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Research Article

**CLINICAL PROFILE OF PATIENTS WITH
THROMBOCYTOPENIA AT TERTIARY CARE HOSPITAL****Dr. Akber Yousfani¹, Dr. Muhammed Khalid Shaikh¹, Dr. Mukhtiar Hussain Jaffery¹,
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Jamshoro² General Practitioner Zulekha Hospital, Dubai United Arab Emirates³ Brandon Regional Hospital Brandon, Florida, U.S.A**Received:** 28 March 2017**Accepted:** 13 April 2017**Published:** 18 April 2017**Abstract:****OBJECTIVE:** To determine the clinical profile of patient with thrombocytopenia at tertiary care hospital.**PATIENTS AND METHODS:** This descriptive case series study for one year was conducted at tertiary care hospital Hyderabad on the patients who had clinical manifestation due to thrombocytopenia. The inclusion criteria of the study were patients, of ≥ 12 years of age, either gender, had thrombocytopenia counts less than 1, 50,000/ μl with or without clinical manifestations. The investigations relevant to detect etiology were advised while the severity of thrombocytopenia was categorized as mild, moderate and severe. The data was collected on pre-designed proforma and analyzed in SPSS 16. The frequency and percentage was calculated while mean \pm SD was computed for numerical variables.**RESULTS:** During one year study period total one hundred patients of thrombocytopenia were recruited and studied. Majority of the patients belonged to rural population (78%). The mean \pm SD for age and platelet count was 38.98 ± 8.95 years and $1, 10500 \pm 4500 / \mu\text{l}$ respectively while the mortality was detected as 11%. The male population was predominant 53%, the fever is the most common clinical presentation observed in all participant while the other common symptoms observed were gum bleeding (19%), hematuria (19%), menorrhagia (15%) and melena (14%). The common etiological factors detected as Plasmodium vivax (21%), Plasmodium falciparum (16%), dengue (19%), tuberculosis (13%) and viremia (13%) while the bleeding time was detected as prolonged in 37% respectively.**CONCLUSION:** The thrombocytopenia is a common and life threatening complication of febrile illness especially of infectious origin.**Keywords:** Platelet, Thrombocytopenia, Megakaryocytes**Corresponding author:****Dr. Zulfiqar Ali Qutrio Baloch,**

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INTRODUCTION:

The platelets are small, anucleate cells and are exists within the bone marrow as megakaryocytes and subsequently released in the blood and plays important role in hemostasis, they are the terminal (final) stage for the formation of megakaryocyte series. [1-3]The immature precursor is the megakaryoblast for less than 8% of megakaryocyte population and they occupied less than 1% of Bone marrow compartment. It had been fact that one can diagnose a disease when one has awareness and knowledge regarding that disease. [4] The thrombocytopenia (low platelet count) usually missed, because it was not often looked for and the specific investigation sometime also neglected. With increasing awareness and knowledge regarding the association of thrombocytopenia with various disorders especially during febrile illness, this component now the matter to evaluate properly.[5-7] The thrombocytopenia occurs in different disorders and leads to potentially fatal bleeding due to severe decrease in platelet count.[8] The causes of thrombocytopenia are impaired platelet formation, increase platelet destruction or dilution and/or splenic sequestration.[9] There is no confirmatory association between bleeding and platelet count, but clinical experience had observed that the platelet counts less than 10,000/ μ l, there is usually severe bleeding and responsible for mortality and morbidity due to various febrile illness.[10] The serial monitoring of platelet counts has great prognostic importance and highlights the importance of thrombocytopenia in various conditions.[11] It can also be the initial presentation of some diseases like leukemia and lymphoma and stresses the need for proper workup bur due to nature of the disease the cause of thrombocytopenia sometimes not established. [12] Therefore, the present study was conduct at tertiary care hospital to evaluate the various common conditions responsible for thrombocytopenia and bleeding because early evaluation and treatment can save the patients to acquire life threatening bleeding associated with thrombocytopenia.

PATIENTS AND METHODS:

This descriptive case series study for one year was conducted at tertiary care hospital Hyderabad on the patients who had clinical manifestation due to thrombocytopenia. The inclusion criteria of the study were patients, of ≥ 12 years of age, either gender, had thrombocytopenia counts less than 1,50,000/ μ l with or without clinical manifestations while the exclusion criteria were patients with Von Willebrand disease (VWD), Bernard-Soulier syndrome (BSS), malignancy, pregnancy, already on platelet impaired therapy as aspirin, clopidogrel and eltrombopag, and non cooperative patients. The detail history was taken and clinical examination was performed to see any cutaneous manifestations. After taken the informed consent the platelet counts were observed on blood complete picture while other related investigations (if necessary) as bleeding and clotting time, bone marrow biopsy and the specific investigations to diagnose the primary pathology (relevant disease) were advised accordingly. Only those patients with low counts existed on 2 occasions were included in the study and were monitored for platelet count every day or on alternate day. The investigations relevant to detect etiology were advised while the severity of thrombocytopenia was categorized as mild (<150,000 to >50,000 μ l) moderate (<50,000 to >20,000 μ l) and severe (<20,000 μ l). The patients were managed under the team of senior consultants of the ward while the data was collected on pre-designed proforma and analyzed in SPSS 16. The frequency and percentage was calculated while mean \pm SD was computed for numerical variables.

