

# Determination of Clinical Profile of Patients with Thrombocytopenia

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## Abstract

**Background:** To determine clinical profile of patients with thrombocytopenia. **Subjects and Methods:** 96 patients of fever with thrombocytopenia of either gender was selected. Parameters such as etiology, clinical data and site of bleeding and treatment outcome was recorded. **Results:** Out of 96 patients, males comprise 56 and females 40. Etiology was malaria in 22, viral fever in 20, dengue fever in 32, scrub typhus in 10, septicaemia in 6 and leptospirosis in 6 cases. Clinical symptoms were fever in 96, cough in 62, headache in 54, rashes in 34, pallor in 51, chills & rigors in 32, jaundice in 26 and bleeding in 15 patients. Bleeding site was gum bleeding was seen in 8, bleeding per vagina in 1, Malena in 2, hematemesis in 2, hematuria in 1 and epistaxis in 1 patient. The difference was significant ( $P < 0.05$ ). **Conclusion:** Most common cause of thrombocytopenia was malaria, viral fever, dengue fever, scrub typhus, septicaemia and leptospirosis. Most of the patients with platelets count less than 20000 needed blood transfusion.

**Keywords:** Fever, Thrombocytopenia, Platelets, Headache.

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## Introduction

Pyrexia is from the Greek pyretos meaning fire. Febrile is from the Latin word febris, meaning fever, and archaically known as ague.<sup>[1]</sup> Fever was then consider to be synonymous with infectious disease as, until the mid- 19 century, most of these disease were grouped under the generic term of “fever” because patients with fevers were considered to be associated with disease and often death, they were frequently isolated in order to protect the community, as a result, fever came to be feared, and thus warranted intervention.<sup>[2]</sup> Fever is currently treated as ‘the origin of, rather than the response to, an illness’.<sup>[3]</sup>

Fever is defined as an elevation of the body temperature above normal circadian range as a result of change in the thermoregulatory centre located in the anterior hypothalamus.<sup>[4]</sup> An AM temperature of  $>37.2^{\circ}\text{C}$  ( $98.9^{\circ}\text{F}$ ) or a P.M. temperature of  $> 37.7^{\circ}\text{C}$  ( $99.9^{\circ}\text{F}$ ) would define fever. Fever has been recognized as a cardinal manifestation of disease and reliable marker of illness.<sup>[5]</sup> Normal body temperature displays a diurnal pattern with lower values in the early morning hours and higher values in the afternoon. Normal ranges are between  $36.5^{\circ}\text{C}$  and  $37.5^{\circ}\text{C}$  ( $97.7^{\circ}\text{F}$  and  $99.5^{\circ}\text{F}$ ). Fever is superimposed on this pattern and thus temperatures are usually greatest in the afternoon and evening.<sup>[6]</sup>

Thrombocytopenia is characterized when platelet count is less than  $1,50,000/\mu\text{L}$ . This is because of diminished creation, expanded obliteration, and expanded sequestration in spleen. The most common etiology behind this in febrile cases are expanded sequestration in the spleen, diminished

creation and expanded obliteration.<sup>[7]</sup> Considering this we determined clinical profile of patients with thrombocytopenia.

## Subjects and Methods

We included ninety- six adult patients of fever with thrombocytopenia of either gender. All those who gave their written consent was enrolled.

A complete case history was entered in case history sheet followed by thorough systemic examination. Laboratory investigation such as complete blood count was recorded. The etiology, clinical data and site of bleeding was recorded. The results were compiled and subjected for statistical analysis using SPSS version 21.0 and Mann Whitney U test. P value less than 0.05 was set significant.

## Results

Out of 96 patients, males comprise 56 and females 40 [Table 1]

**Table 1: Distribution of patients**

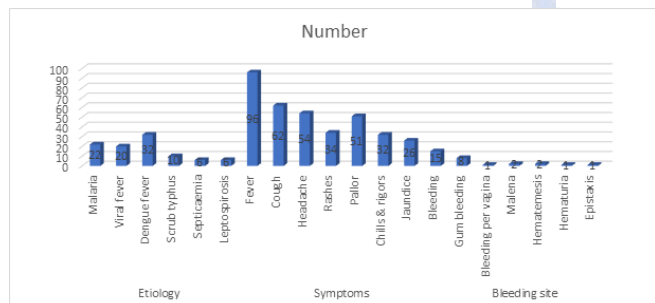
Total- 96		
Gender	Males	Females
Number	56	40

Etiology was malaria in 22, viral fever in 20, dengue fever in 32, scrub typhus in 10, septicaemia in 6 and leptospirosis in 6 cases. Clinical symptoms were fever in 96, cough in 62, headache in 54, rashes in 34, pallor in 51, chills & rigors in

32, jaundice in 26 and bleeding in 15 patients. Bleeding site was gum bleeding was seen in 8, bleeding per vagina in 1, Malena in 2, hematemesis in 2, hematuria in 1 and epistaxis in 1 patient. The difference was significant (P< 0.05) [Table 2, Figure 1].

