



CLINICAL PROFILE OF PATIENTS WITH THROMBOCYTOPENIA AT A TERTIARY CARE CENTRE

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ABSTRACT

Introduction: Thrombocytopenia is a common finding in clinical practice. There are various reasons for the development of thrombocytopenia. The underlying cause may be either inconsequential or life threatening.

Aims & Objectives: To evaluate various causes of thrombocytopenia and to study the clinical profile and laboratory parameters in patients with thrombocytopenia. Materials and Method: A total of 200 patients with thrombocytopenia admitted to Sree Balaji Medical College and Hospital were evaluated. Patients with platelet count <1 lakh/mm³ were included in study whereas patients with malignancy and chemotherapy induced thrombocytopenia were excluded.

Results: The present study includes patients between 18-70 years of age. The highest incidence of thrombocytopenia belonged to the age group 21-30 years (30%) followed by 18-20 years (24%) and 31-40 years (22%). Diseases causing thrombocytopenia such as, megaloblastic anemia and infections (malaria, dengue, enteric fever, and septicemia) were found to be common in younger population. In our study, majority of the patients belonged to age group of younger than 40 years.

Conclusion: Major cause of thrombocytopenia was found to be due to dengue fever. Bleeding manifestations were noted in one-third of the population.

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INTRODUCTION

The normal platelet count ranges from 140,000 to 440,000 platelets per microliter. Thrombocytopenia is defined as the reduced number of platelets in the circulation. There are various reasons for thrombocytopenia. However, the primary mechanism involves one of the following: 1) Decreased bone marrow production, 2) Increased splenic sequestration or, 3) Accelerated platelet destruction. Thrombocytopenia can cause bleeding. When the platelet count falls below about 50,000 platelets per microliter of blood, bleeding can occur even after relatively minor injury.

MATERIALS AND METHOD

A total of 200 patients with thrombocytopenia admitted to Sree Balaji Medical College and hospital were evaluated.

Criteria for Patient Selection

1. Inclusion Criteria: Patient with platelet count <1 lakh/mm³ (with or without clinical bleeding).
2. Exclusion Criteria: Patient having malignancy with thrombocytopenia or due to treatment with cancer chemotherapy is excluded.

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A detailed clinical history was taken for each patient. This included a detailed past history, history of tuberculosis, drug history. A detail history of the bleeding manifestations was also done. To substantiate the clinical history, a thorough physical examination was done. The following investigations were done for all the patients, complete blood count, peripheral smear, coagulation profile, chest X ray, renal function test, liver function test. Other special investigations such as bone marrow examination, Widal serology, Dengue profile, Coomb's test were done for patients only when indicated.

All the patients were treated according to the disease. The data was noted in separate performa for each patient.

RESULTS

This study includes patients between the age group of 18 - 70 years of age. The age group with maximum number of patients with thrombocytopenia was between 18 - 30 years (30%) followed by 41- 50 years are group (25%) and 31 - 40 years age group (21%). This is shown in table 1.

In our study, the most common cause of thrombocytopenia was dengue fever (45%) followed by chronic liver disease (15%), megaloblastic anemia (8%), malaria (9%) and DIC (7.5%) (Table 2). We did not observe any cases of pseudo-thrombocytopenia.

This study showed that, 88 (44%) patients had bleeding manifestations. Most patients experienced only minor bleeding manifestations such as skin and mucosal bleed (48.8%) which ranged from petechiae, ecchymosis and purpura followed by gum bleed (25%). About 23 (26.1%) patients experienced major bleeding manifestations in the form of epistaxis (7.95%), bleeding per vagina (3.4%), hemoptysis (4.54%), melena (4.54%), hematochezia (4.54%) and intra cerebral hemorrhage (1.1%) (Table 3).

Table 1 Age incidence in patients with thrombocytopenia

Age group (in years)	Percentage of patients (n=200)
18 - 30	30% (60)
31 - 40	21 % (42)
41 - 50	25 % (50)
51 - 60	16% (32)
61 - 70	8% (16)
TOTAL	100% (200)

Table 2 Etiology of thrombocytopenia

CAUSES	Total patients (n = 200)
Dengue fever	90 (45%)
Cirrhosis of liver	30 (15%)
Megaloblastic anemia	18 (9%)
HIV	5 (2.5%)
ITP	10 (5%)
DIC	15 (7.5%)
HELLP syndrome	11 (5.5%)
Malaria	16 (8%)
Hypersplenism	5 (2.5%)

ITP (42%) and dengue fever (33%) were common etiologies associated with skin and mucous membrane bleeding (table.4). In patients with gum bleeding, dengue fever (33%) and Megaloblastic anemia (33%) were common causes, while in patients with per vaginal bleeding ITP (58%) was the common etiology.

