



Clinical profile and Etiological Parameters: Acute Febrile Illnesses in Relation with Thrombocytopenia

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ABSTRACT

Aims: To study etiological and laboratory parameters of acute febrile illness patients in relation with thrombocytopenia.

Material and methods: This is a hospital based cross sectional study between October 2012 to August 2014, with the diagnosis of acute febrile illnesses with thrombocytopenia like Dengue fever (DF), malaria, leptospirosis, viral infections and typhoid fever. Their clinical and laboratory parameters were compared for the diagnostic utility in acute febrile illness with thrombocytopenia.

Results: Out of 100 cases were collected for the entire study 55 cases were dengue positive, 22 cases were unexplained fever, 11 cases were of septicemia, 7 cases were positive for Malaria and 3 cases were diagnosed as enteric based on blood culture and 2 cases were positive for leptospiral IgM. Among the total 100 cases 65 were males and 35 were females. The most common age group affected in our study was 21-40 years of age. Bleeding manifestations include petechia (55.81%), epistaxis (51.16%), Hematuria (39.53%), subconjunctival Hemorrhages (23.26%), bleeding gums (11.63%), malaena (4.65%).

Conclusion: It is a hospital based cross-sectional study showing the etiological and clinical profile of patients with acute febrile illness in relation with thrombocytopenia.

Keywords: Dengue fever, Leptospirosis, Malaria.

INTRODUCTION

Dengue fever (DF), is the most common mosquito borne arbo-viral infection in humans. Undifferentiated febrile illnesses are very common in tropical countries like India which may mimic like dengue ie. malaria, leptospirosis, influenza, salmonella typhi etc 1-8 The clinical presentation and differential diagnosis of these infections are almost similar to dengue, so that the absolute diagnosis without laboratory confirmation will not be easy. According to WHO, annually 50 million cases of DF occur world over with a mortality of 2.5%. Approximately, 112 countries that experience dengue transmission. Among the estimated 2.5 billion people at risk globally for dengue, about 1.8 billion (i.e., more than 70%) reside in Asia Pacific countries¹⁰. Currently the disease is endemic in all continents except Europe. DENGUE viruses belong to the genus flavi virus. These single stranded RNA viruses are of four serotypes which are designated as DEN-1, DEN-2, DEN-3 and DEN-4"². In spite of antigenic similarity they are different enough to elicit cross-protection only for a few months after infection by any one of them. The clinical spectrum of DF varies from mild febrile illness to its grave form of dengue haemorrhagic fever (DHF)³. Classical DF is characterised by the presence of fever, headache, myalgia, retroorbital pain, joint pain, vomiting, nausea and maculopapular rashes which last for 5-7 days ⁴. But there are many other infectious diseases which present with similar clinical picture like leptospirosis, malaria, typhoid fever and henceforth, clinical and laboratory evaluation is taken into picture.

MATERIALS AND METHODS

Source of Data

Patients admitted in Rajah Muthiah medical college and hospital with acute febrile illness and thrombocytopenia.

Study design

This is a hospital based Cross-sectional study among patients with acute febrile illness with above diagnosis

Objectives

1. To assess the clinical complications associated with fever and thrombocytopenia.
2. To evaluate clinical profile of fever with thrombocytopenia.
3. To identify the cause of fever with thrombocytopenia

Methods

This is a hospital based Cross-sectional study among patients with acute febrile illness with thrombocytopenia including dengue fever, malaria, leptospirosis, viral infections and Enteric fever by serological and culture studies. The clinical details and laboratory parameters of all patients were obtained from the records and captured to the preformatted data sheet. The clinical details include fever, headache, myalgia, joint pain, rashes over body and bleeding manifestations were documented.

Inclusion criteria

1. Patients above the age of 12.
2. Age more than 12 years.
3. Fever less than 15 days duration.
4. Fever more than 100⁰ F at least once a day.

Exclusion criteria

1. Known patients of Primary Thrombocytopenia's.
2. Patients on treatment with antiplatelet drugs.
3. Drug induced thrombocytopenia
4. Platelet count more than 1,00,000/ μ l
5. Known patients of cirrhosis of liver

Data Analysis

The data obtained was analysed by percentage, mean, frequency, chi-square

RESULTS**Case distribution**

Total 100 cases were collected for the entire study 55 cases were dengue positive, 22 cases were unexplained fever, 11 cases were of septicemia, 7 cases were positive for Malaria and 3 cases were diagnosed as enteric based on blood culture and 2 cases were positive for leptospiral IgM.

