dis.* 1997; 29:69–72.
7. Narayanan M, Aravind MA, Thilothammal N, Prema R, Sargunam CS, Ramamurthy N. Dengue fever epidemic in Chennai—a study of clinical profile and outcome. *Indian Pediatr.* 2002; 39:1027–33.
8. Aggarwal A, Chandra J, Aneja S, Patwari AK, Dutta AK. An epidemic of dengue hemorrhagic fever and dengue shock syndrome in children in Delhi. *Indian Pediatr.* 1998; 35:727–32.
9. Cecilia D. National Institute of Virology, Golden Jubilee Publication. Dengue

- Reemerging disease 2004; 4: 278–307.
10. Balaya S, Paul SD, D'Lima LV, Pavri KM. Investigations on an outbreak of dengue in Delhi in 1967. *Indian J Med Res.* 1969; 5:767–74.
11. Chaturvedi UC, Mathur A, Kapoor AK, Mehrotra NK, Mehrotra RM. Virological study of an epidemic of febrile illness with hemorrhagic manifestations at Kanpur, India during 1968. *Bull World Health Organ.* 1970; 4:289–93.
12. Padibidri VS, Adhikari P, Thakare JP, Ilkal MA, Joshi GD, Pereira P, et al. The 1993 epidemic of dengue fever in Mangalore, Karnataka State, India. *Southeast Asian J Trop Med Public Health.* 1995; 26:699–704.
13. Cherian T, Ponnuraj E, Kuruvilla T, Kirubakaran C, John TJ, Raghupathy P. An epidemic of dengue hemorrhagic fever and dengue shock syndrome in and around Vellore. *Indian J Med Res.* 1994; 100:51–6.
14. Gubler DJ. Dengue and dengue hemorrhagic fever. *Clin Microbiol Rev.* 1998; 11:480–96.
15. Mittal H, Faridi MM, Arora SK, Patil R. Clinicohematological profile and platelet trends in children with dengue during 2010 epidemic in north India. *Indian J Pediatr.* 2012; 79:467–71.
16. Sahana KS, Sujatha R. Clinical profile of dengue among children according to revised WHO classification: analysis of a 2012 outbreak from Southern India. *Indian J Pediatr* 2015; 82:109–13.
17. Selvan T, Nagaraj MV, Saravanan P, Somashekar. A study of clinical profile of dengue fever in children. *Int J Contemp Pediatr* 2017; 4:534–7.
18. Raj AS, Munshi S, Shah BH. A study on clinical presentation of dengue fever in Children. *IJMSR*, 2016; 2272–8.