Section: General Medicine

Original Research Article

A STUDY ON CLINICAL AND LABORATORY EVALUATION OF PATIENTS WITH FEBRILE THROMBOCYTOPENIA

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ABSTRACT

Background: Fever represents the most prevalent symptomatology encountered in outpatient departments (OPD). Thrombocytopenia is clinically delineated by a platelet count below 150,000 per cubic millimeter (cu.mm). The concurrence of fever and thrombocytopenia constitutes a predominant indication for hospital admission. This study endeavors to systematically evaluate the clinico-etiological profile of patients presenting with the concomitant manifestations of fever and thrombocytopenia.

Materials and Methods: This study was conducted in the Department of General Medicine, Katuri Medical College, Guntur over a period of One year June 2021 to May 2022. The study included 150 patients who got admitted with fever and thrombocytopenia.

Results: he present study 66.7% are males. Most common age group is between 20-40 years. malaria was the most common cause of fever with thrombocytopenia. 5.3% of the patients had died.

Conclusion: Early recognition and prompt treatment are pivotal in patients suffering from fever with thrombocytopenia.

Keywords: Clinical profile, laboratory profile, fever, thrombocytopenia, platelet transfusion.

INTRODUCTION

Fever, or pyrexia, has been a subject of extensive examination throughout the annals of human history, encompassing domains of art and science. As a ubiquitous symptom of disease, it is unsurprising to encounter detailed depictions of febrile patients in early historical records. Most cases of unexplained fever are manifestations of well-characterized illnesses that present in atypical manners. Esteemed physicians such as Hippocrates and their Roman counterparts provided comprehensive accounts of fever and its diverse presentation patterns.[1,2]

Fever is scientifically defined as an elevation of core body temperature beyond the normal circadian range, due to disturbances in the hypothalamic thermoregulatory center. Diagnostic criteria for fever include specific temperature thresholds, such as an evening temperature exceeding 37.7°C or a morning temperature surpassing 37.2°C.[3]

Thrombocytopenia is characterized by a platelet count below the normal threshold, typically less than 150,000 per microliter. This hematologic condition can arise from reduced platelet production, enhanced destruction, or increased splenic sequestration, with infections being the predominant etiology.[4,5]Patients with thrombocytopenia may exhibit bleeding manifestations, including petechiae, epistaxis, and gastrointestinal hemorrhage. It is the most common cause of bleeding in pediatric populations. In tropical regions, fever with thrombocytopenia is frequently associated with infectious diseases such as malaria, dengue, and typhoid fever.[6,7]

Early diagnosis of fever accompanied by thrombocytopenia is imperative to avert life-threatening complications, even in the absence of overt bleeding. Routine monitoring of platelet counts in febrile patients is advocated, as clinical presentation alone may be insufficient to ascertain the underlying cause.[8]

This study aims to investigate the clinical and etiological profile of acute undifferentiated fever with thrombocytopenia. The study will compare the severity of thrombocytopenia with other clinical parameters, such as organ dysfunction, shock, and fluid shifts, evaluate the necessity for platelet transfusion, and assess overall patient outcomes. By identifying correlations between the degree of thrombocytopenia and these various clinical factors, the study aspires to enhance risk stratification and inform appropriate management strategies. Ultimately, the insights garnered from this research aim to aid healthcare professionals in providing more accurate diagnoses and improved care for patients presenting with this prevalent and complex clinical scenario.

MATERIAL AND METHODS

This prospective observational study was conducted in the Department of General Medicine at Katuri Medical College over a period of one year June 2021 to May 2022. The study included all patients aged 18 years and above who were admitted to the institution with fever and concurrent thrombocytopenia.

Exclusion criteria encompassed patients presenting with fever but without thrombocytopenia, individuals below 18 years of age, those who declined consent for participation, and patients with a pre-existing history of platelet disorders.

A comprehensive history was obtained from all participants, with particular focus on the duration of symptoms and any history of bleeding manifestations. Each patient underwent an extensive general and systemic examination. A thorough battery of laboratory investigations was performed, including complete blood counts, liver function tests, renal function tests, and additional relevant diagnostics as indicated by clinical presentation.

The degree of thrombocytopenia was stratified into mild, moderate, or severe categories based on platelet counts. Organ dysfunction was assessed through meticulous clinical examination and corroborative laboratory data, including blood tests, imaging studies, and other pertinent diagnostic procedures. The presence of shock and third-space fluid loss was systematically documented.

