

ORIGINAL RESEARCH**Clinical profile of patients with thrombocytopenia- A clinical study****¹Dr. Pravin Gulab Dandekar, ²Dr. Rajesh Bhagchandani, ³Dr. Sanjay Gupta**^{1,2,3}Assistant Professor, Department of Medicine, Chirayu Medical College and Hospital, Bhopal, Madhya Pradesh, India**Corresponding Author**

Dr. Sanjay Gupta

Assistant Professor, Department of Medicine, Chirayu Medical College and Hospital, Bhopal, Madhya Pradesh, India

Received: 15 November, 2022

Accepted: 20 December, 2022

Abstract**Background:** Thrombocytopenia is defined as platelet count $<1,50,000/\mu\text{L}$. The present study was conducted to assess clinical profile of patients with thrombocytopenia.**Materials & Methods:** 110 patients of fever of both genders were enrolled. Etiologic and clinical data of all the patients was recorded**Results:** Out of 110 patients, males were 60 and females were 50. Aetiology was malaria in 15, dengue fever in 45, viral fever in 20, scrub typhus in 13, septicaemia in 10 and Leptospirosis in 7 patients. Common symptoms were fever in 110, cough in 65, pallor in 40, jaundice in 22, chills & rigors in 72, headache in 45, myalgia in 49, bleeding in 22 and rashes in 15 cases. The difference was significant ($P < 0.05$). Platelet count was <20000 per cubic mm in 8, 20000- 50000 per cubic mm in 25, 50000- 100000 per cubic mm in 65 and 100000-150000 per cubic mm in 12 cases. The difference was significant ($P < 0.05$).**Conclusion:** Common clinical features were fever, cough, pallor, jaundice, chills & rigors, headache, myalgia, bleeding and rashes.**Key words:** Platelet, thrombocytopenia, rashes**Introduction**

Thrombocytopenia is defined as platelet count $<1,50,000/\mu\text{L}$. This is due to decreased production, increased destruction (immunogenic and non-immunogenic), and increased sequestration in spleen. Of these, infections is one of the commonest cause of thrombocytopenia. Infections like dengue, leptospirosis, malaria, typhoid, military TB, HIV, septicemia are some of the common causes of fever with thrombocytopenia.¹

Despite the fact that thrombocytopenia is experienced in different illnesses, it is for certain that possibly lethal seeping because of thrombocytopenia is rare.⁴ Thrombocytopenia is because of diminished creation, expanded obliteration, and expanded sequestration in spleen. The causes of thrombocytopenia are impaired platelet production, accelerated platelet destruction or dilution and/ or splenic sequestration.²

Infections like dengue, leptospirosis, malaria, typhoid, military TB, HIV, septicemia are some of the common causes of fever with thrombocytopenia.³ This can manifest as petechiae over the skin, hemorrhages from mucosa of gastrointestinal and genitourinary tract. Intracranial haemorrhage is a dangerous consequence in thrombocytopenic patients. Even though there is no absolute relation between platelet counts and bleeding, certain broad generalizations can be made, with counts less than $10,000/\mu\text{l}$, bleeding is usual and may be severe.⁴ The present study was conducted to assess clinical profile of patients with thrombocytopenia.

Materials & Methods

The present study comprised of 110 patients of fever of both genders. The selected patients gave their written consent.

Data such as name, age, gender etc. was recorded. A complete detailed history of patients was taken and thorough clinical was performed. All the laboratory investigations such as CBC, peripheral smear examination, QBC for Malarial parasite, WIDAL test, for dengue fever, IgM ELISA was done, Leptospiral antibodies test. Blood cultures were done in some cases. In subjects with bleeding complications, platelet transfusions were done if platelet count was $<20,000/\mu\text{L}$. Etiologic and clinical data was recorded. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

Results

Table I: Distribution of patients

Total- 110		
Gender	Males	Females
Number	60	50

Table I shows that out of 110 patients, males were 60 and females were 50.

Table II: Assessment of parameters

Parameters	Variables	Number	P value
Etiology	Malaria	15	0.04
	Dengue fever	45	
	Viral fever	20	
	Scrub typhus	13	
	Septicaemia	10	
	Leptospirosis	7	
Clinical presentation	Fever	110	0.05
	Cough	65	
	Pallor	40	
	Jaundice	22	
	Chills & Rigors	72	
	Headache	45	
	Myalgia	49	
	Bleeding	22	
	Rashes	15	

Table II, graph I shows that aetiology was malaria in 15, dengue fever in 45, viral fever in 20, scrub typhus in 13, septicaemia in 10 and Leptospirosis in 7 patients. Common symptoms were fever in 110, cough in 65, pallor in 40, jaundice in 22, chills & rigors in 72, headache in 45, myalgia in 49, bleeding in 22 and rashes in 15 cases. Common symptoms were fever in 110, cough in 65, pallor in 40, jaundice in 22, chills & rigors in 72, headache in 45, myalgia in 49, bleeding in 22 and rashes in 15 cases. The difference was significant ($P < 0.05$). Platelet count was <20000 per cubic mm in 8, 20000- 50000 per cubic mm in 25, 50000- 100000 per cubic mm in 65 and 100000- 150000 per cubic mm in 12 cases. The difference was significant ($P < 0.05$).

