Study of Clinical Profile of Thrombocytopenia

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ABSTRACT

Introduction: Thrombocytopenia is often the most commonly encountered clinical condition in our routine practice. Etiological causes being numerous, often pose a challenge in evaluating and treating the patients. The objective of this study was to find out the epidemiology, etiology and complications in the patients admitted in General Medicine department in HSK hospital, Bagalkot.

Material and methods: This was a prospective study done on 36 patients with thrombocytopenia admitted to HSK Hospital, Bagalkot with various complaints, during the period of Jan 2017 to June 2017.

Results: This study includes age group 18-80 years. The highest incidence of thrombocytopenia belonged to the age group 18-30 years (36%) followed by 31-40 years (22%) and 51-60 years (17%). Incidence of thrombocytopenia was more in women (64%) as compared to men (36%). the most common cause of thrombocytopenia was septicemia (17%) followed by Megaloblastic anemia (14%) and dengue fever (14%).

Conclusion: Infections like malaria, dengue, leptospirosis and septicemia were the common causes of thrombocytopenia along with megaloblastic anemia. Whenever thrombocytopenia is detected further investigations can help us in reaching a correct diagnosis in the majority of the cases so that appropriate treatment can be given.

Keywords: Thrombocytopenia, Clinical Profile, Septicemia, Dengue Fever, Malaria, Bleeding Manifestations.

INTRODUCTION

Thrombocytopenia refers to a reduction in platelet count below 1.5 lakh/microliter.[1] It is the commonest abnormality encountered in clinical practice with variable clinical expression. The symptomatology may vary greatly and the underlying cause may be either inconsequential or life threatening.[2] In a tropical country like India, infectious causes predominate and are usually associated with fever, also drugs, autoimmunity, Hypersplenism, DIC, malignancy are among the leading causes of thrombocytopenia. Pseudo thrombocytopenia should always be ruled out first by peripheral smear examination.[3]

Because platelet counts are prone to error, a single platelet count that is lower than normal should be confirmed by a second count. It should also be confirmed by inspecting the blood film.[4,5] The life span of platelets once they enter the circulation is about 8- 10 days. About 10% of the population is destroyed each day.[5] Thrombocytopenia may result from impaired platelet production, accelerated platelet destruction, or dilution/splenic sequestration.[4,5] Of these infections being the commonest cause of thrombocytopenia.[4,6]

The present study was undertaken to study and evaluate the cases of thrombocytopenia detected on a routine hemogram of inpatients over a period of 6 months. Severe thrombocytopenia was seen in cases of malaria, dengue, septicemia and disseminated intravascular coagulation (DIC), which can be life threatening. The presence of thrombocytopenia in a hemogram should alert the physician to identify the underlying etiology for the prompt management of the patient.

The objective of this study was to find out the epidemiology, etiology, complications in patients admitted in General Medicine department in HSK hospital, Bagalkot. Cases of Thrombocytopenia were further analyzed and evaluated to find its underlying cause.

MATERIAL AND METHODS

This was a prospective study done on 36 patients with thrombocytopenia admitted to HSK Hospital, Bagalkot, during the period of Jan 2017 to June 2017.

Taking the proportion of patients with septicemia as 26.6% according to a study done by Nair P S et al.[3] the sample size was calculated using the formula $4PQ/l^2$, the sample size was calculated to be 35 and a total of 36 samples were collected. Criteria for Patient Selection:

Inclusion Criteria: Patient with platelet count <1.5-lakh/mm3

Exclusion Criteria: Patient having pre established diagnosis of chronic thrombocytopenia, malignancy, patients on chemotherapy were excluded.

Informed consent was taken and patients were explained regarding the study. Detailed clinical history was noted in each patient including bleeding manifestations, past history of chronic thrombocytopenia, malignancy, patients on chemotherapy were asked. Detailed physical examination was carried out in all the patients. Routine Investigation in form of CBC, chest x-ray, RFT, LFT, Coagulation Profile etc. were performed in all patients. The special investigations like Bone Marrow Examination, Widal, Dengue Serology, Coomb's test, G6PD Test, RA Factor, etc. were done if the evaluation demanded. All the patients were treated with disease specific treatment and platelet transfusion was given

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only if clinical evidence of bleeding was noted. All the data of each patient were recorded in separate proforma.

STATISTICAL ANALYSIS

Data from the proforma were entered into MS Excel software (version 2013) and descriptive analysis of the data was done. The results were presented in the form of percentages and proportions, and interpreted.

RESULTS

This study includes age group 18-80 years. The highest incidence of thrombocytopenia belonged to the age group 18-30 years (36%) followed by 31-40 years (22%) and 51-60 years (17%) (Table 1). Incidence of thrombocytopenia was more in women (64%) as compared to men (36%).

In our study, the most common cause of thrombocytopenia was septicemia (17%) followed by Megaloblastic anemia (14%) and dengue fever (14%) (Table 2). We had reported 8% patients with P.Vivax malaria as an uncommon presentation with thrombocytopenia. We had not observed any patient with pseudo-thrombocytopenia.

In this study, 7(19%) patients out of total 36 patients had bleeding manifestations. Rest of the patients did not have any hemorrhagic manifestations although they fulfilled the inclusion criteria. Most common bleeding manifestation was seen in skin and mucous membrane (43%) followed by gum bleeding (29%) and melena (14%). The major clinical bleeding in the form of intracranial hemorrhage was detected in only one patient (14%).