To identify bacterial infections, blood cultures and antibiotic susceptibility testing were performed. Serological assays were employed to diagnose specific bacterial pathogens. Parasitic infections were diagnosed based on clinical suspicion, epidemiological context, and laboratory investigations such as stool examination, serology, and imaging. Due to limitations in viral testing capabilities, viral infections other than dengue were primarily diagnosed based on clinical presentation and exclusion of other etiologies.

Statistical analysis involved descriptive summaries and association/correlation analyses, with particular emphasis on the relationship between the degree of thrombocytopenia and clinical outcomes, including bleeding, platelet transfusion requirements, and duration of hospitalization. The study aims to elucidate the clinical and etiological profiles of patients presenting with fever and thrombocytopenia, thereby informing more effective management strategies.

RESULTS

A total of 150 patients who presented to the OPD with fever and got admitted were included in the study.

The study subjects aged between 18 – 78 years, with majortiy of the patients between 20-40 years. out of 150 patients, 100 were males and the rest 50 were females.

The mean duration of hospital stay in present study was 7.4 days with the minimum duration being of 5 days and maximum duration being 18 days.

All 150 patients had been diagnosed with infective etiology, with malaria as the commonest cause. The most common variant of malarial parasite observed in present study was Plasmodium Falciparum.

The second most common cause, enteric fever, accounted for 14.6%, followed by Dengue (18%). Septicemia accounted for 13.3% of the cases. [Table 2]

In present study, 45% had bleeding manifestations with petechiae accounting for 40% of type of bleeding. [Table 3]

The mortality rate of present study was 5.3% (n = 8), with septicemia being the most common cause of death (4%), followed by dengue shock syndrome (1.3%). [Table 4]

Table 1: Age distribution of the study subjects

Age in years	No. of Patients
<20 years	25 (16.7%)
20-30 years	50 (33.3%)
31-40 years	40 (26.7%)
41-50 years	20 (13.3%)
>50 years	15 (10%)

Table 2: Frequency of Thrombocytopenia in Patients with Fever

Diseasecategory	No. of patients
Malaria	69 (46%)
Entericfever	22 (14.6%)
Septicemia	20 (13.3%)
Dengue	27 (18%)

Leptospirosis	12 (8%)
Total	150

Table 3: Malarial parasite distribution

Typeofmalaria	Patients
Vivaxmalaria	25 (16.7%)
Falciparummalaria	37 (24.7%)
Mixedmalaria	7 (4.6%)

Table 4: Predictors of death in our sample

Diseasecategory	Patients
Septicemia	6 (4%)
Dengue	2 (1.3%)
Total	8 (5.3%)

DISCUSSION

Fever is a ubiquitous clinical symptom that garners significant concern. When accompanied by thrombocytopenia, fever is most frequently associated with an infectious etiology. This study, conducted in the Department of General Medicine, aimed to evaluate the underlying causes of fever concomitant with thrombocytopenia. The study cohort comprised 100 patients admitted with both fever and thrombocytopenia.

Among the participants, 66.7% were males, which is consistent with the findings of Nair et al,[9] who conducted a similar study involving 109 patients presenting with fever and thrombocytopenia over an 18-month period. Their research identified septicemia as the predominant cause of thrombocytopenia.

The incidence of fever with thrombocytopenia attributable to infectious causes ranges from 68% to 100%. Other etiologies include malignancies and hematological disorders. In a study conducted by Amanet al.1, infectious diseases, alcoholic liver disease, and unidentified bites were reported as causes of fever with thrombocytopenia.

Kakaret al,[10] found that dengue infection accounted for 13% of cases in their study, whereas in the present study, it accounted for 15%. Petechiae emerged as the most common bleeding manifestation in the current study, aligning with the findings of Jadhav et al.[11]

The present study observed a mortality rate of 5.3% among the patients. This is comparable to the mortality rate of 6% reported by Amanet al,[1] Additionally, Patilet al,[12] and Dash et al,[13]reported mortality rates of 22% and 5%, respectively.

Overall, this study reinforces the predominance of infectious etiologies in fever with thrombocytopenia and highlights the necessity of thorough diagnostic evaluation to guide effective management and improve patient outcomes.

CONCLUSION

Fever with thrombocytopenia is one of the commonest presentation in OPD. Infections being the most common cause followed by hematological abnormalities and malignancies. The severity of thrombocytopenia can range from minor petechiae to life-threatening bleeding diathesis. Timely identification of the etiology and appropriate management is crucial in such cases. The mortality rate of fever with thrombocytopenia can be as high as 8* as seen in present study.

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