Graph I: Assessment of parameters

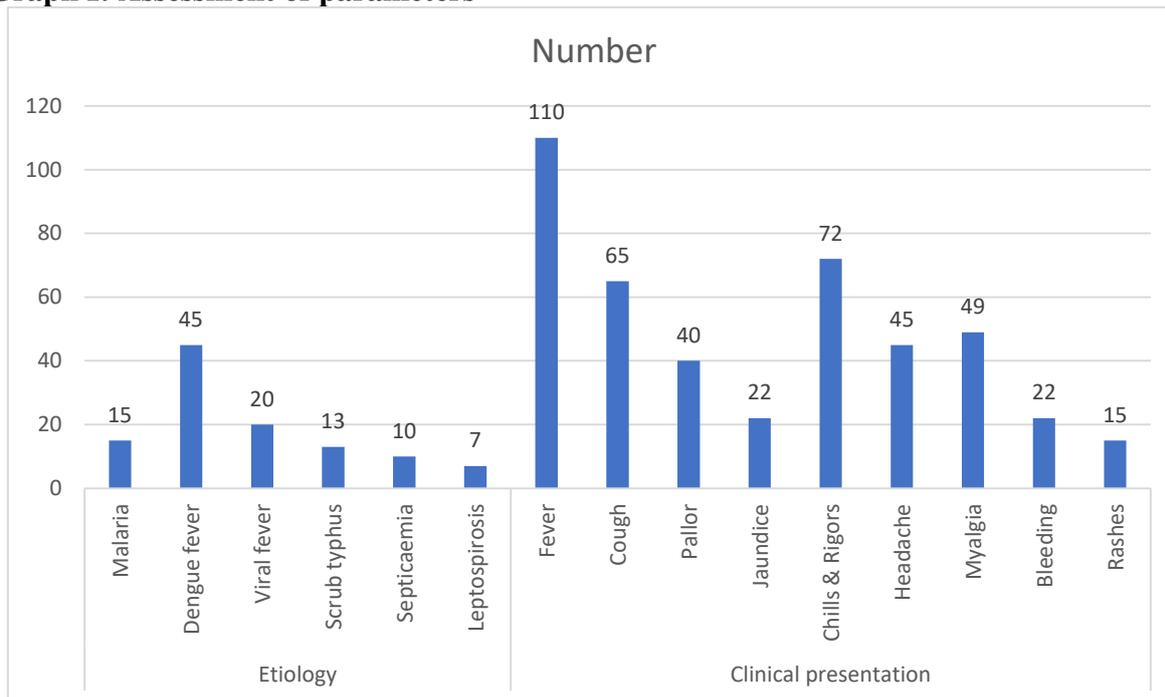


Table IV: Assessment of Platelet count

Platelet count	Number	P value
<20000 per cubic mm	8	0.05
20000- 50000 per cubic mm	25	
50000- 100000 per cubic mm	65	
100000- 150000 per cubic mm	12	

Table III shows that platelet count was <20000 per cubic mm in 8, 20000- 50000 per cubic mm in 25, 50000- 100000 per cubic mm in 65 and 100000- 150000 per cubic mm in 12 cases. The difference was significant (P< 0.05).

Discussion

Fever has been recognized as a cardinal manifestation of disease since ancient times, as recorded by ancient scholars like Hippocrates.⁵ Seen first as a disease but later recognized as an accompaniment to a variety of disease entities; fever is an easily noted and reliable marker of illness.² Normal body temperature displays a diurnal pattern with lower values in the early morning hours and higher values in the afternoon.⁶ Normal ranges are between 36.5°C and 37.5°C (97.7°F and 99.5°F). Fever is superimposed on this pattern and thus temperatures are usually greatest in the afternoon and evening.⁷The present study was conducted to assess clinical profile of patients with thrombocytopenia.

We found that out of 110 patients, males were 60 and females were 50. Geetha et al⁸ assessed the significance of thrombocytopenia in diagnosing etiologies of acute nonspecific febrile illness. Of the 130 patients 33% of patients had Thrombocytopenia. In thrombocytopenia cases 41.86% patients were positive for Malaria, 32.55% of patients were reactive for dengue, 4.65% were reactive for chikungunya, no etiology was found in 20.94% cases. On statistical analysis there was a significant association of thrombocytopenia with Dengue and Malaria cases. No significant association was found with Widal and Chikungunya cases. Finding of thrombocytopenia in patients with acute febrile illness raises the suspicion of dengue and malaria infection.

We found that aetiology was malaria in 15, dengue fever in 45, viral fever in 20, scrub typhus in 13, septicaemia in 10 and Leptospirosis in 7 patients. Common symptoms were fever in 110, cough in 65, pallor in 40, jaundice in 22, chills & rigors in 72, headache in 45, myalgia in 49, bleeding in 22 and rashes in 15 cases. In the study by Dash et al⁹ bleeding manifestations in the form of petechiae and purpura were seen in 35% of cases and spontaneous bleeding was seen in 18% of the cases.

