International Journal of Medical and Health Research
ISSN: 2454-9142, Impact Factor: RJIF 5.54
www.medicalsciencejournal.com
Volume 3; Issue 3; March 2017; Page No. 123-125

Clinical and laboratory evaluation of patients with fever with thrombocytopenia

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Abstract

Aims: To evaluate clinical profile of fever with thrombocytopenia. To identify the causes of fever with thrombocytopenia. To assess the clinical complications associated with fever and thrombocytopenia.

Material and methods: We prospectively collected a series of 100 patients with fever and thrombocytopenia.

Results: Age and sex distribution; in this study male outnumbered female. Platelet count and bleeding; of 100 patients four had bleeding manifestations. There is no correlation between platelet count and bleeding.

Degree of thrombocytopenia in various diseases; (1) Viremia; among infectious cases viremia including dengue accounted for the vast majority. In this study out of 100 cases viremia including dengue accounts for 52 cases. (2) Dengue; in our study dengue caused severe thrombocytopenia.

In our study malaria caused mild-to-moderate thrombocytopenia with counts remaining between 50,000 to 1 lacs in most cases. Bleeding manifestations; in our study, out of 100 patients only four patients presented with bleeding manifestations.

Three patients of mixed Plasmodium vivax with Plasmodium falciparum malaria presented with petechie, purpura and hematuria. One patient of dengue presented with gum bleeding. Platelet count and fever; in this study, shortest duration of fever is three days and longest is 10 days. Platelet count started increasing from 2nd day of admission to 8th day of admission with relative treatment. Enteric fever; in our study out of 100 patients three had fever with thrombocytopenia without any bleeding manifestations.

Keywords: dengue, malaria, viremia, enteric fever, hematuria

Introduction

Fever is a pervasive and ubiquitous theme in human myth, art and science. Fever is such a common manifestation of illness that it is not surprising to find. New interest surfaced in the relationship between body temperature and disease. Initially thought to be a product of polymorphonuclear leukocyte, this endogenous pyrogen is generated by mononuclear phagocytes. It is identical or very similar in composition to substances previously identified as lymphocyte activating factor (LAF), mononuclear cell factor and leukocyte endogenous mediator collectively known as interleukin-1 (IL-1). IL-1 has now been shown to have a major role in thermoregulation.

Aims and Objectives

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

Material and Method

We prospectively collected a series of 100 patients with fever and thrombocytopenia. Inclusion Criteria The patients of both sexes aged >12 years. Patients admitted with fever and found to have thrombocytopenia are included in the study.

Table 1: Distribution of Disease

Age	Male	Female	Disease	Total
12-30 years	29	11	Dengue	40
30-45 years	6	2	Dengue	8
45-60 years	2	1	Dengue	3
>60 years	0	0	Dengue	0
12-30 years	12	1	*P. vivax*	13
30-45 years	2	3	*P. vivax*	5
45-60 years	2	1	*P. vivax*	3
>60 years	0	0	*P. vivax*	0
12-30 years	8	2	*P. falci*	10
30-45 years	3	1	*P. falci*	4
45-60 years	2	1	*P. falci*	3
>60 years	2	2	*P. falci*	4
12-30 years	1	1	Enteric fever	2
30-45 years	1	0	Enteric fever	1
45-60 years	0	0	Enteric fever	0
>60 years	0	0	Enteric fever	0
12-30 years	1	0	*P. vivax + falci*	1
30-45 years	1	0	*P. vivax + falci*	1
45-60 years	1	0	*P. vivax + falci*	1

Table 2: Sex-wise Distribution of Cases

Disease	Male (%)	Female (%)	Total (%)
Dengue	37%	15%	52%
P. vivax malaria	16%	5%	21%
P. falci malaria	15%	6%	21%
P. vivax + *P. falci* malaria	3%	0%	3%
Enteric fever	2%	1%	3%

Table 3: Sex-wise Platelet Count

Disease	Lowest platelet count in male	Lowest platelet count in female
Dengue	10,000	13,000
P. vivax malaria	28,000	20,000
P. falci malaria	12,000	25,000
Enteric fever	90,000	50,000

Table 4: Relationship between Day of Fever and Platelet Count

Disease	Lowest platelet count/Day of admission our study	Normal platelet count/Day of admission our study
Dengue	1-2	4-5
P. vivax malaria	1-2	4-5
P. falci malaria	1-3	4-7
Enteric fever	1-2	4-5

Table 5: Relation of Month of Yearand Number of Cases for Each Disease

Disease	October 2010/No. of cases	November 2010/No. of cases	December 2010/No. of cases
Dengue	10	22	20
Malaria	12	18	12
Enteric fever	02	01	00

Method

Once the patients admitted with fever and those who had thrombocytopenia, a careful history was recorded, general physical examination was done. Detailed examination of various systems was done. Routine investigation was done, the specific and special investigations were done as and when indicated. In whom a final definite diagnosis was reached, were treated for the disease and platelet, count was repeated at the time of discharge.

