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CHARACTERISTICS OF DENGUE FEVER IN WAYANAD DISTRICT KERALA

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ABSTRACT

Objectives: This study was conducted to know the clinical and biochemical profile of dengue fever patients in the Wayanad district of Kerala and the surrounding area of Tamilanadu district and to compare with bleeding and without bleeding patients. **Methods:** We studied total of 120 patients of confirmed dengue fever patients admitted to medical ward of DM WIMS Medical College Kerala. All patients were examined with thorough history and clinical examination. Relevant biochemical tests were conducted. Dengue fever was confirmed by NS1 antigen or antibodies (IgM, IgG) to dengue virus. **Results:** Out of 120 patients 84 (70%) were males and 36 (30)%) were females. Mean age of patients was 28 ± 12.4 years. Total of 26 (21.66%) patients had bleeding manifestations, 94 (78.33%) patients did not have any bleeding manifestations. Mean haematocrit was 38 ±8.4 which is important predictor of severity of dengue fever. Liver dysfunction is common finding in most of dengue fever patients. Bleeding magnifications were common with low platelet counts. **Conclusion:** Dengue fever is viral fever which presents like any other viral infections. Bleeding manifestations and complications like hemorrhage and shock can occur in some patients. Early diagnosis and proper supportive measures can reduce the mortality and morbidity in dengue fever patients.

INTRODUCTION

Dengue fever is a viral disease caused by flavi virus group. It is transmitted by mosquito Aedes Egypti and its incubation period is 2-7 days. Its prevalence and incidence is increasing in the recent years. Urban areas of tropical countries are more prone to develop dengue fever worldwide. The figures may reach around 2.5 billion.[1]

Dengue fever and its complications are increasing in India. Dengue outbreaks are very frequent in most parts of the country. Both urban and rural populations are affected.[2] The dengue presents as flu like symptoms. Sometimes it is complicated, otherwise it cures by itself.[2]

Life threatening complications include Dengue hemorrhagic fever (DHF) and Dengue shock syndrome (DSS). These are very serious and fatal complications that can occur in dengue patients. Some cases vary in presentation even though they are dengue cases.[3,4]

This study was conducted in the Department of Medicine of DM WIMS MEDICAL COLLEGE Wayanad District Kerala during the year JAN 2016 to DEC 2016(1 Year). It is an observational cross sectional study of clinical and laboratory presentation of dengue fever.

MATRERIAL AND METHODS

We studied a total of 120 confirmed cases of dengue fever admitted to medical ward. An informed consent was obtained from all the patients to include in the study. A thorough clinical examination was carried out in all patients including tourniquet test. All patient underwent hematological and biochemical examination like complete blood count, Haematocrit, Haemoglobin level, Random blood sugar, Liver function tests, Blood urea, Serum creatinine and NS1 antigen, IgG, IgM for dengue fever, CT, BT, PT and INR. Other causes of fever were ruled out by testing Widal test, Malaria card test, Leptospirosis. Platelet count, clotting time, bleeding time, and prothrombin time, INR were performed daily to keep watch on bleeding.

To study the characteristics of dengue fever the cases were classified into two groups - One group included all the patients who had bleeding manifestations like purpura, epistaxis, subconjunctival hemorrhage and haematuria.Other group was dengue fever without bleeding manifestations.

Inclusion criteria

1) All the patients confirmed with dengue fever either NS1 antigen or IgM, IgG for dengue positive.
2) Age more that 14 years.

Exclusion criteria

1) Patients with primary thrombocytopenia

2) Cases of thrombocytopenic purpura on treatment
3) Cases of drug induced thrombocytopenia
4) Cases with blood malignancy

Statistical analysis

Statistical analysis was done using statistical package for social science (SPSS 17), with P <0.05 taken as statistically significant. All data are described as means and percentage. Chi square test, ANNOVA are applied wherever applicable.

RESULTS

It is a hospital based crossectional observational study. The study was conducted between 1 January 2016 to 31 December 2016 (one year).

We studied about 120 confirmed cases of dengue fever. Out of 120 patients 84 (70%) were males and 36 (30%) were females. Mean age of the patients was 28 ± 12.4 years. Out of 120 patients 26(21.66%) patients had bleeding manifestations remaining 94 (78.33%) did not have bleeding manifestations. Mean age of patients with bleeding manifestations was 28.12 ± 3.4 years as compared to patients without bleeding manifestations (28.2 ± 2.2 years) which was little higher but it was statistically not significant (p= 0.08). All the patients had fever (120, 100%) as presenting symptom. Rash was present in 58 (48.33%) patients of which 34 (28.33%) with bleeding and 24(20%) were without bleeding manifestations. Vomiting was present in 62 (51.66%) patients. Abdominal pain in 58 (48.33%) patients, Myalgia in 86 (71.66%) patients. Bleeding manifestations like epistaxis was present in 12 (10%) patients, subconjuctival hemorrhage in 16 (13.33%) patients, haematuria in 12 (10%) patients. Shock was present in 4(3.33%) patients. Hepatitis was present in 38 (31.66%) patients.

