RESEARCH ARTICLE

CLINICAL STUDY OF THROMBOCYTOPENIA IN ACUTE FEBRILE ILLNESS: A HOSPITAL BASED RETROSPECTIVE STUDY

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ARTICLE INFO	ABSTRACT
	Introduction: Acute febrile illness (fever of short duration 2-3 week) is a common presentation. This study is intended to know thrombocytopenia in patients of acute fever, its severity, cause and recovery. **Aims and Objective:** To clinically study thrombocytopenia in Aute Febrile Illness and the aetiology **Material and Methods:** The study was conducted on 100 patients who presented with fever of short duration in Darbhanga Medical College & hospital **Results:** Thrombocytopenia is very common in fever of short duration in all age groups ranging from 10 years to 80 years. Approx. 40 % patients have platelets between 50,000 to 1,00000 mm^3. In 45 % patients cause was mostly viral fever (not dengue). In 30% enteric fever, 10% dengue fever, 8 % malaria and 7 % septicemia.> 98 % patients had good recovery. **Conclusions:** Thrombocytopenia is quite common in patients presenting with fever of acute onset (2-3 week duration) and the main cause is unknown not malaria, enteric fever or dengue.

INTRODUCTION

Fever is an elevation of body temperature that exceeds the normal daily variation and occurs in conjunction with an increase in the hypothalamic set point (e.g., from 37°C to 39°C) (Chapter 23). Acute febrile illness is a type of illness characterized by a sudden onset of fever, which is an increase in internal body temperature to levels above normal. The normal platelet count is 150000-450000/mm^3. Thrombocytopenia is defined as platelet count less than 150000/mm3. It results from one of three mechanisms i.e. reduced production, excessive peripheral destruction and increased platelet sequestration in spleen (Bichile, 2012). Many viral and bacterial infections result in thrombocytopenia and are the most common noniatrogenic cause of thrombocytopenia (Chapter, 140). This may or may not be associated with laboratory evidence of disseminated intravascular coagulation (DIC), which is most commonly seen in patients with systemic infections with gram-negative bacteria. Infections can affect both platelet production and platelet survival. In addition, immune mechanisms can be at work (Chapter, 140).

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Patients with acute febrile illnesses in a tropical country like India usually have an infectious aetiology and may have associated thrombocytopenia. Infections like malaria, dengue and typhoid are some of the common causes of fever with thrombocytopenia. The present study is aimed at determining the frequency of thrombocytopenia in patients presenting with short duration fever of 2-3 weeks, the frequency of different causes (diseases), their prognosis and bleeding risk.

MATERIAL AND METHODS

The study was carried out in 100 patients admitted with acute febrile illness between age group 10 year to 80 year. Detailed history was taken. Presenting complaints and haemorrhagic manifestation were hospital were recorded. All the patients were subjected to routine complete blood count (CBC) including platelet count, peripheral smear study, peripheral smear for malarial parasites, Dengue NS1antigen, Dengue IgM and IgG, Prothrombin time with INR, Activated partial thromboplastin time, renal function test and liver function test. Baseline platelet counts were done on the day of presentation. Repeat platelet counts were done in subjects with marked thrombocytopenia until normal or near-normal values were reached. Other investigations as necessary were done to achieve diagnosis such as bone marrow trephine biopsy, serological study for HIV infection, TSH, Serum Widal test,

D-Dimer, Serum vitamin B12 level, Anti Nuclear Antibody (ANA). Inclusion criteria: Patients with acute fever between 10 year to 80 years of age. Exclusion criteria: Patients with fever and no thrombocytopenia were excluded. Patients with thrombocytopenia and no fever were also excluded from study. Previously diagnosed conditions which can lead to thrombocytopenia such as ITP, cirrhosis, chronic liver disease, patients on drugs (Linezolid, piperacillin-Tazobactam, Amiodarone, Carbamazepine, Captopril, Methyldopa, acetaminophen, heparin, etc) causing thrombocytopenia were excluded.

RESULTS

Out of 100 patients who presented with acute febrile illness, in 92 patients lab finding showed thrombocytopenia, which showed thrombocytopenia a common finding.

Table 1.

% of patients of Acute febrile illness	Platelet count
8	>1,50000 / mm^3
30	Between 1,00000-1,50000/ mm^3
40	Between 50000 – 100000 /mm^3
22	< 50000 / mm^3

Further most common cause of thrombocytopenia in our study was viral fever(excluding dengue) (45%), enteric fever(30%), dengue fever (10%) and Malaria(8%), septicemia(7%).

Table 2. Infectious causes of Thrombocytopenia

Disease	Total (%)
Viral fever	45 %
Enteric fever	30%
Dengue fever	10 %
Malarial fever	8%
Septisemia	7 %

In our study, in 75 % of patients platelet count was more than 50,000 / mm^3 and surprisingly they were asymptomatic. In remaining 25 % of patients, patients of dengue (10 %) and septisemia (7%), showed bleeding manifestations when platelets < 20,000- 25,000 / mm^3 and they required platelet transfusion. Also bleeding manifestations were more common in patients of sepsis.

Table 3. Symptoms due to thrombocytopenia

Severity of Thrombocytopenia	symptoms
1,00000-1,50000 / mm^3	Asymptomatic
50000 – 1,00000 /mm^3	Asymptomatic
20000 – 50000 / mm^3	Skin purpura
< 20000 / mm^3	Bleeding gums, malena, subconjunctival hemorrhage

DISCUSSION

Patients of acute febrile illness with presenting complain of fever, headache, generalized bodyache, common cough and cold, pain abdomen with acute gastroenteritis ; their Complete blood count showed platelet count < 1,50000/mm^3, more frequently than expected. In this study, the most common aetiology responsible for newly diagnosed thrombocytopenia in adult patients was found to be viral fever (45 %). In majority of patients (75 %) thrombocytopenia was transient and asymptomatic and platelets between 50000 – 1, 50000/mm^3, however the commonest bleeding manifestations were petechiae and/or purpura. The two mechanisms probably involved in dengue-induced thrombocytopenia are impaired thrombopoiesis and peripheral platelet destruction (Yeolekar, 2012). Both nonimmunological destruction and immune mechanism involving specific platelet-associated IgG antibodies that bind directly to malarial antigen in the platelets have been reported to play a role in the lysis of platelets (Yeolekar, 2002). On treating the specific cause, improvement in platelet count was noted in majority of patients at the time of discharge and during further follow-up.

Conclusion

In acute febrile illness, thrombocytopenia is a commonly observed hematological finding. Our study of fever with thrombocytopenia reveals among infections viral fevers and enteric fevers, then dengue fevers are common causes because of seasonal and regional variations. Common Bleeding manifestations are petechiae /purpura and gum bleeding, malena, epistaxis and subconjunctival bleeding. Most of patients recover spontaneously and most go unnoticed if they donot get a hematological examination done.

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