Table 3 Hemorrhagic manifestations associated with thrombocytopenia

Site of Bleeding	Total no (%) of patients (n = 88)
Skin and mucosal surfaces (Petechiae, ecchymosis, purpura)	43 (48.8%)
Epistaxis	7 (7.95%)
Bleeding per vagina	3 (3.4%)
Hematochezia	4 (4.54%)
Gum bleed	22 (25%)
Hemoptysis	4 (4.54%)
Melena	4 (4.54%)
Intracerebral hemorrhage	1 (1.1%)

Splenomegaly was found in about a quarter of patients (25%) with thrombocytopenia. Splenomegaly was commonly found in cirrhosis of liver and in malarial infections. Hepatomegaly was found in 11% of the patients and hepatosplenomegaly in 8% of the patients. The most common etiology for hepatomegaly with thrombocytopenia was malaria, followed by early liver cirrhosis and dengue and enteric fever.

Table 4 Splenomegaly and hepatomegaly in thrombocytopenia

Organ enlargement	% of patients
Splenomegaly	50 (25%)
Hepatomegaly	22 (11%)
Hepatosplenomegaly	16 (8%)

Selective thrombocytopenia was found in 31 patients (15.5%), thrombocytopenia with anemia in 80 patients (40%), thrombocytopenia with leucopenia in 56 (28%) and pancytopenia in 33 (16.5%). The most common cause for

leucopenia with thrombocytopenia was dengue fever (80.3%) followed by sepsis (10.7%). The most common cause for isolated thrombocytopenia was ITP (32.2%). The most common cause for anemia with thrombocytopenia was cirrhosis of liver (31.2%), followed by megaloblastic anemia (22.5%), malaria (12.5%) and HELLP syndrome (13.75%). The most common cause for pancytopenia was hypersplenism (15%).

Table 5 Complete blood count in thrombocytopenia

Complete blood count	No: of patients (%)
Selective thrombocytopenia	31 (15.5%)
With anemia	80 (40%)
With leucopenia	56 (28%)
With pancytopenia	33 (16.5%)
TOTAL	200 (100%)

DISCUSSION

Thrombocytopenia was found to be more common among the younger age group. Our study shows almost 3/4 of total patients were below age of 40 years.

Pseudo thrombocytopenia is secondary to platelet clumping and there are no clinical findings. It is usually confirmed by peripheral smear which shows clumping of platelets. It occurs in one in 1,000 persons in the general population. However in our study we did not encounter any pseudo thrombocytopenia. (1)

The diseases that cause thrombocytopenia commonly like Megaloblastic anemia and infections (malaria, dengue, enteric fever, and septicemia) were common in younger. There was found to be no sex predilection for thrombocytopenia in our study population as thrombocytopenia is a laboratory diagnosis. India being endemic for various tropical infections like malaria, dengue fever and typhoid had these as some of the important causes of thrombocytopenia in our study. However, with the current outbreak of dengue fever and dengue hemorrhagic fever, this was the most leading cause of thrombocytopenia in our study. This was followed by cirrhosis of liver. The causes for cirrhosis of liver in our study mainly were alcoholism and chronic infections such as hepatitis B and C virus infections. Anemia was the most common hematological abnormality associated with thrombocytopenia. The most life threatening complication of thrombocytopenia was intracerebral hemorrhage but encountered in only in 1 patient in our study. In our study not all cases of thrombocytopenia had bleeding manifestations. Only 88 patients out of 200 developed bleeding manifestations and most of them were minor bleeding manifestations like petechiae. However, most patients with bleeding manifestations had a platelet count of <30,000. However, there was no absolute relationship between platelet quantity and bleeding manifestations. (2) The factors causing bleeding due to thrombocytopenia has to still be studied in detail. The correctable causes of thrombocytopenia such as B12 deficiency should be paid attention to. Thrombocytopenia due to B12 deficiency is a production defect and can be corrected by administering adequate doses of B12 and by supplementing B12 in diet. ITP as a cause for thrombocytopenia was found to be 5% in our study. However, the incidence of thrombocytopenia due to ITP was found to be much lesser in another study conducted in England (3). The findings in our study is very similar to a study conducted by Shah et al. (4)

Among various similar studies conducted in India, dengue fever was found to be the most common cause of thrombocytopenia (4,5)

CONCLUSION

The most common cause of thrombocytopenia in our study was dengue fever in about 1/2 of the cases. This was followed by liver cirrhosis and megaloblastic anemia. The other causes were malaria, ITP, typhoid fever and DIC. Bleeding manifestations were only found in about 44 % of patients with thrombocytopenia. Predominantly patients were < 40 years of age.

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Abbreviations

DIC - Disseminated intravascular coagulation
ITP - Immune thrombocytopenic purpura
HIV - Human immunodeficiency virus

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