

EVALUATION OF THE CAUSE IN FEVER WITH THROMBOCYTOPENIA CASES

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HOW TO CITE THIS ARTICLE:

Putta Suresh, C. Yamini Devi, C. Ramesh Kumar, Y. Jalaja. "Evaluation of the Cause in Fever with Thrombocytopenia Cases". Journal of Evidence based Medicine and Healthcare; Volume 2, Issue 15, April 13, 2015; Page: 2287-2291.

ABSTRACT: INTRODUCTION: Fever with thrombocytopenia has become the commonest presenting problem in the medical wards. Various infectious causes are there for fever with thrombocytopenia. It is necessary to know the cause, which will be useful to give proper treatment to the patient. **AIMS AND OBJECTIVES:** Identification of the cause in fever with thrombocytopenia. **MATERIALS AND METHODS: INCLUSION CRITERIA:** Patients who were admitted with fever and thrombocytopenia, aged above 12 years, in S.V.R.R.G.G.H, Tirupati were taken for the study. **EXCLUSION CRITERIA:** Patients who are admitted with thrombocytopenia and without fever were excluded. **RESULTS AND CONCLUSION:** Fever with thrombocytopenia is the commonest presenting problem in the medical wards. In the present study the commonest infectious etiology of fever with thrombocytopenia was malaria fever (36%), followed by undiagnosed fevers (28%), dengue fever (26%), typhoid fever (6%) and scrub typhus (4%).

KEYWORDS: Fever, Thrombocytopenia, Platelet Count, Dengue, Malaria.

INTRODUCTION: Fever has been recognized as a common manifestation of diseases since, ancient times, as recorded by ancient scholars like Hippocrates.¹ An A.M. temperature of more than 37.2°C (98.9°F) or P.M. temperature of >37.7°C (99.9°F) would define fever. Thrombocytopenia is defined as a platelet count less than normal range, usually below 1, 50, 000/ μ l.² Most of the diseases like dengue, malaria, typhoid, leptospirosis, military T.B., H.I.V., septicemia are associated with abnormal platelet count (<1.5 lakh).³ Thrombocytopenia correlates invariably with mortality and morbidity in various febrile cases. In recent days fever with thrombocytopenia is a common clinical presentation in the medical ward. Established infective causes like dengue fever is well known for fever with thrombocytopenia.⁴ There are not many studies excluding other infections for thrombocytopenia. This study might help us to correlate the clinical features and laboratory findings to come to conclusion. Nair PS conducted study of fever with thrombocytopenia and concluded septicemia was the commonest cause.⁵ A study conducted by Md Aule et al showed that the commonest presentation has fever (100%) followed by headache (48%), myalgia (66%) and vomiting⁶. Septicemia resulting from gram negative and gram positive organisms is the commonest cause of thrombocytopenia.⁷ Causes of fever and thrombocytopenia includes viral, protozoal and bacterial. Serial monitoring of platelet count has prognostic value. All fever cases should be investigated for platelet count whether they have bleeding manifestations or not. This highlights the importance of thrombocytopenia in various febrile diseases.⁸

AIMS AND OBJECTIVES: To study the etiology of thrombocytopenia in various fever cases.

ORIGINAL ARTICLE

MATERIALS AND METHODS: Blood samples were collected retrospectively from patients with fever and thrombocytopenia who were admitted in S.V.R.R.G.G.H., Tirupati. Detailed clinical history noted. And complete physical examination was done. All cases were analysed for platelet count, malarial parasite, dengue antibody, widal and other relevant lab investigations.

INCLUSION CRITERIA: 50 patients of (both female and male) aged above 12 years with fever and thrombocytopenia admitted in S.V.R.R.G.G.H., Tirupati were taken.

EXCLUSION CRITERIA: Patients admitted with thrombocytopenia and without fever were excluded.

RESULTS:

Sl. No.	Diagnosis	No. of cases	Percentage
1	Dengue fever	13	26%
2	Malaria fever	18	36%
3	Typhoid fever	3	6%
4	Scrub typhus	2	4%
5	Undiagnosed	14	28%

Table 1: Incidence of thrombocytopenia in different fever cases

Sex	No. of cases	Percentage
Male	27	54%
Female	23	46%
Total	50	100%

Table 2: Incidence of thrombocytopenia with relation to sex

Age	No. of cases	Percentage
13-20	15	30%
21-30	7	14%
31-40	13	26%
41-50	6	12%
51-60	3	6%
>60	6	12%

Table 3: Incidence of thrombocytopenia with relation to age

Disease	<50,000	50,000-1,00,000	1,00,000-1,50,000
Dengue	6	4	2
Malaria	8	5	5

ORIGINAL ARTICLE

Typhoid	1	1	1
Scrub Typhus	0	0	1
Undiagnosed	6	3	7
Total	21	13	16

Table 4: Distribution of cases with relation of severity of thrombocytopenia

DISCUSSION: Fever is a common manifestation of illness that, it is not surprising to find accurate description of febrile patients in early-recognized history.⁹ Thrombocytopenia is common in malaria, especially in falciparum type and is due to sequestration, immune mediated destruction with elevated platelet activated immunoglobulin,¹⁰ followed by dengue fever due to immune mediated mechanisms.¹¹ The observation of SCOTT et al suggested that while patients with malaria may be predisposed to the development of thrombocytopenia, a reduced platelet count might also be due in part to pseudothrombocytopenia.¹² Bleeding is uncommon with platelet count above $50 \times 10^6/l$ and severe spontaneous bleeding is unusual with platelet count above $20 \times 10^6/l$.¹³ Transient thrombocytopenia occurs with systemic infections. Thrombocytopenia occurs in 50-75% of patients with bacterial or fungal infections, it also occurs in association with viral infections including HIV.¹⁴ Thrombocytopenia occurs in 50% of patients in gram-negative bacteria and sepsis.