Sex distribution

Among the total 100 cases 65 were males and 35 were females. Age distribution: Commonest age group affected in most of these infections was 20-40 years of age.(Table 1)

AGE (in years)	PERCENTAGE		
	MALE	FEMALE	TOTAL
≤ 20	18	10	28
21-40	28	14	42
41-60	14	7	21
>60	5	4	9
Total	65	35	100

Etiological differentiation:(Table 2)

ETIOLOGY	PATIENT (in percentage)
DENGUE	55
UN EXPLAINED	22
SEPTICEMIA	11
MALARIA	7
ENTERIC	3
FEVER	2
LEPTOSPIROSIS	
Total	100

Overall distribution of platelet count with reference to different etiology (Table 3)

PLATELET COUNT	BLEEDING TENDENCY											
	DENGUE		UNEXPLAINED		SEPTICEMIA		MALARIA		ENTERIC FEVER		LEPTOSPIROSIS	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
≤10000												
10001-20000	6	4	-	-	-	-	-	-	-	-	-	-
20001-50000	3	17	6	1	3	-	-	2	-	-	-	-
50001-100000	5	14	3	7	3	-	2	3	1	-	-	-
	6	0	3	2	2	3	-	-	-	2	-	2

DISCUSSION

Dengue fever is one of the most common arboviral infection which affect humans. In all clinical scenarios where there is both fever and thrombocytopenia, we should evaluate for the possibility of dengue fever. The delay in diagnosis of dengue fever is because of the similar clinical presentation of other disease like malaria, leptospirosis, enteric fever and other viral infections. So in our study we are trying to differentiate the various causes of fever with thrombocytopenia based on the clinical and investigation measures. In our study majority of the cases are dengue fever and unexplained fever. Among infections, Dengue (55%) was the commonest cause as compared to other study in which septicemia (27%) was the commonest cause; this was due to seasonal and regional variations. This study also showed that the chance of getting enteric fever was drastically reduced nowadays. In our study we noticed that the male

population (65%) was more affected than females (35%). The most common age group affected in our study was 21-40 years of age. In our study Petechiae/ purpura (55%) was the commonest bleeding manifestations followed by spontaneous bleeding (34%). The reason for this increased incidence in males has been attributed to the prolonged outdoor activities and thereby increased chance of exposure to mosquito bites²⁴. These reports from Asia are in contrast to studies in South America, which have found either equal proportions of male and female dengue cases or a greater proportion of female cases²⁴⁻².

The clinical presentation of unexplained viral fever is almost similar to dengue fever. The differentiation is very difficult based on the clinical background. So by the end of this study we demonstrated different etiological disease with bleeding manifestations in relation to thrombocytopenia.

CONCLUSION

Maximum percentage of patients (N=42) were in the age group 21-40 years. The Mean age of study patients was 35.08 years. Maximum percentage of patients (38%) had platelet count in the range between 20001-50000 cells/ μ l. For majority of patients (55%) the causative factor for thrombocytopenia was Dengue illness. 32.55% of patients with Bleeding tendencies had platelet count between 20001-50000 cells/ μ l. Petechial/purpura (55.81%) and Epistaxis (51.16) were the common Bleeding Manifestations. In patient with petechiae/purpura, 33.33% had platelet count between 20001-50000 cells/ μ l. Among spontaneous bleeding patients, the maximum percentage (35.3%) had platelet count in the range of 20001-50000 cells/ μ l. 30% of bleeding tendency in dengue causes had platelet count between 50001-100000 cells/ μ l. About 50% of bleeding tendency patients in unexplained causes had platelet count in the range of 10001-20000 cells/ μ l. There was no significant Chi-square test of association for Age, Gender and etiology with bleeding tendencies of thrombocytopenia patients. There was positive chi-square test of association for platelet count with dengue causes presented with bleeding tendencies. The mortality rate was 6% among thrombocytopenia patients. The leading cause of death was septicemia. There was significant association between nature of etiology and mortality.

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