**Table 2: Assessment of parameters**

Parameters	Variables	Number	P value
Etiology	Malaria	22	0.04
	Viral fever	20	
	Dengue fever	32	
	Scrub typhus	10	
	Septicaemia	6	
	Leptospirosis	6	
Symptoms	Fever	96	0.05
	Cough	62	
	Headache	54	
	Rashes	34	
	Pallor	51	
	Chills & rigors	32	
	Jaundice	26	
	Bleeding	15	
Bleeding site	Gum bleeding	8	0.02
	Bleeding per vagina	1	
	Malena	2	
	Hematemesis	2	
	Hematuria	1	
	Epistaxis	1	



**Figure 1: Assessment of parameters**

**Table 3: Platelet counts and outcome of treatment**

Platelet counts (per cumm)	Total cases	Case improved without blood transfusion	Case improved with blood transfusion
40000-150000	42	42	0
20000-40000	36	32	4
<20000	18	10	8

There were 42 cases having platelets count between 40000-150000 per cumm of blood and all cases improved without blood transfusion. Out of 36 cases with platelets count between 20000-40000 per cumm of blood, 4 required blood transfusion and out of 18 cases with platelets count <20000, 8 required blood transfusion [Table 3].

## Discussion

Thrombocytopenia is a common clinical condition and is

caused by infectious and non-infectious etiology.<sup>[8]</sup>

Thrombocytopenia is defined as platelet count <1,50,000/microliter. This is due to decreased production, increased destruction, increased sequestration in spleen.<sup>[9]</sup> Of this infection is the most common cause.<sup>[10]</sup> Fever with thrombocytopenia narrows the differential diagnosis of the clinical entity. Infection like malaria, dengue, leptospirosis, typhoid, HIV, and miliary tuberculosis are some of the common causes of fever with thrombocytopenia.<sup>[11]</sup> Therefore, a well organised systemic approach that is carried out with an awareness of cause of fever with thrombocytopenia can shorten the duration of investigation and bring out diagnosis.<sup>[12]</sup> In this study we determined clinical profile of patients with thrombocytopenia.

Our results showed that out of 96 patients, males comprise 56 and females 40. Latha V et al,<sup>[13]</sup> in their study found that the cause of thrombocytopenia was Dengue (40%), Malaria (24%), Leptospirosis (8%) and septicaemia (10%) and other causes (18%) acute viral fever. The duration of fever ranged from 1-15 days with mean duration of 6.05 days and 92% of them had duration of < 10 days. Headache was the most common symptom other than fever. Derangement of LFT was also observed in most of the cases. Spontaneous bleeding was seen 42 number of patients. 112 patients recovered and 6 expired.

Our results demonstrated that etiology was malaria in 22, viral fever in 20, dengue fever in 32, scrub typhus in 10, septicaemia in 6 and leptospirosis in 6 cases. Clinical symptoms were fever in 96, cough in 62, headache in 54, rashes in 34, pallor in 51, chills & rigors in 32, jaundice in 26 and bleeding in 15 patients. Mudunuri et al,<sup>[14]</sup> in their study on 100 patients observed that the febrile illness with thrombocytopenia had maximum occurrence in the third (32%). The four diseases which contributed mainly to febrile thrombocytopenia were acute viral fever (34%), Dengue (29%), Leptospirosis (13%) and Malaria (10%). The duration of fever ranged from 1-20 days with mean duration of 6.05 days and 92% of them had duration of < 10 days.

We found that bleeding site was gum was seen in 8, bleeding per vagina in 1, Malena in 2, hematemesis in 2, hematuria in 1 and epistaxis in 1 patient. Many virus causes thrombocytopenia, out of this dengue is the most common cause. Most patients who develop dengue hemorrhagic fever or dengue hemorrhagic shock syndrome have had prior infection with one or more dengue serotypes. When an individual is infected with another serotype (ie, secondary infection), these non- neutralizing antibodies recognize the dengue virus but do not neutralize or inhibit virus replication.<sup>[15]</sup>

There were 42 cases having platelets count between 40000-150000 per cumm of blood and all cases improved without blood transfusion. Out of 36 cases with platelets count between 20000-40000 per cumm of blood, 4 required blood transfusion and out of 18 cases with platelets count <20000, 8 required blood transfusion. Patne et al,<sup>[16]</sup> showed that the highest incidence of thrombocytopenia was seen in the age group of 21-30 years (32.50%) followed by 31-40 (25.83%) and 12-20 years (23.33%). The most common diseases that causes thrombocytopenia were infections (63.33%) [i.e.

Dengue (30%), Malaria (20.83%), Enteric fever (5%), HIV (4.166%), Leptospirosis (1.66%) and DIC (1.66%) and Megaloblastic anemia (21.66%) were common in younger population.

Malaria is a mosquito-borne infectious disease of humans and other animals caused by eukaryotic protists of the genus *Plasmodium*.<sup>[17]</sup> The disease results from the multiplication of *Plasmodium* parasites within red blood cells, causing symptoms that typically include fever and headache, in severe cases progressing to coma or death. It is widespread in tropical and subtropical regions, including much of Sub-Saharan Africa, Asia, and the Americas. Five species of *Plasmodium* can infect and be transmitted by humans. This is also common cause leading to thrombocytopenia.<sup>[18]</sup>

## Conclusion

Malaria, viral fever, dengue fever, scrub typhus, septicaemia and leptospirosis were most common causes of thrombocytopenia. Most of the patients with platelets count less than 20000 needed blood transfusion.

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