In the present study 50 patients were included who were admitted with fever and thrombocytopenia. Among the 50 patients commonest cause of fever with thrombocytopenia was found as malaria in 18 patients (36%). This was followed by undiagnosed cases of 14(28%), followed by dengue fever cases of 13(26%), typhoid fever cases of 3(6%), Scrub typhus cases of 2(4%). Thrombocytopenia with fever was found in 27 male patients (54%) and 23 female patients (46%). The commonest age group for fever with thrombocytopenia was 13-20 years (30%), followed by 31-40 years (26%). Malaria fever was the commonest cause of fever with thrombocytopenia, in which 16% patients had severe thrombocytopenia (<50000), 10% had moderate thrombocytopenia (50000-100000) and 10% had mild thrombocytopenia (100000–150000). In dengue fever 12% of patients had severe thrombocytopenia, 8% had moderate thrombocytopenia and 4% had mild thrombocytopenia. In undiagnosed cases, 12% of patients had severe thrombocytopenia, 6% had moderate thrombocytopenia and 14% had mild thrombocytopenia. Among all cases 42% of patients had severe thrombocytopenia.

SUMMARY AND CONCLUSION: Thrombocytopenia was the commonest laboratory finding in many fever cases. Thrombocytopenia was commonly found in malaria, dengue, bacterial and viral infections. It is better to do platelet count in all fever cases. Treating the causative agent will improve the platelet count. The cause of fever with thrombocytopenia depends upon the season endemicity of the disease. Dengue fever is common in early winter. Malaria is commonly seen in endemic areas.

REFERENCES:

1. Larson EB, Featherstone HJ, Peterdorf RG: Fever of undetermined origin: Diagnosis and follow-up of 105 cases, 1970 -1980: *Medicine* 1982; 61: 269-92.

ORIGINAL ARTICLE

2. Charles S Abrams: Thrombocytopenia Goldman's CECIL Medicine, Lee Goldman, M.D., Andrew I Schafer, M.D., 24th Edition, p- 1124.
3. Nayanalakum, HardikMakwane, Dr. Rekha Shah: "A study of laboratory profile of fever with thrombocytopenia in adult patients at C.U. Shah Medical College, Surendranagar" 2014, SEAJCRR Jan: Feb 3(1): 2319 – 1090: p556.
4. Dash HS, Ravikiran P, Swarnalatha G: A study of clinical and laboratory profile of fever with thrombocytopenia and its outcoming during hospital stay, IJSR - 445.
5. Nair PS, Jain T, Kanduri U, Kumar V: A study of fever associated thrombocytopenia, JAPI 2006; 51: 1173.
6. MdAule et al: Characteristics of dengue fever in a large ublic hospital, Jedda, Saudi Arabia, J of Ayub Med. Col., Abbott, 2006: 18-2.
7. Harrison's Principles of Internal Medicine, 18th ed., Chapter 196, Infections caused by arthropod and rodent – borne viruses, p1621.
8. Beutler B, Cearami A: Catchetin. More than a TNF, NEJM – 1987 Feb 12, 316 (7); 379-385.
9. Woodward TE: The fever pattern as a diagnostic aid from fever – basic mechanisms and management, 2nd ed.; Phillip A, Mackwick; Jan. 1, 1997, p216-234.
10. Kelton JG, Keystone J, Moore J, Denomme G, Tozman E, Glynn M et al: Immune mediated thrombocytopenia of malaria. J Clin Invest., 1983 April; 71 (4): 832 -6.
11. Eyster M, Rabkin C, Hilgartner M et al: Human immune deficiency virus related conditions in children and adults with hemophilia, rates, relationship to CD4 counts, and Predictive value. Blood 1993, Feb. 1; 81 (3); 828-34.
12. Risdall RJ, Brumer RD, Humadez JI, Gordan DH: bacterial associated hemophagocytic syndrome, cancer; 1984 dec.15: 54 (12).
13. MF murphy, J Wain Scot and BT Colvin: Platelet disorders; Kumar and Clarke Clinical Medicine, Prof. Parveen Kumar M.D., FRCP, dr Michael Clarke, M.D., FRCP, 5th ed. P458.
14. Katheryn E Wahart and John G Kelton: Disease of platelet, Number and function; Oxford Textbook of Medicine, David A Warrel, Timothy M Cox, John D Firth, 5th edition, Vol. 3: p- 4514.

ORIGINAL ARTICLE

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Date of Submission: 31/03/2015.
Date of Peer Review: 01/04/2015.
Date of Acceptance: 03/04/2015.
Date of Publishing: 08/04/2015.