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A STUDY OF CLINICAL AND LABORATORY PROFILE IN PATIENTS OF PYREXIA WITH THROMBOCYTOPENIA AT A TERTIARY CARE HOSPITAL IN EASTERN RAJASTHAN

Medicine

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KEYWORDS

INTRODUCTION

In day to day life, fever is a common complaint for which patients consult a doctor. "Fever is defined as A.M. (Ante meridiem) temperature more than 98.9 degree F and P.M.(Post meridiem) temperature more than 99.9 degree F[1]. It is a manifestation of various infective as well as non infective disease processes.

Thrombocytopenia is defined as decrease in number of circulating platelets in the blood. Normal platelet counts range from 1,50.000 to 4,50,000 platelets/µl. Often patients with thrombocytopenia are asymptomatic, and are diagnosed incidentally by routine complete blood count (CBC). Occasionally, there may be bruising, purpura, petechiae, black coloured stools, nasal bleeding and gum bleeds, hematuria and life threatening bleeding in central nervous system[2]. It may occur due to decreased platelet production or due to their increased destruction. The causes of thrombocytopenia are varied and range from idiopathic to infectious to malignancies.

Nowadays there has been an increase in the incidence of febrile thrombocytopenia. In a Tropical country like India the infectious etiologies are common. Infections like dengue, scrub typhus, malaria, typhoid and other viral illness are some of the common causes of fever with thrombocytopenia in India.

AIMS AND OBJECTIVES

1) To determine the relative frequency of different diseases.
2) To observe the different bleeding manifestations.
3) Association of bleeding manifestations with platelet counts.

MATERIALS AND METHODS

1. SOURCE OF DATA: The study was conducted in patients coming to MGMCH with fever in association with decreased platelets.

2. SAMPLE SIZE AND PERIOD OF STUDY: 150 patients , from June 2018 to December 2018.

3. INCLUSION CRITERIA:

- Patients presenting with fever, i.e. "A.M temperature of >37.2℃ (>98.9℉ F) and P.M temperature >37.7℃ C (>99.9℉ F), and thrombocytopenia i.e. platelet count of <1.5 lakhs/µl.

4. EXCLUSION CRITERIA:

- Patients presenting with thrombocytopenia without fever.
- A diagnosed case of immune thrombocytopenic purpura.
- Thrombocytopenia due to haematological or malignant disorders, patients on chemotherapy or immunosuppressant drugs and other known causes of thrombocytopenia.
- A diagnosed case of platelet disorder and dysfunction.

INVESTIGATIONS REQUIRED:-

Patients fulfilling the above criteria were subjected to detailed clinical profile related to pyrexia and investigations were done to find out the aetiological factors.

- Complete hemogram,,ESR,,Bleeding time and Clotting time (if required),Renal Function Test , Liver Function Test , Urine analysis, MP card test, Chest X- ray, Ultrasound abdomen, ELISA for HIV1 and 2, PT and APTT (if required)
- Serological test to detect (if clinically required): Dengue, Leptospira, Chikungunya, Scrub typhus, Widal
- Bone marrow study, if required
- Blood culture , if necessary

RESULTS

A Total of 150 Patient of Pyrexia with Thrombocytopenin admited in MGMC Hospital During June 2018 to December 2018, were Studied Throughly.

Table-1 shows out of 150 cases maximum cases were of dengue (64.7%) followed by malaria (16.7%) and scrub typhus (11.4%), Sepsis (2.0%), Enteric fever (1.4%), Chikungunya(0.7%).

TABLE 1: Distribution of cases on the basis of etiology

Etiology	No. of patients	Percentage
Dengue	97	64.7
PF(Falciparum Malaria)	6	4.0
PV(Vivax Malaria)	19	12.7
Scrub typhus	17	11.4
Sepsis	3	2.0
Enteric fever	2	1.4
Chikungunya	1	0.7
Unknown	5	3.4

Table-2 shows out of total 150 cases 71 patients did not have any bleeding manifestation. Most common bleeding manifestation was Melena (40.7%) followed by Epistaxis (8%), Hematuria (6%), Menorrhagia (5.3%), Petechiae/Purpura (2%), Gum bleed (2%), Hematemesis/Hemoptysis (2%) and Sub conjunctival haemorrhage (0.7%).