Details of history, general physical examination and laboratory and technical investigation reports were noted down from time to time. Once the specific diagnosis was reached, patients were treated for it specifically and symptomatically.

Results

In our study, out of 100 patients 52 are having Dengue (37 M, 15 F), 21 patients are having Plasmodium vivax malaria (16 M, 5 F), 21 patients are having Plasmodium falciparum malaria (15 M, 6 F), three male patients having mixed P. vivax and P. falciparum malaria, three patients having enteric fever (2 M, 1 F) (Table 1).

Age and Sex Distribution

In our study, male are affected more than female. Young aged male (12-30 years) are affected more than young age female (12-30 years) (Table 2).

Table 6: Relation of Season to Number of Cases for Each Disease

Disease	Study proper/season
Dengue	Rainy/Winter
Malaria	Rainy/Winter
Enteric fever	Rainy/Winter

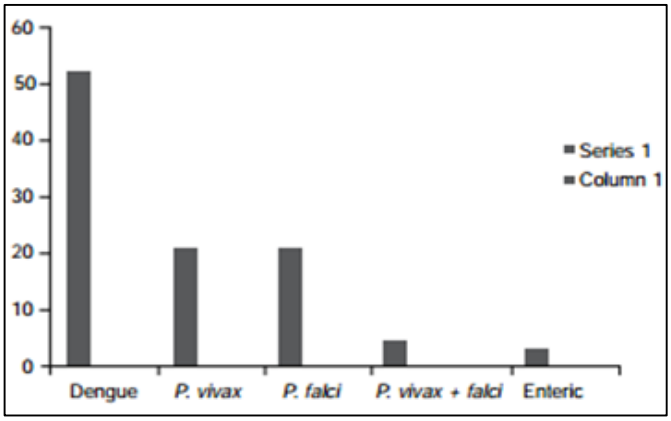

Fig 1: Distribution of Disease

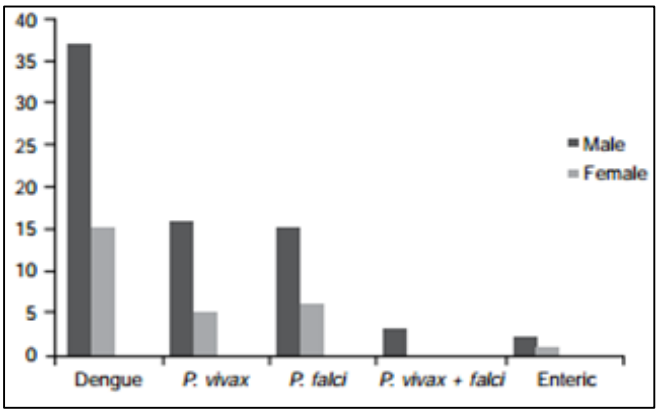

Fig 2: Male and Female Distribution of Disease

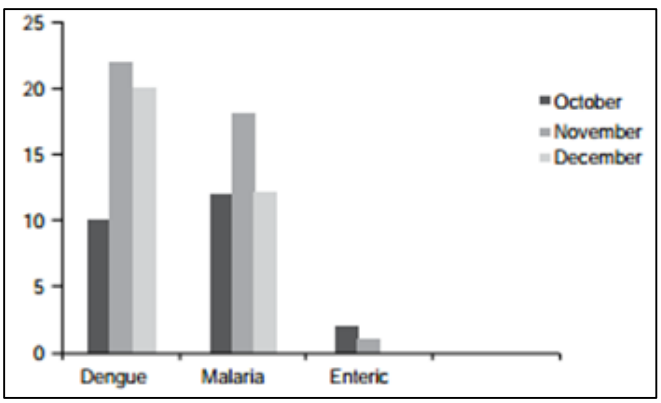

Fig 3: seasonal distribution of disease

In our study, Dengue is the commonest cause. Lowest platelet count in each disease and its relation to male and female is shown in Table 3.

In our study, low platelet count seen on the day of admission, which started raising from Day 3 to 4, and reached to normal value on average of 4 to 7 days of admission (Table 4).

In our study, maximum number of cases of fever with thrombocytopenia are seen mainly during rainy and early winter season (Tables 5 and 6).

Conclusion

Febrile illness accounts for large number of cases with thrombocytopenia. Incidence is more in male compared to females. Maximum prevalence is in the younger age group, 66% of cases seen in 12-30 years age group. Least prevalence seen in elderly age group, 10%.

Fever is the presenting complaint in all 100 cases. Bleeding manifestations were very rarely seen in our study. Viremia is the commonest cause of thrombocytopenia in our study including Dengue, 52% of cases. Bleeding time has no relation to platelet count or bleeding manifestation.

No mortality was seen in our study. P. vivax malaria accounts 22% of cases and P. falciparum malaria 21% of cases. Mixed infection that is combined P. vivax and P. falciparum malaria accounted for 3% of cases. Bacterial infection in our study is mainly seen with enteric fever. Enteric fever accounts for 3% of cases of fever with thrombocytopenia. Thrombocytopenia due to infectious diseases shows seasonal variation, commonly seen in rainy and winter season.

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