

Study of Clinical and Etiological Profile of Acute Febrile Illness with Thrombocytopenia in a Tertiary Care Hospital, Ahmedabad

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Abstract: *Acute Febrile Illness (AFI) with thrombocytopenia is a frequently encountered clinical presentation in tropical regions like India. This study aimed to evaluate the clinical and etiological spectrum of AFI with thrombocytopenia and assess the correlation between platelet counts and disease severity. A total of 150 patients admitted between 2023–2024 were studied. Dengue and malaria were the most common causes. Thrombocytopenia severity correlated with complications such as bleeding and plasma leakage, especially in dengue. Early identification of etiology and severity markers helps guide targeted management and improve outcomes.*

Keywords: Acute febrile illness, thrombocytopenia, dengue, malaria, platelet count, tropical infections

1. Introduction

Acute febrile illness (AFI) with thrombocytopenia is a common clinical challenge in India. The etiologies range from benign viral infections to severe life-threatening conditions such as dengue, malaria, leptospirosis, typhoid, and sepsis. Infections in tropical regions often present with overlapping symptoms, making timely diagnosis and management critical. Thrombocytopenia in AFI may result from direct viral cytopathy, immune-mediated destruction, bone marrow suppression, or disseminated intravascular coagulation.

Purpose of the Study

To evaluate the clinical presentation and etiological profile of patients presenting with AFI and thrombocytopenia and assess the correlation of platelet count with disease severity and outcome.

Significance of the Study

Understanding the etiological spectrum and thrombocytopenia severity in AFI can guide clinicians in early diagnosis, rational investigations, and prompt management. It also helps prioritize differential diagnoses based on local epidemiological trends.

Aims and Objectives

- To determine the common etiologies of AFI with thrombocytopenia.
- To assess the clinical features associated with different etiologies.
- To analyze the relationship between thrombocytopenia severity and complications like bleeding and plasma leakage.

2. Materials and Methods

This prospective observational study was conducted at a tertiary care hospital in Ahmedabad from January 2023 to December 2024. A total of 150 adult patients (age ≥ 18 years)

admitted with fever and thrombocytopenia (platelet count $<150,000/\text{mm}^3$) were enrolled after informed consent.

Inclusion Criteria:

- Patients with fever ($>38^\circ\text{C}$) of ≤ 14 days duration
- Platelet count $<150,000/\text{mm}^3$

Exclusion Criteria:

- Patients on chemotherapy or known hematological disorders
- Chronic liver disease or autoimmune thrombocytopenia

Investigations included CBC, peripheral smear, malarial antigen testing, dengue NS1/IgM, Widal test, leptospira serology, LFTs, RFTs, and ultrasonography as needed.

3. Results

Of 150 patients studied:

- Mean age: 36.4 ± 14.2 years
- Gender: 60% male, 40% female

Most common etiologies:

- Dengue: 42%
- Malaria: 28%
- Typhoid: 10%
- Leptospirosis: 8%
- Sepsis/Others: 12%

Table 1: Etiological Distribution of AFI with Thrombocytopenia

| Etiology | Number (%) |
|---------------|------------|
| Dengue | 63 (42%) |
| Malaria | 42 (28%) |
| Typhoid fever | 15 (10%) |
| Leptospirosis | 12 (8%) |
| Sepsis/Other | 18 (12%) |

Table 2: Platelet Count and Clinical Complications

| Platelet Count | Patients (%) | Bleeding (%) | Plasma Leakage (%) |
|-----------------------------------|--------------|--------------|--------------------|
| <50, 000/mm ³ | 57 (38%) | 14 (24.6%) | 9 (15.8%) |
| 50, 000–100, 000/mm ³ | 68 (45%) | 4 (5.8%) | 6 (8.8%) |
| 100, 000–150, 000/mm ³ | 25 (17%) | 0 (0%) | 0 (0%) |

4. Discussion

This study reaffirms that dengue and malaria are leading causes of AFI with thrombocytopenia in the Indian setting. Thrombocytopenia severity is an important marker of clinical risk, especially in dengue, where plasma leakage and bleeding can occur despite modest platelet counts. Our results align with earlier studies from tropical regions showing a need for high suspicion and early intervention in febrile patients with low platelets.

5. Conclusion

AFI with thrombocytopenia is most frequently caused by dengue and malaria in our region. Thrombocytopenia correlates with complications such as bleeding and capillary leakage. Routine screening of platelet counts in febrile patients, especially in dengue-endemic areas, is essential for early risk stratification and appropriate management.

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