TABLE 2: Haemorrhagic manifestations

Bleeding manifestation	No. of patients	Percentage
None	71	47.3
Hematuria	9	6.0
Petechiae/ Purpura	3	2.0
Epistaxis	12	8.0
Melena	61	40.7
Gum bleed	3	2.0
Sub Conjuctival Hemorrhage	1	0.7
Hematemesis/ Hemoptysis	3	2.0
Menorrhagia	8	5.3

Table-3 shows mean platelets counts was 0.58±0.41×105 per µL. But lowest platelet count were encountered in febrile illness of unknown etiology (0.38±0.32).

In known etiology lowest platelet counts were in falciparum malaria (0.43±1.24×105), Mean platelet counts for dengue, Vivax malaria, Chikungunya, sepsis, enteric fever were 0.50±0.36×105, 0.55±0.440×105, 0.60±0.00×105, 0.69±0.44×105, 0.69±0.44×105 respectively.

TABLE 3: Mean platelet count at time of admission (Day 1)

Etiology	Platelet N(10^5) /µL (Mean ± SD)
Dengue	0.50±0.36
PF(Falciparum Malaria)	0.43±1.24
PV(Vivax Malaria)	0.55±0.440
Scrub typhus	0.83±0.42
Sepsis	0.69±0.44
Enteric fever	0.69±0.44
Chikungunya	0.60±0.00
Unknown	0.38±0.32
Total	0.58±0.41

(Mean platelet count in 10^5 per µL)

Table-4 shows out of 97 dengue cases 62 had bleeding manifestations (63.9%) this being the highest percentage among all cases, in case of sepsis 33.3%,Vivax Malaria 36.8%, scrub typhus 23.5% had bleeding manifestation. while None of the cases of Falciparum Malaria showed bleeding manifestation.

Table 4: Bleeding Manifestation In Different Etiology Groups

Etiology	No. of patients	Bleeding manifestations	Percentage
Dengue	97	62	63.9
PF(Falciparum Malaria)	6	NIL	0.00
PV(Vivax Malaria)	19	7	36.8
Scrub typhus	17	4	23.5
Sepsis	3	1	33.3
Enteric fever	2	NIL	0.00
Chikungunya	1	1	100
Unknown	5	3	60.0

Table-5 shows out of 33 patients 27 patients presented with bleeding manifestations when platelet counts were <20,000, 33 out of 49 patients with platelet counts between 20,000 to 50,000 had bleeding manifestations, out of 68 patients 18 had bleeding manifestations with platelet counts >50,000. Bleeding manifestations had a direct correlation with the presence or absence of thrombocytopenia as also its severity.

TABLE 5: Association of Bleeding manifestations with platelet count

Platelet	Bleeding manifestations	No Bleeding	Total
<20000 (A)	27 (81.8%)	6 (18.2%)	33
20000-50000 (B)	33 (67.3%)	16 (32.7%)	49
>50000 (C)	18 (26.5%)	50 (73.5%)	68
Total	110	40	150

Chi-square= 66.670;
P= 0.000

DISCUSSION

In our study the spectrum of disease distribution of the febrile illnesses with thrombocytopenia was as follows:- Dengue(64.7%) followed by Malaria(16.7%), and Scrub typhus (11.4%), Sepsis (2.0%), Enteric fever (1.4%)and Chikungunya(0.7%).

These Observation were Comparable With Study Conducted Mohammed Fawas N et al[3] In their study They found that the commonest cause of fever with thrombocytopenia was Dengue (54.5%) followed by Malaria.