RESULTS:

During one year study period total one hundred patients of thrombocytopenia were recruited and studied. Majority of the patients belonged to rural population (78%). The mean \pm SD for age and platelet count was 38.98 \pm 8.95 years and 1, 10500 \pm 4500 μ l respectively while the mortality was detected as 11%. The demographical, clinical and etiological profile of study population is presented in Table 1-7.

TABLE 1: THE AGE AND GENDER DISTRIBUTION

AGE (yrs)	GENDER		Total
	Male	Female	
12-19	13 24.5%	10 21.3%	23 23.0%
29-29	21 39.6%	15 31.9%	36 36.0%
30-39	8 15.1%	10 21.3%	18 18.0%
40-49	8 15.1%	5 10.6%	13 13.0%
50+	3 5.7%	7 14.9%	10 10.0%
Total	53 100.0%	47 100.0%	100 100.0%

TABLE 2: THE CLINICAL PRESENTATION AND GENDER DISTRIBUTION

PRESENTATION	GENDER		Total
	Male	Female	
Gum bleeding	16 30.2%	3 6.4%	19 19.0%
Epistaxis	3 5.7%	11 23.4%	14 14.0%
Hematuria	10 18.9%	9 19.1%	19 19.0%
Menorrhagia	10 18.9%	5 10.6%	15 15.0%
Melena	2 3.8%	12 25.5%	14 14.0%
Petechiae / Purpura	4 7.5%	7 14.9%	11 11.0%
Subconjunctival hemorrhage	8 15.1%	0 .0%	8 8.0%
Total	53 100.0%	47 100.0%	100 100.0%

TABLE 3: THE BONE MARROW FINDINGS AND GENDER DISTRIBUTION

BONE MARROW FINDINGS	GENDER		
	Male	Female	Total
Normal	22 41.5%	13 27.7%	35 35.0%
Hypercellular with megakaryocytes	5 9.4%	11 23.4%	16 16.0%
Megaloblastic	18 34.0%	17 36.2%	35 35.0%
Hypoplastic	8 15.1%	6 12.8%	14 14.0%
Total	53 100.0%	47 100.0%	100 100.0%

TABLE 4: THE ETIOLOGY AND AGE DISTRIBUTION

ETIOLOGY	AGE (yrs)					Total
	12-19	29-29	30-39	40-49	50+	
Plasmodium vivax	7 30.4%	6 16.7%	7 38.9%	0 .0%	1 10.0%	21 21.0%
Plasmodium falciparum	5 21.7%	5 13.9%	3 16.7%	2 15.4%	1 10.0%	16 16.0%
Dengue	7 30.4%	6 16.7%	0 .0%	5 38.5%	1 10.0%	19 19.0%
Tuberculosis	4 17.4%	6 16.7%	0 .0%	3 23.1%	0 .0%	13 13.0%
Megaloblastic anemia	0 .0%	5 13.9%	1 5.6%	2 15.4%	0 .0%	8 8.0%
Idiopathic thrombocytopenic purpura	0 .0%	2 5.6%	2 11.1%	1 7.7%	1 10.0%	6 6.0%
Viremia	0 .0%	4 11.1%	4 22.2%	0 .0%	5 50.0%	13 13.0%
TTP/HUS	0 .0%	2 5.6%	1 5.6%	0 .0%	1 10.0%	4 4.0%
Total	23 100.0%	36 100.0%	18 100.0%	13 100.0%	10 100.0%	100 100.0%

*p-value = 0.09; statistically non significant

TABLE 5: THE ETIOLOGY AND GENDER DISTRIBUTION

ETIOLOGY	GENDER		
	Male	Female	Total
Plasmodium vivax	11 20.8%	10 21.3%	21 21.0%
Plasmodium falciparum	6 11.3%	10 21.3%	16 16.0%
Dengue	10 18.9%	9 19.1%	19 19.0%
Tuberculosis	9 17.0%	4 8.5%	13 13.0%
Megaloblastic anemia	4 7.5%	4 8.5%	8 8.0%
Idiopathic thrombocytopenic purpura (ITP)	4 7.5%	2 4.3%	6 6.0%
Viremia	7 13.2%	6 12.8%	13 13.0%
TTP/HUS	2 3.8%	2 4.3%	4 4.0%
Total	53 100.0%	47 100.0%	100 100.0%