Dengue fever (33%) was common etiologies associated with skin and mucous membrane bleeding (Table 3). In patients with gum bleeding, dengue fever (50%) and Megaloblastic anemia (50%) were common causes.

Common etiologies in 11 patients with platelet count <20,000/µl were dengue (45%), megaloblastic anemia (27%), enteric fever (18%), ITP (9%), and in 10% patients with platelet count <10,000/µl were dengue (66%), ITP (33%) and (Table 4). In patients presented with platelet count >50,000/µl, the commonest etiology were septicemia, malaria and urinary tract infection.

Around 20% of patients had pancytopenia, 28% patients had leucopenia with thrombocytopenia, 39% patients had anemia with thrombocytopenia and 13% patients had selective thrombocytopenia.

Out of 7 patients of pancytopenia, 4(57%) had Megaloblastic anemia, 2 had retroviral disease and 1 patient had

Age Group (in Yrs.)	% of Patients (n=36)
18-30	13
31-40	8
41-50	5
51-60	6
61-70	3
71-80	1
Total	36

Table-1: Age incidence in patients with Thrombocytopenia

Causes	Total patients
Septicemia	6
Megaloblastic anemia	5
Dengue fever	5
Retroviral disease	3
Malaria	3
UTI	3
Chronic kidney disease	2
Iron deficiency anemia	2
Enteric fever	2
Others	5

Table-2: Etiology of Thrombocytopenia

Hemorrhagic Manifestations (n=7)	Etiology	No. of Patients (%)
Skin and Mucous membrane (n=3)	Dengue	2 (66%)
	Malaria	1 (33%)
Gum bleeding (n=2)	Dengue	1 (50%)
	Megaloblastic anemia	1 (50%)
Malaena (n=1)	ITP	1 (100%)
Intraparenchymal bleed (n=1)	HELLP	1 (100%)

Table-3: Correlation of Bleeding Manifestations with Etiology

Etiology (n=36)	Platelet count <10,000/µl	Platelet count 10,000 - 20,000/µl	Platelet count 20,000 - 50,000/µl	Platelet count >50,000/µl
Septicemia (6)			1	5
Megaloblastic anemia (5)		3		2
Dengue fever (5)	2	3		
Retroviral disease (3)			1	2
Malaria (3)			1	2
UTI (3)				3
Chronic kidney disease (2)				2
Iron deficiency anemia (2)				2
Enteric fever (2)		2		
Others (5)	1		2	2

Table-4: Correlation of etiology with platelet count

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disseminated TB.

4 patients having bleeding manifestations required platelet transfusion irrespective of their platelet count. Remaining patients were given disease specific treatment.

DISCUSSION

The diseases that cause thrombocytopenia commonly like Megaloblastic anemia and infections (malaria, dengue, enteric fever) are common in younger population and other cause like CKD, septicemia, malignancy were relatively commoner in elderly. This study shows around 60% of total patients were below age of 40 years, correlating with Suresh et al which showed 21-40 years was the common age group.[8]

As thrombocytopenia is a laboratory abnormality and diseases that commonly cause thrombocytopenia have no sex predilection, and our observation corresponds to the admission rates for female and male patients in our institute. In a study done by Suresh et al, showed male preponderance with males 54% and females 46%.[8] In another study conducted by Nair P S et al 76% were male and 24% were female patients.[3]

Septicemia, megaloblastic anemia (probably due to alcoholism) were among the common causes of thrombocytopenia in agreement with Nair P S et al.[3]

In our study, 7(19%) patients out of total 36 patients had bleeding manifestations. Most common bleeding manifestation was seen in skin and mucous membrane (43%) followed by gum bleeding (29%) and melena (14%). Compared to study by P.S. Nair et al[3] spontaneous bleeding in 77.78% was a major manifestation followed by petechiae/ purpura accounting for 22.22%. While in a similar study by Dr. Srinivas et al[9] purpura (63%) was the commonest bleeding manifestations followed by spontaneous bleeding (37%). In study done by Patil et al[10] petechiae was the major manifestation73.9% followed by spontaneous bleeding (26.9%).

This observation shows that common etiologies of thrombocytopenia in the present study were less severe as compared to uncommon etiologies. In our study we found that Megaloblastic anemia is major cause for pancytopenia, which is best correlated with literature.[7] Intracranial bleed seen in one patient is a dreaded complication which could have been avoided by timely platelet transfusion.

In a study conducted by Lye et al, no significant relationship was demonstrated between clinical bleeding and platelet count.[11] Against to common dictum of prophylactic platelet transfusion for less 20000/µl, we treated patients only with bleeding signs and symptoms and this could help in lessening the patient burden and platelet wastage.

CONCLUSION

Thrombocytopenia is more common in age group below 40 years of age where women are more affected than men in our study. Bleeding manifestations were present in 1/6th of patients and the common site is skin and mucous membrane in 1/2nd patients, the main cause of which was dengue fever and majority patients had platelet count <20,000/µl.

The commonest etiology was septicemia in 1/6th patients followed by Megaloblastic anemia in 1/6th and dengue fever in 1/6th patients.

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