In a another study conducted by Nair et al[4], Septicemia was the leading cause of fever with thrombocytopenia (26.61%) followed by Typhoid fever (14.68%), Dengue (13.8%), Megaloblastic anemia (11.9%), Malaria (9.2%) and Hematological malignancies (3.7%). This might be due to the seasonal and regional variability between the two studies.

Same results were also Observed in a study conducted by Gandhi et al[5]. in their study commonest cause of fever with thrombocytopenia was Malaria (42%) followed by Dengue (26%), and other viral fevers (17%), septicemia (4.5%) and enteric fever (4.45%). The results of our study are at variance with the study as stated above. and In our study 79 out of 150 patients presented with bleeding manifestations. Among the bleeding manifestation melena (41.7%) was most commonly encountered followed by, epistaxis. (8%), haematuria(6%), menorrhagia(5.3%), gum bleeding(2%), petechiae(2%), hematemesis/ hemoptysis(2%) and subconjunctival hemorrhage (0.7%).

Mohammed Fawas N et al[3] found in their study that in patients with thrombocytopenia, Bleeding manifestations like petechiae, conjunctival haemorrhage, gum bleeding and melena were seen in 17% of patients. Petechiae was the commonest bleeding manifestation followed by gum bleeding, haematuria and melena. In the study by Nair et al[4] spontaneous mucosal bleeding was the commonest bleeding manifestation followed by petechiae/purpura.

Another study conducted by Praveen Kumar et al[6] in 2014,Clinical manifestations of thrombocytopenia were noted in 11.05% patients (GI bleed - 5.26% patients, petechial rashes - 3.67% and hematuria - 2.10%).

In our study mean platelet counts were 0.58±0.41×10^5 per µL. Lowest platelet count was seen in febrile illness of unknown etiology (0.38±0.32).

In cases where etiology was known the lowest mean platelet count was in patients of Falciparum Malaria (0.43±1.24×10^5), Mean platelet count in other illnesses were as follows Dengue 0.50±0.36×10^5, Vivax Malaria 0.55±0.440×10^5, Chikungunya 0.60±0.00×10^5, sepsis 0.69± 0.44×10^5, enteric fever 0.69±0.44×10^5

In our study we observed that out of the 33 patients with platelet counts <20,000 27 patients (81.8%) had bleeding manifestation. Of the 49 patients with platelet counts between 20000-50000, 33 patients (67.4%) had bleeding manifestation when out 18 patients (26.5%) of the 68 patients with platelet counts >50000.

Mohammed Fawas N et al[3] conducted a detailed study of distribution of thrombocytopenia and they found that the distribution of platelet varied from 10000 to 150000 in cases. Interestingly 35% of cases in this study had thrombocytopenia <50000 whereas platelet count less than 20000 occurred in 4.7%. Whereas in the study by Nair et al[4] 25.7% of patients had platelet count in the range of 20000- 50000/mm^3.

Praveen Kumar et al[6] in 2014 found in their study, platelet count was commonly > 50,001/ mm^3 (50%) followed by 20,001/- 50,000/mm^3 (39.47%) and <20,000/mm^3 in 10.52% cases. So, they concluded that thrombocytopenia is usually mild in case of febrile thrombocytopenia.

In our study Dengue fever accounted for a large majority of cases of febrile thrombocytopenia, specially those with bleeding manifestations. It also showed the lowest platelet counts The postulated mechanism for the low platelet count is a combination of impaired thrombopoiesis and peripheral platelet destruction[8]

CONCLUSION

Out of 150 cases of fever with thrombocytopenia following results are highlighted-

- Dengue(64.7%) was the commonest cause of febrile thrombocytopenia.
- Most common bleeding manifestation was melena(40.7%); followed by epistaxis(8%) and haematuria(6%).
- Mean platelet count was 0.58±0.41×10^5 per µL. But lowest platelet count was in febrile illness in unknown etiology (0.38±0.32).
- A direct correlation of bleeding manifestations with the degree of thrombocytopenia was observed, being highest (81.81% at platelet counts below 20,000/µL. Falciparum Malaria was an unexplained exception to this observation.

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