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Original Research Paper

General Medicine

AETIOLOGICAL PROFILE OF FEBRILE THROMBOCYTOPENIA IN PATIENTS ADMITTED TO TERTIARY CARE GOVERNMENT GENERAL HOSPITAL

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ABSTRACT

Background: One of the most presenting issues in the medical wards is fever with thrombocytopenia. There are numerous infectious causes of fever and thrombocytopenia. Knowing the cause is essential since it will help in providing the patient with the right care. The purpose of the current study was to identify the underlying causes of febrile thrombocytopenia cases that were admitted to our hospital. **Materials and methods:** The study was conducted on 650 patients who presented with fever with thrombocytopenia and were admitted to the government general hospital, Srikakulam from September 2020 to August 2022. **Results:** A total of 650 patients with febrile thrombocytopenia were admitted to our hospital during the study period. A male-to-female ratio of 1.4: 1. . In the present study, the commonest infectious aetiology of fever with thrombocytopenia was dengue fever (28.6%), followed by malaria fevers (26.5%), septicemia(23.4%), viral fever other than dengue (9.5%), scrub typhus (7%) and typhoid fever (3.3%). **Conclusion:** One of the common reasons for hospitalisation is febrile thrombocytopenia, which necessitates thorough evaluation and prompt treatment.

KEYWORDS : thrombocytopenia, dengue fever, malaria

INTRODUCTION:

Fever is one of the commonest presentations which is a manifestation of various infections as well as a non-infective disease process. An a.m. temperature of >37.2°C (>98.9°F) or a p.m. temperature of >37.7°C (>99.9°F) would define a fever. The normal daily temperature variation is typically 0.5°C (0.9°F).[1] Thrombocytopenia is defined as a platelet count less than the normal range, usually below 1, 50, 000/µl.[2] This is due to decreased production, increased destruction (immunogenic and non-immunogenic), and increased sequestration in the spleen. The commonest cause of thrombocytopenia is infection .[3,4]

Some of the most common causes of fever with thrombocytopenia are infections such as Dengue, Scrub Typhus, Malaria, Typhoid, Miliary TB, HIV, and Septicaemia. Because thrombocytopenia is inversely related to mortality and morbidity in various febrile illnesses, serial platelet count monitoring has prognostic value.

This emphasises the significance of thrombocytopenia in a variety of febrile disorders[5]. To avoid fatal outcomes, timely recognition and treatment of the underlying condition, as well as platelet transfusions, are required. As a result, more research is needed to understand the clinical profile and complications of fever with thrombocytopenia. The study's goal was to assess the aetiological profile of patients with fever and thrombocytopenia at the government general hospital, Srikakulam.

MATERIALS AND METHODS:

This prospective observational study was undertaken in the department of paediatrics and general medicine at the government general hospital, Srikakulam India, from September 2020 to August 2022.

Inclusion Criteria:

Patients admitted with fever (>99.9 degrees F) with thrombocytopenia (<1, 50000/mm^3).

Exclusion Criteria:

Patients who had fever without thrombocytopenia and who had thrombocytopenia without fever.

Individuals were admitted after a thorough history and examination. All relevant investigations based on history and examination were conducted. The cases were monitored daily.

Based on complaints, relevant necessary investigations were repeated. They were treated based on their clinical diagnosis.

RESULTS:

In our study, a total of 650 cases were evaluated, in this 380 males and 270 females. Male: female ratio is 1.4:1.

The duration of stay in the hospital was 5 to 12 days. Patients whose platelets were between 50000 to 1 lakhs cells/mm^3 were 287 in number, with 20001 to 50000 were 165 in number and less than 20000 platelets counts were seen in 52 individuals, and one lakhs to 1.5 lakhs cells/mm^3 were seen in 146 cases (Table 2).

Table 1: age and sex distribution

Age	Number of cases	Percentage
< 12 years	224	34.5%
12 to 20 years	72	11%
20 to 30 years	62	9.5%
30 to 40 years	52	8%
40 to 50 years	57	8.8%
50 To 60 years	61	9.4%
>60 years	122	18.8%

In our study involving 650 cases, on evaluation, the following aetiologies of fever with thrombocytopenia were noted(table 2). In the present study, the commonest infectious aetiology of fever with thrombocytopenia was dengue fever (28.6%), followed by malaria fevers (26.5%), septicemia(23.4%), viral fever other than dengue (9.5%), scrub typhus (7.1%) and typhoid fever (3.4%).

Table 2: aetiological causes and thrombocytopenia severity

Aetiological causes	Platelets 20000cells/mm3	Platelets 20000 to 50000 cells/mm3	Platelets 50000 to 100000 cells/mm3	Platelets 100000 to 150000 cells/mm3	Total with percentage

Dengue fever	22	59	78	27	186 (28.6%)
Malaria fever	12	24	102	34	172 (26.5%)
Septicemia	8	52	55	37	152 (23.4%)
Viral fever other than dengue	2	8	22	30	62 (9.5%)
Scrub typhus	8	12	16	10	46 (7.1%)
Enteric fever	0	8	12	2	22 (3.4%)
Tuberculosis	0	2	2	6	10 (1.5%)
Total	52	165	287	146	650

DISCUSSION:

The most common aetiology responsible for newly diagnosed febrile thrombocytopenia in the present study was found to be dengue fever (28.6%). Thrombocytopenia in Dengue fever is caused by bone marrow suppression (i.e., decreased platelet synthesis and increased immune-mediated destruction of platelets).[6] Dengue fever was the commonest cause of febrile thrombocytopenia in studies by Gandhi A A et al 26.7%[10], Modi T et al 55.97%[11], Fawas M N et al 54.5%.[12]

Malaria (26.5%) was the second most common cause responsible for febrile thrombocytopenia. Malaria is commonly accompanied by mild to moderate thrombocytopenia (79%) (78.4% by Jadhav et al study).[7] Thrombocytopenia in malaria is probably due to increased splenic sequestration, immune-mediated destruction, and a shortened platelet survival and consumption by DIC.[8] The incidence of malaria in our study is 26.5%, The incidence of malaria is 28.5% in the study by Hariprasad S et al[13], 24.4% in the study by Yadav and Singhai et al.[14] Malaria and Dengue Fever were more common causes(55.1%) because of the more common occurrence of these illnesses in the early winter and rainy seasons and their endemicity.

Septicemia (23.4%) was the third common cause in the study. Thrombocytopenia is an independent prognostic marker. The aetiology of thrombocytopenia in sepsis is multifactorial. It is commonly associated with DIC and is caused by splenic destruction of immune complex coated platelets, platelet adherence to damaged vascular surfaces and direct platelet toxicity caused by microorganisms.[9] The incidence of septicemia was 23.4 % in the study by Fawas M N et al[12] 12.5% in the study by Hariprasad S et al.[13]

In total 650 cases of fever with thrombocytopenia 588 cases recovered well 28 cases LAMA, and the remaining 34 cases died, mortality rate in our study was 5.2% in cases presented with thrombocytopenia.

CONCLUSION:

Thrombocytopenia was the commonest laboratory finding in many patients who presented with fever. Dengue, malaria, septicemia, and viral diseases were all known to cause thrombocytopenia. The platelet count will increase with the treatment of the underlying cause. The season in which the disease is endemic determines the aetiology of fever and thrombocytopenia. Early winter is a common time for dengue fever. In endemic regions, malaria is frequently observed.

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