We observed that platelet count was <20000 per cubic mm in 8, 20000- 50000 per cubic mm in 25, 50000- 100000 per cubic mm in 65 and 100000- 150000 per cubic mm in 12 cases. Jayanthi et al¹⁰ evaluated correlation between platelet count and non hemorrhagic complications, duration of hospital stay and additive effect of leucopenia with thrombocytopenia on complications in 99 patients who had dengue fever with thrombocytopenia. Transaminitis (12.12%) was the most common complication followed by acute renal injury (2%). As the platelet count decreased the complication rate increased ($P = 0.0006$). Duration of hospital increased with decreasing platelet count when compared to other study where there was no correlation between the two. There was no correlation between thrombocytopenia with leucopenia and complications. Platelet count can be used to predict the complication and duration of hospital stay and hence better use of resources.

Prathyusha et al¹¹ in her study at showed that with increasing severity of leukopenia there is increased the incidence of hemorrhagic manifestations including petechiae (P value 0.023). However, she found no significant association of leukopenia with significant bleeding manifestations. Ibrahim et al¹² found that ninety-four patients had a final diagnosis of dengue infection, on the basis of clinical features and hematological parameters. Of them, 58 were male (61%), and the mean age was 31 (range, 13–64) years. The mean duration of fever prior to admission was 4 days (range, 2–7). Apart from fever, muscle pain (67%) was the most frequent symptom at admission, followed by joint pain (61%), and headache (59%). Vomiting (43%) and dizziness (34%) were also common, but were found in less than half of the patients. Seventeen (18%) patients were found to have bleeding manifestations on admission. Sixteen percent of patients were found to have symptomatic postural hypotension (defined as a drop in blood pressure greater than 20mmHg between the supine and seated measurements). Tender hepatomegaly was detected at admission in 13 patients (14%).

The limitation the study is small sample size.

Conclusion

Authors found that common clinical features were fever, cough, pallor, jaundice, chills & rigors, headache, myalgia, bleeding and rashes.

References

1. Raikar SR, Kamdar PK, Dabhi AS. Clinical and laboratory evaluation of patients with fever with thrombocytopenia. *Indian Journal of Clinical Practice* 2013;24(4):360-63.
2. Mital R, Agarwal V, Agarwal A. To Assess the relative incidence of and to compare the hemocytological changes in malaria, dengue and typhoid fever or their combination, in children admitted in a tertiary care centre in western UP, India. *Internat J Contemp Medic Res.* 2016;3(3):718-23.
3. Kumar PM, Swapna M, Kavitha K, Sudhir U, Sunil HS, Deepak TS. Clinical manifestations and biochemical profile of dengue fever in a tertiary care centre. *Internat J Contemp Medic Res.* 2016;3(3):920-4.
4. Colman RW, Hirsch J, Marder VJ, Salzman EW. Hemostasis and Thrombosis. Basic principles and clinical practice. 1982. p.246-7.
5. William WJ, EanestBeutler E, Erslev AH, Litchman MA. Hematology. 3rd ed. p.1290-342.

6. Firkin F. Degruchy's Clinical haematology in medical practice. 5th ed. 1990. p.375. 11. George JN, Aizvi MA. Thrombocytopenia. 6th ed. Chapter 117. In: Williams Haematology, Beufler E, ed. New York: McGraw-Hill; 2001. p.1501.
7. Raikar SR, Kamdar PK. Clinical and Laboratory Evaluation of Patients with Fever with Thrombocytopenia. Intern Med 360 Indian J Clin Pract [Internet]. 2013;24(4).
8. Geetha JP, Rashmi MV, Murthy N. Acute Febrile Illness with Thrombocytopenia-a Common Scenario. Ind J Public Health Res Develop. 2015;6(4):163.
9. Dash HS, Ravikiran P, Swarnlatha. A study of clinical and laboratory profile of fever with thrombocytopenia and its outcome during hospital stay. IJSR 2013; 11(4):445-7.
10. Jayanthi HK, Tulasi SK. Correlation study between platelet count, leukocyte count, nonhemorrhagic complications, and duration of hospital stay in dengue fever with thrombocytopenia. Journal of family medicine and primary care. 2016 Jan;5(1):120.
11. Prathyusha CV, Srinivasa Rao M, Sudarsini P, Uma Maheswara Rao K. Clinico-haematological profile and outcome of dengue fever in children. Int J CurrMicrobiolAppl Sci. 2013;2:338–46.
12. Ibrahim S, Horadagoda C, Maithripala C, Lokunarangoda N, Ranasinghe G, Wickramaratne T, et al. Characteristics and management patterns of patients admitted with fever and thrombocytopenia to an acute general medical unit in Sri Lanka. J Glob Infect Dis. 2011;3:203–5.