*p=0.03 is significant

TABLE 6: THE SEVERITY OF THROMBOCYTOPENIA AND GENDER DISTRIBUTION

SEVERITY	GENDER		
	Male	Female	Total
Mild	21 39.6%	13 27.7%	34 34.0%
Moderate	15 28.3%	24 51.1%	39 39.0%
Severe	17 32.1%	10 21.3%	27 27.0%
Total	53 100.0%	47 100.0%	100 100.0%

*p=0.04; statistically significant

TABLE 7: THE SEVERITY OF THROMBOCYTOPENIA AND ETIOLOGY DISTRIBUTION

ETIOLOGY	SEVERITY			Total
	MILD	MODERATE	SEVERE	
Plasmodium vivax	9 26.5%	3 7.7%	9 33.3%	21 21.0%
Plasmodium falciparum	6 17.6%	10 25.6%	0 .0%	16 16.0%
Dengue	3 8.8%	7 17.9%	9 33.3%	19 19.0%
Tuberculosis	9 26.5%	0 .0%	4 14.8%	13 13.0%
Megaloblastic anemia	6 17.6%	2 5.1%	0 .0%	8 8.0%
Idiopathic thrombocytopenic purpura	1 2.9%	5 12.8%	0 .0%	6 6.0%
Viremia	0 .0%	11 28.2%	2 7.4%	13 13.0%
TTP/HUS	0 .0%	1 2.6%	3 11.1%	4 4.0%
Total	34 100.0%	39 100.0%	27 100.0%	100 100.0%

*P<0.01; statistically significant

DISCUSSION:

In this study one hundred cases of thrombocytopenia were recruited and were study for severity and etiological factors. Fever was the commonest presenting complaint and observed in all patients. The severity of thrombocytopenia in infectious diseases and other disorders has great prognostic importance and has an inverse correlation to mortality and morbidity. In present study the male population was predominant 53% and the infection like dengue and malaria accounted for the majority of subjects and both disorders are mosquito borne. The majority of population was belonged to rural areas (78%) where the sanitation was impaired and poor, the male population predominance because they less covered by clothes and also move out from their place of residence for work. The findings are consistent with the former studies. [13-17]The disorders due to which thrombocytopenia developed have an important influence as far as bleeding is concerned and when associated with infection or uremia there is additional functional

disturbance and the risk of bleeding will be more and increases with severity of thrombocytopenia. In present study the bleeding manifestation with different clinical modes was observed in majority of the study population, the observation is consistent with the former studies. [18, 19] In present study the etiological factors observed were, Plasmodium vivax (21%) and falciparum (16%), dengue (19%), tuberculosis (13%), megaloblastic anemia (8%), idiopathic thrombocytopenic purpura (6%), viremia (13%) and TTP/HUS (4%). The different proportions were observed for thrombocytopenia and its etiological factors in former literature [20-21] and consistent with the present study. In current study 37 patients had a prolonged bleeding time and it progressive decline in relation to stability of platelet count. So there is a correlation between bleeding time tests and platelet numbers as well. The finding was consistent with the former studies. [22, 23] In present study, 35% patients with thrombocytopenia had a normal bone marrow response and it is consistent with the factual statement that bone marrow may be normal

or show increased megakaryocytes during the phase of thrombocytopenia. The finding also reported by Bhasin TS, et al and Jubelirer SJ, et al. [24, 25] Thus the early appropriate treatment of the underlying condition gives better results along with proper monitoring of platelet counts because severe thrombocytopenia can be life threatening and has an inverse correlation to mortality and morbidity i.e. low platelet count higher will be the mortality and in present study, out of 27 severe thrombocytopenic subjects 3 (11%) were expired.

CONCLUSION:

Febrile illness accounts for large number of cases with thrombocytopenia. The incidence is more in males and rural population. The fever is the most common clinical presentation observed in all the participant of the study while the other common symptoms observed were gum bleeding (19%), hematuria (19%), menorrhagia (15%) and melena (14%). The bone marrow response was observed to be variable, the common etiological factors detected as *Plasmodium vivax* (21%), *Plasmodium falciparum* (16%), dengue (19%), tuberculosis (13%) and viremia (13%) while the bleeding time was detected as prolonged in 37% thrombocytopenic patients whereas the mortality was detected as 11%.

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