Among 120 dengue patients NS1 was positive in 88 (73.33%) patients and 16 (61.53%) with bleeding signs, 72 (76.59%) patients without bleeding were positive (p =0.08). IgM was in 84 (70%) patients, among these 7 (26.29%) patients were with bleeding and 77 (81.94%) were without bleeding, (p = 0.04) which was statistically significant and IgG was positive in 42 (35%) patients. Among these 3 (11.53%) were with bleeding and 39 (41.48%) were without bleeding (p= 0.08) which was statistically not significant.

In all dengue fever patients the mean CBC was 7246 ± 30.4 cells, mean Hemoglobin was 12.8 ± 3.6 grams/dl and mean platelet count was 52680 ± 120.8 cells. Patients with bleeding manifestations had mean platelet count of 32684 ± 56 and in patients without bleeding the mean platelet count was 44840 ± 38 (p = 0.04) which was statistically significant.

In all dengue fever patients mean ALT was 48 ± 6.8 U/L and in patients with bleeding manifestations the mean was 40.6 ± 8.42 U/L and in patients without bleeding manifestations the mean was 38.8 ± 6.4 U/L.

In all dengue fever patients mean AST was 42 ± 4.6 U/L, in patients with bleeding manifestations the mean AST was 36.8 ± 6.20 U/L and in patients without bleeding manifestations the mean was 28.6 ± 6.2U/L.

In all dengue fever patients the mean serum creatinine was 2.1 ± 0.61mg/dl, among these 1.68 ± 1.81 in patients with bleeding manifestations and 1.2 ± 0.80 in patients without bleeding manifestations.

In all dengue fever patients the mean blood urea was 14.6 ± 12.6 mg/dl, in these 12.6 ± 0.8 in patients with bleeding manifestations and 14.2 ± 0.8 in patients without bleeding manifestations.

In all dengue fever patients the mean Haematocrit was 38.86 ± 8.4. Among these the mean Haematocrit in patients with bleeding was 44.60 ± 1.4 and 38.06 ± 0.06 in patients without bleeding.(p=0.02) which was statistically significant, it is an important predictor of severity of dengue fever.

Mean hospital stay was 4.6 ± 3.4 days for all dengue fever patients. Patients with bleeding manifestations had mean hospital stay of 6.8 ± 1.2 days as compared to 4.2 ± 1.2 days of patients without bleeding manifestations.

DISCUSSION

Dengue fever is appearing in endemic areas of both rural and urban regions. Ours is a tertiary hospital receiving patients from Wayanad district and surrounding Tamilanadu areas. It is a hospital based crossectional observational study. We tried to find out clinical and biochemical profiles of dengue fever cases in our areas. The age group in our study is in comparison with other studies in India.[5] Fever, abdominal pain, vomiting, Myalgia and bleeding manifestations and laboratory finding were similar in our study as reported in other studies.[6]

In contrast with previous studies platelet counts were low in our study. A very low platelet count carries a high risk of mortality[7] but in our study we did not have any mortality even with a platelet count of 1200 cells /cmm. Bleeding in dengue fever is multifactorial and it does not depend only on platelet count but even virulence of the virus determines the outcome in dengue fever patients.

LFT abnormalities are common findings in most studies[8] and our study also had similar findings. Our study did not show any mortality probably because of small size of study population. Joshi et al[9] reported a mortality of 3.5% in their study.

Ratagiri VH et al[10] and Manjith N et al[11] reported average fever of 5.4 days and 4.9 days respectively. Our study showed average duration of fever of 4.6 days. We

encountered 4 patients with dengue shock syndrome, did not have any mortality.

Dengue fever has varied presentation with common viral symptoms and abnormal biochemical values and outcome. Our study also had shown similar presentation and laboratory findings as compared with other studies done in India.

Table 1: Comparison of clinical profile of dengue fever patients with and without bleeding manifestations.

	Total dengue N = 120	Patient with bleeding N = 26	Patients without bleeding N = 94	P
Males	84 (70%)	18 (69.23%)	66 (70.21)	0.07
Females	36 (30%)	6 (23.07%)	30 (31.91%)	0.06
Mean Age	28 ± 12.4 yrs	28.12 ± 3.4 yrs	28 ± 2.2 yrs	0.08
Rashes	58 (48.33%)	34 (28.33%)	24 (20%)	0.08
Vomiting	62 (51.66%)	20 (76.92%)	30 (31.91 %)	0.06
Abdominal pain	58 (48.33%)	22 (84.61%)	28 (29.78%)	0.08
Myalgia	86 (71.66%)	24 (92.30%)	31 (32.97 %)	0.06
Epistxis	12 (10%)	12 (46.15 %)	0	0.09
Sub conjunctival haemorrhage	16 (13.35%)	16 (61.53%)	0	0.07
Haematuria	12 (10%)	12 (46.15%)	0	0.06
Shock	4 (3.33%)	4 (15.38 %)	0	0.09
Hepatitis	38 (31.66%)	20 (76.92 %)	65 (69.14%)	0.06
Fever	120	26 (100 %)	94 (100%)	0.07
Mean hospital stay (days)	4.6 ± 3.4	6.8 ± 1.2	4.2 ± 1.2	0.02

Table 2: Comparison of biochemical profile of dengue fever patients with and without bleeding manifestations.

	Total dengue n=120	Patient with bleeding N= 26	Patients without bleeding N=94	P
NS1 positive	88 (73.33%)	16 (61.53%)	72 (76.59)	0.08
IgM	84 (70%)	7 (26.92%)	77 (81.91%)	0.04
IgG	42 (35%)	3 (11.53%)	39 (41.48%)	0.08
Mean WBC	7246 ± 30.4 cells cmm	6322 ± 28.22 cells cmm	5275 ± 23 cells cmm	0.06
Mean HB g/Dl	12.8 ± 3.6 gm%	12.44 ± 1.23 gm%	12.64 ± 1.5 gm%	0.06
Mean platelet count in cmm	52680±120.8	32684 ± 56	44840 ± 38	0.04
Mean ALT(U/L)	48 ± 6.8	40.6 ± 8.42	38.8 ± 6.4	0.08
Mean AST (U/L)	42 ± 4.6	36.8 ± 6.2	28.6 ± 6.2	0.06
Mean Sr. creatinine	2.1 ± 0.61	1.68 ± 1.81	1.2 ± 0.8	0.09
Mean blood urea	14.6 ± 12.6	12.6 ± 0.8	14.2 ± 0.8	0.07
Mean hematocrit	38.86 ± 8.4	44.6 ± 1.4	38.06 ± 0.06	0.02

CONCLUSION

Dengue fever is an acute febrile illness with fever, Myalgia, rash, abdominal pain, bleeding manifestations like petichae, purpura subconjunctival hemorrhage and haematuria which are common with low platelet counts.

Clinically rash and hepatomegaly are common findings and LFT abnormalities are common. CNS complications may occur in rare cases. As dengue fever is taking epidemic turn in some parts of India, it should be promptly diagnosed and treated with supportive care to prevent mortality. Educating the public regarding dengue fever and maintaining a proper hygiene in surrounding areas can reduce the spread of dengue fever.

REFERENCES

1. Halstead SB. Dengue. *Lancet*, 2007; 370: 1644-1652.
2. Kabra SK, Jain Y, Pandey RM, et al. Dengue haemorrhagic fever in children in the 1996 Delhi epidemic. Transaction of royal society of Tropical Medicine *and Hygiene*, 1999; 73: 435-440.
3. Gulati S, Maheshwari A. Atypical manifestations of dengue. *Tropical Medicine and International Health*, 2007; 12: 1087-1095.
4. Misra UK, Kalita J, Syam UK, et al. Neurological manifestations of dengue virus infection. *J Neurol Sciences*, 2006; 244: 117-12.
5. Aggrawal A, Chandra J, Aneja S, et al. An epidemic of dengue haemorrhagic fever and dengue shock syndrome in children in Delhi. *Indian Pediatrics*, 1998; 35: 727-732.

6. Kulkarni MJ, Sarathi V, Bhalla V, et al. Clinico-epidemiological profile of children hospitalized with dengue. *Indian J Pediatrics*, 2010; 77: 1103-1107.
7. Dhooria GS, Bhat D, Bains HS. Clinical profile and outcome in children of dengue haemorrhagic fever in North India. *Iran J Pediatrics* 2008; 18: 222-228.
8. Parkash O, Almas A, Jafri WSM, et al. Severity of acute hepatitis and its outcome in patients with dengue fever in a tertiary care hospital Karachi, Pakistan (South Asia). *BMC Gastroenterology*, 2010; 10: 43.
9. Joshi R, Baid V. Profile of dengue patients admitted to a tertiary care hospital in Mumbai. *Turkish J Pediatrics*, 2011; 53: 626-631.
10. Ratageri VH, Shepur TA, Wari PK, et al. Clinical profile and outcome of Dengue fever cases. *India J Pediatrics*, 2005; 72: 705.
11. Manjith N, Aravind M, Thilothammal N, et al. Dengue fever epidemic in Chennai- a study of clinical profile and outcome. *Indian Pediatrics*, 2002; 39: 1027-1033.